

September 1, 2021

20-139979

Mr. Carl Eldred

Hopping Green & Sams, P.A.
119 South Monroe Street, Suite 300
Tallahassee, FL 32301

E: CarlE@hgslaw.com

**RE: SOURCE REMOVAL REPORT FOR FLORIDA STATE UNIVERSITY
LOW-LEVEL RADIATION WASTE
TALLAHASSEE, FLORIDA**

Dear Mr. Eldred:

Golder Associates Inc. (Golder) is submitting this Source Removal Report to Hopping Green & Sams, PA for the excavation of low-level radiation waste (LLRW) materials buried at the Florida State University (FSU) LLRW Site, located in Tallahassee, Florida (Site). The site location is shown on Figure 1. The LLRW materials are regulated by Florida State University's Radioactive Materials License 32-10 under Chapter 64E-5 Florida Administrative Code and is also registered with the Nuclear Regulatory Commission.

BACKGROUND

LLRW materials were disposed in four cells beneath a concrete slab with dimensions of approximately 25 feet by 25 feet. The historically reported depth of the cells was 8 feet below ground surface (bgs), with the lower 4 feet of each cell containing the LLRW. The LLRW consisted of research-generated wastes, including animal carcasses and other waste materials which were solidified and placed in containers, or loosely placed into the cells more than 50 years ago. The water table at the site is greater than 50 feet below ground surface, therefore, dewatering of the excavation was not necessary. The LLRW disposal area is shown on Figure 2.

SOURCE REMOVAL ACTIVITIES

Health and Safety

Prior to beginning work, Golder prepared a Health and Safety Plan as well as a Radiation Protection Plan, and the field personnel attended an online training session covering the Radiation Protection Plan. In addition to Level D personal protective equipment, field personnel wore particulate coveralls, neoprene or nitrile chemical resistant gloves, boot covers, and a half-face air purifying respirator while working in the vicinity of the LLRW. A radiation survey specialist conducted monitoring of the ground surface, soil borings, field personnel, personal protective equipment, and excavation equipment for gamma radiation and direct contamination radiation activity from alpha/beta emitters. Airborne dust monitoring was also conducted. The field documentation for the radiation and dust monitoring is included in Attachment A.

LLRW Excavation

Golder provided oversight for the LLRW source removal conducted by Remediation Services, Inc. (RSI) between June 6 and June 11, 2021. Prior to initiation of the excavation activities, RSI set up a temporary staging area adjacent to the excavation area for the concrete slab material and the clean overburden that was ultimately reused as backfill. Plastic liner was used below the staged material and was also placed over the staged overburden to prevent rainwater from accumulating. RSI also set up a locked chain-link fenced area lined with plastic for storage of the excavated LLRW materials pending waste characterization. The waste bags were covered, and the storage area was locked during non-working hours and following completion of the source removal and backfill activities. Temporary orange safety fencing was used to secure the open excavation and the temporary staging area during non-working hours. Warning signs were posted during source removal activities. In addition, RSI was responsible for setting up and maintaining stormwater controls, which included a soil berm along the western (uphill) and silt fencing along the eastern (downhill) boundaries of the excavation. The approximate area for the source removal was less than 1 acre and did not require a Stormwater Pollution Prevention Plan or a Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

The source removal activities were focused on removing the LLRW material present within each of the four disposal cells. At each cell, RSI used an excavator to remove the concrete cap and the overburden that did not contain LLRW. Historical records indicated that the LLRW was confined to the 4- to 8-foot interval; however, LLRW was discovered and removed from the 2- to 8-foot interval at two of the four disposal cells. EnergySolutions, the waste disposal company, provided Golder and RSI with 5 cubic yard LLRW disposal bags capable of storing up to 4 tons of material. RSI loaded each bag using an excavator and a loading frame. The loading frame was constructed using specifications provided by EnergySolutions and was designed specifically for the purpose loading the disposal bags. Weights were determined using a portable scale in order to stay within the 4-tons-per-bag limit. A total of 24.32 tons of LLRW was loaded into seven bags and staged in the fenced storage area pending waste characterization. Backfill commenced after the LLRW was removed. The staged non-impacted overburden was placed in the lower portion of the excavation and then topped with imported backfill. The imported backfill was analyzed prior to arriving on site. The imported backfill analytical results were below applicable standards.

EnergySolutions is authorized to receive Class A Low-Level and Mixed Low-Level Radioactive Waste and has been issued an Agreement State Radioactive Material License (License #UT 2300249) by the Utah Division of Waste Management and Radiation Control (DWMRC). The DWMRC also issued EnergySolutions a State-issued Part B Permit (EPA ID Number UTD982598898) to treat and dispose of hazardous waste which is also contaminated with LLRW (mixed waste). Wastes accepted by EnergySolutions were classified in accordance with the requirements of Utah Administrative Code (UAC) R313-15-1009, Classification and Characteristics of Low-Level Radioactive Waste (EnergySolutions, 2015). Accordingly, Golder collected a composite sample for waste characterization from the seven bags that contained the LLRW.

The waste characterization sample was submitted to Pace Analytical (Pace) for laboratory analysis. The composite sample was periodically scanned in the field for radiation as the LLRW was generated and loaded into the bags, prior to shipping. The radiological laboratory analyses included tritium using Method 906M, Carbon-14 using Method EERF C01, Strontium-90 using Method 905M, Gross Alpha/Beta using Method EPA 9310, and Europium-152 and Cesium-137 using Method DOE Ga-01/901.1. The sample was also analyzed for volatile organic compounds (VOCs) using EPA Method 8260B and semi-volatiles using EPA Method 8270C. The laboratory conducted Toxicity Characteristic Leaching Procedure (TCLP) and analyzed the leachate for the following: VOCs (8260B), SVOCs (8270C), metals using EPA Methods 6010 and 7470 (mercury), herbicides using EPA Method 8151, and pesticides

using EPA Method 8081. These data were used to generate a waste profile. The paint filter analysis was not run due to lack of free liquids.

Once the waste profile was reviewed and approved, EnergySolutions issued a Notice to Transport that authorized the waste shipments. Prior to the first shipment of waste material to EnergySolutions facility, a Generator Site Access Permit (GSAP) was issued by the Utah DWMRC. Utah Administrative Code R313-26 establishes the terms for a GSAP Program that authorizes waste generators, waste processors, and waste collectors to deliver radioactive wastes to a disposal facility within Utah (EnergySolutions, 2015). RSI applied for and received the GSAP on FSU's behalf. After the GSAP was issued, Golder and RSI scheduled the shipments in accordance with EnergySolutions' 5-Working Day Advanced Shipment Notification process. Waste handling, storage, transportation, and disposal were performed in accordance with Chapter 62-730, FAC (Updated Investigation Derived Wastes Best Management Practices). EnergySolutions also provided oversight and radiation screening during the loading of the waste bags onto trucks prior to shipment to their facility in Clive, Utah on July 21, 2021. The bags were loaded for transport and departed the site on July 22, 2021. The Florida Department of Health (FDOH), Bureau of Radiation Control also conducted a final LLRW shipment inspection prior to the waste leaving the site. The FDOH inspection report did not observe any violations.

Field documentation is included in Attachment A, and photographic documentation of the field activities is included in Attachment B. Laboratory reports, waste profile, GSAP, FDOH inspection report, and waste manifests are included in Attachment C.

SUMMARY OF EXCAVATION ACTIVITIES

Golder mobilized to the site between June 6 to June 11, 2021 to oversee the LLRW source removal. On July 21 and 22, 2021, Golder oversaw the screening and loading of the staged LLRW for transport and the departure from site. The activities completed are summarized as follows:

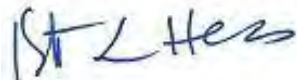
- A total of 24.32 tons (7 bags, 2 truckloads) of LLRW was excavated from an area measuring approximately 25 feet by 25 feet (see Figure 1) at the approximate 2- to 8-foot bgs depth interval. The LLRW was loaded directly into bags supplied by EnergySolutions. The bags were temporarily staged within a plastic-lined and locked chain-link fenced area pending waste characterization analytical results.
- Pace Analytical analyzed the waste characterization composite sample. The sample results included in Attachment C were used to develop a waste profile in collaboration with EnergySolutions. The completed waste profile is also included in Attachment C.
- Following the completion of waste characterization and profiling, the waste was removed by RSI and EnergySolutions' transporter (Hittman Transport Services, Inc.). Waste manifests for the shipment are included in Attachment C.

Following completion of all site activities, Golder and RSI demobilized from the site and RSI removed all temporary chain-link and silt fencing. No further action will be required at the site.

Please be aware that Golder has been acquired by and is now a Member of the WSP family of companies. Golder remains as a legal entity and is the proposed contracting entity for this report. We are in the process of integrating the resources of our companies. Correspondence for this report should continue to be addressed to the undersigned. If you have any questions regarding this Source Removal Report or require additional information, please call the undersigned at (904) 363-3430.

Sincerely,

Golder Associates Inc.



Kristi L. Hess, PG
Senior Geologist



Robert M. Wojcik, PG
Practice Leader and Principal

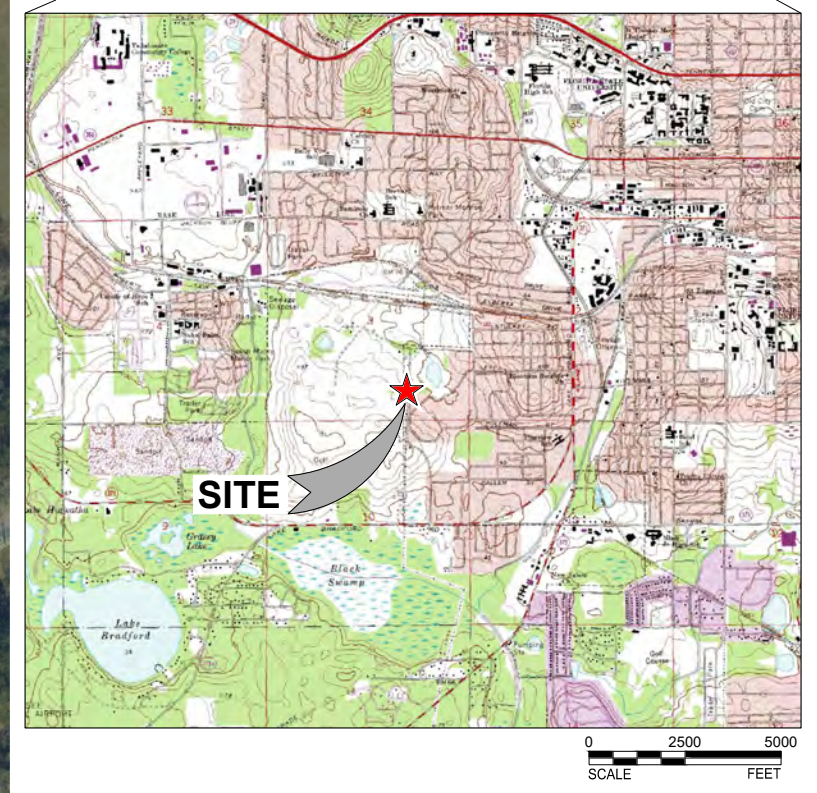
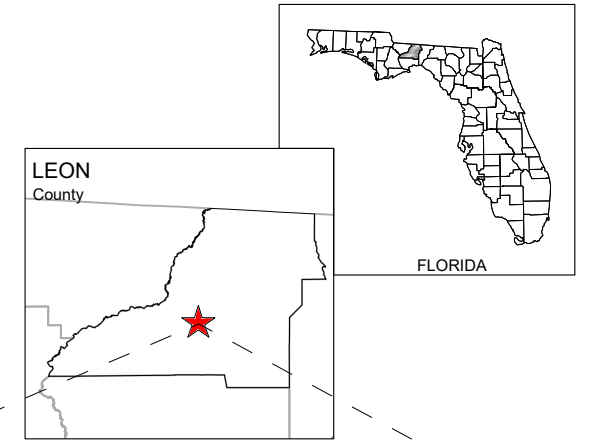
KLH/RMW/as

cc: Dustin Dailey – FSU

Attachments: Figures
Attachment A – Field Documentation
Attachment B – Photographic Documentation
Attachment C – Laboratory Reports and Miscellaneous Permitting Documents and Waste Profile

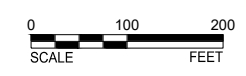
<https://golderassociates.sharepoint.com/sites/124035/Project Files/6 Deliverables/Source Removal Report/Site 1 SR Report Final.docx>

FIGURES



REFERENCE(S)

1. USGS TOPOGRAPHIC MAP, 7.5 MIN. QUADRANGLE MAP SERIES: TALLHASSEE QUADRANGLE, LEON COUNTY, FLORIDA.
2. AERIAL IMAGE TAKEN FROM FDEP BUREAU OF SURVEY AND MAPPING (LAND BOUNDARY INFORMATION SYSTEM), DATED JAN 2018.



CLIENT
HGS

CONSULTANT



YYYY-MM-DD	2021-04-09
DESIGNED	KLH
PREPARED	BCL
REVIEWED	KLH.
APPROVED	RMW

PROJECT
FLORIDA STATE UNIVERSITY
LOW-LEVEL RADIATION WASTE
LEON COUNTY, FLORIDA

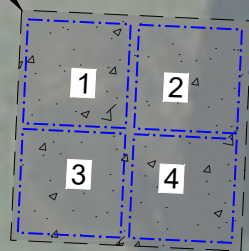
TITLE
SITE LOCATION MAP

PROJECT NO.	Control No.	REV.	FIGURE
			1

1in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



APPROXIMATE LIMIT OF
CONCRETE PAD



LEGEND

- 1 DISPOSAL CELL

REFERENCE(S)

1. AERIAL IMAGE TAKEN FROM FDEP BUREAU OF SURVEY AND MAPPING (LAND BOUNDARY INFORMATION SYSTEM), DATED JAN 2018.

CLIENT
HGS

CONSULTANT	YYYY-MM-DD	2021-04-09
	DESIGNED	KLH
	PREPARED	BCL
	REVIEWED	KLH
	APPROVED	RMW

PROJECT
FLORIDA STATE UNIVERSITY
LOW-LEVEL RADIATION WASTE
LEON COUNTY, FLORIDA

TITLE
LOW-LEVEL RADIATION DISPOSAL AREA

ATTACHMENT A

Field Documentation

CONTENTS

PAGE

REFERENCE

DATE

Location Jacksonville → Tallahassee, FL

Date 6/6/2021

3

Project / Client 20139979

Scott Neal

85, sunny

1500- Pack Rental Chevy Silverado at Golder -
Jacksonville office1540- MOB from Golder to Hampton Inn - Tallahassee
FL

1835- Arrive at hotel


 (SN)
6/6

4 Location Tallahassee, FL - FSU campus Date 6/7/2021

Project / Client 20139979

SNeal, RSI, FSU 88°, clouds

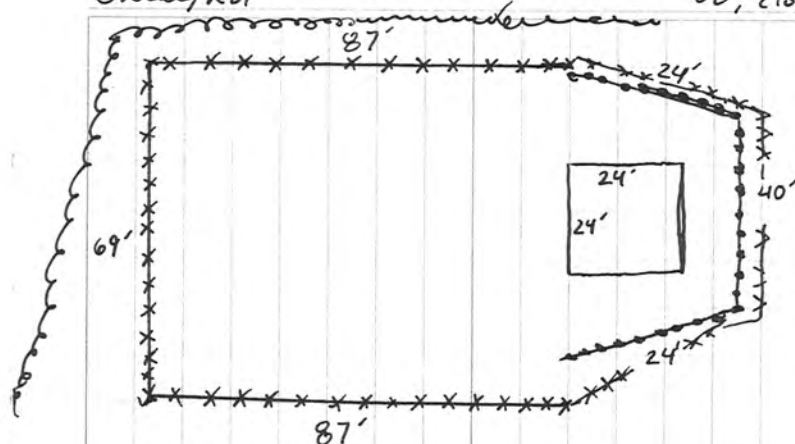
- 0640 - leave hotel
- 0655 - On site. RSI (Andy, Grant, CD, + Tim) on site. (Remediation Services Inc.)
- 0700 - Introduction + site orientation. Review Hasep including Radiation Protection Plan.
- 0730 - Ashley Gray + Jason Johnson (FSU) on site. Continue review of HASP + S.O.W.
- 0800 - RSI to home depot for materials. FSU off site.
- 0900 - Leppo Rents delivers Bobcat E85 mini excavator, Bobcat T66 mini track loader (skid-steer), and JLG Telescopic fork lift (telehandler)
- 0925 - Use skid-steer to clear vegetation to east of excavation area
- 1020 - RSI all on site. Install 30' x 30' area of 6' chain-link fence approx. 100' east of Engineering Way. Will be used to keep soil bags secure.
- 1145-1230 - Lunch
- 1245 - install 88 ft of silt fencing to north, east, + south of the excavation area
- 1430 - Unload 28 soil bags near excavation area
- 1500 - Install construction fencing around perimeter of Exclusion Zone
- ⊙ 6/7
* See logs for gamma, rad. contamination, + dust monitoring info.

Location Tallahassee, FL

Date 6/7/2021

Project / Client 20139979

SNeal, RSI 88°, cloudy



* ~~not~~ quite to scale --- = silt fencing *** = construction fencing
----- = soil berm

- 1510 - Crowder delivers 16 yd³ load of fill
- 1530 - Build soil/backfill berm to [⊙] west of construction fencing for stormwater control
- 1530 - Ashley + Jason (FSU) on site
- 1615 - Gary Feldman + Dustin Dailey (FSU) on site
- 1700 - Gary + Dustin off site
- 1730 - Rain coming. Construction fence + berm complete. Secure work area
- 1745 - All off site
- 1800 - Hotel

⊙ 6/7
* 1625 - construct steel soil bag loading box

Location Tallahassee, FL - FSU Campus Date 6/8/2021

Project / Client 20139979

JNeal, RSI, FSU

85°, calm

- 0640- Mobilize to site from hotel
- 0650- buy drinks
- 0655- On site. RSI (Grant, Andy, CD, Tim) on site.
FSU (Ashley + Jason) on site
- 0700- Review HASP + SOW including Radiation Protection Plan
- 0725- RSI fills Poly tote with water from Engineering building spigot + move to excavation area.
- 0725- Calibrate Dust meter, Gamma meter, + radiation contamination meter. See Logs for screening info.
- 0745- lay out poly sheeting for overburden + concrete stockpiles. Complete decon area at edge of exclusion zone
- 0810- Begin breaking + stockpiling concrete slabs.
- 1010- Begin excavation + stockpiling of overburden
- 1200-1245- lunch.
- 1250- Resume excavation. NE Cell: Glass found approx 6.5-7.0 ft logs. SE Cell: GROUT and concrete layered (Approx 5' diameter + 12" thick) found ~4' bgs. Placed in NE cell. 5'-6.5' bgs removed as overburden then glass found. @ 6.5' bgs. NW Cell: solidified paint buckets containing lab

Location Tallahassee, FL

Date 6/8/21

Project / Client

Golder, RSI, FSU

92°, ^{5 mph} sunny

- materials (test tubes, ~100 mL bottles, etc) found at ~2' bgs. White/gray "salts" also found in vicinity. ~5 gal bucket found in NW corner ~1.5' bgs. ~7 gal bucket found in middle of NW cell ~2.5' bgs.
- SW Cell: 2 5-gal buckets found ~3.5' bgs
- 1305- Bob W. (Golder) on site. HASP
- 1405-1500- Ashley + Jason (FSU) on site
- 1620- ~~1700~~ Dustin Dailey on site
- 1700- End excavation activities for the day.
Bob W, Dustin D, Ashley, + Jason off site.
- 1710- End all monitoring
- 1720- ~~Y~~ Cover overburden stockpile with poly sheeting
- 1735- Pack vehicles + secure work area
- 1745- All off site
- 1800- hotel

(SN) 6/8

Location Tallahassee, FL, FSU Campus Date 6/9/2021

Project / Client 20139979, Low Level Radiation Waste Removal

SWear, RSI, FSU, Bob W.

86°, calm

- 0640 - leave hotel for site
 0655 - On site, RSI (Grant, CD, Tim, Andy). FSU (Ashley/Jason)
 0700 - Review HASP including radiation Safety & review S.O.W.
 0725 - Don PPE (tyvek suits, P100 respirators, boot covers, hard hat, safety glasses)
 0730 - Calibrate Radiation & dust meters & begin monitoring. See radiation screening & dust logs.
 0945 - Resume excavation in SW corner of excavation
~~0825~~ (S) 0800 - Bob W (Golden) on site
 0915 - Excavation of overburden complete.
 0930 - Excavation of impacted materials begins. soil & man-made waste loaded directly from excavator bucket into waste soil bags inside of steel loading/transport box.
 • Bag 1 - from SW corner - 5-gal buckets w/ solidified waste. White/gray salts/debris mixed in soil. 7,818 lbs on scale
 1100 - Bag 1 Placed in storage
 Bag 2 - SE corner - lab glass mixed with soil. Salts. ~8 ft³ bgs ~1 ft³ black metal box reading 2,400 uR/h (see logs). 7,340 lbs
 1315 - Bag 2 in storage

Location Tallahassee, FL

Date 6/9/2021

Project / Client 20139979

SN, RSI, FSU

92°, < 5 mph

- 1400 - Bob W. off site
 Bag 3 - NE portion - lab glass w/ liquids, Salts/soil 6,800 lbs
 Bag 4 - Lab glass/bottles w/ liquids, glass & salts mixed w/ soil. 7,306 lbs
 1645 - All bags in storage. Bag 2 placed in middle of storage area to keep radiation levels at fence < 2x background levels. FSU off site
 1730 - Secure work area. Doff PPE & scan workers for contamination. Overburden stockpiles covered & fences secured
 1800 - All off site
 1815 - Hotel

(S) 6/9

6/10 (S) 1400
 • Leppo Rents delivered additional skid-steer and a mini excavator with soil plate compactor attachment

10 Location Tallahassee, FL - FSU Campus Date 6/10/2021

Project / Client 20139979 - Low-level Radiation Waste Removal

Scott Neal, RSI, FSU

- 0640- Leave hotel. Buy ice/drinks
- 0655- On site. FSU (Ashley/Jason) + RSI (Grant, CO, Tim, Andy) on site
- 0700- Review HAZOP including Radiation + SOW.
- 0735- Don PPE. Calibrate radiation/dust meters + begin screening. See logs.
- 0750- Continue excavation in northern portion of Pit
- 0800- FSU Radiation Safety Officers (Ashley + Jason) inspect the metal box in Bag 2. A lead cylinder ("Pig") containing a ~100 mL vial of liquid was located inside. Suspected paperwork inside was water damaged. ~50,000 uR/H gamma readings at the opening of the lead pig. FSU's RSOs placed the box + contents into containment for transport to FSU's designated radiation storage facility. FSU will handle proper disposal of these materials through their typical protocols + channels.
- 0830- Excavation:
Bag 5 - White/gray silt mixed w/ soil. 6,596 lbs
Bag 6 - ~~NE~~ NW corner ~ 2 ft bgs. 20 5-gallon buckets of solidified materials + salts mixed w/ soil. 7,924 lbs

(S)

Location Tallahassee, FL

Date 6/10/2021

Project / Client 20139979

SN, RSI, FSU

- Bag 7 - One 5-gal bucket of solidified materials. one ~2 L lab bottle. Salts mixed w/ soil. (Rinsate from equip decon + decon materials also placed in Bag 7)
4,862 lbs
- 1130- Excavation of pits complete. All areas excavated to depth of removal of all visually impacted materials. Soil across entire excavation area turned over with excavator bucket to ≥ 9 ft bgs to confirm bottom of pits (e.g. bottom of impacted materials in NW corner was ~ 6 ft bgs but investigated to 9 ft bgs)
- 1200- All bags in storage area. Equipment decontaminated. Workers, work area, + equipment scanned with radiation meters.
- 1215- FSU on site. Grant (RSI) off site
- 1240- Begin backfill + compaction of overburden and backfill - continuously compacted during backfill. + 2 additional loads backfill and one load topsoil delivered (16 yd³/load from Crowder)
- 1500- Concrete from pad loaded into roll-off
- 1715- Remaining backfill covered. Site secured. ~ 90% backfill complete. All off site

(S) 6/10

Return to Room

12 Location Tallahassee, FL / FSU Campus Date 6/11/2021
Project / Client 20139979 - Low-level Radiation Waste Removal
Scott Neal, RSI, FSU 86°, calm

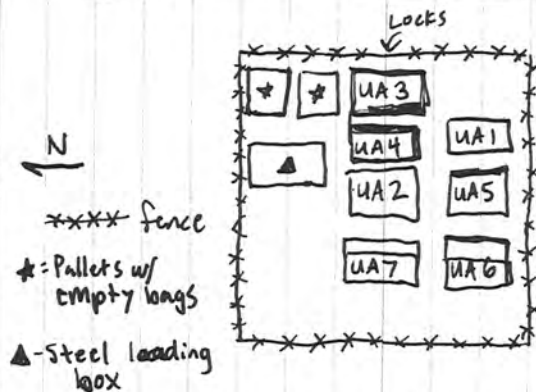
- 0640- Leave hotel
0655- RSI (Andy, CD, Tim) + FSU (Jason, Ashley) on site.
0700- Review HASP + S.O.W.
0720- Calibrate Radiation + dust meters. Begin monitoring. See Logs
0730- RSI completes backfill and compaction activities. top ~6" is top soil
0900- Begin removing construction fencing around exclusion zone. Dispose of non-impacted construction trash (plastic, fencing, etc) into dumpsters designated by FSU
1000- Backfill/compaction complete. Work area regraded with skid-steer. Excavation area covered with seeding straw, bahia grass seed, + watered. Silt fencing left in place
1115- Waste Storage Area secured. All 7 bags labeled + tagged. No radiation in final checks of work area. See Storage Area layout on next page.
1315- Concrete taken off site by Crowder Trucking for disposal/recycling
1320- Site Secured. All off site
1630- Golder office, Jacksonville, FL

(SW)

13 Location Tallahassee, FL Date 6/11/2021
Project / Client 20139979
SN, RSI, FSU

- 6/10/2021 additional (SW) 6/11
* - Soil collected at regular intervals from each bag during excavation. Soil composited + soil samples "WASTE CHARACTERIZATION" collected for TCLP, VB260TIC, PAINT, SV8270TIC. Sample "WASTE-1" collected for RADiation characterization. Samples shipped in 2 coolers via FedEx on 6/10 at 1450. Radiation reading of samples > ~~ex~~ background levels. No labeling for radiation required. Samples collected 6/10 1330

Bag Storage Area Layout



engineering Way ↓

(SW) 6/11

Location Tallahassee, FL FSU Campus

Date 7/20/21

Project / Client HGS - CHASP, FSU Site 1 LLRW

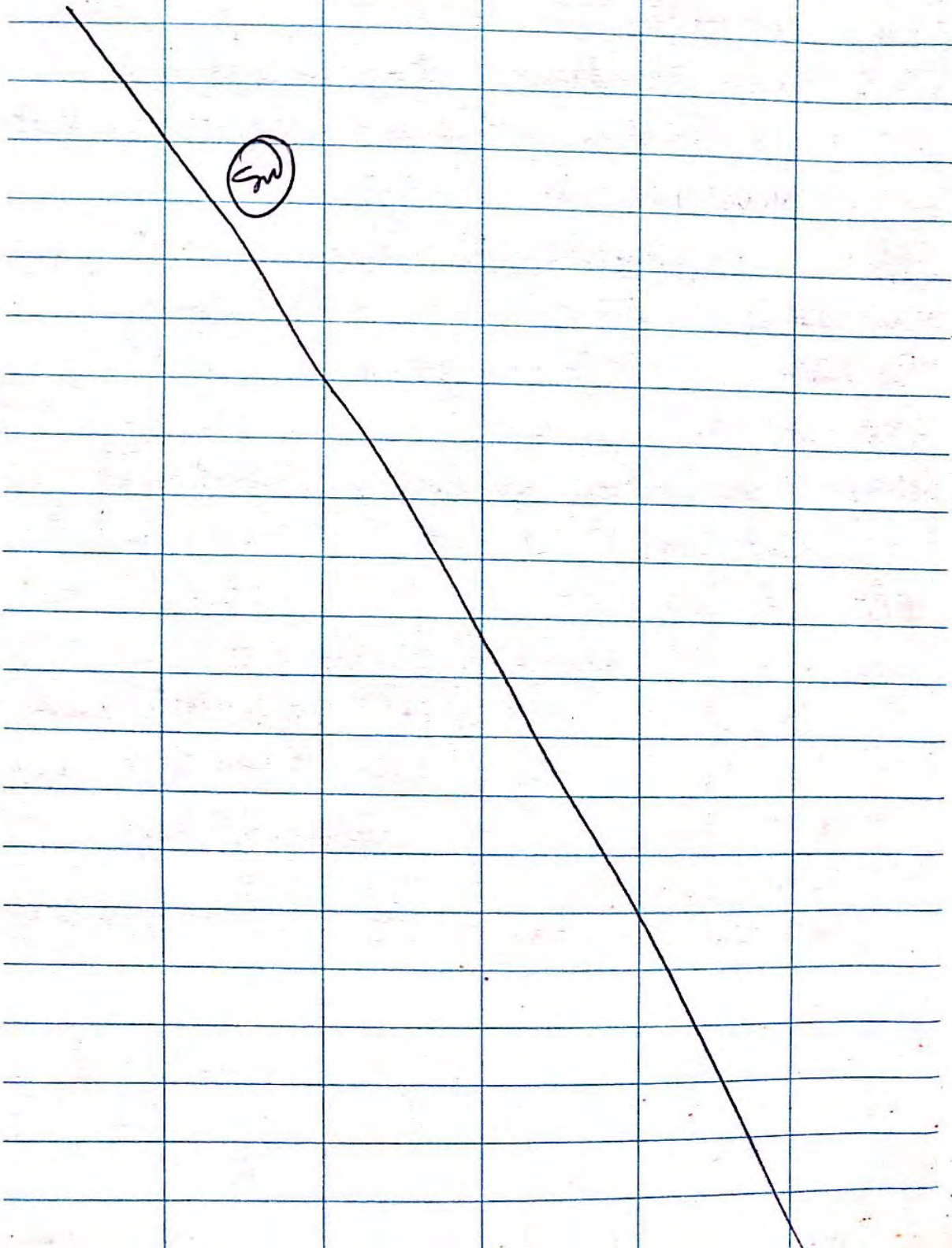
Scott Neal

88°, cloudy

~~0630 - leave 7~~ (Su)

1800 - MOB from Jacksonville, FL

2045 - Hotel in Tallahassee, FL

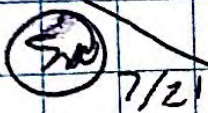


Project / Client HGS- FSU Site 1 LLRW

SNeal, RSI, FSU, Energy Solutions

90° cloudy/overcast

- 0630 - Leave hotel
- 0645 - Pick up Andy (Remediation Services Inc) at his hotel
- 0700 - On site. Greg King (Energy Solutions) on site.
- 0705 - Review Health + Safety Plan + S.O.W.
- 0730 - Ashley (FSU RSO) on site + unlocks fence to waste storage Area
- 0745 - Greg scans bags with geiger counter. All bags at/near background levels.
- 0800 - Off site to pick up materials for labeling bags.
- 0830 - Walmart for zip locs + Spray adhesive
- 0945-1045 - Lunch
- 1100 - On site. Andy + Ashley on site
- 1145 - Greg on site. label bags with BAG #, weight, + "CLASS AU"
- 1230 - Thunder storm. All off site
- 1245 - Hotel. off job



SNeal, RSI, FSU, Energy Solutions

90°, Partly
cloudy

0645 - Check out of hotel

0700 - On site. Ashley (FSU RSO) on site. Ashley (FSU) on site. Andy (RSI) + Greg (ES) on site.

0705 - Two tractor trailers from Hittman Transport services, Inc on site.

0710 - Review HASP + SOW

0730 - Greg scans trucks with Geiger counter, readings at background levels

0750 - Begin loading truck #1 with bags via telehandler. Truck #1 will haul waste bags 1, 2, + 6 (~25k lbs total)

0845 - Telehandler has "engine critical" code after loading bags 1 + 6. Call Leppo Rents for new telehandler

1040 - Leppo Rents on site to take away disabled telehandler and deliver new Telehandler

1100 - Two pallets of unused waste super sacks loaded onto Truck #1

1105 - Begin loading Truck #2. Greg scans truck #1 with geiger counter - reading background levels

1130 - Bag #s 3, 5, 4, + 7 loaded on Truck #2. Greg Scans (Reading Background). Truck drivers secure loads for transport.

Location Tallahassee, FL FSU Campus Date 7/22/21

Project / Client 20139979 - LLRW

FDOH, SN, ES, FSU, RSI 92°, clear

- 1215- Uniform low-level Radioactive Waste Manifests are completed (see copies)
- 1230- Mark + Joyce - Florida Dept. of Health - Bureau of Radiation Control, on site
- 1235- Metal loading box for super sacks broken down + taken to FSU storage area
- 1300- Bag storage fencing remove and area cleaned/restored to previous condition
- 1415- All scans/inspections from FDOH complete. Trucks # 1 + 2 off site.
- 1425- FDOH off site
- 1440- All off site
- 1730- Return to Golder, Jacksonville.

SW
7/22

Rite in the Rain.

Page 1 of 1

CONTAMINATION CONTROL: DIRECT

Project: 20139979

Method: Direct Contamination Reading

Equipment Type: Contamination Meter

Date (DD-MM-YY): 07-06-2021

Counts Per Minute

Contamination Meter Number	Location	Background	Reading	Sample Time (24hr)	Comments	Collected By: (initials)
177946	Background	45	45	1010	Background at tailgate	SN
"	Silt fence trench South	45	45	1400		SN
"	" " " East	45	50	1405		SN
"	" " " North	45	45	1420		SN

Page 1 of 1

CONTAMINATION CONTROL: DIRECT

Project: 20139979

Method: Direct Contamination Reading

Equipment Type: Contamination Meter

Date (DD-MM-YY): 08-06-21

Contamination Meter Number	Location	Background	Reading	Sample Time (24hr)	Comments	Collected By: (initials)
177946	Background	45	45	0800	Break table ☺ Area Table	SN
	concrete slab-North	45	45	0815	while removing slab	SN
	Concrete slab-south	45	45	0817	"	SN
	Workers boots/gloves	45	45	0900	"	SN
	Andy boots/gloves	45	45	1200	Break for lunch	SN
	Tim Boots/gloves	45	50	1201		SN
	CD boots/gloves	45	40	1202		SN
	Scott Boots/gloves	45	45	1203		SN
	Solidified Paint can w/ lab equipment	45	80	1430	NW cell, ~ 2 ft bgs	SN
	Loose "salts" in vicinity of paint can	45	80	1433	NW cell, ~ 2 ft bgs	SN
	Andy Boots/gloves	45	45	1705	exit decon area, end of day	SN
	Tim	45	45	1707		SN
	CD	45	45	1715		SN
	SNeal	45	45	1704		SN
	Skid-steer bucket	45	45	1710	Checking equip decon	SN
	Shovel	45	45	1712	" " "	SN

Page 1 of 1

CONTAMINATION CONTROL: DIRECT

Project: 20139979

Method: Direct Contamination Reading

Equipment Type: Contamination Meter

Date (DD-MM-YY): 09-06-21

Contamination Meter Number	Location	Background	Reading	Sample Time (24hr)	Comments	Collected By: (initials)
177946	Background @ staging area Table	45	45	0740	Daily Background Reading	SN
	Tim/Andy/CD boots + hands	45	45	0830	Decon check of workers	SN
	Skid-steer tracks/bucket	45	40	0845	" " " equipment	SN
	Buckets in bag 1 waste	45	210	0925	from SW cell location	SN
	"salts" in bag 2 waste	45	200	1100	From SE cell; ~ 5.5' bgs	SN
	Black box in bag 2 waste	45	12,500	1125	from SE cell, ~ 7.0' bgs	SN
	Bag 1 exterior (highest)	45	180	1240	In Storage, <u>7,818</u> Lbs	SN
	Bag 2 exterior (highest)	45	1200	1245	In Storage, <u>7,340</u> Lbs	SN
	Skid-steer bucket/tracks	45	40	1400	Decon check	SN
	CD/Tim/Andy boots/gloves	45	40/45	1410	Decon check	
	Bag 3 exterior (highest)	45	500 275	1500	In Storage, <u>6,800</u> lbs	SN
	Bag 4 contents - soil around bottles	45	310	1550	From NE Cell ~ 6.5' bgs	SN
	CD/Tim/Andy Boots/gloves	45	45	1610	Decon check	SN
	BAG 4 exterior (highest)	45		1630	In Storage, <u>7,306</u> lbs	SN
	Bag Storage Area exterior	45	50	1645	Peak reading around fencing after moving Bag 2	SN

CONTAMINATION CONTROL: DIRECT

Project: 20139979

Method: Direct Contamination Reading

Equipment Type: Contamination Meter

Date (DD-MM-YY): 10-06-21

Contamination Meter Number	Location	Background	Reading	Sample Time (24hr)	Comments	Collected By: (initials)
177946	Background @ Staging Area Table	45	45	0730	Background Reading	SN
	Bag 2 Metal Box	45	12,500 ^{gamma} 12,500	0800	FSU RSOs collected the box from Bag 2 + inspected box contents. The box and its contents were placed in temporary containment, moved to FSU's radiation storage area and will be disposed of through FSU's Radiation channels.	SN
	Bag 2 Metal Box lead cylinder	45	12,000 ^{gamma} 12,000	0810		SN
	Bag 2 ~125 mL bottle inside lead cylinder	45	50,000 ^{gamma} 50,000	0815		SN
	Bag 2 after box removed	45	90	0840		SN
	Bag 5 - soil + salts	45	160	0900		SN
	Bag 6 - Buckets	45	230	0930		SN
	Workers' PPE	45	40, 45, 45, 45	0950		SN
	Skid-steer tracks + Bucket	45	45	0955		SN
	Bag 7 - Bucket + debris, decontamination soil/water	45	90	1100		SN
	Skid steer - Post decontamination	45	45	1135		SN
	mini-excavator-Post decon	45	45	1140		SN
	Workers after PPE removed	45	45, 45, 45, 45	1145	End of excavation. Check of all decontaminated equipment that made contact w/ soil + workers	SN
	Fence of Bag storage area	45	90	1600		SN
	Telehandler Forks	45	45	1605	Decon check	SN
	Soil Samples	45	50	1340	checked sample containers	SN



GOLDER

Telehandler Forks 45 45 1605 Decon check SN
 Soil Samples 45 50 1340 checked sample containers SN

Page 1 of 1

CONTAMINATION CONTROL: DIRECT

Project: 20139979

Method: Direct Contamination Reading

Equipment Type: Contamination Meter

Date (DD-MM-YY): 11-06-2021

Contamination Meter Number	Location	Background	Reading	Sample Time (24hr)	Comments	Collected By: (initials)
177946	Tailgate at Staging area	40	40	0740	Daily Background Reading Routine	SN
	Golder Truck		45	0800		SN
	RSI Truck/trailer		40	0815		SN
	Excavation area scan		45	1015		SN
	Workers out of PPE (RSI)		40	1115	Final contamination check before leaving site	SN
	Workers out of PPE (Golder)		45	1115		SN
	Concrete Roll-off		40	1120		SN
	Steel soil bag box		45	1120		SN
	Pallets in Storage		40	1125		SN
	Bag storage fencing perimeter		45	1125		SN

CONTAMINATION METER QUALITY CONTROL FORM

Date: June 7, 2021

Initials: SN

Project #: 20139979

Check **Factory Calibration Date** is within the last year

1. Check the batteries (Switch dial to **BAT**, needle should deflect to battery area on meter)
2. Perform **Background Check**
 - I. Turn on meter to **x0.1** Scale and **Slow** rate
 - II. Hold probe near a clean surface, note the reading after ~30 seconds. It should be approx. **no more than 50-60 CPM.**
3. Perform **Check Source**
 - I. Change Scale to x0.1
 - II. Rest face of meter on plastic source supporting the check source.

Ludlum Model 3

Meter/Probe Serial Numbers	177946	
Calibration Date	4/30/2021	
Calibration with 1 Year?	<input checked="" type="radio"/> Yes / No	Yes / No
Battery Check?	<input checked="" type="radio"/> Ok / Replace	Ok / Replace
Background Check Count (Daily)	45	
Average Check Source Count (X3) (complete once per week)	<u> </u>	
Efficiency	0.25	0.25

It should read approximately **1150 CPM** if source is out of plastic cover and directly against the probe or **450 CPM** with the plastic removed and probe sitting on the foam for efficiency of 0.25.

CONTAMINATION METER QUALITY CONTROL FORM

Date: June 8, 2021

Initials: SN

Project #: 20139979

Check **Factory Calibration Date** is within the last year

1. Check the batteries (Switch dial to **BAT**, needle should deflect to battery area on meter)
2. Perform **Background Check**
 - I. Turn on meter to **x0.1** Scale and **Slow** rate
 - II. Hold probe near a clean surface, note the reading after ~30 seconds. It should be approx. **no more than 50-60 CPM.**
3. Perform **Check Source**
 - I. Change Scale to x0.1
 - II. Rest face of meter on plastic source supporting the check source.

Ludlum Model 3

Meter/Probe Serial Numbers	177946	
Calibration Date	4/30/21	
Calibration with 1 Year?	Yes / No	Yes / No
Battery Check?	Ok / Replace	Ok / Replace
Background Check Count (Daily)	45	
Average Check Source Count (X3) (complete once per week)	—	
Efficiency	0.25	0.25

It should read approximately **1150 CPM** if source is out of plastic cover and directly against the probe or **450 CPM** with the plastic removed and probe sitting on the foam for efficiency of 0.25.

CONTAMINATION METER QUALITY CONTROL FORM

Date: June 9, 2021

Initials: SN

Project #: 20139979

Check **Factory Calibration Date** is within the last year

1. Check the batteries (Switch dial to **BAT**, needle should deflect to battery area on meter)
2. Perform **Background Check**
 - I. Turn on meter to **x0.1** Scale and **Slow** rate
 - II. Hold probe near a clean surface, note the reading after ~30 seconds. It should be approx. **no more than 50-60 CPM.**
3. Perform **Check Source**
 - I. Change Scale to x0.1
 - II. Rest face of meter on plastic source supporting the check source.

Ludlum Model 3

Meter/Probe Serial Numbers	177946	
Calibration Date	4/30/21	
Calibration with 1 Year?	<input checked="" type="radio"/> Yes / No	Yes / No
Battery Check?	<input checked="" type="radio"/> Ok / Replace	Ok / Replace
Background Check Count (Daily)	45	
Average Check Source Count (X3) (complete once per week)	—	
Efficiency	0.25	0.25

It should read approximately **1150 CPM** if source is out of plastic cover and directly against the probe or **450 CPM** with the plastic removed and probe sitting on the foam for efficiency of 0.25.

CONTAMINATION METER QUALITY CONTROL FORM

Date: 6/10/2021

Initials: SN

Project #: 20139979

Check **Factory Calibration Date** is within the last year

1. Check the batteries (Switch dial to **BAT**, needle should deflect to battery area on meter)
2. Perform **Background Check**
 - I. Turn on meter to **x0.1** Scale and **Slow** rate
 - II. Hold probe near a clean surface, note the reading after ~30 seconds. It should be approx. **no more than 50-60 CPM.**
3. Perform **Check Source**
 - I. Change Scale to x0.1
 - II. Rest face of meter on plastic source supporting the check source.

Ludlum Model 3

Meter/Probe Serial Numbers	177946	
Calibration Date	4/30/21	
Calibration with 1 Year?	<input checked="" type="radio"/> Yes / No	Yes / No
Battery Check?	<input checked="" type="radio"/> Ok / Replace	Ok / Replace
Background Check Count (Daily)	45	
Average Check Source Count (X3) (complete once per week)	—	
Efficiency	0.25	0.25

It should read approximately **1150 CPM** if source is out of plastic cover and directly against the probe or **450 CPM** with the plastic removed and probe sitting on the foam for efficiency of 0.25.

CONTAMINATION METER QUALITY CONTROL FORM

Date: June 11, 2021

Initials: SN

Project #: 20139979

Check **Factory Calibration Date** is within the last year

1. Check the batteries (Switch dial to **BAT**, needle should deflect to battery area on meter)
2. Perform **Background Check**
 - I. Turn on meter to **x0.1** Scale and **Slow** rate
 - II. Hold probe near a clean surface, note the reading after ~30 seconds. It should be approx. **no more than 50-60 CPM.**
3. Perform **Check Source**
 - I. Change Scale to x0.1
 - II. Rest face of meter on plastic source supporting the check source.

Ludlum Model 3

Meter/Probe Serial Numbers	177946	
Calibration Date	4/30/21	
Calibration with 1 Year?	<u>Yes</u> / No	Yes / No
Battery Check?	<u>Ok</u> / Replace	Ok / Replace
Background Check Count (Daily)	40	
Average Check Source Count (X3) (complete once per week)	<u> </u>	
Efficiency	0.25	0.25

It should read approximately **1150 CPM** if source is out of plastic cover and directly against the probe or **450 CPM** with the plastic removed and probe sitting on the foam for efficiency of 0.25.

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DIRECT ENTRY READINGS BULK (GAMMA)

Project: 20-139979

Method: Gamma Survey

Equipment Type: Gamma Meter

Project/Purpose: 20139979

Date (D-M-YY)	Equipment (Gamma Meter Used)	Location	Sample Type	Sample Time (24-Hr)	Reading (µSv/h)	Comments/Coordinates	Collected By: (initials)
7/6/21	Ludlum Model 2241	Background/Parking	Routine	1000	13	Truck Tailgate	SN
7/6/21	"	Silt fence trench south	"	1300	14	—	SN
7/6/21	"	silt fence trench east	"	1310	14	—	SN
7/6/21	"	Silt fence trench north	"	1330	18	—	SN

Page 1 of 1

DIRECT ENTRY READINGS BULK (GAMMA)

Back

Project: 20-139979

Method: Gamma Survey

Equipment Type: Gamma Meter

Project/Purpose: 20139979

Date (D-M-YY)	Equipment (Gamma Meter Used)	Location	Sample Type	Sample Time (24-Hr)	Reading (µSv/h)	Comments/Coordinates	Collected By: (initials)
8-6-21	Ludlum model 2241	Background	Routine	0805	19	SAMPLE Break table @ Area Table	SN
		Concrete slab	Routine	0822	20	while removing slab	SN
		Solidified Paint can w/ lab equipment	Routine	1440	20	2' bgs in NW cell	SN
		Skidsteer bucket	end of day decan	1712	16		SN

6/9/2021

Page 1 of 1

DIRECT ENTRY READINGS BULK (GAMMA)

Project: 20-139979

Method: Gamma Survey

Equipment Type: Gamma Meter

Project/Purpose: 20139979

Date (D-M-YY)	Equipment (Gamma Meter Used)	Location	Sample Type	Sample Time (24-Hr)	Reading ($\mu\text{Sv/h}$)	Comments/Coordinates	Collected By: (initials)
9-6-21	indium model 2241	Background - staging area table	Routine	0720	15	Background reading - Daily	SN
9-6-21	"	Bag 1 soil contents		0925	25		SN
9-6-21	"	Bag 2 soil contents		1115	300		SN
9-6-21	"	Metal box in bag 2		1118	2.4 mR/h MS*		SN
	"	Skid-steer bucket/Arms		1400	14		SN
	"	Bag storage Area outside of fencing		1430	90	Peak reading at bag storage fence (next to Bag 2)	SN
				1648	20	Peak gamma reading around bag storage fence	SN
	"	Bag 3 soil/glass/salt debris		1445	210		
	"	Bag 4 contents, lab bottles		1555	300		
	"	Worker boots/gloves		1630	16		
	"	Worker, no tyvek		1650	16		

* millRm/hr

6/10/2021

Page 1 of 1

DIRECT ENTRY READINGS BULK (GAMMA)

Project: 20-139979

Method: Gamma Survey

Equipment Type: Gamma Meter

Project/Purpose: 20139979

Date (D-M-YY)	Equipment (Gamma Meter Used)	Location	Sample Type	Sample Time (24-Hr)	Reading (uSv/h) <i>uR/h</i>	Comments/Coordinates	Collected By: (initials)
10-6-21	Ludlum Model 2241	Background - Staging area table	Background	0725	14	Daily Background Reading	SN
"	"	Bag 2 metal Box	Routine	0800	12,500	see contamination log. Readings performed by FSU RSOs during inspection, containment, & transfer of materials to FSU's radiation storage facility	
"	"	Metal Box lead cylinder/pig	"	0810	24,000		
"	"	~125 mL vial inside lead pig	"	0815	~50,000		
"	"	Bag 5 contents	"	0902	5 65		
"	"	Bag 6 contents	"	0931	89 ²⁰ 110		
"	"	Worker's PPE	"	0954	13, 15, 14, 16		
"	"	Skid-steer	"	0959	19		
"	"	Bag 7 contents	"	1102	90		
"	"	Post Decon skid-steer	"		14		
"	"	Post Decon mini-excavator	"		16		
"	"	workers after PPE removed		1152	14, 14, 15, 14		
"	"	Telehandler forks		1605	13		

6/11/2021

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DIRECT ENTRY READINGS BULK (GAMMA)

Project: 20-139979

Method: Gamma Survey

Equipment Type: Gamma Meter

Project/Purpose: 20139979

Date (D-M-YY)	Equipment (Gamma Meter Used)	Location	Sample Type	Sample Time (24-Hr)	Reading (µSv/h)	Comments/Coordinates	Collected By: (initials)
11-6-21	Ludlum MODEL 2241	Tailgate at Staging area	Daily Background	0745	14	Background	SN
		Goldier Truck	Routine	0805	14	Decon confirmation	SN
		RSI truck/trailer		0820	15		SN
		excavation area Post resurf Surface restoration		1015	15		SN
		RSI workers out of PPE		1115	15-19		SN
		Goldier worker out of PPE		1120	16		SN
		Concrete roll-off		1120	17		SN
		Bag Storage Fencing Perimeter		1130	18		JN

ATTACHMENT B

Photographic Documentation

HGS Site 1 Site Assessment

Photograph 1
Exclusion Zone Setup.



Photograph 2
LLRW excavation into waste bag.



HGS Site 1 Site Assessment

Photograph 3
LLRW storage area.



Photograph 4
Backfilling LLRW area.



HGS Site 1 Site Assessment

Photograph 5

LLRW area one month after excavation.



Photograph 6

LLRW prior to bag closure.



HGS Site 1 Site Assessment

Photograph 7

Loading LLRW for transportation.



Photograph 8

LLRW inspection/monitoring by EnergySolutions representative.



HGS Site 1 Site Assessment

Photograph 9

LLRW loaded.



Photograph 10

LLRW loaded and enclosed for transportation to EnergySolutions in Clive, Utah.



ATTACHMENT C

**Laboratory Reports and Miscellaneous Permitting
Documents and Waste Profile**

March 30, 2021

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Remediation Services, Inc.

Sample Delivery Group: L1329770
Samples Received: 03/23/2021
Project Number:
Description: FSU LLRW Site 1

Report To: Grant Sherwood
PO Box 587
Independence, KS 67301

Entire Report Reviewed By:



Jeff Carr
Project Manager

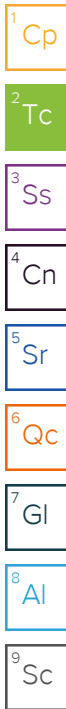
Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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Gl: Glossary of Terms	32
Al: Accreditations & Locations	33
Sc: Sample Chain of Custody	34



SAMPLE SUMMARY

22/19-BORROW L1329770-01 Solid

Collected by:
 Collected date/time: 03/22/21 15:30
 Received date/time: 03/23/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1639810	1	03/26/21 09:23	03/26/21 09:31	KDW	Mt. Juliet, TN
Mercury by Method 7471A	WG1639617	1	03/24/21 09:41	03/24/21 14:16	BMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1639509	1	03/24/21 06:50	03/24/21 12:28	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1641239	1.13	03/23/21 20:43	03/27/21 08:45	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method FLPRO	WG1639781	1	03/26/21 06:43	03/26/21 10:51	AEG	Mt. Juliet, TN
OP Pesticides by Method 8141	WG1639485	1	03/24/21 18:35	03/25/21 12:15	HMH	Mt. Juliet, TN
Pesticides (GC) by Method 8081	WG1641454	1	03/29/21 06:17	03/29/21 18:48	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1641845	1	03/29/21 16:42	03/30/21 04:00	AO	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jeff Carr
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.4		1	03/26/2021 09:31	WG1639810

Mercury by Method 7471A

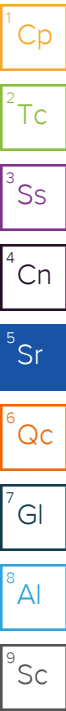
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0191	U	0.0191	0.0424	1	03/24/2021 14:16	WG1639617

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	0.549	U	0.549	2.12	1	03/24/2021 12:28	WG1639509
Barium	1.91		0.0903	0.530	1	03/24/2021 12:28	WG1639509
Cadmium	0.0499	U	0.0499	0.530	1	03/24/2021 12:28	WG1639509
Chromium	0.141	U	0.141	1.06	1	03/24/2021 12:28	WG1639509
Lead	0.785		0.220	0.530	1	03/24/2021 12:28	WG1639509
Selenium	0.810	U	0.810	2.12	1	03/24/2021 12:28	WG1639509
Silver	0.135	U	0.135	1.06	1	03/24/2021 12:28	WG1639509

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	0.0458	U	0.0458	0.0629	1.13	03/27/2021 08:45	WG1641239
Acrylonitrile	0.00454	U	0.00454	0.0157	1.13	03/27/2021 08:45	WG1641239
Benzene	0.00129		0.000587	0.00126	1.13	03/27/2021 08:45	WG1641239
Bromobenzene	0.00113	U	0.00113	0.0157	1.13	03/27/2021 08:45	WG1641239
Bromodichloromethane	0.000911	U	0.000911	0.00315	1.13	03/27/2021 08:45	WG1641239
Bromoform	0.00147	U	0.00147	0.0315	1.13	03/27/2021 08:45	WG1641239
Bromomethane	0.00248	U	0.00248	0.0157	1.13	03/27/2021 08:45	WG1641239
n-Butylbenzene	0.00660	U	0.00660	0.0157	1.13	03/27/2021 08:45	WG1641239
sec-Butylbenzene	0.00362	U	0.00362	0.0157	1.13	03/27/2021 08:45	WG1641239
tert-Butylbenzene	0.00245	U	0.00245	0.00629	1.13	03/27/2021 08:45	WG1641239
Carbon tetrachloride	0.00112	U	0.00112	0.00629	1.13	03/27/2021 08:45	WG1641239
Chlorobenzene	0.000264	U	0.000264	0.00315	1.13	03/27/2021 08:45	WG1641239
Chlorodibromomethane	0.000770	U	0.000770	0.00315	1.13	03/27/2021 08:45	WG1641239
Chloroethane	0.00214	U	0.00214	0.00629	1.13	03/27/2021 08:45	WG1641239
Chloroform	0.00129	U	0.00129	0.00315	1.13	03/27/2021 08:45	WG1641239
Chloromethane	0.00547	U	0.00547	0.0157	1.13	03/27/2021 08:45	WG1641239
2-Chlorotoluene	0.00109	U	0.00109	0.00315	1.13	03/27/2021 08:45	WG1641239
4-Chlorotoluene	0.000566	U	0.000566	0.00629	1.13	03/27/2021 08:45	WG1641239
1,2-Dibromo-3-Chloropropane	0.00491	U	0.00491	0.0315	1.13	03/27/2021 08:45	WG1641239
1,2-Dibromoethane	0.000814	U	0.000814	0.00315	1.13	03/27/2021 08:45	WG1641239
Dibromomethane	0.000943	U	0.000943	0.00629	1.13	03/27/2021 08:45	WG1641239
1,2-Dichlorobenzene	0.000534	U	0.000534	0.00629	1.13	03/27/2021 08:45	WG1641239
1,3-Dichlorobenzene	0.000754	U	0.000754	0.00629	1.13	03/27/2021 08:45	WG1641239
1,4-Dichlorobenzene	0.000880	U	0.000880	0.00629	1.13	03/27/2021 08:45	WG1641239
Dichlorodifluoromethane	0.00202	U	0.00202	0.00315	1.13	03/27/2021 08:45	WG1641239
1,1-Dichloroethane	0.000617	U	0.000617	0.00315	1.13	03/27/2021 08:45	WG1641239
1,2-Dichloroethane	0.000815	U	0.000815	0.00315	1.13	03/27/2021 08:45	WG1641239
1,1-Dichloroethene	0.000762	U	0.000762	0.00315	1.13	03/27/2021 08:45	WG1641239
cis-1,2-Dichloroethene	0.000922	U	0.000922	0.00315	1.13	03/27/2021 08:45	WG1641239
trans-1,2-Dichloroethene	0.00131	U	0.00131	0.00629	1.13	03/27/2021 08:45	WG1641239
1,2-Dichloropropane	0.00178	U	0.00178	0.00629	1.13	03/27/2021 08:45	WG1641239
1,1-Dichloropropene	0.00102	U	0.00102	0.00315	1.13	03/27/2021 08:45	WG1641239
1,3-Dichloropropane	0.000630	U	0.000630	0.00629	1.13	03/27/2021 08:45	WG1641239



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
cis-1,3-Dichloropropene	0.000951	CC	0.000951	0.00315	1.13	03/27/2021 08:45	WG1641239
trans-1,3-Dichloropropene	0.00144	CC	0.00144	0.00629	1.13	03/27/2021 08:45	WG1641239
2,2-Dichloropropane	0.00174	CC	0.00174	0.00315	1.13	03/27/2021 08:45	WG1641239
Di-isopropyl ether	0.000515	CC	0.000515	0.00126	1.13	03/27/2021 08:45	WG1641239
Ethylbenzene	0.000927	CC	0.000927	0.00315	1.13	03/27/2021 08:45	WG1641239
Hexachloro-1,3-butadiene	0.00754	CC	0.00754	0.0315	1.13	03/27/2021 08:45	WG1641239
Isopropylbenzene	0.000534	CC	0.000534	0.00315	1.13	03/27/2021 08:45	WG1641239
p-Isopropyltoluene	0.00320	CC	0.00320	0.00629	1.13	03/27/2021 08:45	WG1641239
2-Butanone (MEK)	0.0799	CC	0.0799	0.126	1.13	03/27/2021 08:45	WG1641239
Methylene Chloride	0.00834	CC	0.00834	0.0315	1.13	03/27/2021 08:45	WG1641239
4-Methyl-2-pentanone (MIBK)	0.00287	CC	0.00287	0.0315	1.13	03/27/2021 08:45	WG1641239
Methyl tert-butyl ether	0.000441	CC	0.000441	0.00126	1.13	03/27/2021 08:45	WG1641239
Naphthalene	0.00613	CC	0.00613	0.0157	1.13	03/27/2021 08:45	WG1641239
n-Propylbenzene	0.00119	CC	0.00119	0.00629	1.13	03/27/2021 08:45	WG1641239
Styrene	0.000288	CC	0.000288	0.0157	1.13	03/27/2021 08:45	WG1641239
1,1,1,2-Tetrachloroethane	0.00119	CC	0.00119	0.00315	1.13	03/27/2021 08:45	WG1641239
1,1,2,2-Tetrachloroethane	0.000873	CC	0.000873	0.00315	1.13	03/27/2021 08:45	WG1641239
Tetrachloroethene	0.00112	CC	0.00112	0.00315	1.13	03/27/2021 08:45	WG1641239
Toluene	0.00449	CC	0.00164	0.00629	1.13	03/27/2021 08:45	WG1641239
1,2,3-Trichlorobenzene	0.00921	CC	0.00921	0.0157	1.13	03/27/2021 08:45	WG1641239
1,2,4-Trichlorobenzene	0.00553	CC	0.00553	0.0157	1.13	03/27/2021 08:45	WG1641239
1,1,1-Trichloroethane	0.00116	CC	0.00116	0.00315	1.13	03/27/2021 08:45	WG1641239
1,1,2-Trichloroethane	0.000751	CC	0.000751	0.00315	1.13	03/27/2021 08:45	WG1641239
1,1,2-Trichlorotrifluoroethane	0.000948	CC	0.000948	0.00315	1.13	03/27/2021 08:45	WG1641239
Trichloroethene	0.000734	CC	0.000734	0.00126	1.13	03/27/2021 08:45	WG1641239
Trichlorofluoromethane	0.00104	CC	0.00104	0.00315	1.13	03/27/2021 08:45	WG1641239
1,2,3-Trichloropropane	0.00204	CC	0.00204	0.0157	1.13	03/27/2021 08:45	WG1641239
1,2,4-Trimethylbenzene	0.00199	CC	0.00199	0.00629	1.13	03/27/2021 08:45	WG1641239
1,3,5-Trimethylbenzene	0.00251	CC	0.00251	0.00629	1.13	03/27/2021 08:45	WG1641239
Vinyl chloride	0.00146	CC	0.00146	0.00315	1.13	03/27/2021 08:45	WG1641239
Xylenes, Total	0.00170	CC	0.00111	0.00818	1.13	03/27/2021 08:45	WG1641239
(S) Toluene-d8	108			75.0-131		03/27/2021 08:45	WG1641239
(S) 4-Bromofluorobenzene	103			67.0-138		03/27/2021 08:45	WG1641239
(S) 1,2-Dichloroethane-d4	108			70.0-130		03/27/2021 08:45	WG1641239

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method FLPRO

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Petroleum Range Organics	19.3		2.85	10.6	1	03/26/2021 10:51	WG1639781
(S) o-Terphenyl	110			66.0-136		03/26/2021 10:51	WG1639781
(S) C35	65.9			36.0-132		03/26/2021 10:51	WG1639781

OP Pesticides by Method 8141

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Azinphos-Methyl	0.0337	CC	0.0337	0.106	1	03/25/2021 12:15	WG1639485
Bolstar (Sulprofos)	0.0158	CC	0.0158	0.106	1	03/25/2021 12:15	WG1639485
Chlorpyrifos	0.0166	CC	0.0166	0.106	1	03/25/2021 12:15	WG1639485
Coumaphos	0.0258	CC	0.0258	0.106	1	03/25/2021 12:15	WG1639485
Demeton, -O and -S	0.00619	CC	0.00619	0.0742	1	03/25/2021 12:15	WG1639485
Diazinon	0.0238	CC	0.0238	0.106	1	03/25/2021 12:15	WG1639485
Dichlorvos	0.0318	CC	0.0318	0.106	1	03/25/2021 12:15	WG1639485
Dimethoate	0.0354	CC	0.0354	0.106	1	03/25/2021 12:15	WG1639485
Disulfoton	0.0269	CC	0.0269	0.106	1	03/25/2021 12:15	WG1639485
EPN	0.0292	CC	0.0292	0.106	1	03/25/2021 12:15	WG1639485

OP Pesticides by Method 8141

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Ethoprop	0.0125	CC	0.0125	0.106	1	03/25/2021 12:15	WG1639485
Ethyl Parathion	0.0174	CC	0.0174	0.106	1	03/25/2021 12:15	WG1639485
Fensulfothion	0.0374	CC	0.0374	0.106	1	03/25/2021 12:15	WG1639485
Fenthion	0.0141	CC	0.0141	0.106	1	03/25/2021 12:15	WG1639485
Malathion	0.0190	CC	0.0190	0.106	1	03/25/2021 12:15	WG1639485
Merphos	0.0246	CC	0.0246	0.106	1	03/25/2021 12:15	WG1639485
Methyl parathion	0.0215	CC	0.0215	0.106	1	03/25/2021 12:15	WG1639485
Mevinphos	0.0244	CC	0.0244	0.106	1	03/25/2021 12:15	WG1639485
Naled	0.0509	CC	0.0509	0.106	1	03/25/2021 12:15	WG1639485
Phorate	0.0223	CC	0.0223	0.106	1	03/25/2021 12:15	WG1639485
Ronnel	0.0158	CC	0.0158	0.106	1	03/25/2021 12:15	WG1639485
Stirophos	0.0189	CC	0.0189	0.106	1	03/25/2021 12:15	WG1639485
Sulfotep	0.0104	CC	0.0104	0.106	1	03/25/2021 12:15	WG1639485
TEPP	0.166	CC	0.166	1.06	1	03/25/2021 12:15	WG1639485
Tokuthion (Prothothiofos)	0.0159	CC	0.0159	0.106	1	03/25/2021 12:15	WG1639485
Trichloronate	0.0213	CC	0.0213	0.106	1	03/25/2021 12:15	WG1639485
(S) Triphenyl Phosphate	110			36.0-121		03/25/2021 12:15	WG1639485

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Pesticides (GC) by Method 8081

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	0.00398	CC	0.00398	0.0212	1	03/29/2021 18:48	WG1641454
Alpha BHC	0.00390	CC	0.00390	0.0212	1	03/29/2021 18:48	WG1641454
Beta BHC	0.00402	CC	0.00402	0.0212	1	03/29/2021 18:48	WG1641454
Delta BHC	0.00367	CC	0.00367	0.0212	1	03/29/2021 18:48	WG1641454
Gamma BHC	0.00365	CC	0.00365	0.0212	1	03/29/2021 18:48	WG1641454
Chlordane	0.109	CC	0.109	0.318	1	03/29/2021 18:48	WG1641454
4,4-DDD	0.00392	CC	0.00392	0.0212	1	03/29/2021 18:48	WG1641454
4,4-DDE	0.00388	CC	0.00388	0.0212	1	03/29/2021 18:48	WG1641454
4,4-DDT	0.00664	CC	0.00664	0.0212	1	03/29/2021 18:48	WG1641454
Dieldrin	0.00365	CC	0.00365	0.0212	1	03/29/2021 18:48	WG1641454
Endosulfan I	0.00385	CC	0.00385	0.0212	1	03/29/2021 18:48	WG1641454
Endosulfan II	0.00355	CC	0.00355	0.0212	1	03/29/2021 18:48	WG1641454
Endosulfan sulfate	0.00386	CC	0.00386	0.0212	1	03/29/2021 18:48	WG1641454
Endrin	0.00371	CC	0.00371	0.0212	1	03/29/2021 18:48	WG1641454
Endrin aldehyde	0.00359	CC	0.00359	0.0212	1	03/29/2021 18:48	WG1641454
Endrin ketone	0.00753	CC	0.00753	0.0212	1	03/29/2021 18:48	WG1641454
Hexachlorobenzene	0.00367	CC	0.00367	0.0212	1	03/29/2021 18:48	WG1641454
Heptachlor	0.00454	CC	0.00454	0.0212	1	03/29/2021 18:48	WG1641454
Heptachlor epoxide	0.00359	CC	0.00359	0.0212	1	03/29/2021 18:48	WG1641454
Methoxychlor	0.00513	CC	0.00513	0.0212	1	03/29/2021 18:48	WG1641454
Toxaphene	0.131	CC	0.131	0.424	1	03/29/2021 18:48	WG1641454
(S) Decachlorobiphenyl	73.3			10.0-135		03/29/2021 18:48	WG1641454
(S) Tetrachloro-m-xylene	69.2			10.0-139		03/29/2021 18:48	WG1641454

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.00571	CC	0.00571	0.0353	1	03/30/2021 04:00	WG1641845
Acenaphthylene	0.00497	CC	0.00497	0.0353	1	03/30/2021 04:00	WG1641845
Anthracene	0.00628	CC	0.00628	0.0353	1	03/30/2021 04:00	WG1641845
Benzdine	0.0663	CC	0.0663	1.77	1	03/30/2021 04:00	WG1641845
Benzo(a)anthracene	0.00622	CC	0.00622	0.0353	1	03/30/2021 04:00	WG1641845
Benzo(b)fluoranthene	0.00658	CC	0.00658	0.0353	1	03/30/2021 04:00	WG1641845
Benzo(k)fluoranthene	0.00627	CC	0.00627	0.0353	1	03/30/2021 04:00	WG1641845

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(g,h,i)perylene	0.00645	CC	0.00645	0.0353	1	03/30/2021 04:00	WG1641845
Benzo(a)pyrene	0.00656	CC	0.00656	0.0353	1	03/30/2021 04:00	WG1641845
Bis(2-chloroethoxy)methane	0.0106	CC	0.0106	0.353	1	03/30/2021 04:00	WG1641845
Bis(2-chloroethyl)ether	0.0117	CC	0.0117	0.353	1	03/30/2021 04:00	WG1641845
2,2-Oxybis(1-Chloropropane)	0.0153	CC	0.0153	0.353	1	03/30/2021 04:00	WG1641845
4-Bromophenyl-phenylether	0.0124	CC	0.0124	0.353	1	03/30/2021 04:00	WG1641845
2-Chloronaphthalene	0.00620	CC	0.00620	0.0353	1	03/30/2021 04:00	WG1641845
4-Chlorophenyl-phenylether	0.0123	CC	0.0123	0.353	1	03/30/2021 04:00	WG1641845
Chrysene	0.00702	CC	0.00702	0.0353	1	03/30/2021 04:00	WG1641845
Dibenz(a,h)anthracene	0.00978	CC	0.00978	0.0353	1	03/30/2021 04:00	WG1641845
3,3-Dichlorobenzidine	0.0130	CC	0.0130	0.353	1	03/30/2021 04:00	WG1641845
2,4-Dinitrotoluene	0.0101	CC	0.0101	0.353	1	03/30/2021 04:00	WG1641845
2,6-Dinitrotoluene	0.0116	CC	0.0116	0.353	1	03/30/2021 04:00	WG1641845
Fluoranthene	0.00637	CC	0.00637	0.0353	1	03/30/2021 04:00	WG1641845
Fluorene	0.00574	CC	0.00574	0.0353	1	03/30/2021 04:00	WG1641845
Hexachlorobenzene	0.0125	CC	0.0125	0.353	1	03/30/2021 04:00	WG1641845
Hexachloro-1,3-butadiene	0.0119	CC	0.0119	0.353	1	03/30/2021 04:00	WG1641845
Hexachlorocyclopentadiene	0.0185	CC	0.0185	0.353	1	03/30/2021 04:00	WG1641845
Hexachloroethane	0.0139	CC	0.0139	0.353	1	03/30/2021 04:00	WG1641845
Indeno(1,2,3-cd)pyrene	0.00997	CC	0.00997	0.0353	1	03/30/2021 04:00	WG1641845
1-Methylnaphthalene	0.00451	CC	0.00451	0.0353	1	03/30/2021 04:00	WG1641845
2-Methylnaphthalene	0.00458	CC	0.00458	0.0353	1	03/30/2021 04:00	WG1641845
Isophorone	0.0108	CC	0.0108	0.353	1	03/30/2021 04:00	WG1641845
Naphthalene	0.00886	CC	0.00886	0.0353	1	03/30/2021 04:00	WG1641845
Nitrobenzene	0.0123	CC	0.0123	0.353	1	03/30/2021 04:00	WG1641845
n-Nitrosodimethylamine	0.0524	CC	0.0524	0.353	1	03/30/2021 04:00	WG1641845
n-Nitrosodiphenylamine	0.0267	CC	0.0267	0.353	1	03/30/2021 04:00	WG1641845
n-Nitrosodi-n-propylamine	0.0118	CC	0.0118	0.353	1	03/30/2021 04:00	WG1641845
Phenanthrene	0.00700	CC	0.00700	0.0353	1	03/30/2021 04:00	WG1641845
Benzylbutyl phthalate	0.0110	CC	0.0110	0.353	1	03/30/2021 04:00	WG1641845
Bis(2-ethylhexyl)phthalate	0.0447	CC	0.0447	0.353	1	03/30/2021 04:00	WG1641845
Di-n-butyl phthalate	0.0121	CC	0.0121	0.353	1	03/30/2021 04:00	WG1641845
Diethyl phthalate	0.0117	CC	0.0117	0.353	1	03/30/2021 04:00	WG1641845
Dimethyl phthalate	0.0748	CC	0.0748	0.353	1	03/30/2021 04:00	WG1641845
Di-n-octyl phthalate	0.0238	CC	0.0238	0.353	1	03/30/2021 04:00	WG1641845
Pyrene	0.00687	CC	0.00687	0.0353	1	03/30/2021 04:00	WG1641845
1,2,4-Trichlorobenzene	0.0110	CC	0.0110	0.353	1	03/30/2021 04:00	WG1641845
4-Chloro-3-methylphenol	0.0114	CC	0.0114	0.353	1	03/30/2021 04:00	WG1641845
2-Chlorophenol	0.0117	CC	0.0117	0.353	1	03/30/2021 04:00	WG1641845
2,4-Dichlorophenol	0.0103	CC	0.0103	0.353	1	03/30/2021 04:00	WG1641845
2,4-Dimethylphenol	0.00922	CC	0.00922	0.353	1	03/30/2021 04:00	WG1641845
4,6-Dinitro-2-methylphenol	0.0800	CC	0.0800	0.353	1	03/30/2021 04:00	WG1641845
2,4-Dinitrophenol	0.0826	CC	0.0826	0.353	1	03/30/2021 04:00	WG1641845
2-Nitrophenol	0.0126	CC	0.0126	0.353	1	03/30/2021 04:00	WG1641845
4-Nitrophenol	0.0110	CC	0.0110	0.353	1	03/30/2021 04:00	WG1641845
Pentachlorophenol	0.00950	CC	0.00950	0.353	1	03/30/2021 04:00	WG1641845
Phenol	0.0142	CC	0.0142	0.353	1	03/30/2021 04:00	WG1641845
2,4,6-Trichlorophenol	0.0113	CC	0.0113	0.353	1	03/30/2021 04:00	WG1641845
(S) Nitrobenzene-d5	56.2			10.0-122		03/30/2021 04:00	WG1641845
(S) 2-Fluorobiphenyl	66.4			15.0-120		03/30/2021 04:00	WG1641845
(S) p-Terphenyl-d14	77.2			10.0-120		03/30/2021 04:00	WG1641845
(S) Phenol-d5	58.8			10.0-120		03/30/2021 04:00	WG1641845
(S) 2-Fluorophenol	69.4			12.0-120		03/30/2021 04:00	WG1641845
(S) 2,4,6-Tribromophenol	78.4			10.0-127		03/30/2021 04:00	WG1641845

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3635369-1 03/26/21 09:31

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.000			

1 Cp

2 Tc

3 Ss

L1329766-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1329766-01 03/26/21 09:31 • (DUP) R3635369-3 03/26/21 09:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	89.9	89.6	1	0.408		10

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3635369-2 03/26/21 09:31

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3634365-1 03/24/21 13:19

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	0.0180	<u>U</u>	0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3634365-2 03/24/21 13:22

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Mercury	0.500	0.534	107	80.0-120	

L1329700-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329700-02 03/24/21 13:27 • (MS) R3634365-3 03/24/21 13:30 • (MSD) R3634365-4 03/24/21 13:32

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	0.500	0.0317	0.571	0.646	91.5	104	1	75.0-125			12.3	20

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3634289-1 03/24/21 09:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	0.518	IC	0.518	2.00
Barium	0.0852	IC	0.0852	0.500
Cadmium	0.0471	IC	0.0471	0.500
Chromium	0.133	IC	0.133	1.00
Lead	0.208	IC	0.208	0.500
Selenium	0.764	IC	0.764	2.00
Silver	0.127	IC	0.127	1.00

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3634289-2 03/24/21 09:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	94.2	94.2	80.0-120	
Barium	100	99.2	99.2	80.0-120	
Cadmium	100	94.4	94.4	80.0-120	
Chromium	100	94.0	94.0	80.0-120	
Lead	100	95.0	95.0	80.0-120	
Selenium	100	97.0	97.0	80.0-120	
Silver	20.0	18.6	93.2	80.0-120	

6 Qc

7 Gl

8 Al

9 Sc

L1329700-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329700-02 03/24/21 10:02 • (MS) R3634289-5 03/24/21 10:10 • (MSD) R3634289-6 03/24/21 10:13

Analyte	Spike Amount (dry) mg/kg	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	4.49	121	124	99.1	101	1	75.0-125			2.17	20
Barium	100	196	317	307	103	94.7	1	75.0-125			2.96	20
Cadmium	100	0.108	116	118	98.4	99.9	1	75.0-125			1.52	20
Chromium	100	5.58	110	111	88.1	89.7	1	75.0-125			1.61	20
Lead	100	0.915	114	117	95.9	98.0	1	75.0-125			2.12	20
Selenium	100	1.28	124	127	104	106	1	75.0-125			1.96	20
Silver	20.0	0.150	23.0	23.5	97.6	99.5	1	75.0-125			1.88	20

Method Blank (MB)

(MB) R3635812-3 03/27/21 02:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	0.0365	IC	0.0365	0.0500
Acrylonitrile	0.00361	IC	0.00361	0.0125
Benzene	0.000467	IC	0.000467	0.00100
Bromobenzene	0.000900	IC	0.000900	0.0125
Bromodichloromethane	0.000725	IC	0.000725	0.00250
Bromoform	0.00117	IC	0.00117	0.0250
Bromomethane	0.00197	IC	0.00197	0.0125
n-Butylbenzene	0.00525	IC	0.00525	0.0125
sec-Butylbenzene	0.00288	IC	0.00288	0.0125
tert-Butylbenzene	0.00195	IC	0.00195	0.00500
Carbon tetrachloride	0.000898	IC	0.000898	0.00500
Chlorobenzene	0.000210	IC	0.000210	0.00250
Chlorodibromomethane	0.000612	IC	0.000612	0.00250
Chloroethane	0.00170	IC	0.00170	0.00500
Chloroform	0.00103	IC	0.00103	0.00250
Chloromethane	0.00435	IC	0.00435	0.0125
2-Chlorotoluene	0.000865	IC	0.000865	0.00250
4-Chlorotoluene	0.000450	IC	0.000450	0.00500
1,2-Dibromo-3-Chloropropane	0.00390	IC	0.00390	0.0250
1,2-Dibromoethane	0.000648	IC	0.000648	0.00250
Dibromomethane	0.000750	IC	0.000750	0.00500
1,2-Dichlorobenzene	0.000425	IC	0.000425	0.00500
1,3-Dichlorobenzene	0.000600	IC	0.000600	0.00500
1,4-Dichlorobenzene	0.000700	IC	0.000700	0.00500
Dichlorodifluoromethane	0.00161	IC	0.00161	0.00250
1,1-Dichloroethane	0.000491	IC	0.000491	0.00250
1,2-Dichloroethane	0.000649	IC	0.000649	0.00250
1,1-Dichloroethene	0.000606	IC	0.000606	0.00250
cis-1,2-Dichloroethene	0.000734	IC	0.000734	0.00250
trans-1,2-Dichloroethene	0.00104	IC	0.00104	0.00500
1,2-Dichloropropane	0.00142	IC	0.00142	0.00500
1,1-Dichloropropene	0.000809	IC	0.000809	0.00250
1,3-Dichloropropane	0.000501	IC	0.000501	0.00500
cis-1,3-Dichloropropene	0.000757	IC	0.000757	0.00250
trans-1,3-Dichloropropene	0.00114	IC	0.00114	0.00500
2,2-Dichloropropane	0.00138	IC	0.00138	0.00250
Di-isopropyl ether	0.000410	IC	0.000410	0.00100
Ethylbenzene	0.000737	IC	0.000737	0.00250
Hexachloro-1,3-butadiene	0.00600	IC	0.00600	0.0250
Isopropylbenzene	0.000425	IC	0.000425	0.00250

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3635812-3 03/27/21 02:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	0.00255	IC	0.00255	0.00500
2-Butanone (MEK)	0.0635	IC	0.0635	0.100
Methylene Chloride	0.00664	IC	0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	0.00228	IC	0.00228	0.0250
Methyl tert-butyl ether	0.000350	IC	0.000350	0.00100
Naphthalene	0.00488	IC	0.00488	0.0125
n-Propylbenzene	0.000950	IC	0.000950	0.00500
Styrene	0.000229	IC	0.000229	0.0125
1,1,1,2-Tetrachloroethane	0.000948	IC	0.000948	0.00250
1,1,2,2-Tetrachloroethane	0.000695	IC	0.000695	0.00250
Tetrachloroethene	0.000896	IC	0.000896	0.00250
Toluene	0.00130	IC	0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	0.000754	IC	0.000754	0.00250
1,2,3-Trichlorobenzene	0.00733	IC	0.00733	0.0125
1,2,4-Trichlorobenzene	0.00440	IC	0.00440	0.0125
1,1,1-Trichloroethane	0.000923	IC	0.000923	0.00250
1,1,2-Trichloroethane	0.000597	IC	0.000597	0.00250
Trichloroethene	0.000584	IC	0.000584	0.00100
Trichlorofluoromethane	0.000827	IC	0.000827	0.00250
1,2,3-Trichloropropane	0.00162	IC	0.00162	0.0125
1,2,4-Trimethylbenzene	0.00158	IC	0.00158	0.00500
1,3,5-Trimethylbenzene	0.00200	IC	0.00200	0.00500
Vinyl chloride	0.00116	IC	0.00116	0.00250
Xylenes, Total	0.000880	IC	0.000880	0.00650
(S) Toluene-d8	108			75.0-131
(S) 4-Bromofluorobenzene	106			67.0-138
(S) 1,2-Dichloroethane-d4	86.6			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3635812-1 03/27/21 01:30 • (LCSD) R3635812-2 03/27/21 01:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.744	0.761	119	122	10.0-160			2.26	31
Acrylonitrile	0.625	0.664	0.687	106	110	45.0-153			3.40	22
Benzene	0.125	0.113	0.118	90.4	94.4	70.0-123			4.33	20
Bromobenzene	0.125	0.112	0.114	89.6	91.2	73.0-121			1.77	20
Bromodichloromethane	0.125	0.121	0.123	96.8	98.4	73.0-121			1.64	20
Bromoform	0.125	0.115	0.118	92.0	94.4	64.0-132			2.58	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3635812-1 03/27/21 01:30 • (LCSD) R3635812-2 03/27/21 01:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromomethane	0.125	0.116	0.120	92.8	96.0	56.0-147			3.39	20
n-Butylbenzene	0.125	0.102	0.102	81.6	81.6	68.0-135			0.000	20
sec-Butylbenzene	0.125	0.0962	0.0982	77.0	78.6	74.0-130			2.06	20
tert-Butylbenzene	0.125	0.103	0.103	82.4	82.4	75.0-127			0.000	20
Carbon tetrachloride	0.125	0.103	0.111	82.4	88.8	66.0-128			7.48	20
Chlorobenzene	0.125	0.112	0.115	89.6	92.0	76.0-128			2.64	20
Chlorodibromomethane	0.125	0.110	0.112	88.0	89.6	74.0-127			1.80	20
Chloroethane	0.125	0.124	0.124	99.2	99.2	61.0-134			0.000	20
Chloroform	0.125	0.131	0.139	105	111	72.0-123			5.93	20
Chloromethane	0.125	0.141	0.145	113	116	51.0-138			2.80	20
2-Chlorotoluene	0.125	0.101	0.107	80.8	85.6	75.0-124			5.77	20
4-Chlorotoluene	0.125	0.115	0.116	92.0	92.8	75.0-124			0.866	20
1,2-Dibromo-3-Chloropropane	0.125	0.107	0.119	85.6	95.2	59.0-130			10.6	20
1,2-Dibromoethane	0.125	0.118	0.116	94.4	92.8	74.0-128			1.71	20
Dibromomethane	0.125	0.109	0.115	87.2	92.0	75.0-122			5.36	20
1,2-Dichlorobenzene	0.125	0.110	0.116	88.0	92.8	76.0-124			5.31	20
1,3-Dichlorobenzene	0.125	0.106	0.108	84.8	86.4	76.0-125			1.87	20
1,4-Dichlorobenzene	0.125	0.109	0.112	87.2	89.6	77.0-121			2.71	20
Dichlorodifluoromethane	0.125	0.134	0.136	107	109	43.0-156			1.48	20
1,1-Dichloroethane	0.125	0.112	0.114	89.6	91.2	70.0-127			1.77	20
1,2-Dichloroethane	0.125	0.145	0.147	116	118	65.0-131			1.37	20
1,1-Dichloroethene	0.125	0.124	0.132	99.2	106	65.0-131			6.25	20
cis-1,2-Dichloroethene	0.125	0.122	0.127	97.6	102	73.0-125			4.02	20
trans-1,2-Dichloroethene	0.125	0.128	0.137	102	110	71.0-125			6.79	20
1,2-Dichloropropane	0.125	0.115	0.114	92.0	91.2	74.0-125			0.873	20
1,1-Dichloropropene	0.125	0.121	0.119	96.8	95.2	73.0-125			1.67	20
1,3-Dichloropropane	0.125	0.116	0.115	92.8	92.0	80.0-125			0.866	20
cis-1,3-Dichloropropene	0.125	0.107	0.113	85.6	90.4	76.0-127			5.45	20
trans-1,3-Dichloropropene	0.125	0.114	0.115	91.2	92.0	73.0-127			0.873	20
2,2-Dichloropropane	0.125	0.125	0.148	100	118	59.0-135			16.8	20
Di-isopropyl ether	0.125	0.117	0.120	93.6	96.0	60.0-136			2.53	20
Ethylbenzene	0.125	0.110	0.112	88.0	89.6	74.0-126			1.80	20
Hexachloro-1,3-butadiene	0.125	0.136	0.132	109	106	57.0-150			2.99	20
Isopropylbenzene	0.125	0.108	0.109	86.4	87.2	72.0-127			0.922	20
p-Isopropyltoluene	0.125	0.0938	0.100	75.0	80.0	72.0-133			6.40	20
2-Butanone (MEK)	0.625	0.662	0.646	106	103	30.0-160			2.45	24
Methylene Chloride	0.125	0.124	0.130	99.2	104	68.0-123			4.72	20
4-Methyl-2-pentanone (MIBK)	0.625	0.574	0.596	91.8	95.4	56.0-143			3.76	20
Methyl tert-butyl ether	0.125	0.132	0.145	106	116	66.0-132			9.39	20
Naphthalene	0.125	0.104	0.108	83.2	86.4	59.0-130			3.77	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3635812-1 03/27/21 01:30 • (LCSD) R3635812-2 03/27/21 01:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
n-Propylbenzene	0.125	0.104	0.105	83.2	84.0	74.0-126			0.957	20
Styrene	0.125	0.115	0.111	92.0	88.8	72.0-127			3.54	20
1,1,1,2-Tetrachloroethane	0.125	0.100	0.107	80.0	85.6	74.0-129			6.76	20
1,1,2,2-Tetrachloroethane	0.125	0.0902	0.0993	72.2	79.4	68.0-128			9.60	20
Tetrachloroethene	0.125	0.123	0.120	98.4	96.0	70.0-136			2.47	20
Toluene	0.125	0.113	0.116	90.4	92.8	75.0-121			2.62	20
1,1,2-Trichlorotrifluoroethane	0.125	0.114	0.120	91.2	96.0	61.0-139			5.13	20
1,2,3-Trichlorobenzene	0.125	0.114	0.119	91.2	95.2	59.0-139			4.29	20
1,2,4-Trichlorobenzene	0.125	0.117	0.124	93.6	99.2	62.0-137			5.81	20
1,1,1-Trichloroethane	0.125	0.120	0.134	96.0	107	69.0-126			11.0	20
1,1,2-Trichloroethane	0.125	0.131	0.130	105	104	78.0-123			0.766	20
Trichloroethene	0.125	0.120	0.121	96.0	96.8	76.0-126			0.830	20
Trichlorofluoromethane	0.125	0.118	0.120	94.4	96.0	61.0-142			1.68	20
1,2,3-Trichloropropane	0.125	0.117	0.123	93.6	98.4	67.0-129			5.00	20
1,2,4-Trimethylbenzene	0.125	0.110	0.114	88.0	91.2	70.0-126			3.57	20
1,3,5-Trimethylbenzene	0.125	0.108	0.112	86.4	89.6	73.0-127			3.64	20
Vinyl chloride	0.125	0.112	0.120	89.6	96.0	63.0-134			6.90	20
Xylenes, Total	0.375	0.339	0.347	90.4	92.5	72.0-127			2.33	20
(S) Toluene-d8				105	103	75.0-131				
(S) 4-Bromofluorobenzene				106	107	67.0-138				
(S) 1,2-Dichloroethane-d4				114	119	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1329495-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329495-01 03/27/21 03:04 • (MS) R3635812-4 03/27/21 09:23 • (MSD) R3635812-5 03/27/21 09:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.595	0.0426	0.300	0.306	43.2	44.0	1	10.0-160			1.93	40
Acrylonitrile	0.595	0.00421	0.470	0.399	67.7	57.5	1	10.0-160			16.4	40
Benzene	0.119	0.000545	0.0888	0.0719	63.9	51.8	1	10.0-149			21.1	37
Bromobenzene	0.119	0.00105	0.106	0.100	76.1	72.0	1	10.0-156			5.45	38
Bromodichloromethane	0.119	0.000846	0.112	0.0977	80.7	70.3	1	10.0-143			13.7	37
Bromoform	0.119	0.00137	0.120	0.103	86.6	73.9	1	10.0-146			15.7	36
Bromomethane	0.119	0.00230	0.0701	0.0615	50.5	44.3	1	10.0-149			13.1	38
n-Butylbenzene	0.119	0.00613	0.0879	0.0916	63.3	66.0	1	10.0-160			4.16	40
sec-Butylbenzene	0.119	0.00336	0.0883	0.0839	63.6	0.000	1	10.0-159			200	39
tert-Butylbenzene	0.119	0.00228	0.0883	0.0874	63.6	62.9	1	10.0-156			1.06	39
Carbon tetrachloride	0.119	0.00105	0.0764	0.0691	55.0	49.7	1	10.0-145			10.1	37
Chlorobenzene	0.119	0.000245	0.0958	0.0866	69.0	62.4	1	10.0-152			10.1	39

L1329495-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329495-01 03/27/21 03:04 • (MS) R3635812-4 03/27/21 09:23 • (MSD) R3635812-5 03/27/21 09:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chlorodibromomethane	0.119	0.000714	0.117	0.102	84.0	73.4	1	10.0-146			13.4	37
Chloroethane	0.119	0.00198	0.0718	0.0650	51.7	46.8	1	10.0-146			9.90	40
Chloroform	0.119	0.00120	0.104	0.0848	74.6	61.1	1	10.0-146			19.9	37
Chloromethane	0.119	0.00508	0.0812	0.0715	58.5	51.5	1	10.0-159			12.7	37
2-Chlorotoluene	0.119	0.00101	0.0850	0.0801	61.2	57.6	1	10.0-159			5.94	38
4-Chlorotoluene	0.119	0.000525	0.0988	0.000525	71.2	0.000	1	10.0-155	JU		200	39
1,2-Dibromo-3-Chloropropane	0.119	0.00455	0.113	0.103	81.6	74.2	1	10.0-151			9.49	39
1,2-Dibromoethane	0.119	0.000756	0.126	0.116	90.8	83.3	1	10.0-148			8.59	34
Dibromomethane	0.119	0.000875	0.111	0.0985	79.7	70.9	1	10.0-147			11.7	35
1,2-Dichlorobenzene	0.119	0.000496	0.111	0.101	80.3	73.0	1	10.0-155			9.43	37
1,3-Dichlorobenzene	0.119	0.000700	0.0953	0.0855	68.7	61.6	1	10.0-153			10.8	38
1,4-Dichlorobenzene	0.119	0.000817	0.103	0.0931	74.1	67.1	1	10.0-151			10.0	38
Dichlorodifluoromethane	0.119	0.00188	0.0928	0.0920	66.8	66.2	1	10.0-160			0.884	35
1,1-Dichloroethane	0.119	0.000573	0.0804	0.0678	57.9	48.8	1	10.0-147			17.0	37
1,2-Dichloroethane	0.119	0.000757	0.116	0.103	83.4	74.5	1	10.0-148			11.3	35
1,1-Dichloroethene	0.119	0.000707	0.0832	0.0743	59.9	53.5	1	10.0-155			11.3	37
cis-1,2-Dichloroethene	0.119	0.000857	0.0913	0.0792	65.7	57.1	1	10.0-149			14.1	37
trans-1,2-Dichloroethene	0.119	0.00121	0.0837	0.0732	60.3	52.7	1	10.0-150			13.4	37
1,2-Dichloropropane	0.119	0.00166	0.0992	0.0906	71.4	65.2	1	10.0-148			9.10	37
1,1-Dichloropropene	0.119	0.000944	0.0798	0.0663	57.5	47.7	1	10.0-153			18.5	35
1,3-Dichloropropane	0.119	0.000585	0.124	0.114	89.1	82.4	1	10.0-154			7.74	35
cis-1,3-Dichloropropene	0.119	0.000883	0.124	0.104	89.1	75.2	1	10.0-151			16.9	37
trans-1,3-Dichloropropene	0.119	0.00133	0.116	0.108	83.8	78.1	1	10.0-148			7.06	37
2,2-Dichloropropane	0.119	0.00161	0.0710	0.0645	51.1	46.5	1	10.0-138			9.47	36
Di-isopropyl ether	0.119	0.000478	0.104	0.0918	74.9	66.1	1	10.0-147			12.4	36
Ethylbenzene	0.119	0.000860	0.0825	0.0749	59.4	53.9	1	10.0-160			9.64	38
Hexachloro-1,3-butadiene	0.119	0.00700	0.121	0.154	87.4	111	1	10.0-160			23.7	40
Isopropylbenzene	0.119	0.000496	0.0844	0.0824	60.8	59.3	1	10.0-155			2.38	38
p-Isopropyltoluene	0.119	0.00298	0.0896	0.0857	64.5	61.7	1	10.0-160			4.53	40
2-Butanone (MEK)	0.595	0.0741	0.473	0.540	68.1	77.8	1	10.0-160			13.4	40
Methylene Chloride	0.119	0.00775	0.104	0.0872	75.1	62.8	1	10.0-141			17.9	37
4-Methyl-2-pentanone (MIBK)	0.595	0.00266	0.606	0.533	87.2	76.8	1	10.0-160			12.7	35
Methyl tert-butyl ether	0.119	0.000408	0.140	0.110	101	78.9	1	11.0-147			24.4	35
Naphthalene	0.119	0.00569	0.115	0.115	82.8	83.1	1	10.0-160			0.405	36
n-Propylbenzene	0.119	0.00111	0.0836	0.0788	60.2	56.7	1	10.0-158			5.90	38
Styrene	0.119	0.000267	0.101	0.0935	72.9	67.3	1	10.0-160			8.03	40
1,1,1,2-Tetrachloroethane	0.119	0.00111	0.0927	0.0845	66.7	60.8	1	10.0-149			9.22	39
1,1,2,2-Tetrachloroethane	0.119	0.000811	0.0775	0.0795	55.8	57.2	1	10.0-160			2.53	35
Tetrachloroethene	0.119	0.00105	0.0735	0.0788	52.9	56.7	1	10.0-156			6.90	39

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1329495-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329495-01 03/27/21 03:04 • (MS) R3635812-4 03/27/21 09:23 • (MSD) R3635812-5 03/27/21 09:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Toluene	0.119	0.00152	0.0873	0.0803	62.9	57.8	1	10.0-156			8.36	38
1,1,2-Trichlorotrifluoroethane	0.119	0.000880	0.0853	0.0763	61.4	55.0	1	10.0-160			11.1	36
1,2,3-Trichlorobenzene	0.119	0.00855	0.128	0.134	92.4	96.6	1	10.0-160			4.44	40
1,2,4-Trichlorobenzene	0.119	0.00513	0.133	0.124	95.8	89.1	1	10.0-160			7.27	40
1,1,1-Trichloroethane	0.119	0.00108	0.0853	0.0853	61.4	61.4	1	10.0-144			0.000	35
1,1,2-Trichloroethane	0.119	0.000697	0.134	0.125	96.6	89.9	1	10.0-160			7.21	35
Trichloroethene	0.119	0.000681	0.119	0.110	85.7	79.0	1	10.0-156			8.16	38
Trichlorofluoromethane	0.119	0.000965	0.0780	0.0728	56.1	52.4	1	10.0-160			6.81	40
1,2,3-Trichloropropane	0.119	0.00189	0.140	0.130	101	93.3	1	10.0-156			7.79	35
1,2,4-Trimethylbenzene	0.119	0.00184	0.0937	0.0887	67.5	63.9	1	10.0-160			5.50	36
1,3,5-Trimethylbenzene	0.119	0.00233	0.0932	0.0878	67.1	63.2	1	10.0-160			6.06	38
Vinyl chloride	0.119	0.00135	0.0672	0.0628	48.4	45.2	1	10.0-160			6.82	37
Xylenes, Total	0.357	0.00103	0.272	0.243	65.3	58.3	1	10.0-160			11.3	38
<i>(S) Toluene-d8</i>					105	108		75.0-131				
<i>(S) 4-Bromofluorobenzene</i>					102	106		67.0-138				
<i>(S) 1,2-Dichloroethane-d4</i>					98.5	92.1		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1329700-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329700-02 03/27/21 04:39 • (MS) R3635812-6 03/27/21 10:01 • (MSD) R3635812-7 03/27/21 10:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.843	0.0496	0.313	0.284	37.1	33.7	1	10.0-160			9.57	40
Acrylonitrile	0.843	0.00491	0.496	0.405	58.9	48.1	1	10.0-160			20.2	40
Benzene	0.169	0.000635	0.105	0.108	62.3	63.9	1	10.0-149			2.43	37
Bromobenzene	0.169	0.00122	0.135	0.122	79.8	72.3	1	10.0-156			9.86	38
Bromodichloromethane	0.169	0.000986	0.126	0.121	74.6	71.9	1	10.0-143			3.63	37
Bromoform	0.169	0.00159	0.136	0.118	80.6	69.9	1	10.0-146			14.1	36
Bromomethane	0.169	0.00268	0.0881	0.0888	52.3	52.7	1	10.0-149			0.769	38
n-Butylbenzene	0.169	0.00714	0.122	0.119	72.1	70.8	1	10.0-160			1.81	40
sec-Butylbenzene	0.169	0.00392	0.117	0.124	69.4	73.5	1	10.0-159			5.87	39
tert-Butylbenzene	0.169	0.00265	0.125	0.123	74.2	73.1	1	10.0-156			1.53	39
Carbon tetrachloride	0.169	0.00122	0.104	0.107	61.9	63.5	1	10.0-145			2.70	37
Chlorobenzene	0.169	0.000286	0.121	0.119	71.6	70.6	1	10.0-152			1.47	39
Chlorodibromomethane	0.169	0.000832	0.125	0.115	74.3	68.3	1	10.0-146			8.37	37
Chloroethane	0.169	0.00231	0.0877	0.0976	52.0	57.9	1	10.0-146			10.7	40
Chloroform	0.169	0.00140	0.119	0.115	70.5	68.4	1	10.0-146			3.02	37
Chloromethane	0.169	0.00592	0.111	0.116	65.9	68.6	1	10.0-159			4.08	37

L1329700-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329700-02 03/27/21 04:39 • (MS) R3635812-6 03/27/21 10:01 • (MSD) R3635812-7 03/27/21 10:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2-Chlorotoluene	0.169	0.00118	0.107	0.110	63.5	65.0	1	10.0-159			2.39	38
4-Chlorotoluene	0.169	0.000612	0.226	0.125	134	74.0	1	10.0-155	J		57.6	39
1,2-Dibromo-3-Chloropropane	0.169	0.00530	0.120	0.0952	71.0	56.5	1	10.0-151			22.8	39
1,2-Dibromoethane	0.169	0.000881	0.146	0.117	86.3	69.4	1	10.0-148			21.6	34
Dibromomethane	0.169	0.00102	0.118	0.105	70.2	62.4	1	10.0-147			11.7	35
1,2-Dichlorobenzene	0.169	0.000578	0.133	0.118	78.7	69.8	1	10.0-155			11.9	37
1,3-Dichlorobenzene	0.169	0.000816	0.123	0.118	73.1	69.8	1	10.0-153			4.62	38
1,4-Dichlorobenzene	0.169	0.000952	0.122	0.118	72.3	69.7	1	10.0-151			3.75	38
Dichlorodifluoromethane	0.169	0.00219	0.123	0.148	72.7	87.9	1	10.0-160			18.9	35
1,1-Dichloroethane	0.169	0.000668	0.0970	0.100	57.5	59.4	1	10.0-147			3.17	37
1,2-Dichloroethane	0.169	0.000883	0.135	0.117	79.8	69.4	1	10.0-148			14.0	35
1,1-Dichloroethene	0.169	0.000824	0.109	0.122	64.8	72.1	1	10.0-155			10.7	37
cis-1,2-Dichloroethene	0.169	0.000998	0.111	0.108	65.6	64.2	1	10.0-149			2.11	37
trans-1,2-Dichloroethene	0.169	0.00141	0.108	0.114	63.9	67.4	1	10.0-150			5.41	37
1,2-Dichloropropane	0.169	0.00193	0.113	0.117	67.1	69.1	1	10.0-148			2.96	37
1,1-Dichloropropene	0.169	0.00110	0.0966	0.122	57.3	72.2	1	10.0-153			23.1	35
1,3-Dichloropropane	0.169	0.000681	0.141	0.120	83.9	71.0	1	10.0-154			16.6	35
cis-1,3-Dichloropropene	0.169	0.00103	0.137	0.122	81.5	72.1	1	10.0-151			12.2	37
trans-1,3-Dichloropropene	0.169	0.00155	0.132	0.121	78.1	71.9	1	10.0-148			8.39	37
2,2-Dichloropropane	0.169	0.00188	0.0835	0.0979	49.5	58.1	1	10.0-138			15.9	36
Di-isopropyl ether	0.169	0.000558	0.114	0.112	67.7	66.4	1	10.0-147			2.04	36
Ethylbenzene	0.169	0.00100	0.104	0.115	61.5	68.5	1	10.0-160			10.8	38
Hexachloro-1,3-butadiene	0.169	0.00816	0.185	0.167	110	99.2	1	10.0-160			10.0	40
Isopropylbenzene	0.169	0.000578	0.111	0.118	65.8	69.8	1	10.0-155			5.95	38
p-Isopropyltoluene	0.169	0.00347	0.118	0.121	70.2	71.9	1	10.0-160			2.39	40
2-Butanone (MEK)	0.843	0.0864	0.579	0.461	68.7	54.7	1	10.0-160			22.7	40
Methylene Chloride	0.169	0.00903	0.109	0.109	64.4	64.5	1	10.0-141			0.250	37
4-Methyl-2-pentanone (MIBK)	0.843	0.00310	0.636	0.539	75.5	63.9	1	10.0-160			16.7	35
Methyl tert-butyl ether	0.169	0.000476	0.132	0.114	78.5	67.6	1	11.0-147			15.0	35
Naphthalene	0.169	0.00664	0.137	0.114	81.5	67.4	1	10.0-160			18.9	36
n-Propylbenzene	0.169	0.00129	0.115	0.116	68.0	68.6	1	10.0-158			0.945	38
Styrene	0.169	0.000311	0.118	0.119	70.1	70.4	1	10.0-160			0.459	40
1,1,1,2-Tetrachloroethane	0.169	0.00129	0.116	0.106	68.6	62.6	1	10.0-149			9.22	39
1,1,2,2-Tetrachloroethane	0.169	0.000945	0.0520	0.0559	30.8	33.1	1	10.0-160			7.31	35
Tetrachloroethene	0.169	0.00122	0.110	0.121	65.4	72.0	1	10.0-156			9.62	39
Toluene	0.169	0.00177	0.112	0.119	66.2	70.8	1	10.0-156			6.71	38
1,1,2-Trichlorotrifluoroethane	0.169	0.00103	0.107	0.123	63.5	73.0	1	10.0-160			13.8	36
1,2,3-Trichlorobenzene	0.169	0.00997	0.155	0.143	91.9	84.7	1	10.0-160			8.22	40
1,2,4-Trichlorobenzene	0.169	0.00598	0.156	0.131	92.7	77.7	1	10.0-160			17.7	40

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1329700-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329700-02 03/27/21 04:39 • (MS) R3635812-6 03/27/21 10:01 • (MSD) R3635812-7 03/27/21 10:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1,1-Trichloroethane	0.169	0.00126	0.117	0.140	69.4	83.1	1	10.0-144			18.0	35
1,1,2-Trichloroethane	0.169	0.000812	0.156	0.135	92.7	79.8	1	10.0-160			15.1	35
Trichloroethene	0.169	0.000794	0.184	0.167	109	99.2	1	10.0-156			9.30	38
Trichlorofluoromethane	0.169	0.00112	0.107	0.121	63.4	71.8	1	10.0-160			12.4	40
1,2,3-Trichloropropane	0.169	0.00220	0.155	0.125	91.9	74.0	1	10.0-156			21.7	35
1,2,4-Trimethylbenzene	0.169	0.00215	0.122	0.122	72.1	72.2	1	10.0-160			0.112	36
1,3,5-Trimethylbenzene	0.169	0.00272	0.121	0.125	71.9	74.2	1	10.0-160			3.20	38
Vinyl chloride	0.169	0.00158	0.0835	0.0993	49.5	58.9	1	10.0-160			17.3	37
Xylenes, Total	0.506	0.00120	0.336	0.345	66.4	68.3	1	10.0-160			2.79	38
<i>(S) Toluene-d8</i>					107	110		75.0-131				
<i>(S) 4-Bromofluorobenzene</i>					104	107		67.0-138				
<i>(S) 1,2-Dichloroethane-d4</i>					91.1	90.9		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3635229-1 03/26/21 10:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Petroleum Range Organics	2.69	<u>U</u>	2.69	10.0
(S) C35	68.3			36.0-132
(S) o-Terphenyl	114			66.0-136

Laboratory Control Sample (LCS)

(LCS) R3635229-2 03/26/21 11:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Petroleum Range Organics	113	97.6	86.4	65.0-119	
(S) C35			34.8	36.0-132	<u>J</u>
(S) o-Terphenyl			112	66.0-136	

L1329770-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329770-01 03/26/21 10:51 • (MS) R3635229-3 03/26/21 11:19 • (MSD) R3635229-4 03/26/21 11:32

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Petroleum Range Organics	113	19.3	136	139	103	105	1	39.0-181			2.32	25
(S) C35					68.1	65.8		36.0-132				
(S) o-Terphenyl					105	101		66.0-136				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3634603-1 03/25/21 03:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Azinphos-Methyl	0.0318	IC	0.0318	0.100
Bolstar (Sulprofos)	0.0149	IC	0.0149	0.100
Chlorpyrifos	0.0157	IC	0.0157	0.100
Coumaphos	0.0243	IC	0.0243	0.100
Demeton,-O and -S	0.00584	IC	0.00584	0.0700
Diazinon	0.0225	IC	0.0225	0.100
Dichlorvos	0.0300	IC	0.0300	0.100
Dimethoate	0.0334	IC	0.0334	0.100
Disulfoton	0.0254	IC	0.0254	0.100
EPN	0.0276	IC	0.0276	0.100
Ethoprop	0.0118	IC	0.0118	0.100
Ethyl Parathion	0.0164	IC	0.0164	0.100
Fensulfothion	0.0353	IC	0.0353	0.100
Fenthion	0.0133	IC	0.0133	0.100
Malathion	0.0179	IC	0.0179	0.100
Merphos	0.0232	IC	0.0232	0.100
Methyl parathion	0.0203	IC	0.0203	0.100
Mevinphos	0.0230	IC	0.0230	0.100
Naled	0.0480	IC	0.0480	0.100
Phorate	0.0210	IC	0.0210	0.100
Ronnel	0.0149	IC	0.0149	0.100
Stirophos	0.0178	IC	0.0178	0.100
Sulfotep	0.00986	IC	0.00986	0.100
TEPP	0.157	IC	0.157	1.00
Tokuthion (Prothothiofos)	0.0150	IC	0.0150	0.100
Trichloronate	0.0201	IC	0.0201	0.100
(S) Triphenyl Phosphate	95.8			36.0-121

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3634603-2 03/25/21 03:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Azinphos-Methyl	0.333	0.376	113	58.0-125	
Bolstar (Sulprofos)	0.333	0.361	108	64.0-120	
Chlorpyrifos	0.333	0.342	103	62.0-120	
Coumaphos	0.333	0.380	114	60.0-120	
Demeton,-O and -S	0.167	0.180	108	59.0-120	
Diazinon	0.333	0.335	101	49.0-120	

Laboratory Control Sample (LCS)

(LCS) R3634603-2 03/25/21 03:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Dichlorvos	0.333	0.288	86.5	37.0-120	
Dimethoate	0.333	0.331	99.4	46.0-127	
Disulfoton	0.333	0.367	110	60.0-121	
EPN	0.333	0.350	105	60.0-121	
Ethoprop	0.333	0.363	109	59.0-120	
Ethyl Parathion	0.333	0.337	101	62.0-120	
Fensulfothion	0.333	0.355	107	58.0-123	
Fenthion	0.333	0.351	105	61.0-121	
Malathion	0.333	0.346	104	59.0-120	
Merphos	0.333	0.336	101	59.0-120	
Methyl parathion	0.333	0.341	102	63.0-120	
Mevinphos	0.333	0.336	101	50.0-120	
Naled	0.333	0.202	60.7	10.0-125	
Phorate	0.333	0.376	113	60.0-120	
Ronnel	0.333	0.361	108	62.0-120	
Stirophos	0.333	0.341	102	62.0-120	
Sulfotep	0.333	0.371	111	62.0-122	
TEPP	3.33	0.618	18.6	10.0-135	
Tokuthion (Prothothiofos)	0.333	0.346	104	63.0-120	
Trichloronate	0.333	0.359	108	62.0-120	
(S) Triphenyl Phosphate			101	36.0-121	

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

L1329022-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329022-01 03/25/21 06:28 • (MS) R3634603-3 03/25/21 07:01 • (MSD) R3634603-4 03/25/21 07:34

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Azinphos-Methyl	0.389	0.0388	0.393	0.373	101	96.2	1	10.0-160			5.10	22
Bolstar (Sulprofos)	0.389	0.0182	0.380	0.354	97.8	91.2	1	10.0-151			7.31	20
Chlorpyrifos	0.389	0.0191	0.371	0.350	95.3	90.3	1	12.0-149			5.75	20
Coumaphos	0.389	0.0296	0.399	0.363	103	93.7	1	10.0-160			9.28	22
Demeton,-O and -S	0.195	0.00712	0.199	0.184	102	95.0	1	10.0-160			7.64	23
Diazinon	0.389	0.0274	0.363	0.350	93.4	90.3	1	11.0-157			3.76	20
Dichlorvos	0.389	0.0366	0.377	0.377	96.9	97.2	1	10.0-160			0.000	24
Dimethoate	0.389	0.0407	0.378	0.368	97.2	95.0	1	10.0-150			2.61	27
Disulfoton	0.389	0.0310	0.390	0.378	100	97.5	1	12.0-155			3.17	20
EPN	0.389	0.0336	0.393	0.383	101	98.7	1	10.0-159			2.52	20
Ethoprop	0.389	0.0144	0.386	0.378	99.4	97.5	1	11.0-156			2.23	20
Ethyl Parathion	0.389	0.0200	0.380	0.373	97.8	96.2	1	10.0-147			1.94	20

L1329022-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329022-01 03/25/21 06:28 • (MS) R3634603-3 03/25/21 07:01 • (MSD) R3634603-4 03/25/21 07:34

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Fensulfothion	0.389	0.0430	0.394	0.374	101	96.5	1	10.0-157			5.08	27
Fenthion	0.389	0.0162	0.383	0.363	98.4	93.7	1	13.0-155			5.23	20
Malathion	0.389	0.0218	0.400	0.389	103	100	1	13.0-137			2.78	21
Merphos	0.389	0.0283	0.357	0.319	91.8	82.4	1	10.0-147	P	P	11.2	26
Methyl parathion	0.389	0.0247	0.358	0.343	92.2	88.4	1	10.0-150			4.52	21
Mevinphos	0.389	0.0280	0.369	0.374	95.0	96.5	1	10.0-158			1.31	24
Naled	0.389	0.0585	0.329	0.308	84.6	79.6	1	10.0-137			6.50	40
Phorate	0.389	0.0256	0.390	0.372	100	95.9	1	13.0-154			4.80	20
Ronnel	0.389	0.0182	0.395	0.378	102	97.5	1	14.0-149			4.42	20
Stirophos	0.389	0.0217	0.390	0.354	100	91.2	1	10.0-150			9.84	20
Sulfotep	0.389	0.0120	0.407	0.402	105	104	1	10.0-160			1.20	20
TEPP	3.89	0.191	3.39	3.21	87.1	82.7	1	10.0-142	L	L	5.55	28
Tokuthion (Prothothiofos)	0.389	0.0183	0.386	0.360	99.4	92.8	1	12.0-153			7.19	20
Trichloronate	0.389	0.0245	0.391	0.374	101	96.5	1	12.0-152			4.46	20
(S) Triphenyl Phosphate					92.5	88.4		36.0-121				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3635883-1 03/29/21 10:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Aldrin	0.00376	IC	0.00376	0.0200
Alpha BHC	0.00368	IC	0.00368	0.0200
Beta BHC	0.00379	IC	0.00379	0.0200
Delta BHC	0.00346	IC	0.00346	0.0200
Gamma BHC	0.00344	IC	0.00344	0.0200
4,4-DDD	0.00370	IC	0.00370	0.0200
4,4-DDE	0.00366	IC	0.00366	0.0200
4,4-DDT	0.00627	IC	0.00627	0.0200
Dieldrin	0.00344	IC	0.00344	0.0200
Endosulfan I	0.00363	IC	0.00363	0.0200
Endosulfan II	0.00335	IC	0.00335	0.0200
Endosulfan sulfate	0.00364	IC	0.00364	0.0200
Endrin	0.00350	IC	0.00350	0.0200
Endrin aldehyde	0.00339	IC	0.00339	0.0200
Endrin ketone	0.00711	IC	0.00711	0.0200
Heptachlor	0.00428	IC	0.00428	0.0200
Heptachlor epoxide	0.00339	IC	0.00339	0.0200
Hexachlorobenzene	0.00346	IC	0.00346	0.0200
Methoxychlor	0.00484	IC	0.00484	0.0200
Chlordane	0.103	IC	0.103	0.300
Toxaphene	0.124	IC	0.124	0.400
(S) Decachlorobiphenyl	56.6			10.0-135
(S) Tetrachloro-m-xylene	56.2			10.0-139

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3635883-2 03/29/21 11:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aldrin	0.0666	0.0299	44.9	34.0-136	
Alpha BHC	0.0666	0.0297	44.6	34.0-139	
Beta BHC	0.0666	0.0281	42.2	34.0-133	
Delta BHC	0.0666	0.0302	45.3	34.0-135	
Gamma BHC	0.0666	0.0318	47.7	34.0-136	
4,4-DDD	0.0666	0.0307	46.1	33.0-141	
4,4-DDE	0.0666	0.0303	45.5	34.0-134	
4,4-DDT	0.0666	0.0365	54.8	30.0-143	
Dieldrin	0.0666	0.0310	46.5	35.0-137	
Endosulfan I	0.0666	0.0296	44.4	34.0-134	

Laboratory Control Sample (LCS)

(LCS) R3635883-2 03/29/21 11:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Endosulfan II	0.0666	0.0320	48.0	35.0-132	
Endosulfan sulfate	0.0666	0.0296	44.4	35.0-132	
Endrin	0.0666	0.0323	48.5	34.0-137	
Endrin aldehyde	0.0666	0.0285	42.8	23.0-121	
Endrin ketone	0.0666	0.0316	47.4	35.0-144	
Heptachlor	0.0666	0.0356	53.5	36.0-141	
Heptachlor epoxide	0.0666	0.0323	48.5	36.0-134	
Hexachlorobenzene	0.0666	0.0274	41.1	33.0-129	
Methoxychlor	0.0666	0.0344	51.7	28.0-150	
<i>(S) Decachlorobiphenyl</i>			43.2	10.0-135	
<i>(S) Tetrachloro-m-xylene</i>			42.9	10.0-139	

L1329577-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329577-01 03/29/21 11:28 • (MS) R3635883-3 03/29/21 11:42 • (MSD) R3635883-4 03/29/21 11:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aldrin	0.0666	0.00376	0.0295	0.0285	44.3	42.8	1	20.0-135			3.45	37
Alpha BHC	0.0666	0.00368	0.0290	0.0279	43.5	41.9	1	27.0-140			3.87	35
Beta BHC	0.0666	0.00379	0.0269	0.0268	40.4	40.2	1	23.0-141			0.372	37
Delta BHC	0.0666	0.00346	0.0292	0.0278	43.8	41.7	1	21.0-138			4.91	35
Gamma BHC	0.0666	0.00344	0.0309	0.0296	46.4	44.4	1	27.0-137			4.30	36
4,4-DDD	0.0666	0.0037	0.0302	0.0282	45.3	42.3	1	15.0-152			6.85	39
4,4-DDE	0.0666	0.00366	0.0341	0.0307	51.2	46.1	1	10.0-152			10.5	40
4,4-DDT	0.0666	0.00627	0.0377	0.0362	56.6	54.4	1	10.0-151			4.06	40
Dieldrin	0.0666	0.00344	0.0314	0.0295	47.1	44.3	1	17.0-145			6.24	37
Endosulfan I	0.0666	0.00363	0.0293	0.0276	44.0	41.4	1	20.0-137			5.98	36
Endosulfan II	0.0666	0.00335	0.0321	0.0298	48.2	44.7	1	15.0-141			7.43	37
Endosulfan sulfate	0.0666	0.00364	0.0281	0.0277	42.2	41.6	1	15.0-143			1.43	38
Endrin	0.0666	0.0035	0.0320	0.0307	48.0	46.1	1	19.0-143			4.15	37
Endrin aldehyde	0.0666	0.00339	0.0315	0.0289	47.3	43.4	1	10.0-139			8.61	40
Endrin ketone	0.0666	0.00711	0.0311	0.0283	46.7	42.5	1	17.0-149			9.43	38
Heptachlor	0.0666	0.00428	0.0353	0.0341	53.0	51.2	1	22.0-138			3.46	37
Heptachlor epoxide	0.0666	0.00339	0.0315	0.0302	47.3	45.3	1	22.0-138			4.21	36
Hexachlorobenzene	0.0666	0.00346	0.0275	0.0261	41.3	39.2	1	25.0-126			5.22	35
Methoxychlor	0.0666	0.00484	0.0356	0.0631	53.5	94.7	1	10.0-159		<u>JP</u>	55.7	40
<i>(S) Decachlorobiphenyl</i>					55.9	54.2		10.0-135				
<i>(S) Tetrachloro-m-xylene</i>					55.1	51.5		10.0-139				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1329450-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329450-01 03/29/21 17:49 • (MS) R3635883-5 03/29/21 18:04 • (MSD) R3635883-6 03/29/21 18:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aldrin	0.0666	0.00376	0.0422	0.0574	63.4	86.6	1	20.0-135			30.5	37
Alpha BHC	0.0666	0.00368	0.0419	0.0570	62.9	86.0	1	27.0-140			30.5	35
Beta BHC	0.0666	0.00379	0.0384	0.0522	57.7	78.7	1	23.0-141			30.5	37
Delta BHC	0.0666	0.00346	0.0457	0.0632	68.6	95.3	1	21.0-138			32.1	35
Gamma BHC	0.0666	0.00344	0.0445	0.0604	66.8	91.1	1	27.0-137			30.3	36
4,4-DDD	0.0666	0.0037	0.0442	0.0607	66.4	91.6	1	15.0-152			31.5	39
4,4-DDE	0.0666	0.0110	0.0840	0.115	110	157	1	10.0-152	P	JP	31.2	40
4,4-DDT	0.0666	0.00627	0.0456	0.0634	68.5	95.6	1	10.0-151			32.7	40
Dieldrin	0.0666	0.00344	0.0409	0.0557	61.4	84.0	1	17.0-145			30.6	37
Endosulfan I	0.0666	0.00363	0.101	0.138	152	208	1	20.0-137	JP	JP	31.0	36
Endosulfan II	0.0666	0.00335	0.0454	0.0621	68.2	93.7	1	15.0-141			31.1	37
Endosulfan sulfate	0.0666	0.00364	0.0421	0.0565	63.2	85.2	1	15.0-143			29.2	38
Endrin	0.0666	0.0035	0.0457	0.0620	68.6	93.5	1	19.0-143			30.3	37
Endrin aldehyde	0.0666	0.00339	0.0460	0.0612	69.1	92.3	1	10.0-139			28.4	40
Endrin ketone	0.0666	0.00711	0.0443	0.0593	66.5	89.4	1	17.0-149			29.0	38
Heptachlor	0.0666	0.00428	0.0447	0.0611	67.1	92.2	1	22.0-138			31.0	37
Heptachlor epoxide	0.0666	0.00339	0.0422	0.0574	63.4	86.6	1	22.0-138			30.5	36
Hexachlorobenzene	0.0666	0.00346	0.0382	0.0512	57.4	77.2	1	25.0-126			29.1	35
Methoxychlor	0.0666	0.00484	0.0436	0.0589	65.5	88.8	1	10.0-159			29.9	40
(S) Decachlorobiphenyl					59.5	75.4		10.0-135				
(S) Tetrachloro-m-xylene					55.0	70.4		10.0-139				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3636103-2 03/30/21 00:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	0.00539	IC	0.00539	0.0333
Acenaphthylene	0.00469	IC	0.00469	0.0333
Anthracene	0.00593	IC	0.00593	0.0333
Benzidine	0.0626	IC	0.0626	1.67
Benzo(a)anthracene	0.00587	IC	0.00587	0.0333
Benzo(b)fluoranthene	0.00621	IC	0.00621	0.0333
Benzo(k)fluoranthene	0.00592	IC	0.00592	0.0333
Benzo(g,h,i)perylene	0.00609	IC	0.00609	0.0333
Benzo(a)pyrene	0.00619	IC	0.00619	0.0333
Bis(2-chlorethoxy)methane	0.0100	IC	0.0100	0.333
Bis(2-chloroethyl)ether	0.0110	IC	0.0110	0.333
2,2-Oxybis(1-Chloropropane)	0.0144	IC	0.0144	0.333
4-Bromophenyl-phenylether	0.0117	IC	0.0117	0.333
2-Chloronaphthalene	0.00585	IC	0.00585	0.0333
4-Chlorophenyl-phenylether	0.0116	IC	0.0116	0.333
Chrysene	0.00662	IC	0.00662	0.0333
Dibenz(a,h)anthracene	0.00923	IC	0.00923	0.0333
3,3-Dichlorobenzidine	0.0123	IC	0.0123	0.333
2,4-Dinitrotoluene	0.00955	IC	0.00955	0.333
2,6-Dinitrotoluene	0.0109	IC	0.0109	0.333
Fluoranthene	0.00601	IC	0.00601	0.0333
Fluorene	0.00542	IC	0.00542	0.0333
Hexachlorobenzene	0.0118	IC	0.0118	0.333
Hexachloro-1,3-butadiene	0.0112	IC	0.0112	0.333
Hexachlorocyclopentadiene	0.0175	IC	0.0175	0.333
Hexachloroethane	0.0131	IC	0.0131	0.333
Indeno(1,2,3-cd)pyrene	0.00941	IC	0.00941	0.0333
Isophorone	0.0102	IC	0.0102	0.333
1-Methylnaphthalene	0.00426	IC	0.00426	0.0333
2-Methylnaphthalene	0.00432	IC	0.00432	0.0333
Naphthalene	0.00836	IC	0.00836	0.0333
Nitrobenzene	0.0116	IC	0.0116	0.333
n-Nitrosodimethylamine	0.0494	IC	0.0494	0.333
n-Nitrosodiphenylamine	0.0252	IC	0.0252	0.333
n-Nitrosodi-n-propylamine	0.0111	IC	0.0111	0.333
Phenanthrene	0.00661	IC	0.00661	0.0333
Benzylbutyl phthalate	0.0104	IC	0.0104	0.333
Bis(2-ethylhexyl)phthalate	0.0422	IC	0.0422	0.333
Di-n-butyl phthalate	0.0114	IC	0.0114	0.333
Diethyl phthalate	0.0110	IC	0.0110	0.333

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3636103-2 03/30/21 00:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Dimethyl phthalate	0.0706	IC	0.0706	0.333
Di-n-octyl phthalate	0.0225	IC	0.0225	0.333
Pyrene	0.00648	IC	0.00648	0.0333
1,2,4-Trichlorobenzene	0.0104	IC	0.0104	0.333
4-Chloro-3-methylphenol	0.0108	IC	0.0108	0.333
2-Chlorophenol	0.0110	IC	0.0110	0.333
2,4-Dichlorophenol	0.00970	IC	0.00970	0.333
2,4-Dimethylphenol	0.00870	IC	0.00870	0.333
4,6-Dinitro-2-methylphenol	0.0755	IC	0.0755	0.333
2,4-Dinitrophenol	0.0779	IC	0.0779	0.333
2-Nitrophenol	0.0119	IC	0.0119	0.333
4-Nitrophenol	0.0104	IC	0.0104	0.333
Pentachlorophenol	0.00896	IC	0.00896	0.333
Phenol	0.0134	IC	0.0134	0.333
2,4,6-Trichlorophenol	0.0107	IC	0.0107	0.333
(S) Nitrobenzene-d5	51.7			10.0-122
(S) 2-Fluorobiphenyl	63.7			15.0-120
(S) p-Terphenyl-d14	79.9			10.0-120
(S) Phenol-d5	58.7			10.0-120
(S) 2-Fluorophenol	67.1			12.0-120
(S) 2,4,6-Tribromophenol	68.9			10.0-127

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3636103-1 03/29/21 23:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.666	0.455	68.3	38.0-120	
Acenaphthylene	0.666	0.475	71.3	40.0-120	
Anthracene	0.666	0.471	70.7	42.0-120	
Benzidine	1.33	0.158	11.9	10.0-120	
Benzo(a)anthracene	0.666	0.506	76.0	44.0-120	
Benzo(b)fluoranthene	0.666	0.453	68.0	43.0-120	
Benzo(k)fluoranthene	0.666	0.474	71.2	44.0-120	
Benzo(g,h,i)perylene	0.666	0.550	82.6	43.0-120	
Benzo(a)pyrene	0.666	0.503	75.5	45.0-120	
Bis(2-chlorethoxy)methane	0.666	0.335	50.3	20.0-120	
Bis(2-chloroethyl)ether	0.666	0.481	72.2	16.0-120	
2,2-Oxybis(1-Chloropropane)	0.666	0.424	63.7	23.0-120	

Laboratory Control Sample (LCS)

(LCS) R3636103-1 03/29/21 23:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
4-Bromophenyl-phenylether	0.666	0.503	75.5	40.0-120	
2-Chloronaphthalene	0.666	0.464	69.7	35.0-120	
4-Chlorophenyl-phenylether	0.666	0.502	75.4	40.0-120	
Chrysene	0.666	0.491	73.7	43.0-120	
Dibenz(a,h)anthracene	0.666	0.542	81.4	44.0-120	
3,3-Dichlorobenzidine	1.33	0.827	62.2	28.0-120	
2,4-Dinitrotoluene	0.666	0.525	78.8	45.0-120	
2,6-Dinitrotoluene	0.666	0.521	78.2	42.0-120	
Fluoranthene	0.666	0.486	73.0	44.0-120	
Fluorene	0.666	0.467	70.1	41.0-120	
Hexachlorobenzene	0.666	0.495	74.3	39.0-120	
Hexachloro-1,3-butadiene	0.666	0.434	65.2	15.0-120	
Hexachlorocyclopentadiene	0.666	0.468	70.3	15.0-120	
Hexachloroethane	0.666	0.416	62.5	17.0-120	
Indeno(1,2,3-cd)pyrene	0.666	0.539	80.9	45.0-120	
Isophorone	0.666	0.328	49.2	23.0-120	
1-Methylnaphthalene	0.666	0.399	59.9	34.0-120	
2-Methylnaphthalene	0.666	0.385	57.8	34.0-120	
Naphthalene	0.666	0.381	57.2	18.0-120	
Nitrobenzene	0.666	0.338	50.8	17.0-120	
n-Nitrosodimethylamine	0.666	0.357	53.6	10.0-125	
n-Nitrosodiphenylamine	0.666	0.434	65.2	40.0-120	
n-Nitrosodi-n-propylamine	0.666	0.393	59.0	26.0-120	
Phenanthrene	0.666	0.482	72.4	42.0-120	
Benzylbutyl phthalate	0.666	0.497	74.6	40.0-120	
Bis(2-ethylhexyl)phthalate	0.666	0.485	72.8	41.0-120	
Di-n-butyl phthalate	0.666	0.475	71.3	43.0-120	
Diethyl phthalate	0.666	0.507	76.1	43.0-120	
Dimethyl phthalate	0.666	0.499	74.9	43.0-120	
Di-n-octyl phthalate	0.666	0.499	74.9	40.0-120	
Pyrene	0.666	0.484	72.7	41.0-120	
1,2,4-Trichlorobenzene	0.666	0.416	62.5	17.0-120	
4-Chloro-3-methylphenol	0.666	0.414	62.2	28.0-120	
2-Chlorophenol	0.666	0.460	69.1	28.0-120	
2,4-Dichlorophenol	0.666	0.405	60.8	25.0-120	
2,4-Dimethylphenol	0.666	0.386	58.0	15.0-120	
4,6-Dinitro-2-methylphenol	0.666	0.448	67.3	16.0-120	
2,4-Dinitrophenol	0.666	0.321	48.2	10.0-120	
2-Nitrophenol	0.666	0.409	61.4	20.0-120	
4-Nitrophenol	0.666	0.453	68.0	27.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3636103-1 03/29/21 23:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Pentachlorophenol	0.666	0.522	78.4	29.0-120	
Phenol	0.666	0.437	65.6	28.0-120	
2,4,6-Trichlorophenol	0.666	0.502	75.4	37.0-120	
(S) Nitrobenzene-d5			49.8	10.0-122	
(S) 2-Fluorobiphenyl			73.0	15.0-120	
(S) p-Terphenyl-d14			92.5	10.0-120	
(S) Phenol-d5			65.2	10.0-120	
(S) 2-Fluorophenol			71.6	12.0-120	
(S) 2,4,6-Tribromophenol			86.0	10.0-127	

L1329495-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329495-01 03/30/21 02:17 • (MS) R3636103-3 03/30/21 02:38 • (MSD) R3636103-4 03/30/21 02:58

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.720	0.00583	0.400	0.389	55.6	54.1	1	18.0-120			2.74	32
Acenaphthylene	0.720	0.00507	0.421	0.403	58.4	56.0	1	25.0-120			4.20	32
Anthracene	0.720	0.00641	0.409	0.415	56.8	57.7	1	22.0-120			1.57	29
Benzidine	1.44	0.0677	0.115	0.0835	7.97	5.80	1	10.0-120	J	J	31.4	40
Benzo(a)anthracene	0.720	0.0104	0.466	0.475	63.3	64.5	1	25.0-120			1.84	29
Benzo(b)fluoranthene	0.720	0.0237	0.445	0.423	58.6	55.4	1	19.0-122			5.23	31
Benzo(k)fluoranthene	0.720	0.00786	0.440	0.420	60.0	57.2	1	23.0-120			4.78	30
Benzo(g,h,i)perylene	0.720	0.0194	0.523	0.500	70.0	66.7	1	10.0-120			4.65	33
Benzo(a)pyrene	0.720	0.0150	0.477	0.462	64.1	62.0	1	24.0-120			3.23	30
Bis(2-chlorethoxy)methane	0.720	0.0108	0.297	0.291	41.3	40.4	1	10.0-120			2.21	34
Bis(2-chloroethyl)ether	0.720	0.0119	0.491	0.399	68.2	55.4	1	10.0-120			20.7	40
2,2-Oxybis(1-Chloropropane)	0.720	0.0156	0.367	0.347	50.9	48.2	1	10.0-120			5.45	40
4-Bromophenyl-phenylether	0.720	0.0127	0.438	0.449	60.8	62.3	1	27.0-120			2.44	30
2-Chloronaphthalene	0.720	0.00633	0.409	0.386	56.8	53.6	1	20.0-120			5.71	32
4-Chlorophenyl-phenylether	0.720	0.0125	0.468	0.448	65.0	62.2	1	24.0-120			4.49	29
Chrysene	0.720	0.0188	0.451	0.461	60.0	61.4	1	21.0-120			2.14	29
Dibenz(a,h)anthracene	0.720	0.00998	0.511	0.488	71.0	67.7	1	10.0-120			4.76	32
3,3-Dichlorobenzidine	1.44	0.0133	0.791	0.829	55.0	57.7	1	10.0-120			4.67	34
2,4-Dinitrotoluene	0.720	0.0103	0.484	0.464	67.3	64.4	1	30.0-120			4.33	31
2,6-Dinitrotoluene	0.720	0.0118	0.471	0.451	65.5	62.6	1	25.0-120			4.45	31
Fluoranthene	0.720	0.0247	0.443	0.454	58.1	59.6	1	18.0-126			2.41	32
Fluorene	0.720	0.00586	0.429	0.412	59.6	57.2	1	25.0-120			4.11	30
Hexachlorobenzene	0.720	0.0128	0.421	0.437	58.4	60.7	1	27.0-120			3.78	28
Hexachloro-1,3-butadiene	0.720	0.0121	0.378	0.351	52.6	48.8	1	10.0-120			7.41	38

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1329495-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1329495-01 03/30/21 02:17 • (MS) R3636103-3 03/30/21 02:38 • (MSD) R3636103-4 03/30/21 02:58

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexachlorocyclopentadiene	0.720	0.0189	0.400	0.356	55.6	49.4	1	10.0-120			11.7	40
Hexachloroethane	0.720	0.0142	0.364	0.336	50.6	46.7	1	10.0-120			8.02	40
Indeno(1,2,3-cd)pyrene	0.720	0.0102	0.527	0.508	73.1	70.6	1	10.0-120			3.55	32
Isophorone	0.720	0.0110	0.297	0.284	41.3	39.5	1	13.0-120			4.46	34
Naphthalene	0.720	0.00904	0.340	0.317	47.1	44.0	1	10.0-120			6.92	35
Nitrobenzene	0.720	0.0125	0.297	0.280	41.3	38.9	1	10.0-120			5.99	36
n-Nitrosodimethylamine	0.720	0.0534	0.319	0.318	44.3	44.1	1	10.0-127			0.340	40
n-Nitrosodiphenylamine	0.720	0.0272	0.384	0.389	53.3	54.1	1	17.0-120			1.40	29
n-Nitrosodi-n-propylamine	0.720	0.0120	0.350	0.323	48.6	44.9	1	10.0-120			8.03	37
Phenanthrene	0.720	0.00715	0.423	0.430	58.7	59.8	1	17.0-120			1.77	31
Benzylbutyl phthalate	0.720	0.0112	0.474	0.492	65.8	68.3	1	23.0-120			3.81	30
Bis(2-ethylhexyl)phthalate	0.720	0.0456	0.477	0.492	66.2	68.3	1	17.0-126			3.12	30
Di-n-butyl phthalate	0.720	0.0123	0.418	0.435	58.1	60.4	1	30.0-120			3.80	29
Diethyl phthalate	0.720	0.0119	0.468	0.448	65.0	62.2	1	26.0-120			4.49	28
Dimethyl phthalate	0.720	0.0763	0.453	0.437	62.9	60.7	1	25.0-120			3.65	29
Di-n-octyl phthalate	0.720	0.0243	0.498	0.514	69.2	71.3	1	21.0-123			2.99	29
Pyrene	0.720	0.0254	0.458	0.465	60.1	61.0	1	16.0-121			1.41	32
1,2,4-Trichlorobenzene	0.720	0.0112	0.361	0.348	50.2	48.3	1	12.0-120			3.66	37
4-Chloro-3-methylphenol	0.720	0.0117	0.376	0.377	52.3	52.4	1	15.0-120			0.287	30
2-Chlorophenol	0.720	0.0119	0.417	0.391	58.0	54.4	1	15.0-120			6.42	37
2,4-Dichlorophenol	0.720	0.0105	0.378	0.377	52.6	52.4	1	20.0-120			0.286	31
2,4-Dimethylphenol	0.720	0.00941	0.345	0.338	47.9	47.0	1	10.0-120			1.90	33
4,6-Dinitro-2-methylphenol	0.720	0.0816	0.451	0.460	62.6	63.8	1	10.0-120			1.90	39
2,4-Dinitrophenol	0.720	0.0842	0.470	0.493	65.3	68.5	1	10.0-121			4.71	40
2-Nitrophenol	0.720	0.0129	0.372	0.355	51.7	49.2	1	12.0-120			4.76	39
4-Nitrophenol	0.720	0.0112	0.391	0.352	54.4	48.9	1	10.0-137			10.5	32
Pentachlorophenol	0.720	0.00969	0.455	0.437	63.2	60.7	1	10.0-160			4.12	31
Phenol	0.720	0.0145	0.369	0.357	51.2	49.5	1	12.0-120			3.28	38
2,4,6-Trichlorophenol	0.720	0.0116	0.440	0.429	61.1	59.6	1	19.0-120			2.49	32
1-Methylnaphthalene	0.720	0.00461	0.359	0.350	49.8	48.6	1	10.0-120			2.44	36
2-Methylnaphthalene	0.720	0.00467	0.345	0.338	47.9	47.0	1	10.0-120			1.90	37
(S) Nitrobenzene-d5					39.6	39.3		10.0-122				
(S) 2-Fluorobiphenyl					58.0	56.2		15.0-120				
(S) p-Terphenyl-d14					74.8	76.9		10.0-120				
(S) Phenol-d5					52.6	52.1		10.0-120				
(S) 2-Fluorophenol					59.3	56.5		12.0-120				
(S) 2,4,6-Tribromophenol					66.8	72.8		10.0-127				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

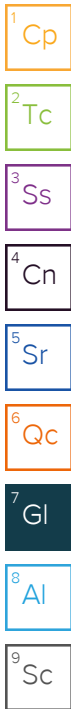
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J	The value is outside laboratory established criteria.
L	Off-scale high. Actual value is known to be greater than value given.
P	RPD between the primary and confirmatory analysis exceeded 40%.
U	Indicates the compound was analyzed for but not detected above the method detection limit.



ACCREDITATIONS & LOCATIONS

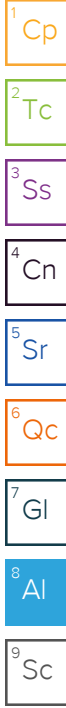
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address:

Remediation Services, Inc.

PO Box 587
Independence, KS 67301

Billing Information:

Lori Young
PO Box 587
Independence, KS 67301

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page **1** of **1**



12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to:
Grant Sherwood

Email To: gsherwood@rsi-ks.com; rklim@rsi-ks.com; dsteinbauer@rsi-ks.com

Project Description:
FSU LLRW Site 1

City/State Collected: **Jacksville FL**

Please Circle: PT MT CT ET

Phone: **620-331-1200**

Client Project #

Lab Project #
REMSERIKS-FSU

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Immediately Packed on Ice N ___ Y ___

___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

No.
of
Cntrs

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

No.
of
Cntrs

FLPRO, SV8270, TS 4ozAmb-NoPres

RCRA Metals 2ozClr-NoPres

SV8081, SV8141 4ozAmb-NoPres

V8260 40mIAmb/MeOH10ml/Syr

SDG # **132970**

M166

Acctnum: REMSERIKS

Template: T183594

Prelogin: P834357

PM: 206 - Jeff Carr

PB: **3/12/24**

Shipped Via: **FedEX Ground**

Remarks

Sample # (lab only)

2219-Borrow

Gnd

SS

0-6

3-22-24

15:30

4

X

X

X

X

01

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Crowder Lake Soil for backfill

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:

___ UPS ___ FedEx **X** Courier

Tracking #

95175768 1380

Sample Receipt Checklist

COC Seal Present/Intact: ___ NP **X** ___ N

COC Signed/Accurate: ___ **X** ___ N

Bottles arrive intact: ___ **X** ___ N

Correct bottles used: ___ **X** ___ N

Sufficient volume sent: ___ **X** ___ N

If Applicable

VOA Zero Headspace: ___ **X** ___ N

Preservation Correct/Checked: ___ **X** ___ N

RAD Screen <0.5 mR/hr: ___ **X** ___ N

Relinquished by: (Signature)

Chris Shine

Date:

3/12/24

Time:

16:45

Received by: (Signature)

Trip Blank Received: Yes/No

1
HCl/MeOH
TBR

Relinquished by: (Signature)

Date:

3/22/24

Time:

16:30

Received by: (Signature)

FEDEX

Temp: **16.2** °C

Bottles Received: **4**

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Calvin Compton

Date:

3/23/24

Time:

9:00

Hold:

Condition:

NCF / **OK**

Golder - Jacksonville, FL

Sample Delivery Group: L1365047

Samples Received: 06/11/2021

Project Number: 20139979

Description:

Report To: Bob Wojcik
9428 Baymeadows Rd Ste 400
Jacksonville, FL 32256-7979

Entire Report Reviewed By:



John Hawkins
Project Manager

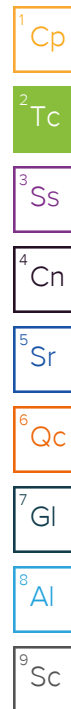
Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

WASTE CHARACTERIZATION L1365047-01 Solid

Collected by: Scott Neal
 Collected date/time: 06/10/21 13:30
 Received date/time: 06/11/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1688131	1	06/15/21 14:22	06/15/21 14:35	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1691056	1	06/10/21 13:30	06/19/21 00:19	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1693792	8	06/10/21 13:30	06/23/21 20:21	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1689231	1	06/16/21 01:51	06/16/21 13:11	TMM	Mt. Juliet, TN

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

WASTE CHARACTERIZATION L1365047-02 Waste

Collected by: Scott Neal
 Collected date/time: 06/10/21 13:30
 Received date/time: 06/11/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Preparation by Method 1311	WG1688561	1	06/15/21 17:31	06/15/21 17:31	TDW	Mt. Juliet, TN
Preparation by Method 1311	WG1689303	1	06/16/21 08:13	06/16/21 08:13	APH	Mt. Juliet, TN
Wet Chemistry by Method 9095B	WG1690372	1	06/18/21 15:18	06/18/21 15:18	AMH	Mt. Juliet, TN
Mercury by Method 7470A	WG1690301	5	06/17/21 13:43	06/19/21 12:49	BMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691129	1	06/18/21 13:45	06/18/21 22:07	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1689590	1	06/16/21 19:33	06/16/21 19:33	ACG	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG1690651	1	06/18/21 01:28	06/18/21 14:18	JMB	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG1690579	1	06/18/21 14:23	06/18/21 16:53	HMH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1690577	1	06/18/21 13:31	06/18/21 20:22	AMG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



John Hawkins
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

WASTE CHARACTERIZATION

SAMPLE RESULTS - 01

Collected date/time: 06/10/21 13:30

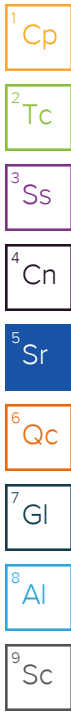
L1365047

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.3		1	06/15/2021 14:35	WG1688131

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	11.9		0.349	0.478	8	06/23/2021 20:21	WG1693792
Acrylonitrile	U		0.00432	0.0150	1	06/19/2021 00:19	WG1691056
Benzene	U		0.000559	0.00120	1	06/19/2021 00:19	WG1691056
Bromobenzene	U		0.00108	0.0150	1	06/19/2021 00:19	WG1691056
Bromodichloromethane	U		0.000867	0.00299	1	06/19/2021 00:19	WG1691056
Bromoform	U		0.00140	0.0299	1	06/19/2021 00:19	WG1691056
Bromomethane	U		0.00236	0.0150	1	06/19/2021 00:19	WG1691056
n-Butylbenzene	U		0.00628	0.0150	1	06/19/2021 00:19	WG1691056
sec-Butylbenzene	U		0.00344	0.0150	1	06/19/2021 00:19	WG1691056
tert-Butylbenzene	U		0.00233	0.00598	1	06/19/2021 00:19	WG1691056
Carbon tetrachloride	U		0.00107	0.00598	1	06/19/2021 00:19	WG1691056
Chlorobenzene	U		0.000251	0.00299	1	06/19/2021 00:19	WG1691056
Chlorodibromomethane	U		0.000732	0.00299	1	06/19/2021 00:19	WG1691056
Chloroethane	U		0.00203	0.00598	1	06/19/2021 00:19	WG1691056
Chloroform	U		0.00123	0.00299	1	06/19/2021 00:19	WG1691056
Chloromethane	U		0.00520	0.0150	1	06/19/2021 00:19	WG1691056
2-Chlorotoluene	U		0.00103	0.00299	1	06/19/2021 00:19	WG1691056
4-Chlorotoluene	U		0.000538	0.00598	1	06/19/2021 00:19	WG1691056
1,2-Dibromo-3-Chloropropane	U		0.00466	0.0299	1	06/19/2021 00:19	WG1691056
1,2-Dibromoethane	U		0.000775	0.00299	1	06/19/2021 00:19	WG1691056
Dibromomethane	U		0.000897	0.00598	1	06/19/2021 00:19	WG1691056
1,2-Dichlorobenzene	U		0.000508	0.00598	1	06/19/2021 00:19	WG1691056
1,3-Dichlorobenzene	U		0.000718	0.00598	1	06/19/2021 00:19	WG1691056
1,4-Dichlorobenzene	U		0.000837	0.00598	1	06/19/2021 00:19	WG1691056
Dichlorodifluoromethane	U		0.00193	0.00299	1	06/19/2021 00:19	WG1691056
1,1-Dichloroethane	U		0.000587	0.00299	1	06/19/2021 00:19	WG1691056
1,2-Dichloroethane	U		0.000776	0.00299	1	06/19/2021 00:19	WG1691056
1,1-Dichloroethene	U		0.000725	0.00299	1	06/19/2021 00:19	WG1691056
cis-1,2-Dichloroethene	U		0.000878	0.00299	1	06/19/2021 00:19	WG1691056
trans-1,2-Dichloroethene	U		0.00124	0.00598	1	06/19/2021 00:19	WG1691056
1,2-Dichloropropane	U		0.00170	0.00598	1	06/19/2021 00:19	WG1691056
1,1-Dichloropropene	U		0.000968	0.00299	1	06/19/2021 00:19	WG1691056
1,3-Dichloropropane	U		0.000599	0.00598	1	06/19/2021 00:19	WG1691056
cis-1,3-Dichloropropene	U		0.000905	0.00299	1	06/19/2021 00:19	WG1691056
trans-1,3-Dichloropropene	U		0.00136	0.00598	1	06/19/2021 00:19	WG1691056
2,2-Dichloropropane	U		0.00165	0.00299	1	06/19/2021 00:19	WG1691056
Di-isopropyl ether	U		0.000490	0.00120	1	06/19/2021 00:19	WG1691056
Ethylbenzene	U		0.000881	0.00299	1	06/19/2021 00:19	WG1691056
Hexachloro-1,3-butadiene	U		0.00718	0.0299	1	06/19/2021 00:19	WG1691056
Isopropylbenzene	U		0.000508	0.00299	1	06/19/2021 00:19	WG1691056
p-Isopropyltoluene	U		0.00305	0.00598	1	06/19/2021 00:19	WG1691056
2-Butanone (MEK)	U		0.0759	0.120	1	06/19/2021 00:19	WG1691056
Methylene Chloride	U		0.00794	0.0299	1	06/19/2021 00:19	WG1691056
4-Methyl-2-pentanone (MIBK)	U		0.00273	0.0299	1	06/19/2021 00:19	WG1691056
Methyl tert-butyl ether	U		0.000419	0.00120	1	06/19/2021 00:19	WG1691056
Naphthalene	U		0.00584	0.0150	1	06/19/2021 00:19	WG1691056
n-Propylbenzene	U		0.00114	0.00598	1	06/19/2021 00:19	WG1691056
Styrene	U		0.000274	0.0150	1	06/19/2021 00:19	WG1691056
1,1,1,2-Tetrachloroethane	U		0.00113	0.00299	1	06/19/2021 00:19	WG1691056
1,1,2,2-Tetrachloroethane	U		0.000831	0.00299	1	06/19/2021 00:19	WG1691056



WASTE CHARACTERIZATION

SAMPLE RESULTS - 01

Collected date/time: 06/10/21 13:30

L1365047

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Tetrachloroethene	U		0.00107	0.00299	1	06/19/2021 00:19	WG1691056
Toluene	U		0.00155	0.00598	1	06/19/2021 00:19	WG1691056
1,2,3-Trichlorobenzene	U		0.00877	0.0150	1	06/19/2021 00:19	WG1691056
1,2,4-Trichlorobenzene	U		0.00526	0.0150	1	06/19/2021 00:19	WG1691056
1,1,1-Trichloroethane	U		0.00110	0.00299	1	06/19/2021 00:19	WG1691056
1,1,2-Trichloroethane	U		0.000714	0.00299	1	06/19/2021 00:19	WG1691056
Trichloroethene	U		0.000698	0.00120	1	06/19/2021 00:19	WG1691056
Trichlorofluoromethane	U		0.000989	0.00299	1	06/19/2021 00:19	WG1691056
1,2,3-Trichloropropane	U		0.00194	0.0150	1	06/19/2021 00:19	WG1691056
1,2,4-Trimethylbenzene	U		0.00189	0.00598	1	06/19/2021 00:19	WG1691056
1,3,5-Trimethylbenzene	U		0.00239	0.00598	1	06/19/2021 00:19	WG1691056
Vinyl chloride	U		0.00139	0.00299	1	06/19/2021 00:19	WG1691056
Xylenes, Total	U		0.00105	0.00777	1	06/19/2021 00:19	WG1691056
(S) Toluene-d8	103			75.0-131		06/19/2021 00:19	WG1691056
(S) Toluene-d8	99.9			75.0-131		06/23/2021 20:21	WG1693792
(S) 4-Bromofluorobenzene	96.2			67.0-138		06/19/2021 00:19	WG1691056
(S) 4-Bromofluorobenzene	102			67.0-138		06/23/2021 20:21	WG1693792
(S) 1,2-Dichloroethane-d4	93.6			70.0-130		06/19/2021 00:19	WG1691056
(S) 1,2-Dichloroethane-d4	98.0			70.0-130		06/23/2021 20:21	WG1693792

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00591	0.0365	1	06/16/2021 13:11	WG1689231
Acenaphthylene	U		0.00514	0.0365	1	06/16/2021 13:11	WG1689231
Anthracene	U		0.00650	0.0365	1	06/16/2021 13:11	WG1689231
Benzidine	U		0.0686	1.83	1	06/16/2021 13:11	WG1689231
Benzo(a)anthracene	U		0.00643	0.0365	1	06/16/2021 13:11	WG1689231
Benzo(b)fluoranthene	U		0.00680	0.0365	1	06/16/2021 13:11	WG1689231
Benzo(k)fluoranthene	U		0.00649	0.0365	1	06/16/2021 13:11	WG1689231
Benzo(g,h,i)perylene	U		0.00667	0.0365	1	06/16/2021 13:11	WG1689231
Benzo(a)pyrene	U		0.00678	0.0365	1	06/16/2021 13:11	WG1689231
Bis(2-chloroethoxy)methane	U		0.0110	0.365	1	06/16/2021 13:11	WG1689231
Bis(2-chloroethyl)ether	U		0.0121	0.365	1	06/16/2021 13:11	WG1689231
2,2-Oxybis(1-Chloropropane)	U		0.0158	0.365	1	06/16/2021 13:11	WG1689231
4-Bromophenyl-phenylether	U		0.0128	0.365	1	06/16/2021 13:11	WG1689231
2-Chloronaphthalene	U		0.00641	0.0365	1	06/16/2021 13:11	WG1689231
4-Chlorophenyl-phenylether	U		0.0127	0.365	1	06/16/2021 13:11	WG1689231
Chrysene	U		0.00725	0.0365	1	06/16/2021 13:11	WG1689231
Dibenz(a,h)anthracene	U		0.0101	0.0365	1	06/16/2021 13:11	WG1689231
3,3-Dichlorobenzidine	U		0.0135	0.365	1	06/16/2021 13:11	WG1689231
2,4-Dinitrotoluene	U		0.0105	0.365	1	06/16/2021 13:11	WG1689231
2,6-Dinitrotoluene	U		0.0119	0.365	1	06/16/2021 13:11	WG1689231
Fluoranthene	U		0.00659	0.0365	1	06/16/2021 13:11	WG1689231
Fluorene	U		0.00594	0.0365	1	06/16/2021 13:11	WG1689231
Hexachlorobenzene	U		0.0129	0.365	1	06/16/2021 13:11	WG1689231
Hexachloro-1,3-butadiene	U		0.0123	0.365	1	06/16/2021 13:11	WG1689231
Hexachlorocyclopentadiene	U		0.0192	0.365	1	06/16/2021 13:11	WG1689231
Hexachloroethane	U		0.0144	0.365	1	06/16/2021 13:11	WG1689231
Indeno(1,2,3-cd)pyrene	U		0.0103	0.0365	1	06/16/2021 13:11	WG1689231
Isophorone	U		0.0112	0.365	1	06/16/2021 13:11	WG1689231
Naphthalene	0.0162	J	0.00916	0.0365	1	06/16/2021 13:11	WG1689231
Nitrobenzene	U		0.0127	0.365	1	06/16/2021 13:11	WG1689231
n-Nitrosodimethylamine	U		0.0541	0.365	1	06/16/2021 13:11	WG1689231
n-Nitrosodiphenylamine	U		0.0276	0.365	1	06/16/2021 13:11	WG1689231
n-Nitrosodi-n-propylamine	U		0.0122	0.365	1	06/16/2021 13:11	WG1689231

WASTE CHARACTERIZATION

SAMPLE RESULTS - 01

Collected date/time: 06/10/21 13:30

L1365047

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Phenanthrene	U		0.00724	0.0365	1	06/16/2021 13:11	WG1689231
Benzylbutyl phthalate	U		0.0114	0.365	1	06/16/2021 13:11	WG1689231
Bis(2-ethylhexyl)phthalate	U		0.0462	0.365	1	06/16/2021 13:11	WG1689231
Di-n-butyl phthalate	U		0.0125	0.365	1	06/16/2021 13:11	WG1689231
Diethyl phthalate	U		0.0121	0.365	1	06/16/2021 13:11	WG1689231
Dimethyl phthalate	U		0.0774	0.365	1	06/16/2021 13:11	WG1689231
Di-n-octyl phthalate	U		0.0247	0.365	1	06/16/2021 13:11	WG1689231
Pyrene	U		0.00710	0.0365	1	06/16/2021 13:11	WG1689231
1,2,4-Trichlorobenzene	U		0.0114	0.365	1	06/16/2021 13:11	WG1689231
4-Chloro-3-methylphenol	U		0.0118	0.365	1	06/16/2021 13:11	WG1689231
2-Chlorophenol	U		0.0121	0.365	1	06/16/2021 13:11	WG1689231
2,4-Dichlorophenol	U		0.0106	0.365	1	06/16/2021 13:11	WG1689231
2,4-Dimethylphenol	U		0.00953	0.365	1	06/16/2021 13:11	WG1689231
4,6-Dinitro-2-methylphenol	U		0.0827	0.365	1	06/16/2021 13:11	WG1689231
2,4-Dinitrophenol	U		0.0854	0.365	1	06/16/2021 13:11	WG1689231
2-Nitrophenol	U		0.0130	0.365	1	06/16/2021 13:11	WG1689231
4-Nitrophenol	U		0.0114	0.365	1	06/16/2021 13:11	WG1689231
Pentachlorophenol	U		0.00982	0.365	1	06/16/2021 13:11	WG1689231
Phenol	U		0.0147	0.365	1	06/16/2021 13:11	WG1689231
2,4,6-Trichlorophenol	U		0.0117	0.365	1	06/16/2021 13:11	WG1689231
(S) 2-Fluorophenol	67.1			12.0-120		06/16/2021 13:11	WG1689231
(S) Phenol-d5	60.6			10.0-120		06/16/2021 13:11	WG1689231
(S) Nitrobenzene-d5	50.9			10.0-122		06/16/2021 13:11	WG1689231
(S) 2-Fluorobiphenyl	61.8			15.0-120		06/16/2021 13:11	WG1689231
(S) 2,4,6-Tribromophenol	86.1			10.0-127		06/16/2021 13:11	WG1689231
(S) p-Terphenyl-d14	69.1			10.0-120		06/16/2021 13:11	WG1689231

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C - TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch	CAS #	RT
Unknown-07	0.552	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	000538-23-8	4.50
Butanoic Acid	0.304	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	000107-92-6	2.21
Unknown-01	0.261	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	000123-42-2	2.47
Unknown-02	0.130	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	000619-99-8	2.53
Unknown-06	0.0998	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	000075-47-8	4.35
Unknown-08	0.0941	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	098910-85-1	5.45
Unknown-09	0.0867	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	017066-67-0	5.77
Pentatriacontane	0.0780	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	000630-07-9	8.83
Tritetracontane	0.0705	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	007098-21-7	12.88
Pentadecane	0.0702	JN	0.000	0.000	1	06/16/2021 13:11	WG1689231	000629-62-9	9.38

Tentatively Identified compounds (TIC) refers to substances not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search routine of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist. Quantitation is accomplished by relative peak area of the TIC compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is 10% or more of that of the nearest internal standard.

WASTE CHARACTERIZATION

Collected date/time: 06/10/21 13:30

SAMPLE RESULTS - 02

L1365047

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		6/16/2021 8:13:42 AM	WG1689303
TCLP ZHE Extraction	-		6/15/2021 5:31:45 PM	WG1688561
Fluid	1		6/16/2021 8:13:42 AM	WG1689303
Initial pH	4.61		6/16/2021 8:13:42 AM	WG1689303
Final pH	4.87		6/16/2021 8:13:42 AM	WG1689303

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Wet Chemistry by Method 9095B

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	06/18/2021 15:18	WG1690372

Sample Narrative:

L1365047-02 WG1690372: Contains No Free Liquid

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	0.177		0.0500	0.20	5	06/19/2021 12:49	WG1690301

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	06/18/2021 22:07	WG1691129
Barium	0.463		0.100	100	1	06/18/2021 22:07	WG1691129
Cadmium	ND		0.100	1	1	06/18/2021 22:07	WG1691129
Chromium	ND		0.100	5	1	06/18/2021 22:07	WG1691129
Lead	ND		0.100	5	1	06/18/2021 22:07	WG1691129
Selenium	ND		0.100	1	1	06/18/2021 22:07	WG1691129
Silver	ND		0.100	5	1	06/18/2021 22:07	WG1691129

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	06/16/2021 19:33	WG1689590
Carbon tetrachloride	ND		0.0500	0.50	1	06/16/2021 19:33	WG1689590
Chlorobenzene	ND		0.0500	100	1	06/16/2021 19:33	WG1689590
Chloroform	ND		0.250	6	1	06/16/2021 19:33	WG1689590
1,2-Dichloroethane	ND		0.0500	0.50	1	06/16/2021 19:33	WG1689590
1,1-Dichloroethene	ND		0.0500	0.70	1	06/16/2021 19:33	WG1689590
2-Butanone (MEK)	ND	J4	0.500	200	1	06/16/2021 19:33	WG1689590
Tetrachloroethene	ND		0.0500	0.70	1	06/16/2021 19:33	WG1689590
Trichloroethene	ND		0.0500	0.50	1	06/16/2021 19:33	WG1689590
Vinyl chloride	ND		0.0500	0.20	1	06/16/2021 19:33	WG1689590
(S) Toluene-d8	97.2		80.0-120			06/16/2021 19:33	WG1689590
(S) 4-Bromofluorobenzene	94.6		77.0-126			06/16/2021 19:33	WG1689590
(S) 1,2-Dichloroethane-d4	96.9		70.0-130			06/16/2021 19:33	WG1689590

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	ND		0.00200	1	1	06/18/2021 14:18	WG1690651
2,4-D	ND		0.00200	10	1	06/18/2021 14:18	WG1690651
(S) 2,4-Dichlorophenyl Acetic Acid	77.8		14.0-158			06/18/2021 14:18	WG1690651

WASTE CHARACTERIZATION

SAMPLE RESULTS - 02

Collected date/time: 06/10/21 13:30

L1365047

Pesticides (GC) by Method 8081B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Chlordane	ND		0.00500	0.03	1	06/18/2021 16:53	WG1690579
Endrin	ND		0.00500	0.02	1	06/18/2021 16:53	WG1690579
Heptachlor	ND		0.00500	0.0080	1	06/18/2021 16:53	WG1690579
Lindane	ND		0.00500	0.40	1	06/18/2021 16:53	WG1690579
Methoxychlor	ND		0.00500	10	1	06/18/2021 16:53	WG1690579
Toxaphene	ND		0.0100	0.50	1	06/18/2021 16:53	WG1690579
(S) Decachlorobiphenyl	87.6			10.0-128		06/18/2021 16:53	WG1690579
(S) Tetrachloro-m-xylene	73.4			10.0-127		06/18/2021 16:53	WG1690579

1 Cp
2 Tc
3 Ss
4 Cn

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1,4-Dichlorobenzene	ND		0.100	7.50	1	06/18/2021 20:22	WG1690577
2,4-Dinitrotoluene	ND		0.100	0.13	1	06/18/2021 20:22	WG1690577
Hexachlorobenzene	ND		0.100	0.13	1	06/18/2021 20:22	WG1690577
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	06/18/2021 20:22	WG1690577
Hexachloroethane	ND		0.100	3	1	06/18/2021 20:22	WG1690577
Nitrobenzene	ND		0.100	2	1	06/18/2021 20:22	WG1690577
Pyridine	ND		0.100	5	1	06/18/2021 20:22	WG1690577
3&4-Methyl Phenol	ND		0.100	400	1	06/18/2021 20:22	WG1690577
2-Methylphenol	ND		0.100	200	1	06/18/2021 20:22	WG1690577
Pentachlorophenol	ND		0.100	100	1	06/18/2021 20:22	WG1690577
2,4,5-Trichlorophenol	ND		0.100	400	1	06/18/2021 20:22	WG1690577
2,4,6-Trichlorophenol	ND		0.100	2	1	06/18/2021 20:22	WG1690577
(S) 2-Fluorophenol	0.000	J2		10.0-120		06/18/2021 20:22	WG1690577
(S) Phenol-d5	0.000	J2		10.0-120		06/18/2021 20:22	WG1690577
(S) Nitrobenzene-d5	53.9			10.0-127		06/18/2021 20:22	WG1690577
(S) 2-Fluorobiphenyl	60.0			10.0-130		06/18/2021 20:22	WG1690577
(S) 2,4,6-Tribromophenol	80.0			10.0-155		06/18/2021 20:22	WG1690577
(S) p-Terphenyl-d14	73.0			10.0-128		06/18/2021 20:22	WG1690577

5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Sample Narrative:

L1365047-02 WG1690577: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3667872-1 06/15/21 14:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

1 Cp

2 Tc

3 Ss

L1365010-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1365010-04 06/15/21 14:35 • (DUP) R3667872-3 06/15/21 14:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	86.7	82.6	1	4.85		10

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3667872-2 06/15/21 14:35

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

6 Qc

7 Gl

8 Al

9 Sc

L1364491-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1364491-03 06/18/21 15:18 • (DUP) R3669148-1 06/18/21 15:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

Sample Narrative:

OS: Contains No Free Liquid

DUP: Contains No Free Liquid



Method Blank (MB)

(MB) R3669368-1 06/19/21 08:24

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.00333	0.0100

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3669368-2 06/19/21 08:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Mercury	0.0300	0.0301	100	80.0-120	

4 Cn

5 Sr

L1365130-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1365130-08 06/19/21 08:30 • (MS) R3669368-3 06/19/21 08:33 • (MSD) R3669368-4 06/19/21 08:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	0.0300	ND	0.0308	0.0301	103	100	1	75.0-125			2.21	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3669293-1 06/18/21 21:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0333	0.100
Cadmium	U		0.0333	0.100
Chromium	U		0.0333	0.100
Lead	U		0.0333	0.100
Selenium	U		0.0333	0.100
Silver	U		0.0333	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R3669293-2 06/18/21 21:29

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Arsenic	10.0	10.5	105	80.0-120	
Barium	10.0	10.3	103	80.0-120	
Cadmium	10.0	10.3	103	80.0-120	
Chromium	10.0	10.1	101	80.0-120	
Lead	10.0	10.3	103	80.0-120	
Selenium	10.0	10.9	109	80.0-120	
Silver	2.00	2.04	102	80.0-120	

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1366000-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366000-04 06/18/21 21:32 • (MS) R3669293-4 06/18/21 21:38 • (MSD) R3669293-5 06/18/21 21:41

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Arsenic	10.0	ND	9.96	9.97	99.6	99.7	1	75.0-125			0.130	20
Barium	10.0	0.148	10.4	10.4	102	103	1	75.0-125			0.386	20
Cadmium	10.0	ND	9.98	10.0	99.8	100	1	75.0-125			0.684	20
Chromium	10.0	ND	9.98	9.90	99.8	99.0	1	75.0-125			0.779	20
Lead	10.0	ND	9.95	9.97	99.5	99.7	1	75.0-125			0.259	20
Selenium	10.0	ND	10.2	10.4	102	104	1	75.0-125			1.43	20
Silver	2.00	ND	1.99	1.98	99.7	99.0	1	75.0-125			0.768	20

L1366378-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366378-02 06/18/21 21:44 • (MS) R3669293-6 06/18/21 21:46 • (MSD) R3669293-7 06/18/21 21:49

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	10.3	10.4	103	104	1	75.0-125			0.715	20
Barium	10.0	0.512	10.7	10.7	102	102	1	75.0-125			0.216	20
Cadmium	10.0	ND	10.2	10.2	102	102	1	75.0-125			0.571	20
Chromium	10.0	ND	9.99	10.0	99.9	100	1	75.0-125			0.0146	20
Lead	10.0	ND	10.1	10.2	101	102	1	75.0-125			0.875	20
Selenium	10.0	ND	10.7	10.8	107	108	1	75.0-125			1.19	20
Silver	2.00	ND	2.03	2.03	102	102	1	75.0-125			0.0934	20

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3668154-3 06/16/21 13:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	99.2			80.0-120
(S) 4-Bromofluorobenzene	98.3			77.0-126
(S) 1,2-Dichloroethane-d4	93.4			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3668154-1 06/16/21 12:09 • (LCSD) R3668154-2 06/16/21 12:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.250	0.282	0.277	113	111	70.0-123			1.79	20
Carbon tetrachloride	0.250	0.268	0.273	107	109	68.0-126			1.85	20
Chlorobenzene	0.250	0.267	0.266	107	106	80.0-121			0.375	20
Chloroform	0.250	0.287	0.287	115	115	73.0-120			0.000	20
1,2-Dichloroethane	0.250	0.275	0.271	110	108	70.0-128			1.47	20
1,1-Dichloroethene	0.250	0.282	0.294	113	118	71.0-124			4.17	20
2-Butanone (MEK)	1.25	2.09	2.28	167	182	44.0-160	J4	J4	8.70	20
Tetrachloroethene	0.250	0.250	0.254	100	102	72.0-132			1.59	20
Trichloroethene	0.250	0.279	0.284	112	114	78.0-124			1.78	20
Vinyl chloride	0.250	0.215	0.206	86.0	82.4	67.0-131			4.28	20
(S) Toluene-d8				102	100	80.0-120				
(S) 4-Bromofluorobenzene				102	103	77.0-126				
(S) 1,2-Dichloroethane-d4				95.3	94.7	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1364797-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1364797-12 06/16/21 18:53 • (MS) R3668154-4 06/16/21 20:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Benzene	0.250	ND	0.268	107	1	17.0-158	
Carbon tetrachloride	0.250	ND	0.281	112	1	23.0-159	
Chlorobenzene	0.250	ND	0.255	102	1	33.0-152	
Chloroform	0.250	ND	0.299	120	1	29.0-154	
1,2-Dichloroethane	0.250	ND	0.284	114	1	29.0-151	
1,1-Dichloroethene	0.250	ND	0.125	50.0	1	11.0-160	
2-Butanone (MEK)	1.25	ND	2.57	206	1	10.0-160	J5
Tetrachloroethene	0.250	ND	0.217	86.8	1	10.0-160	
Trichloroethene	0.250	ND	0.256	102	1	10.0-160	
Vinyl chloride	0.250	ND	0.200	80.0	1	10.0-160	
(S) Toluene-d8				96.6		80.0-120	
(S) 4-Bromofluorobenzene				99.6		77.0-126	
(S) 1,2-Dichloroethane-d4				94.6		70.0-130	

L1364826-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1364826-01 06/16/21 19:13 • (MS) R3668154-6 06/16/21 20:34 • (MSD) R3668154-7 06/16/21 20:54

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.250	ND	0.113	0.116	45.2	46.4	1	17.0-158			2.62	27
Carbon tetrachloride	0.250	ND	0.0910	0.0735	36.4	29.4	1	23.0-159			21.3	28
Chlorobenzene	0.250	ND	0.128	0.128	51.2	51.2	1	33.0-152			0.000	27
Chloroform	0.250	ND	ND	ND	55.6	56.8	1	29.0-154			2.14	28
1,2-Dichloroethane	0.250	ND	0.187	0.189	74.8	75.6	1	29.0-151			1.06	27
1,1-Dichloroethene	0.250	ND	ND	ND	14.4	19.1	1	11.0-160			28.0	29
2-Butanone (MEK)	1.25	ND	2.35	2.65	188	212	1	10.0-160	J5	J5	12.0	32
Tetrachloroethene	0.250	ND	0.0982	0.0914	39.3	36.6	1	10.0-160			7.17	27
Trichloroethene	0.250	ND	0.0981	0.0919	39.2	36.8	1	10.0-160			6.53	25
Vinyl chloride	0.250	ND	0.0500	ND	20.0	19.4	1	10.0-160			3.05	27
(S) Toluene-d8					97.3	95.8		80.0-120				
(S) 4-Bromofluorobenzene					98.0	95.6		77.0-126				
(S) 1,2-Dichloroethane-d4					94.9	95.3		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3670780-3 06/19/21 00:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250
p-Isopropyltoluene	U		0.00255	0.00500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3670780-3 06/19/21 00:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	101			75.0-131
(S) 4-Bromofluorobenzene	94.9			67.0-138
(S) 1,2-Dichloroethane-d4	103			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3670780-1 06/18/21 22:39 • (LCSD) R3670780-2 06/18/21 22:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acrylonitrile	0.625	0.709	0.721	113	115	45.0-153			1.68	22
Benzene	0.125	0.132	0.127	106	102	70.0-123			3.86	20
Bromobenzene	0.125	0.130	0.136	104	109	73.0-121			4.51	20
Bromodichloromethane	0.125	0.122	0.126	97.6	101	73.0-121			3.23	20
Bromoform	0.125	0.0978	0.0938	78.2	75.0	64.0-132			4.18	20
Bromomethane	0.125	0.128	0.121	102	96.8	56.0-147			5.62	20
n-Butylbenzene	0.125	0.131	0.127	105	102	68.0-135			3.10	20
sec-Butylbenzene	0.125	0.131	0.129	105	103	74.0-130			1.54	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3670780-1 06/18/21 22:39 • (LCSD) R3670780-2 06/18/21 22:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
tert-Butylbenzene	0.125	0.125	0.123	100	98.4	75.0-127			1.61	20
Carbon tetrachloride	0.125	0.118	0.110	94.4	88.0	66.0-128			7.02	20
Chlorobenzene	0.125	0.128	0.125	102	100	76.0-128			2.37	20
Chlorodibromomethane	0.125	0.104	0.109	83.2	87.2	74.0-127			4.69	20
Chloroethane	0.125	0.144	0.134	115	107	61.0-134			7.19	20
Chloroform	0.125	0.133	0.129	106	103	72.0-123			3.05	20
Chloromethane	0.125	0.154	0.149	123	119	51.0-138			3.30	20
2-Chlorotoluene	0.125	0.128	0.126	102	101	75.0-124			1.57	20
4-Chlorotoluene	0.125	0.124	0.120	99.2	96.0	75.0-124			3.28	20
1,2-Dibromo-3-Chloropropane	0.125	0.0917	0.0996	73.4	79.7	59.0-130			8.26	20
1,2-Dibromoethane	0.125	0.117	0.120	93.6	96.0	74.0-128			2.53	20
Dibromomethane	0.125	0.140	0.138	112	110	75.0-122			1.44	20
1,2-Dichlorobenzene	0.125	0.119	0.115	95.2	92.0	76.0-124			3.42	20
1,3-Dichlorobenzene	0.125	0.133	0.126	106	101	76.0-125			5.41	20
1,4-Dichlorobenzene	0.125	0.121	0.119	96.8	95.2	77.0-121			1.67	20
Dichlorodifluoromethane	0.125	0.127	0.117	102	93.6	43.0-156			8.20	20
1,1-Dichloroethane	0.125	0.131	0.127	105	102	70.0-127			3.10	20
1,2-Dichloroethane	0.125	0.133	0.136	106	109	65.0-131			2.23	20
1,1-Dichloroethene	0.125	0.137	0.128	110	102	65.0-131			6.79	20
cis-1,2-Dichloroethene	0.125	0.136	0.132	109	106	73.0-125			2.99	20
trans-1,2-Dichloroethene	0.125	0.132	0.120	106	96.0	71.0-125			9.52	20
1,2-Dichloropropane	0.125	0.127	0.125	102	100	74.0-125			1.59	20
1,1-Dichloropropene	0.125	0.130	0.124	104	99.2	73.0-125			4.72	20
1,3-Dichloropropane	0.125	0.133	0.132	106	106	80.0-125			0.755	20
cis-1,3-Dichloropropene	0.125	0.118	0.120	94.4	96.0	76.0-127			1.68	20
trans-1,3-Dichloropropene	0.125	0.114	0.116	91.2	92.8	73.0-127			1.74	20
2,2-Dichloropropane	0.125	0.124	0.127	99.2	102	59.0-135			2.39	20
Di-isopropyl ether	0.125	0.139	0.141	111	113	60.0-136			1.43	20
Ethylbenzene	0.125	0.124	0.118	99.2	94.4	74.0-126			4.96	20
Hexachloro-1,3-butadiene	0.125	0.0881	0.0990	70.5	79.2	57.0-150			11.7	20
Isopropylbenzene	0.125	0.125	0.122	100	97.6	72.0-127			2.43	20
p-Isopropyltoluene	0.125	0.127	0.120	102	96.0	72.0-133			5.67	20
2-Butanone (MEK)	0.625	0.658	0.610	105	97.6	30.0-160			7.57	24
Methylene Chloride	0.125	0.128	0.130	102	104	68.0-123			1.55	20
4-Methyl-2-pentanone (MIBK)	0.625	0.719	0.734	115	117	56.0-143			2.06	20
Methyl tert-butyl ether	0.125	0.123	0.124	98.4	99.2	66.0-132			0.810	20
Naphthalene	0.125	0.0825	0.0937	66.0	75.0	59.0-130			12.7	20
n-Propylbenzene	0.125	0.142	0.137	114	110	74.0-126			3.58	20
Styrene	0.125	0.114	0.111	91.2	88.8	72.0-127			2.67	20
1,1,1,2-Tetrachloroethane	0.125	0.117	0.117	93.6	93.6	74.0-129			0.000	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3670780-1 06/18/21 22:39 • (LCSD) R3670780-2 06/18/21 22:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,1,2-Tetrachloroethane	0.125	0.130	0.134	104	107	68.0-128			3.03	20
Tetrachloroethene	0.125	0.115	0.110	92.0	88.0	70.0-136			4.44	20
Toluene	0.125	0.127	0.123	102	98.4	75.0-121			3.20	20
1,2,3-Trichlorobenzene	0.125	0.0867	0.0838	69.4	67.0	59.0-139			3.40	20
1,2,4-Trichlorobenzene	0.125	0.104	0.0970	83.2	77.6	62.0-137			6.97	20
1,1,1-Trichloroethane	0.125	0.128	0.120	102	96.0	69.0-126			6.45	20
1,1,2-Trichloroethane	0.125	0.125	0.125	100	100	78.0-123			0.000	20
Trichloroethene	0.125	0.128	0.123	102	98.4	76.0-126			3.98	20
Trichlorofluoromethane	0.125	0.0994	0.101	79.5	80.8	61.0-142			1.60	20
1,2,3-Trichloropropane	0.125	0.120	0.118	96.0	94.4	67.0-129			1.68	20
1,2,4-Trimethylbenzene	0.125	0.122	0.124	97.6	99.2	70.0-126			1.63	20
1,3,5-Trimethylbenzene	0.125	0.123	0.119	98.4	95.2	73.0-127			3.31	20
Vinyl chloride	0.125	0.143	0.134	114	107	63.0-134			6.50	20
Xylenes, Total	0.375	0.357	0.345	95.2	92.0	72.0-127			3.42	20
(S) Toluene-d8				101	101	75.0-131				
(S) 4-Bromofluorobenzene				98.3	95.8	67.0-138				
(S) 1,2-Dichloroethane-d4				106	104	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1365475-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1365475-21 06/19/21 06:41 • (MS) R3670780-4 06/19/21 07:01 • (MSD) R3670780-5 06/19/21 07:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acrylonitrile	0.620	U	0.423	0.633	68.2	102	1	10.0-160			39.8	40
Benzene	0.124	U	0.0351	0.0830	28.3	66.9	1	10.0-149		J3	81.1	37
Bromobenzene	0.124	U	0.0599	0.0912	48.3	73.5	1	10.0-156		J3	41.4	38
Bromodichloromethane	0.124	U	0.0542	0.0826	43.7	66.6	1	10.0-143		J3	41.5	37
Bromoform	0.124	U	0.0679	0.0809	54.8	65.2	1	10.0-146			17.5	36
Bromomethane	0.124	U	0.0228	0.0468	18.4	37.7	1	10.0-149		J3	69.0	38
n-Butylbenzene	0.124	U	0.0282	0.0915	22.7	73.8	1	10.0-160		J3	106	40
sec-Butylbenzene	0.124	U	0.0281	0.0868	22.7	70.0	1	10.0-159		J3	102	39
tert-Butylbenzene	0.124	U	0.0266	0.0822	21.5	66.3	1	10.0-156		J3	102	39
Carbon tetrachloride	0.124	U	0.0155	0.0635	12.5	51.2	1	10.0-145		J3	122	37
Chlorobenzene	0.124	U	0.0453	0.0874	36.5	70.5	1	10.0-152		J3	63.5	39
Chlorodibromomethane	0.124	U	0.0606	0.0802	48.9	64.7	1	10.0-146			27.8	37
Chloroethane	0.124	U	0.0132	0.0389	10.6	31.4	1	10.0-146		J3	98.7	40
Chloroform	0.124	U	0.0414	0.0840	33.4	67.7	1	10.0-146		J3	67.9	37
Chloromethane	0.124	U	0.0335	0.0835	27.0	67.3	1	10.0-159		J3	85.5	37
2-Chlorotoluene	0.124	U	0.0395	0.0851	31.9	68.6	1	10.0-159		J3	73.2	38

L1365475-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1365475-21 06/19/21 06:41 • (MS) R3670780-4 06/19/21 07:01 • (MSD) R3670780-5 06/19/21 07:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
4-Chlorotoluene	0.124	U	0.0422	0.0793	34.0	64.0	1	10.0-155		J3	61.1	39
1,2-Dibromo-3-Chloropropane	0.124	U	0.0810	0.0900	65.3	72.6	1	10.0-151			10.5	39
1,2-Dibromoethane	0.124	U	0.0834	0.0970	67.3	78.2	1	10.0-148			15.1	34
Dibromomethane	0.124	U	0.0859	0.0998	69.3	80.5	1	10.0-147			15.0	35
1,2-Dichlorobenzene	0.124	U	0.0636	0.0936	51.3	75.5	1	10.0-155		J3	38.2	37
1,3-Dichlorobenzene	0.124	U	0.0534	0.0902	43.1	72.7	1	10.0-153		J3	51.3	38
1,4-Dichlorobenzene	0.124	U	0.0543	0.0873	43.8	70.4	1	10.0-151		J3	46.6	38
Dichlorodifluoromethane	0.124	U	U	0.0636	0.000	51.3	1	10.0-160	J6	J3	200	35
1,1-Dichloroethane	0.124	U	0.0318	0.0788	25.6	63.5	1	10.0-147		J3	85.0	37
1,2-Dichloroethane	0.124	U	0.0716	0.100	57.7	80.6	1	10.0-148		J3	33.1	35
1,1-Dichloroethene	0.124	U	0.0186	0.0750	15.0	60.5	1	10.0-155		J3	121	37
cis-1,2-Dichloroethene	0.124	U	0.0439	0.0859	35.4	69.3	1	10.0-149		J3	64.7	37
trans-1,2-Dichloroethene	0.124	U	0.0263	0.0780	21.2	62.9	1	10.0-150		J3	99.1	37
1,2-Dichloropropane	0.124	U	0.0482	0.0858	38.9	69.2	1	10.0-148		J3	56.1	37
1,1-Dichloropropene	0.124	U	0.0201	0.0760	16.2	61.3	1	10.0-153		J3	116	35
1,3-Dichloropropane	0.124	U	0.0856	0.105	69.0	84.7	1	10.0-154		J3	20.4	35
cis-1,3-Dichloropropene	0.124	U	0.0527	0.0828	42.5	66.8	1	10.0-151		J3	44.4	37
trans-1,3-Dichloropropene	0.124	U	0.0633	0.0858	51.0	69.2	1	10.0-148		J3	30.2	37
2,2-Dichloropropane	0.124	U	0.0167	0.0550	13.5	44.4	1	10.0-138		J3	107	36
Di-isopropyl ether	0.124	U	0.0590	0.0968	47.6	78.1	1	10.0-147		J3	48.5	36
Ethylbenzene	0.124	U	0.0321	0.0807	25.9	65.1	1	10.0-160		J3	86.2	38
Hexachloro-1,3-butadiene	0.124	U	0.0211	0.0776	17.0	62.6	1	10.0-160		J3	114	40
Isopropylbenzene	0.124	U	0.0289	0.0795	23.3	64.1	1	10.0-155		J3	93.4	38
p-Isopropyltoluene	0.124	U	0.0283	0.0822	22.8	66.3	1	10.0-160		J3	97.6	40
2-Butanone (MEK)	0.620	U	0.466	0.483	75.2	77.9	1	10.0-160			3.58	40
Methylene Chloride	0.124	0.00782	0.0528	0.0920	36.3	67.9	1	10.0-141		J3	54.1	37
4-Methyl-2-pentanone (MIBK)	0.620	U	0.644	0.647	104	104	1	10.0-160			0.465	35
Methyl tert-butyl ether	0.124	U	0.0655	0.0972	52.8	78.4	1	11.0-147		J3	39.0	35
Naphthalene	0.124	U	0.0921	0.102	74.3	82.3	1	10.0-160			10.2	36
n-Propylbenzene	0.124	U	0.0306	0.0884	24.7	71.3	1	10.0-158		J3	97.1	38
Styrene	0.124	U	0.0455	0.0795	36.7	64.1	1	10.0-160		J3	54.4	40
1,1,1,2-Tetrachloroethane	0.124	U	0.0467	0.0807	37.7	65.1	1	10.0-149		J3	53.4	39
1,1,2,2-Tetrachloroethane	0.124	U	0.105	0.105	84.7	84.7	1	10.0-160			0.000	35
Tetrachloroethene	0.124	U	0.0207	0.0722	16.7	58.2	1	10.0-156		J3	111	39
Toluene	0.124	U	0.0356	0.0825	28.7	66.5	1	10.0-156		J3	79.4	38
1,2,3-Trichlorobenzene	0.124	U	0.0676	0.0960	54.5	77.4	1	10.0-160			34.7	40
1,2,4-Trichlorobenzene	0.124	U	0.0645	0.108	52.0	87.1	1	10.0-160		J3	50.4	40
1,1,1-Trichloroethane	0.124	U	0.0184	0.0697	14.8	56.2	1	10.0-144		J3	116	35
1,1,2-Trichloroethane	0.124	U	0.0811	0.103	65.4	83.1	1	10.0-160			23.8	35
Trichloroethene	0.124	U	0.0358	0.0817	28.9	65.9	1	10.0-156		J3	78.1	38

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1365475-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1365475-21 06/19/21 06:41 • (MS) R3670780-4 06/19/21 07:01 • (MSD) R3670780-5 06/19/21 07:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Trichlorofluoromethane	0.124	U	U	0.0257	0.000	20.7	1	10.0-160	J6	J3	200	40
1,2,3-Trichloropropane	0.124	U	0.0980	0.107	79.0	86.3	1	10.0-156			8.78	35
1,2,4-Trimethylbenzene	0.124	U	0.0398	0.0834	32.1	67.3	1	10.0-160		J3	70.8	36
1,3,5-Trimethylbenzene	0.124	U	0.0316	0.0811	25.5	65.4	1	10.0-160		J3	87.8	38
Vinyl chloride	0.124	U	0.0178	0.0788	14.4	63.5	1	10.0-160		J3	126	37
Xylenes, Total	0.372	U	0.0982	0.229	26.4	61.6	1	10.0-160		J3	80.0	38
(S) Toluene-d8					102	102		75.0-131				
(S) 4-Bromofluorobenzene					99.2	96.7		67.0-138				
(S) 1,2-Dichloroethane-d4					101	99.8		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3671523-3 06/23/21 10:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
(S) Toluene-d8	104			75.0-131
(S) 4-Bromofluorobenzene	97.3			67.0-138
(S) 1,2-Dichloroethane-d4	99.6			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3671523-1 06/23/21 09:17 • (LCSD) R3671523-2 06/23/21 09:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.474	0.477	75.8	76.3	10.0-160			0.631	31
(S) Toluene-d8				99.4	103	75.0-131				
(S) 4-Bromofluorobenzene				92.1	96.9	67.0-138				
(S) 1,2-Dichloroethane-d4				101	102	70.0-130				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3669684-1 06/18/21 13:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
2,4-D	U		0.000667	0.00200
2,4,5-TP (Silvex)	U		0.000667	0.00200
(S) 2,4-Dichlorophenyl Acetic Acid	75.4			14.0-158

Laboratory Control Sample (LCS)

(LCS) R3669684-2 06/18/21 14:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	0.0500	0.0395	79.0	50.0-120	
2,4,5-TP (Silvex)	0.0500	0.0452	90.4	50.0-125	
(S) 2,4-Dichlorophenyl Acetic Acid			97.6	14.0-158	

L1365047-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1365047-02 06/18/21 14:18 • (MS) R3669684-3 06/18/21 14:32 • (MSD) R3669684-4 06/18/21 14:47

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	0.0500	ND	0.0388	0.0400	77.6	80.0	1	50.0-120			3.05	20
2,4,5-TP (Silvex)	0.0500	ND	0.0431	0.0447	86.2	89.4	1	50.0-125			3.64	20
(S) 2,4-Dichlorophenyl Acetic Acid					96.2	99.6		14.0-158				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3669658-1 06/18/21 16:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Gamma BHC	U		0.00167	0.00500
Endrin	U		0.00167	0.00500
Heptachlor	U		0.00167	0.00500
Methoxychlor	U		0.00167	0.00500
Chlordane	U		0.00167	0.00500
Toxaphene	U		0.00333	0.0100
(S) Decachlorobiphenyl	62.0			10.0-128
(S) Tetrachloro-m-xylene	68.8			10.0-127

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3669658-2 06/18/21 16:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Gamma BHC	0.0100	0.00925	92.5	55.0-129	
Endrin	0.0100	0.00880	88.0	57.0-134	
Heptachlor	0.0100	0.00836	83.6	27.0-132	
Methoxychlor	0.0100	0.00650	65.0	54.0-155	
(S) Decachlorobiphenyl			62.3	10.0-128	
(S) Tetrachloro-m-xylene			77.4	10.0-127	

7 Gl

8 Al

9 Sc

L1365047-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1365047-02 06/18/21 16:53 • (MS) R3669658-3 06/18/21 17:06 • (MSD) R3669658-4 06/18/21 17:18

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Gamma BHC	0.0100	ND	0.00917	0.00850	91.7	85.0	1	14.0-141			7.58	40
Endrin	0.0100	ND	0.0101	0.00872	101	87.2	1	10.0-160			14.7	39
Heptachlor	0.0100	ND	0.00883	0.00802	88.3	80.2	1	16.0-136			9.61	40
Methoxychlor	0.0100	ND	0.0104	0.00756	104	75.6	1	10.0-160			31.6	34
(S) Decachlorobiphenyl					109	92.0		10.0-128				
(S) Tetrachloro-m-xylene					77.1	66.8		10.0-127				

Method Blank (MB)

(MB) R3667876-2 06/16/21 09:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00539	0.0333
Acenaphthylene	U		0.00469	0.0333
Anthracene	U		0.00593	0.0333
Benzidine	U		0.0626	1.67
Benzo(a)anthracene	U		0.00587	0.0333
Benzo(b)fluoranthene	U		0.00621	0.0333
Benzo(k)fluoranthene	U		0.00592	0.0333
Benzo(g,h,i)perylene	U		0.00609	0.0333
Benzo(a)pyrene	U		0.00619	0.0333
Bis(2-chlorethoxy)methane	U		0.0100	0.333
Bis(2-chloroethyl)ether	U		0.0110	0.333
2,2-oxybis(1-chloropropane)	U		0.0144	0.333
4-Bromophenyl-phenylether	U		0.0117	0.333
2-Chloronaphthalene	U		0.00585	0.0333
4-Chlorophenyl-phenylether	U		0.0116	0.333
Chrysene	U		0.00662	0.0333
Dibenz(a,h)anthracene	U		0.00923	0.0333
3,3-Dichlorobenzidine	U		0.0123	0.333
2,4-Dinitrotoluene	U		0.00955	0.333
2,6-Dinitrotoluene	U		0.0109	0.333
Fluoranthene	U		0.00601	0.0333
Fluorene	U		0.00542	0.0333
Hexachlorobenzene	U		0.0118	0.333
Hexachloro-1,3-butadiene	U		0.0112	0.333
Hexachlorocyclopentadiene	U		0.0175	0.333
Hexachloroethane	U		0.0131	0.333
Indeno(1,2,3-cd)pyrene	U		0.00941	0.0333
Isophorone	U		0.0102	0.333
Naphthalene	U		0.00836	0.0333
Nitrobenzene	U		0.0116	0.333
n-Nitrosodimethylamine	U		0.0494	0.333
n-Nitrosodiphenylamine	U		0.0252	0.333
n-Nitrosodi-n-propylamine	U		0.0111	0.333
Phenanthrene	U		0.00661	0.0333
Benzylbutyl phthalate	U		0.0104	0.333
Bis(2-ethylhexyl)phthalate	U		0.0422	0.333
Di-n-butyl phthalate	U		0.0114	0.333
Diethyl phthalate	U		0.0110	0.333
Dimethyl phthalate	U		0.0706	0.333
Di-n-octyl phthalate	U		0.0225	0.333

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3667876-2 06/16/21 09:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Pyrene	U		0.00648	0.0333
1,2,4-Trichlorobenzene	U		0.0104	0.333
4-Chloro-3-methylphenol	U		0.0108	0.333
2-Chlorophenol	U		0.0110	0.333
2,4-Dichlorophenol	U		0.00970	0.333
2,4-Dimethylphenol	U		0.00870	0.333
4,6-Dinitro-2-methylphenol	U		0.0755	0.333
2,4-Dinitrophenol	U		0.0779	0.333
2-Nitrophenol	U		0.0119	0.333
4-Nitrophenol	U		0.0104	0.333
Pentachlorophenol	U		0.00896	0.333
Phenol	U		0.0134	0.333
2,4,6-Trichlorophenol	U		0.0107	0.333
(S) Nitrobenzene-d5	45.6			10.0-122
(S) 2-Fluorobiphenyl	58.3			15.0-120
(S) p-Terphenyl-d14	70.9			10.0-120
(S) Phenol-d5	56.8			10.0-120
(S) 2-Fluorophenol	61.0			12.0-120
(S) 2,4,6-Tribromophenol	70.9			10.0-127

¹Cp

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⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB) - TENTATIVELY IDENTIFIED COMPOUNDS

(MB) R3667876-2 06/16/21 09:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL	CAS #
	mg/kg		mg/kg	mg/kg	
Number of TICs found: 0					

Tentatively Identified compounds (TIC) refers to substances not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search routine of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist. Quantitation is accomplished by relative peak area of the TIC compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is 10% or more of that of the nearest internal standard.

Laboratory Control Sample (LCS)

(LCS) R3667876-1 06/16/21 08:57

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
Acenaphthene	0.666	0.354	53.2	38.0-120	
Acenaphthylene	0.666	0.368	55.3	40.0-120	
Anthracene	0.666	0.398	59.8	42.0-120	
Benzidine	1.33	0.468	35.2	10.0-120	
Benzo(a)anthracene	0.666	0.469	70.4	44.0-120	

Laboratory Control Sample (LCS)

(LCS) R3667876-1 06/16/21 08:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Benzo(b)fluoranthene	0.666	0.434	65.2	43.0-120	
Benzo(k)fluoranthene	0.666	0.430	64.6	44.0-120	
Benzo(g,h,i)perylene	0.666	0.432	64.9	43.0-120	
Benzo(a)pyrene	0.666	0.436	65.5	45.0-120	
Bis(2-chlorethoxy)methane	0.666	0.284	42.6	20.0-120	
Bis(2-chloroethyl)ether	0.666	0.344	51.7	16.0-120	
2,2-Oxybis(1-Chloropropane)	0.666	0.301	45.2	23.0-120	
4-Bromophenyl-phenylether	0.666	0.452	67.9	40.0-120	
2-Chloronaphthalene	0.666	0.346	52.0	35.0-120	
4-Chlorophenyl-phenylether	0.666	0.422	63.4	40.0-120	
Chrysene	0.666	0.433	65.0	43.0-120	
Dibenz(a,h)anthracene	0.666	0.429	64.4	44.0-120	
3,3-Dichlorobenzidine	1.33	0.837	62.9	28.0-120	
2,4-Dinitrotoluene	0.666	0.444	66.7	45.0-120	
2,6-Dinitrotoluene	0.666	0.402	60.4	42.0-120	
Fluoranthene	0.666	0.432	64.9	44.0-120	
Fluorene	0.666	0.397	59.6	41.0-120	
Hexachlorobenzene	0.666	0.451	67.7	39.0-120	
Hexachloro-1,3-butadiene	0.666	0.321	48.2	15.0-120	
Hexachlorocyclopentadiene	0.666	0.292	43.8	15.0-120	
Hexachloroethane	0.666	0.298	44.7	17.0-120	
Indeno(1,2,3-cd)pyrene	0.666	0.430	64.6	45.0-120	
Isophorone	0.666	0.287	43.1	23.0-120	
Naphthalene	0.666	0.269	40.4	18.0-120	
Nitrobenzene	0.666	0.259	38.9	17.0-120	
n-Nitrosodimethylamine	0.666	0.264	39.6	10.0-125	
n-Nitrosodiphenylamine	0.666	0.387	58.1	40.0-120	
n-Nitrosodi-n-propylamine	0.666	0.304	45.6	26.0-120	
Phenanthrene	0.666	0.399	59.9	42.0-120	
Benzylbutyl phthalate	0.666	0.412	61.9	40.0-120	
Bis(2-ethylhexyl)phthalate	0.666	0.406	61.0	41.0-120	
Di-n-butyl phthalate	0.666	0.405	60.8	43.0-120	
Diethyl phthalate	0.666	0.416	62.5	43.0-120	
Dimethyl phthalate	0.666	0.407	61.1	43.0-120	
Di-n-octyl phthalate	0.666	0.406	61.0	40.0-120	
Pyrene	0.666	0.424	63.7	41.0-120	
1,2,4-Trichlorobenzene	0.666	0.318	47.7	17.0-120	
4-Chloro-3-methylphenol	0.666	0.319	47.9	28.0-120	
2-Chlorophenol	0.666	0.324	48.6	28.0-120	
2,4-Dichlorophenol	0.666	0.342	51.4	25.0-120	

¹Cp

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Laboratory Control Sample (LCS)

(LCS) R3667876-1 06/16/21 08:57

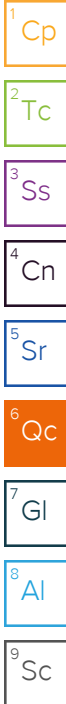
Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
2,4-Dimethylphenol	0.666	0.298	44.7	15.0-120	
4,6-Dinitro-2-methylphenol	0.666	0.449	67.4	16.0-120	
2,4-Dinitrophenol	0.666	0.371	55.7	10.0-120	
2-Nitrophenol	0.666	0.305	45.8	20.0-120	
4-Nitrophenol	0.666	0.410	61.6	27.0-120	
Pentachlorophenol	0.666	0.465	69.8	29.0-120	
Phenol	0.666	0.303	45.5	28.0-120	
2,4,6-Trichlorophenol	0.666	0.399	59.9	37.0-120	
<i>(S) Nitrobenzene-d5</i>			35.7	10.0-122	
<i>(S) 2-Fluorobiphenyl</i>			55.3	15.0-120	
<i>(S) p-Terphenyl-d14</i>			63.7	10.0-120	
<i>(S) Phenol-d5</i>			49.8	10.0-120	
<i>(S) 2-Fluorophenol</i>			53.0	12.0-120	
<i>(S) 2,4,6-Tribromophenol</i>			78.4	10.0-127	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3669420-2 06/18/21 20:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
Pyridine	U		0.0333	0.100
(S) 2-Fluorophenol	39.2			10.0-120
(S) Phenol-d5	24.0			10.0-120
(S) Nitrobenzene-d5	56.7			10.0-127
(S) 2-Fluorobiphenyl	72.3			10.0-130
(S) 2,4,6-Tribromophenol	85.0			10.0-155
(S) p-Terphenyl-d14	77.7			10.0-128



Laboratory Control Sample (LCS)

(LCS) R3669420-1 06/18/21 19:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,4-Dichlorobenzene	0.500	0.281	56.2	18.0-120	
2,4-Dinitrotoluene	0.500	0.422	84.4	49.0-124	
Hexachlorobenzene	0.500	0.374	74.8	44.0-120	
Hexachloro-1,3-butadiene	0.500	0.264	52.8	19.0-120	
Hexachloroethane	0.500	0.283	56.6	15.0-120	
Nitrobenzene	0.500	0.226	45.2	27.0-120	
2-Methylphenol	0.500	0.238	47.6	28.0-120	
3&4-Methyl Phenol	0.500	0.239	47.8	31.0-120	
Pentachlorophenol	0.500	0.407	81.4	23.0-120	
2,4,5-Trichlorophenol	0.500	0.355	71.0	44.0-120	
2,4,6-Trichlorophenol	0.500	0.332	66.4	42.0-120	
Pyridine	0.500	0.120	24.0	10.0-120	
(S) 2-Fluorophenol			34.3	10.0-120	
(S) Phenol-d5			22.7	10.0-120	
(S) Nitrobenzene-d5			45.6	10.0-127	

Laboratory Control Sample (LCS)

(LCS) R3669420-1 06/18/21 19:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) 2-Fluorobiphenyl			69.8	10.0-130	
(S) 2,4,6-Tribromophenol			98.5	10.0-155	
(S) p-Terphenyl-d14			69.6	10.0-128	

¹Cp

²Tc

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⁴Cn

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⁶Qc

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⁸Al

⁹Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RT	Retention Time.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
N	The analyte is tentatively identified and the associated numerical value may not be consistent with the actual concentration present in the sample.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

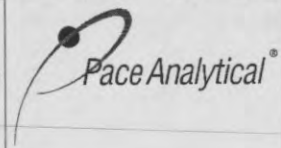
⁸ Al

⁹ Sc

Company Name/Address: **Golder - Jacksonville, FL**
 9428 Baymeadows Rd Ste 400
 Jacksonville, FL 32256-7979

Billing Information:
Bob Wojcik
 9428 Baymeadows Rd Ste 400
 Jacksonville, FL 32256-7979

Report to: **Bob Wojcik**
 Email To: **bwojcik@golder.com**



12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody
 constitutes acknowledgment and acceptance of the
 Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

Project Description: **Site 1 CHASP**

City/State Collected: **Tallahassee / FL**

Please Circle: PT MT CT **ET**

Phone: **904-363-3430**

Client Project # **20139977**

Lab Project # **GOLDERJFL-FSU**

Site/Facility ID #

P.O. # **20-139979.300**

Collected by (print): **Scott Neal**

Collected by (signature): *Scott*

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Date Results Needed: **STANDARD**

Immediately Packed on Ice N ___ Y **X**

Analysis / Container / Preservative										Chain of Custody Page ___ of ___		
EXHAUST PAINT, SV8270TIC 8oz Clr No Pres	TCLP 1L-Clr-NoPres	V8260TIC 40ml Amb/MeOH10ml/Syr	PAINT, SV8270TIC 8 oz Clr No Pres								SDG # L1365047	Table # E169
Acctnum: GOLDERJFL Template: T188559 Prelogin: P851834 PM: 341 - John Hawkins PB: B 5-27-21 Shipped Via: FedEX Ground										Remarks	Sample # (lab only)	

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs							
WASTE CHARACTERIZATION	COMP	SS	NA	6/10/21	1330	4	X	X	X				-01/02

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:

pH _____ Temp _____
 Flow _____ Other _____

Samples returned via: ___ UPS ___ FedEx ___ Courier

Tracking # **5117 4435 7018**

Relinquished by: (Signature) *Scott Neal* Date: **5-27-21** Time: **17:00**

Received by: (Signature) *Scott Neal (Golder)* Trip Blank Received: Yes/No **Yes** HCl/MeOH TBR

Relinquished by: (Signature) *Scott Neal* Date: **6/10/21** Time: **1430**

Received by: (Signature) *John Hawkins* Temp: **26.7-28.4** Bottles Received: **4**

Relinquished by: (Signature) *John Hawkins* Date: **6/10/21** Time: **9:30**

Received for lab by: (Signature) *John Hawkins* Date: **6/10/21** Time: **9:30**

Hold: _____ Condition: **NCF / OK**

Sample Receipt Checklist:
 COC Seal Present/Intact: **NP** Y N
 COC Signed/Accurate: **Y** Y N
 Bottles arrive intact: **Y** Y N
 Correct bottles used: **Y** Y N
 Sufficient volume sent: **Y** Y N
 If Applicable
 VOA Zero HeadSpace: **Y** Y N
 Preservation Correct/Checked: **Y** Y N
 RAD Screen <0.5 mR/hr: **Y** Y N

If preservation required by Login: Date/Time

Golder - Jacksonville, FL

Sample Delivery Group: L1365163
Samples Received: 06/11/2021
Project Number: 20139979
Description: Site 1 Chasp

Report To: Bob Wojcik
9428 Baymeadows Rd Ste 400
Jacksonville, FL 32256-7979

Entire Report Reviewed By:



Donna Eidson
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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Gl: Glossary of Terms	11	⁸Al
Al: Accreditations & Locations	12	
Sc: Sample Chain of Custody	13	⁹Sc

SAMPLE SUMMARY

WASTE-1 L1365163-01 Solids and Chemical Materials

Collected by: Scott Neal
 Collected date/time: 06/10/21 13:30
 Received date/time: 06/11/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 905M	WG1695320	1	06/25/21 14:14	06/29/21 00:59	RRE	Mt. Juliet, TN
Radiochemistry by Method 906M	WG1692435	1	06/21/21 12:15	06/24/21 08:22	SNR	Mt. Juliet, TN
Radiochemistry by Method DOE Ga-01-R/901.1	WG1690652	1	06/15/21 10:07	06/17/21 17:28	DME	Mt. Juliet, TN
Radiochemistry by Method EERF C01	WG1693222	1	06/23/21 09:02	06/24/21 23:24	SNR	Mt. Juliet, TN
Radiochemistry by Method EPA 9310	WG1692847	1	06/23/21 15:04	06/27/21 15:25	JMR	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Donna Eidson
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

WASTE-1

Collected date/time: 06/10/21 13:30

SAMPLE RESULTS - 01

L1365163

Radiochemistry by Method 905M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
STRONTIUM-90	0.0207	<u>U</u>	0.207	0.435	06/29/2021 00:59	WG1695320
(T) STRONTIUM	87.5			30.0-110	06/29/2021 00:59	WG1695320

1 Cp

2 Tc

3 Ss

Radiochemistry by Method 906M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
TRITIUM	2.78	<u>J</u>	2.15	3.57	06/24/2021 08:22	WG1692435

4 Cn

5 Sr

Radiochemistry by Method DOE Ga-01-R/901.1

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
Europium-152	-0.273	<u>U</u>	0.140	0.456	06/17/2021 17:28	WG1690652
Cesium-137	7.37		0.683	0.127	06/17/2021 17:28	WG1690652

6 Qc

7 Gl

Radiochemistry by Method EERF C01

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
Carbon-14	-2.25	<u>U</u>	1.81	2.36	06/24/2021 23:24	WG1693222

8 Al

9 Sc

Radiochemistry by Method EPA 9310

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
GROSS ALPHA	5.29		1.10	0.812	06/27/2021 15:25	WG1692847
GROSS BETA	7.67		1.50	1.67	06/27/2021 15:25	WG1692847

Method Blank (MB)

(MB) R3673197-1 06/29/21 00:59

Analyte	MB Result	MB Qualifier	MB MDA
	pCi/g		pCi/g
STRONTIUM-90	-0.0130	<u>U</u>	0.401
(T) STRONTIUM	93.4		

L1365163-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1365163-01 06/29/21 00:59 • (DUP) R3673197-4 06/29/21 00:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/g	pCi/g		%			%	
STRONTIUM-90	0.0207	0.283	1	173	0.911	<u>J</u>	20	3
(T) STRONTIUM	87.5	89.0						

Laboratory Control Sample (LCS)

(LCS) R3673197-2 06/29/21 00:59

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/g	pCi/g	%	%	
STRONTIUM-90	4.89	5.69	116	80.0-120	
(T) STRONTIUM			100		

L1365163-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1365163-01 06/29/21 00:59 • (MS) R3673197-3 06/29/21 00:59

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	pCi/g	pCi/g	pCi/g	%		%	
STRONTIUM-90	7.35	0.0207	9.22	125	1	65.0-135	
(T) STRONTIUM		87.5		90.5			

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3671968-1 06/24/21 01:34

Analyte	MB Result pCi/g	MB Qualifier	MB MDA pCi/g
TRITIUM	2.90	↓	3.62

¹Cp

²Tc

³Ss

L1365163-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1365163-01 06/24/21 08:22 • (DUP) R3671968-4 06/24/21 06:40

Analyte	Original Result pCi/g	DUP Result pCi/g	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
TRITIUM	2.78	3.49	1	22.5	0.231	↓	20	3

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R3671968-2 06/24/21 03:16

Analyte	Spike Amount pCi/g	LCS Result pCi/g	LCS Rec. %	Rec. Limits %	LCS Qualifier
TRITIUM	93.7	98.3	105	80.0-120	

⁶Qc

⁷Gl

⁸Al

L1365163-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1365163-01 06/24/21 08:22 • (MS) R3671968-3 06/24/21 04:58

Analyte	Spike Amount pCi/g	Original Result pCi/g	MS Result pCi/g	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
TRITIUM	92.7	2.78	97.4	102	1	75.0-125	

⁹Sc

Method Blank (MB)

(MB) R3669221-4 06/18/21 14:44

Analyte	MB Result pCi/g	MB Qualifier	MB MDA pCi/g
Americium-241	0.102	U	0.222
Cesium-137	0.0120	U	0.148
Cobalt-60	-0.0139	U	0.162
Europium-152	0.0718	U	0.367

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1365163-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1365163-01 06/17/21 17:28 • (DUP) R3669221-3 06/18/21 11:45

Analyte	Original Result pCi/g	DUP Result pCi/g	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Cesium-137	7.37	7.70	1	4.47	0.383		20	3
Europium-152	-0.273	0.0310	1	200	1.83	U	20	3

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3669221-1 06/17/21 15:21 • (LCSD) R3669221-2 06/18/21 11:27

Analyte	Spike Amount pCi/g	LCS Result pCi/g	LCSD Result pCi/g	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Americium-241	47.3	50.4	46.3	107	97.9	60.0-140			8.47	20
Cesium-137	72.4	77.4	79.0	107	109	80.0-120			2.02	20
Cobalt-60	86.9	85.3	82.6	98.1	95.1	80.0-120			3.17	20

Method Blank (MB)

(MB) R3672142-1 06/24/21 16:36

Analyte	MB Result	MB Qualifier	MB MDA
	pCi/g		pCi/g
Carbon-14	-4.89	<u>U</u>	2.58

¹Cp

²Tc

³Ss

L1365163-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1365163-01 06/24/21 23:24 • (DUP) R3672142-4 06/24/21 21:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/g	pCi/g		%			%	
Carbon-14	-2.25	-6.39	1	0.000	1.22	<u>U</u>	20	3

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R3672142-2 06/24/21 18:19

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/g	pCi/g	%	%	
Carbon-14	412	207	50.2	14.0-84.0	

⁶Qc

⁷Gl

L1365163-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1365163-01 06/24/21 23:24 • (MS) R3672142-3 06/24/21 20:01

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	pCi/g	pCi/g	pCi/g	%		%	
Carbon-14	379	-2.25	141	37.3	1	14.0-84.0	

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3672991-1 06/27/21 15:25

Analyte	MB Result pCi/g	MB Qualifier	MB MDA pCi/g
GROSS ALPHA	0.343	U	0.757
GROSS BETA	-1.09	U	1.74

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1363217-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1363217-06 06/27/21 15:25 • (DUP) R3672991-4 06/27/21 15:25

Analyte	Original Result pCi/g	DUP Result pCi/g	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
GROSS ALPHA	4.07	5.26	1	25.3	0.707		20	3
GROSS BETA	10.6	11.3	1	6.49	0.337		20	3

Laboratory Control Sample (LCS)

(LCS) R3672991-2 06/27/21 15:25

Analyte	Spike Amount pCi/g	LCS Result pCi/g	LCS Rec. %	Rec. Limits %	LCS Qualifier
GROSS ALPHA	99.6	104	104	75.0-125	
GROSS BETA	534	550	103	75.0-125	

L1358056-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1358056-01 06/27/21 15:25 • (MS) R3672991-3 06/27/21 15:25

Analyte	Spike Amount pCi/g	Original Result pCi/g	MS Result pCi/g	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
GROSS ALPHA	99.6	2.02	61.0	59.2	1	29.0-149	
GROSS BETA	534	4.18	394	73.1	1	43.0-133	

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

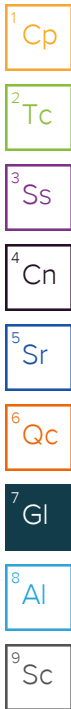
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Company Name/Address: **Golder - Jacksonville, FL**
 9428 Baymeadows Rd Ste 400
 Jacksonville, FL 32256-7979

Billing Information: **Bob Wojcik**
 9428 Baymeadows Rd Ste 400
 Jacksonville, FL 32256-7979


Report to: **Bob Wojcik**

Project Description: **Site 1 Chasp**

City/State Collected: **Tallahassee/FL**

Please Circle: PT MT CT **(ET)**

Chain of Custody Page ___ of ___



12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

Phone: **904-363-3430**

Client Project #: **20139979**

Lab Project #

Collected by (print): **Scott Neal**

Site/Facility ID #

P.O. #

Collected by (signature): *Scott Neal*

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day **X** 10 Day (Rad Only)
 ___ Three Day

Date Results Needed

Immediately Packed on Ice **N X Y**

Quote #

No. of Cntrs

SDG # **U365163**
B202

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RAD Bag	Analysis / Container / Preservative
Waste - 1	COMP	SCM	—	6/10/21	1330	1/2	X	
		SCM				1	X	
		SCM				1	X	
		SCM				1	X	
		SCM				1	X	
		SCM				1	X	
		SCM				1	X	
		SCM				1	X	
		SCM				1	X	

RAD Bag SUB 6oz/Elr-NoPres SN 6/10

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks: **No ice required for rad**

pH _____ Temp _____
 Flow _____ Other _____

Samples returned via: ___ UPS ___ FedEx ___ Courier

Tracking # **5016 1237 4971**

Relinquished by: (Signature) *Bretney* Date: **5/29/21** Time: **3:56pm** Received by: (Signature) *Scott Neal (Golder)* Trip Blank Received: Yes / **NO**
 HCL / MeOH TBR

Relinquished by: (Signature) *Scott Neal* Date: **6/10/21** Time: **1450** Received by: (Signature) *Scott Neal* Temp: **19.5 ± 2.99** °C Bottles Received: **1**

Relinquished by: (Signature) Date: Date: **6/11/21** Time: **09:30** Received for lab by: (Signature) *Scott Neal* Hold: Condition: **(OK)**
 NCF

Sample Receipt Checklist
 COC Seal Present/Intact: ___ NP ___ Y ___ N
 COC Signed/Accurate: ___ Y ___ N
 Bottles arrive intact: ___ Y ___ N
 Correct bottles used: ___ Y ___ N
 Sufficient volume sent: ___ Y ___ N
 If Applicable
 VOA Zero Headspace: ___ Y ___ N
 Preservation Correct/Checked: ___ Y ___ N
 RAD Screen <0.5 mR/hr: ___ Y ___ N

If preservation required by Login: Date/Time

4500cpm



RADIOACTIVE WASTE PROFILE RECORD

A. GENERATOR AND WASTE STREAM INFORMATION

GENERAL: Complete this form for one waste stream. Contact EnergySolutions at (801) 649-2000 if you have any questions while completing this form. Please indicate "N/A" if a category does not apply.

1. GENERATOR INFORMATION

Generator Name: Remediation Service Inc (FSU)/Tallahassee, FL EPA ID:

Name of Person Complete Form:

Phone: Email:

Location of Waste (City, State): Tallahassee, FL

2. WASTE STREAM INFORMATION

Waste Stream ID: 0995-01 Waste Stream Name: FSU Site 1 Disposal Area

Revision: 0 Date: 3/18/2021 Volume:

CHECK APPROPRIATE BOXES BELOW. Please verify the required forms requested below are completed and submitted with the Radioactive Waste Profile Record.

HAZARDOUS WASTE: Is the waste classified as hazardous waste as defined by 40 CFR 261?

- N [x] If NO, complete and attach the "Low-Level Radioactive Waste Certification Attachment".
Y [] If YES, complete and attach the "Hazardous Waste Certification Attachment" and check applicable box below.
Has the waste been treated to meet applicable treatment standards per 40 CFR 268? Y [] N [x]
Is the waste to be treated by EnergySolutions? Y [] N []

LOW-LEVEL RADIOACTIVE WASTE: Is the radioactive waste defined as Low-Level Radioactive Waste in accordance with the Low-Level Radioactive Waste Policy Amendments Act of 1985 or in DOE Order 435.1?

Y [x] If YES, a current copy of a LLRW Compact Export letter authorizing export must be submitted if applicable. Compact export approval is not required for DOE-generated or 11e.(2) waste streams. Case by case export approval for mixed waste and NORM may be required based on generator's governing Compact requirements; contact EnergySolutions Technical Services staff for additional guidance.

N [] If NO, check appropriate box: NORM/NARM [] 11e.(2) Byproduct Material [] Other:

SPECIAL NUCLEAR MATERIAL: Does the waste stream contain material with uranium enriched in U-235 or any of the following radionuclides: U-233, Pu-236, Pu-238, Pu-239, Pu-240, Pu-241, Pu-242, Pu-243, or Pu-244?

Y [] N [x] If Yes, complete and attach the "SNM Exemption Certification" form (EC-0230-SNM). Supporting statements, analytical results, and documentation must be included with the submittal.

PCB WASTE: Does the waste contain Polychlorinated Biphenyls (PCB) that are regulated for disposal per 40 CFR 761?

Y [] N [x] If Yes, complete and attach the "PCB Waste Certification" form (EC-98279).

ASBESTOS: Does the waste contain Asbestos Containing Material?

Y [] N [x] If Yes, Asbestos Containing Material must be managed in accordance with applicable federal regulations. Provide a detailed description of the waste containing asbestos in the Waste Profile narrative.

RADIOACTIVE WASTE PROFILE RECORD

B. WASTE PHYSICAL PROPERTIES & PACKAGE INFORMATION

1. GENERAL CHARACTERISTICS

Does the waste contain free liquids? (>1%) Y N If Yes, what is the percent of free liquid by waste _____ %
 If Yes, is the liquid aqueous (water-based)? Y N
 Density range of the waste: 45 — 58
 Does the waste contain absorbent? Y N
 List percentage of waste type by volume: Soil 95 % Concrete & Metal 5 % DAW _____ % Resins _____ % Sludge _____ %
 Other constituents and percentage by volume? _____ Other _____ %

2. MATERIAL SIZE

Gradation of Material: Indicate the percentage of waste material that would **pass through** the following grid sizes. For example, 95% of the material would pass through a 12" square, 90% passes through a 4" square, 80% passes through a 1" square, etc.

.12" 99 % 4" 98 % 1" 95 % .1/4" 85 % .1/40" 10 % 1/200" 5 %

Does the waste stream contain oversize debris (i.e., no dimension < 10 inches and any dimension > 12 feet)? Y N
 If Yes, include a detailed description (i.e., weight, size, drawings, etc.) of the oversize debris in the Waste Profile narrative.

3. MOISTURE CONTENT

For soil or soil-like materials, please use **Std. Proctor Method ASTM D-698** to determine the optimum moisture content. The waste material must not exceed 3 percentage points above optimum moisture upon arrival at EnergySolutions' disposal facility unless approved by EnergySolutions.

Optimum Moisture Content: 14 % at Maximum Dry Density (lb/ft³): 50
 Average Moisture Content: 7 % Moisture Content Range: 5 % - 10 %

4. WASTE SHIPPING & PACKAGING

Transportation Mode: Highway Rail
 Shipping & Container Packages: Drums* (≤ 85 gallons) Boxes (≤ 100 ft³) Soft-Sided Bags (≤ 10 yd³)
 (Check all that apply)
 Intermodal Sealand Gondola** Box Car

Other:

*Palletized drums are preferred by the disposal site. Please specify in the "Other" field if drums will not be palletized.

**Dimensions of gondola railcars must be between 48 to 65 feet in length and 8.5 to 12.5 feet in height as measured from the top of the rail to the top of the railcar unless approved by EnergySolutions.

5. NARRATIVE DESCRIPTION AND HISTORY OF WASTE

Please submit a narrative description and history of the waste as an attachment to the Radioactive Waste Profile Record. This attachment should include the following:

- Process that generated the waste
- Waste material physical composition and characteristics
- Radiological and chemical characterization method
- Basis for determining manifested radionuclide concentrations
- Description and amounts of absorbents, if applicable
- Basis of non-hazardous or hazardous waste determinations
- Treatment processes, if applicable
- Product information or Material Safety Data Sheets associated with the waste as applicable
- Information requested in other sections of this form

Physical Properties Narrative

Process that generated the waste.

Based upon the historical notes the waste was generated from experiments at the University involving fission bombardments on small animals. All biological material has long since decayed and no visual evidence of biological was seen during the excavation.

Waste material physical composition and characteristics.

Waste is primarily soil with broken glass and containers containing solidified LLRW waste. The LLRW was generated by FSU's laboratory as part of research conducted under contract with the Atomic Energy Commission and included animal carcasses, glass containers, 1- and 5-gallon metal buckets containing solidified waste, and other waste material, placed in cardboard boxes or just loosely placed into the pit, more than 50 years ago.

Radionuclide and chemical characterization method.

Radionuclide Characterization by Radiochemistry 905M, 906M, DOE Ga-01-R/901.1, Method EERF CO1, EPA 9310. Analysis by Pace Analytical which is attached.

Chemical Characterization by Methods 8260B, 8270C, 9095B, 7470A, 6010B, 8260B, 8151A, 8081B, 8270C. Extraction for TCLP analysis by 1311. Analysis by Pace Analytical which is attached.

Basis for determining manifested radionuclide concentrations.

A representative sample was sent to Pace Analytical for analysis of radionuclide concentrations.

That analysis is attached to this profile.

Description and amounts of absorbents, if applicable.

The only known material used for solidification was cement referenced in the historical documents.

Basis of non-hazardous or hazardous waste determinations.

Review of the results of chemical analysis for the RCRA parameters of a representative sample of the waste material.

Treatment processes, if applicable.

NA

Product information or Material Safety Data Sheets associated with the waste as applicable.

NA

Any Flush Certifications as documented on the PCB Certification page (if required and not uploaded to Attachments)

NA

RADIOACTIVE WASTE PROFILE RECORD

LOW-LEVEL RADIOACTIVE WASTE CERTIFICATION ATTACHMENT

This form is required only if the checkbox for Hazardous Waste on page one has been checked No. Otherwise, complete the Hazardous Waste Certification Attachment instead of this attachment. EnergySolutions may waive the chemical laboratory analyses if the material is not amenable to chemical sampling and analysis (e.g., debris items including metal pieces, concrete, plastic, etc.). Justification for waiving the chemical analyses must be provided in the Waste Profile narrative.

D. MINIMUM REQUIRED CHEMICAL ANALYSIS

The following parameters must be analyzed by a Utah or NELAC certified laboratory. Typical SW-846 analytical methods have been listed. Other approved methods are acceptable. Attach the most recent or applicable chemical analytical results representing the waste.

1. GENERAL CHEMICAL PARAMETERS

SW-846 Analytical Methods

PFLT: Pass Pass / Fail Method 9095 Not applicable for liquid radioactive waste streams.

2. 40 CFR 261.24 Table 1 – Contaminants of Toxicity Characteristic

Metals: Methods 6010 & *7470

Arsenic <u>1.000E-1</u>	Chromium <u>1.000E-1</u>	Selenium <u>1.000E-1</u>
Barium <u>4.630E-1</u>	Lead <u>1.000E-1</u>	Silver <u>1.000E-1</u>
Cadmium <u>1.000E-1</u>	*Mercury <u>1.770E-1</u>	

Organics, Pesticides/Herbicides: Methods 8081/*8151

Endrin <u>5.000E-3</u>	Toxaphene <u>1.000E-2</u>	Chlordane <u>5.000E-3</u>
Lindane <u>5.000E-3</u>	*2,4-D <u>2.000E-3</u>	Heptachlor <u>5.000E-3</u>
Methoxychlor <u>5.000E-3</u>	*2,4,5-TP Silvex <u>2.000E-3</u>	

Organics, Semi-Volatile: Method 8270

o-Cresol <u>N/A</u>	Hexachlorobenzene <u>1.000E-1</u>	Pentachlorophenol <u>1.000E-1</u>
m-Cresol <u>N/A</u>	Hexachlorobutadiene <u>1.000E-1</u>	Pyridine <u>1.000E-1</u>
p-Cresol <u>N/A</u>	Hexachloroethane <u>1.000E-1</u>	2,4,5-Trichlorophenol <u>1.000E-1</u>
Total Cresol <u>N/A</u>	Nitrobenzene <u>1.000E-1</u>	2,4,6-Trichlorophenol <u>1.000E-1</u>
2,4-Dinitrotoluene <u>1.000E-1</u>		

Organics, Volatile: Method 8260

Benzene <u>5.000E-2</u>	1,4-Dichlorobenzene <u>1.000E-1</u>	Methyl ethyl ketone <u>5.000E-2</u>
Carbon Tetrachloride <u>5.000E-2</u>	1,2-Dichloroethane <u>5.000E-2</u>	Tetrachloroethylene <u>5.000E-2</u>
Chlorobenzene <u>5.000E-2</u>	1,1-Dichloroethylene <u>5.000E-2</u>	Trichloroethylene <u>5.000E-2</u>
Chloroform <u>5.000E-2</u>	Vinyl Chloride <u>5.000E-2</u>	

3. Was the waste at the point of generation a RCRA hazardous waste per 40 CFR 261? Y N

If Yes, list former hazardous waste codes and former underlying hazardous constituents. List worst-case concentrations for each hazardous constituent. If additional space is needed, provide an attachment to this profile record formatted as below. Attach the most recent chemical analytical results demonstrating compliance with applicable treatment standards.

If No, indicate "N/A" in Section D.3 below.

RADIOACTIVE WASTE PROFILE RECORD

	Former EPA HW Codes or Underlying Hazardous Constituents	Treatment Standard (mg/kg unless noted as mg/L TCLP or Technology Code)	Worst Case Concentration (mg/kg unless noted as mg/L TCLP)
D. 3.	None		

4. OTHER CHEMICAL CONSTITUENTS

List any other chemical constituents of concern (e.g., PCBs, chelating agents, etc.) and worst-case concentrations. If additional space is needed, provide an Attachment D.4 to this profile record formatted as below.

Other Chemical Constituents	Worst-Case Concentration (mg/kg unless noted as mg/L TCLP)	Other Hazardous Constituents	Worst-Case Concentration (mg/kg unless noted as mg/L TCLP)
None			

5. LABORATORY CERTIFICATION

UTAH or NELAC CERTIFIED

The Utah or NELAC certified laboratory holds a current certification for the applicable chemical test methods insofar as such official certifications are given. Please provide a copy of the laboratory's current certification letter for each parameter analyzed and each method used for chemical analyses required by this form.

OTHER LABORATORY CERTIFICATION (Describe below)

6. CERTIFICATION

I certify that sample results representative of the waste described in this profile were or shall be obtained using state- and EPA-approved analytical methods. I also certify that where necessary representative samples were or shall be provided to EnergySolutions and to qualified laboratories for the analytical results reported herein. I further certify that the waste described in this record is not prohibited from land disposal in 40 CFR 268 (unless prior arrangements are made for treatment at EnergySolutions) and that all applicable treatment standards are clearly indicated on this form. I also certify that the information provided on this form is complete, true, and correct and is accurately supported and documented by any laboratory testing as required by EnergySolutions. I certify that the results of any said testing have been submitted to EnergySolutions. I certify that the waste does not contain any prohibited items listed in EnergySolutions' Radioactive Material License.

Signature: _____ Signature Key: _____ Date: _____

WASTE PROFILE COMMENTS

Empty

ATTACHED FILES TO THE WASTE PROFILE

Upload Date	Type	Description	Filename
6/30/2021 11:26 AM EST	Analytical Reports		FSU Radionuclide Analysis.pdf
6/30/2021 11:27 AM EST	Analytical Reports		FSU RCRA Analysis.pdf
6/30/2021 11:29 AM EST	Process Knowledge Justification		FSU Burial site 1 historical data.pdf

TRANSACTION HISTORY ATTACHMENT

Date/Time	User Name	User Email	Status	Button	Action
3/18/2021 12:21 PM EST	Jacob Gardner	jhgardner@energysolutions.com			Created New Profile
3/18/2021 12:21 PM EST	Jacob Gardner	jhgardner@energysolutions.com		Save	Update
6/30/2021 10:38 AM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update
6/30/2021 10:53 AM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update
6/30/2021 11:21 AM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update
6/30/2021 11:26 AM EST	Grant Sherwood	gsherwood@rsi-ks.com		Upload Attachment	FSU Radionuclide Analysis.pdf
6/30/2021 11:27 AM EST	Grant Sherwood	gsherwood@rsi-ks.com		Upload Attachment	FSU RCRA Analysis.pdf
6/30/2021 11:29 AM EST	Grant Sherwood	gsherwood@rsi-ks.com		Upload Attachment	FSU Burial site 1 historical data.pdf
6/30/2021 11:29 AM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update
6/30/2021 12:26 PM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update
6/30/2021 12:36 PM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update
6/30/2021 2:26 PM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update
6/30/2021 2:27 PM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update
6/30/2021 2:28 PM EST	Grant Sherwood	gsherwood@rsi-ks.com		Save	Update

Utah Department of Environmental Quality
 Division of Waste Management and Radiation Control
Application for Generator Site Access Permit

Instructions: Complete all items whether this is an initial application or an application for renewal of a Generator Site Access Permit. Submit the required fee in accordance with R313-26 of the Utah Administrative Code. Upon approval of this application, the applicant will receive a Generator Site Access Permit, issued in accordance with the current Radiation Control Rules as adopted by the Utah Waste Management and Radiation Control Board.

Mail to: Utah Dept. of Environmental Quality
 Div. of Waste Mngmt and Radiation Control
 P.O. Box 144880
 Salt Lake City, Utah 84114-4880

Contact Person:	Grant Sherwood	State of Formation or Incorporation (if applicable):	Kansas
Title:	President	Type of Government Entity (if applicable):	
Legal Organization: (exact name)	Remediation Services, Inc. on behalf of Florida State University	<u>Estimated Annual Volume (ft3)</u>	
Permit Number: (renewals only)		Waste Category	Generators Waste Processors or Waste Collectors
Mailing Address:	P.O Box 587	Naturally Occurring Radioactive Material:	
City:	Independence	Low Level Radioactive Waste:	1,242
State:	Kansas	Mixed Waste:	
	ZIP: 67301	Other:	
Phone:	(620) 331-1200	Total:	1,242
Email:	gsherwood@rsi-ks.com		

I certify that:

1. All information in this application is true and complete.
2. I will notify the Division of Waste Management and Radiation Control within 30 days of any changes in the information on this application.
3. I have read and understand the provisions of R313-26 of the Utah Administrative Code.
4. I have a copy of the current Land Disposal Facility License as amended.
5. I will comply fully with all applicable State or Federal laws, administrative rules, licenses, or license conditions of the land disposal facility regarding the packaging, transportation, storage, disposal and delivery of radioactive wastes.

Signature:		Title:	President
Name:	Grant Sherwood	Date:	4/26/21

TRK 3022 TEL L00013

FORM 540 UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER		EnergySolutions, LLC		5. SHIPPER - NAME AND FACILITY Florida State University (RSU) / Energy Solutions 2525 Pottsdamer Road Tallahassee, FL 32310				SHIPPER I.D. NUMBER 0995-01-0002		7. FORM 540 AND 540A FORM 541 AND 541A FORM 542 AND 542A ADDITIONAL INFORMATION		8. MANIFEST NUMBER (Use this number on all continuation pages) 0995-01-0002	
1. EMERGENCY TELEPHONE NUMBER 18004249300				Utah Generator Site Access Permit No. 2103011202		SHIPMENT NUMBER 0995-01-0002		<input type="checkbox"/> COLLECTOR <input type="checkbox"/> PROCESSOR <input checked="" type="checkbox"/> GENERATOR TYPE (Specify) 0		9. CONSIGNEE - Name and Facility EnergySolutions, LLC Clive Disposal Site Interstate 80, Exit 49 Clive, UT 84029		CONTACT Security Department	
ORGANIZATION Chemtec (CCN806528)				CONTACT Andy Wright		TELEPHONE NUMBER (Include Area Code) 620-205-7687		EPA I.D. NUMBER		SIGNATURE - <i>Authorized consignee acknowledging waste receipt</i> <i>[Signature]</i>		TELEPHONE (Include Area Code) (801)649-2175	
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST 4		6. CARRIER - Name and Address Hittman Transport Services Inc. 1660 Bear Creek Road Oak Ridge, TN 37830				SHIPPING DATE 07/22/2021		10. CERTIFICATION This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation in accordance with the requirements of 10 CFR Parts 20, 21, and 22, and all other applicable state regulations.		DATE 07-26-2021	
DOES EPA REGULATED WASTE REQUIRE A MANIFEST TO ACCOMPANY THIS SHIPMENT? If "Yes," provide Manifest Number =====>		EPA MANIFEST NUMBER		CONTACT Nate Lowery		TELEPHONE (Include Area Code) 865-850-8898		DATE 7-22-21		AUTHORIZED SIGNATURE <i>[Signature]</i>		TITLE RAD SHIPPER	
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, ID number, and any additional information)		12. DOT LABEL "RADIOACTIVE"		13. TRANSPORT INDEX		14. PHYSICAL AND CHEMICAL FORM		15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBe (MCI)		17. HAZARDOUS CLASS	
Exempt per DOT Regulations 1 Supersack		NA		NA		solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		2.967E+00 (8.0190E-02)		NA	
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		3.1938E+00 (8.6320E-02)		NA	
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		2.8819E+00 (7.7890E-02)		NA	
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		2.1732E+00 (5.7277E-02)		NA	
18. TOTAL WEIGHT OR VOLUME (Use appropriate units)		19. IDENTIFICATION NUMBER OF PACKAGE											
6807 lbs.		FSU Bag 3											
7306 lbs.		FSU Bag 4											
6596 lbs.		FSU Bag 5											
4822 lbs.		FSU Bag 7											
FOR CONSIGNEE USE ONLY				20. TERMS AND CONDITIONS									
<input type="checkbox"/> Record Waste Description Inadequate <input type="checkbox"/> Contamination or Leakage Detected <input type="checkbox"/> Unexpected Exposure Rates Detected <input type="checkbox"/> Labels, Markings, etc. Inadequate <input type="checkbox"/> Container Integrity Inadequate <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Violations Detected on this Shipment				A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material ___ is (or) ___ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and certification as required by 40 CFR 268.1. B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license. D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.									

FORM 540 (03-06)

Matt Jensen
7/22/2021

IRL 924

FORM 540 UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER EnergySolutions, LLC		5. SHIPPER - NAME AND FACILITY Florida State University (RSI) / Energy Solutions 2525 Pottsdamer Road Tallahassee, FL 32310		SHIPPER I.D. NUMBER 0995-01-0001 <input type="checkbox"/> COLLECTOR <input type="checkbox"/> PROCESSOR <input checked="" type="checkbox"/> GENERATOR TYPE (Specify) 0		7. FORM 540 AND 540A PAGE 1 OF 1 PAGE(S) FORM 541 AND 541A 2 PAGE(S) FORM 542 AND 542A None PAGE(S) ADDITIONAL INFORMATION None PAGE(S)		8. MANIFEST NUMBER (Use this number on all continuation pages) 0995-01-0001											
1. EMERGENCY TELEPHONE NUMBER 18004249300 (Include Area Code)		Utah Generator Site Access Permit No. 2103011202		SHIPMENT NUMBER 0995-01-0001		9. CONSIGNEE - Name and Facility EnergySolutions, LLC Clive Disposal Site (Bulk Waste Facility) Interstate 80, Exit 49 Clive, UT 84029		CONTACT Security Department TELEPHONE (Include Area Code) (801)649-2175 DATE 7-26-2021											
ORGANIZATION Chemtrac (CCN 806528)		6. CARRIER - Name and Address Hittman Transport Services Inc. 1500 Bear Creek Road Oak Ridge, Tn 37830		EPA I.D. NUMBER SHIPPING DATE 07/22/2021		SIGNATURE - Authorized consignee acknowledging waste receipt <i>[Signature]</i>		10. CERTIFICATION I hereby certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for storage, handling, and disposal as prescribed in accordance with the requirements of 10 CFR parts 26 and 61, or equivalent state regulations.											
2. IS THIS AN 'EXCLUSIVE USE' SHIPMENT? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST 3		CONTACT NAME: R. Smith ADDRESS: (Include Area Code) 865-880-8898 SIGNATURE - Authorized carrier acknowledging waste receipt <i>[Signature]</i>		DATE 07/22/21		AUTHORIZED SIGNATURE RAD SHIPPER DATE 7/22/21											
DOES THIS REGULATED WASTE REQUIRE A MANIFEST ACCOMPANY THIS SHIPMENT? If "Yes," provide Manifest Number =====>		EPA MANIFEST NUMBER 11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)		12. DOT LABEL "RADIOACTIVE" NA		13. DOT REPORT INDEX NA		14. PHYSICAL AND CHEMICAL FORM Solid Oxide		15. INDIVIDUAL RADIONUCLIDES C-14 Cs-137 Eu-152m H-3 Sr-90		16. TOTAL PACKAGE ACTIVITY Bq Ci		17. ICA/SCC CLASS NA		18. TOTAL WEIGHT OR VOLUME (Use appropriate units)		19. IDENTIFICATION NUMBER OF PACKAGE	
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		3.4096E+00 (9.2150E-02)		NA		7519 lbs		FSU Bag 1			
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		3.2053E+00 (8.6630E-02)		NA		7340 lbs		FSU Bag 2			
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		3.4672E+00 (9.3600E-02)		NA		7925 lbs		FSU Bag 6			
FOR CONSIGNEE USE ONLY <input type="checkbox"/> Record Waste Description Inadequate <input type="checkbox"/> Contamination or Leakage Detected <input type="checkbox"/> Unexpected Exposure Rates Detected <input type="checkbox"/> Labels, Markings, etc. Inadequate <input type="checkbox"/> Container Integrity Inadequate <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Violations Detected on this Shipment										20. TERMS AND CONDITIONS A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material is (or) is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1. B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC. C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license. D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.									

FORM 540 (03-06)

Matt Senison
7/22/2021

**STATE OF FLORIDA
BUREAU OF RADIATION CONTROL
NOTIFICATION OF LOW-LEVEL RADIOACTIVE WASTE SHIPMENT**

A. Notification

Shipment number TBD 21073

1. Date of Notification: 7-15-2021 Notification time 5:40 pm.
2. Shippers Name: Energy Solutions FAMU-FSU College of Engineering
2525 Pottsdamer St
3. Shippers address: 299 S Main St STE 1700, Salt Lake City, UT 84111 Tallahassee, FL 32310
4. Shippers contact: Mark Lewis Shippers phone: 803-960-3619 Andy Wright
620-205-7687
5. Carrier name: Hittmans Transportation Carrier phone 865-220-5818
6. Scheduled Departure Date: 7-22-2021 Departure time: 1:30 pm. 1:00 PM

7. Proposed Route to
LLRW Facility:

See Attached

8. Notification received by: Copies To:
9. Comments:

B. Arrival at LLRW Facility

Arrival notification date: Arrival Notification time

Disposal site arrival date: Arrival Notification by:

32301 Tallahassee, FL to Clive, IA - No Stops

Miles: 2,179.5 Time: 33:38

Truck Config: Weight: 80,000lbs Height: 10ft 0in Length: 70ft 0in Width: 98in Axles: 5 LCV

North America, Practical, National Network, 53' Trailer, Borders Open, Highway Only, Radioactive, Discount Tolls USD

State/ Country	Route	Miles	Hours	Interchange	Leg Miles	Leg Hours	Total Miles	Total Hours	Leg Tolls	Toll Plaza	Restriction
<i>Origin: 32301 Tallahassee, FL, Leon</i>			<i>0:00</i>								
FL	North US-27	0.0	0:00	+ US-27 US-27	0.0	0:00	0.0	0:00	0.00		
FL	North US-27	0.8	0:01	+ US-27 US-27	0.8	0:01	0.8	0:01	0.00		
FL	North US-27	21.3	0:23	(to FL/GA State Line)	22.1	0:24	22.1	0:24	0.00		
GA	North US-27	18.6	0:20	+ US-27 Ramp	40.7	0:44	40.7	0:44	0.00		
GA	Left Ramp	0.2	0:01	+ Ramp US-27	40.9	0:45	40.9	0:45	0.00		
GA	North US-27	2.7	0:02	+ US-27 Ramp	43.7	0:47	43.7	0:47	0.00		
GA	Keep right Ramp	0.2	0:01	+ Ramp US-27 Busi...	43.8	0:48	43.8	0:48	0.00		
GA	North US-27 Business	0.1	0:00	+ US-27 Business U...	44.0	0:48	44.0	0:48	0.00		
GA	West US-84	30.8	0:34	(to GA/AL State Line)	74.8	1:22	74.8	1:22	0.00		
AL	West US-84	4.5	0:05	+ US-84	79.3	1:27	79.3	1:27	0.00		
AL	West US-84	3.7	0:04	+ US-84 Route 81	83.0	1:31	83.0	1:31	0.00		
AL	West US-84	11.3	0:12	+ US-84 Ramp	94.3	1:44	94.3	1:44	0.00		
AL	Keep right Ramp	0.1	0:00	+ Ramp US-84	94.4	1:44	94.4	1:44	0.00		
AL	West US-84	3.4	0:04	+ US-84	97.8	1:47	97.8	1:47	0.00		
AL	West US-84	2.1	0:02	+ US-84 Ramp	99.9	1:50	99.9	1:50	0.00		
AL	Keep right Ramp	0.0	0:00	+ Ramp US-231	100.0	1:50	100.0	1:50	0.00		
AL	North US-231	20.7	0:23	+ US-231	120.6	2:12	120.6	2:12	0.00		
AL	North US-231	2.5	0:03	+ US-231 AL-27	123.2	2:15	123.2	2:15	0.00		
AL	North US-231	19.5	0:21	+ US-231 Route 36	142.7	2:36	142.7	2:36	0.00		
AL	North US-231	10.4	0:11	+ US-231 AL-53	153.0	2:48	153.0	2:48	0.00		
AL	North US-231	11.0	0:12	+ US-231 AL-10	164.0	3:00	164.0	3:00	0.00		
AL	North US-231	30.2	0:33	+ US-231 US-80	194.2	3:33	194.2	3:33	0.00		
AL	West US-80	5.4	0:06	+ US-80 Ramp	199.6	3:39	199.6	3:39	0.00		
AL	Keep right Ramp	0.2	0:01	+ Ramp I-65	199.8	3:39	199.8	3:39	0.00		
AL	North I-65	118.8	1:46	+ I-65	318.7	5:25	318.7	5:25	0.00		
AL	North I-65	16.1	0:14	+ I-65 US-31	334.7	5:39	334.7	5:39	0.00		
AL	North I-65	63.1	0:56	(to AL/TN State Line)	397.8	6:35	397.8	6:35	0.00		
TN	North I-65	1.3	0:01	+ I-65 TN-3	399.1	6:36	399.1	6:36	0.00		
TN	North I-65	81.1	1:12	+ I-65 Exit 82B	480.1	7:48	480.1	7:48	0.00		
TN	Keep right Exit 82B	0.5	0:01	+ Exit 82B I-40	480.6	7:49	480.6	7:49	0.00		
TN	East I-40	0.6	0:01	+ I-40 Exit 211A	481.2	7:50	481.2	7:50	0.00		
TN	Keep left Exit 211A	0.4	0:01	+ Exit 211A I-24	481.7	7:51	481.7	7:51	0.00		
TN	West I-24	4.5	0:04	+ I-24 Exit 88B	486.1	7:55	486.1	7:55	0.00		
TN	Keep left Exit 88B	0.9	0:03	+ Exit 88B I-24	487.0	7:58	487.0	7:58	0.00		
TN	West I-24	44.0	0:39	(to TN/KY State Line)	531.0	8:37	531.0	8:37	0.00		
KY	West I-24	93.2	1:26	(to KY/IL State Line)	624.2	10:03	624.2	10:03	0.00		
IL	West I-24	38.0	0:35	+ I-24 Exit 44B	662.2	10:38	662.2	10:38	0.00		
IL	Keep right Exit 44B	0.4	0:01	+ Exit 44B I-57	662.6	10:39	662.6	10:39	0.00		
IL	North I-57	51.8	0:48	+ I-57 Exit 96	714.4	11:27	714.4	11:27	0.00		
IL	Keep left Exit 96	0.7	0:02	+ Exit 96 I-64	715.1	11:29	715.1	11:29	0.00		
IL	West I-64	65.0	1:00	+ I-64	780.1	12:29	780.1	12:29	0.00		
IL	West I-64	5.0	0:05	+ I-64 Ramp	785.1	12:34	785.1	12:34	0.00		
IL	Keep right Ramp	0.4	0:01	+ Ramp I-55	785.5	12:35	785.5	12:35	0.00		
IL	South I-55	2.3	0:03	+ I-55 I-55	787.8	12:38	787.8	12:38	0.00		
IL	South Poplar Street Brg - I-55	0.2	0:00	(to IL/MO State Line)	788.0	12:38	788.0	12:38	0.00		
MO	South Poplar Street Brg - I-55	0.2	0:00	+ I-55 Ramp	788.2	12:38	788.2	12:38	0.00		
MO	Keep right Ramp	0.4	0:01	+ Ramp I-70	788.6	12:39	788.6	12:39	0.00		
MO	West I-70	129.2	1:56	+ I-70	917.8	14:35	917.8	14:35	0.00		
MO	West I-70	96.5	1:25	+ I-70 US-40	1014.3	16:01	1014.3	16:01	0.00		
MO	West I-70	8.4	0:07	+ I-70 I-70	1022.7	16:08	1022.7	16:08	0.00		

State/ Country	Route	Miles	Hours	Interchange	Leg Miles	Leg Hours	Total Miles	Total Hours	Leg Tolls	Toll Plaza	Restriction
MO	West Presidential Pkwy - I...	7.4	0:07	+ I-70 Exit 8B	1030.1	16:15	1030.1	16:15	0.00		
MO	Keep right Exit 8B	0.5	0:02	+ Exit 8B I-435	1030.6	16:16	1030.6	16:16	0.00		
MO	North I-435	31.6	0:28	+ I-435	1062.2	16:44	1062.2	16:44	0.00		
MO	North I-29	38.9	0:34	+ I-29 I-435	1101.1	17:18	1101.1	17:18	0.00		
MO	North I-29	10.6	0:09	+ I-29 US-71	1111.7	17:28	1111.7	17:28	0.00		
MO	North I-29	56.7	0:50	(to MO/IA State Line)	1168.4	18:18	1168.4	18:18	0.00		
IA	North I-29	9.7	0:09	+ I-29 Exit 10	1178.2	18:26	1178.2	18:26	0.00		
IA	Keep right Exit 10	0.3	0:01	+ Exit 10 IA-2	1178.5	18:27	1178.5	18:27	0.00		
IA	West IA-2	3.2	0:03	(to IA/NE State Line)	1181.7	18:31	1181.7	18:31	0.00		
NE	West NE-2	4.1	0:04	+ NE-2	1185.8	18:35	1185.8	18:35	0.00		
NE	West NE-2	45.8	0:49	+ NE-2 Ramp	1231.6	19:24	1231.6	19:24	0.00		
NE	Keep left Ramp	0.2	0:01	+ Ramp NE-2	1231.8	19:24	1231.8	19:24	0.00		
NE	West NE-2	1.1	0:02	+ NE-2 Ramp	1232.9	19:26	1232.9	19:26	0.00		
NE	Keep right Ramp	0.3	0:01	+ Ramp US-77	1233.2	19:27	1233.2	19:27	0.00		
NE	North US-77 - Homestead...	2.0	0:02	+ US-77 Ramp	1235.1	19:29	1235.1	19:29	0.00		
NE	Keep right Ramp	0.2	0:01	+ Ramp US-6	1235.3	19:29	1235.3	19:29	0.00		
NE	West US-6	0.3	0:00	+ US-6 Ramp	1235.7	19:30	1235.7	19:30	0.00		
NE	Keep right Ramp	0.5	0:02	+ Ramp I-80	1236.2	19:31	1236.2	19:31	0.00		
NE	West I-80	292.8	4:18	+ I-80 Ramp	1529.0	23:50	1529.0	23:50	0.00		
NE	Keep right Ramp	0.5	0:02	+ Ramp I-80	1529.5	23:51	1529.5	23:51	0.00		
NE	West I-80	80.9	1:11	+ I-80	1610.4	25:03	1610.4	25:03	0.00		
NE	West I-80	21.0	0:19	(to NE/WY State Line)	1631.4	25:21	1631.4	25:21	0.00		
WY	West I-80	32.0	0:28	+ I-80	1663.4	25:49	1663.4	25:49	0.00		
WY	West I-80	53.5	0:47	+ I-80 US-30	1717.0	26:37	1717.0	26:37	0.00		
WY	West I-80	100.6	1:29	+ I-80 US-30	1817.6	28:05	1817.6	28:05	0.00		
WY	West I-80	28.5	0:25	+ I-80 US-287	1846.1	28:31	1846.1	28:31	0.00		
WY	West I-80	87.7	1:17	+ I-80 WY-789	1933.8	29:48	1933.8	29:48	0.00		
WY	West I-80	32.4	0:29	+ I-80 US-191	1966.2	30:16	1966.2	30:16	0.00		
WY	West I-80	66.7	0:59	(to WY/UT State Line)	2032.9	31:15	2032.9	31:15	0.00		
Warning * I-80 * : Default_Set : Geofence_0											
UT	West I-80	49.5	0:44	+ I-80	2082.4	31:59	2082.4	31:59	0.00		
Warning * I-80 * : Default_Set : Geofence_0											
UT	West I-80	23.8	0:22	+ I-80 Ramp	2106.2	32:21	2106.2	32:21	0.00		
Warning * Ramp * : Default_Set : Geofence_0											
UT	Keep right Ramp	0.7	0:02	+ Ramp Ramp	2107.0	32:23	2107.0	32:23	0.00		
Warning * Ramp * : Default_Set : Geofence_0											
UT	Keep right Ramp	1.3	0:04	+ Ramp UT-201	2108.3	32:27	2108.3	32:27	0.00		
Warning * UT-201 * : Default_Set : Geofence_0											
UT	West UT-201 - 2100 South...	16.2	0:20	+ UT-201 Ramp	2124.5	32:46	2124.5	32:46	0.00		
Warning * Ramp * : Default_Set : Geofence_0											
UT	Keep right Ramp	0.5	0:02	+ Ramp I-80	2125.0	32:48	2125.0	32:48	0.00		
Warning * I-80 * : Default_Set : Geofence_0											
UT	West I-80	52.7	0:46	+ I-80 Local	2177.7	33:35	2177.7	33:35	0.00		
UT	Left Local	1.8	0:03	Clive, UT	2179.5	33:38	2179.5	33:38	0.00		
Arrive Loaded											
Dest: Clive, UT, Tooele			0:00		2179.5	33:38	2179.5	33:38	0.00		



BUREAU OF RADIATION CONTROL

LOW LEVEL RADIOACTIVE WASTE SHIPMENT INSPECTION REPORT

0710-01-0001
0995-01-0002

Shipment Number: 21073
Date/Time Inspection Began: 7/22/21 1240 Initial Dosimeter Reading: 0.0 mR
Time Inspection Ended/Carrier Departed: 1400 Final Dosimeter Reading: 0.0 mR
Shipment ETA at LLRW Facility: 7/25/21 2000 {FAC 64E-5.1508(3)}

A. GENERAL SHIPPING INFORMATION:

Shipper's Name: FAMU - FSU College of Eng. Contact Person: Andy Wright
Carrier's Name: Hittman Transportation Routing Verified: Yes or No
Driver's Name: Marty Bertram, Ricky Smith Tractor # 3022, 330 Trailer # L00013, 924
Total Number of Each Package Type(s): Method of Shipment: 540-2

Casks (Type/ID) _____
 Drums (Type) _____
 Boxes (Type) _____
 Sea Land Containers _____
 Other (Specify) 4x8x4 Canvas Bags Non-Exclusive Use
 Exclusive Use

2 shipments, 2 trucks

PERMIT VERIFICATION {FAC 64E-5.1509}

- Does Carrier possess a valid RAM transport permit from the Florida Department of Health? Y or N
 - Did the Carrier bring any Low Level Radioactive Waste into the State of Florida? Y or N
- If YES, Are proper shipping papers present? Y or N

B. RADIATION/CONTAMINATION SURVEY (transport vehicle/package): (All readings in mR/hr)

	2 Meters	<u>0.01</u>	<u>0.01</u>	
	Surface	<u>0.02</u>	<u>0.01</u>	
Cab/Sleeper	Surface	<u>0.01</u>	Bottom Surface of Trailer	Surface <u>0.01</u>
	2 Meters	<u>0.01</u>	<u>0.01</u>	2 Meters <u>0.01</u>
	Surface	<u>0.01</u>	<u>0.01</u>	
	2 Meters	<u>0.01</u>	<u>0.01</u>	

Same for both trucks.

Exclusive Use:

- LQ: ≤ 0.5 mR/hr at any point on the package surface. {173.421(b)}
- ≤ 1000 mR/hr on any package surface (closed vehicles only). {173.441(b)(1)}
- ≤ 200 mR/hr on any package surface (open vehicles only). {173.441(b)(1)}
- ≤ 200 mR/hr at any point on the outer surfaces of the vehicle. {173.441(b)(2)}
- ≤ 10 mR/hr at 2 meters (6.6 feet) from the outer lateral surfaces of the vehicle. {173.441(b)(3)}
- ≤ 2 mR/hr in normally occupied space of vehicle (cab or sleeper). {173.441(b)(4)}

Non-Exclusive Use:

- LQ: ≤ 0.5 mR/hr at package surface. {173.421(b)}
- ≤ 200 mR/hr on any package surface. {173.441(a)}
- Transport Index (TI) ≤ 10 for any package. {173.441(a)}
- Sum of all TI's does not exceed 50. {173.441(d)(1)}

Highest removable radioactive contamination detected on vehicle or packages: \rightarrow Bkgd dpm/cm² {173.443}
• wipe an area of 300 cm² ($\approx 6'' \times 8''$) • dpm/cm² = (cpm - bkg cpm) + 3

Instrument	Serial Number	Date of Calibration	Background
<u>Ultra Radiac</u>	<u>123520737</u>	<u>24 June 2021</u>	<u>0.01</u> mR/hr
<u>Ludlum 2401-P</u>	<u>225930</u>	<u>24 June 2021</u>	<u>~50</u> cpm

C. SECURITY SEALS AND PACKAGE INTEGRITY:

- Shipment braced and blocked. {173.448(a), 177.842(d)}
- Lids secure, no visible leakage or damage. {173.24(a,b), 173.475(b,c)}
- Security Seal(s) on each package or Exclusive Use closed vehicle. (LSA exempt) {173.412(a)}

D. LABELING, MARKING and PLACARDING:

- Non-exclusive use packages marked with Name and Address of consignor or consignee. {172.301(d)} (LQ Ex.)
- Gross weight for package >110 lbs marked on outside of package. {172.310(a)} (LQ Exempt)
- Package(s) marked "Type A" or "Type B" and "USA" as appropriate. {172.310(b-e)} (LQ Exempt)
- Package(s) labeled White-I, Yellow-II or Yellow-III as appropriate - 2 opposite sides with Contents, Activity and Transport Index. (LSA Exclusive Use, LQ exempt) Labeled for any other hazard class. {172.403(a-c,f,g)}
- Placards on each end and each side of vehicle for Yellow-III, LSA/SCO Exclusive Use and HRCQ (except unconcentrated U or Th ore) (HRCQ requires square backing panel). {172.504, .507, .527}
- Ltd Qty packages marked "Radioactive" on outside of inner package or on outside of package and marked with UN ID#. {173.421(d); 173.422(a)(1)}
- LSA/SCO Exclusive Use packages marked "Radioactive-LSA or Radioactive-SCO" as appropriate and "RQ" as required. {173.427(a)(6)(vi)}
- Waste Class A, B or C marked on package(s) for burial. {10 CFR 61.57}

E. SHIPPING PAPER DOCUMENTATION:

- Proper UN or NA Identification Number(s) Exempt per DOT Regulations ^{1 Supersack} {172.202(a)(1)} **540-11**
- Proper Shipping Name(s), Hazard Class(es), ("RQ" and Hazardous Substances) **540-11**
- Exempt per DOT Regulations 1 Supersack {172.202(a)(1-3), 172.203(c)(2)}
- Name of each radionuclide present. {172.203(d)(1)} (LQ Exempt) **540-15**
- Description of Physical and Chemical Form of the material. {172.203(d)(2)} (LQ Exempt) **540-14**
- Activity contained in each package. {172.203(d)(3)} (LQ Exempt) **540-16**
- Category of label applied to each package in the shipment. {172.203(d)(4)} (LQ Exempt) **540-12**
- Transport Index assigned to Yellow-II or Yellow-III. {172.203(d)(5)}, NA Total T.I. (LQ Exempt) **540-13**
- "Fissile Excepted" or criticality safety index for fissile packages. {172.203(d)(6)} (LQ Exempt) **540-11**
- Package identification marking noted. {172.203(d)(7)} (LQ Exempt) **540-19**
- Indication that shipment is consigned as exclusive use. {172.203(d)(9)} (LQ Exempt) **540-2**
- "Highway Route Controlled Quantity" or "HRCQ" listed with description; must be a Yellow-III.
- Obtain copy of advance route plan and driver certification. {172.203(d)(10)}
- Shipper's Certification - Correct wording, signature, date. {172.204} (LQ Exempt) **540-10**
- Emergency Response Information. {172.600, .602, .604} (LQ Exempt). **540-1**
- Exclusive Use Only - Written instructions provided to the carrier. Obtain copy. {173.441(c)}
- Total Disposal Volume 11,6057, 10,4786 ft³/m³ (FAC 64E-5.1508(6)) **541-1**
- Total Activity (all nuclides) 1.162E+01, 1.0078E+01 MBq. **541-1**
- Obtain copies of all shipping papers including final exit surveys. {172.200, 173.421(a), 175.33, 176.30, 177.817(a)}.
- Shipping paper accessibility verified (occupied/unoccupied vehicle). {177.817(e)}

F. RESULTS OF INSPECTION:

Violations/Comments: None Observed

Inspector's initials as used on the bill of lading (Inspector must initial the bill of lading). {FAC 64E-5.1508(4)}

Initials:
MGS

Inspector's Signature: Matthew Guy Simon

Date: 7 22, 2021

FORM 540		EnergySolutions, LLC		5. SHIPPER - NAME AND FACILITY Florida State University (RSU) / Energy Solutions 2525 Pottsdamer Road Tallahassee, FL 32310		SHIPPER I.D. NUMBER 0995-01-0002		7. FORM 540 AND 540A PAGE 1 OF 1 PAGE(S) FORM 541 AND 541A PAGE 2 OF 2 PAGE(S) FORM 542 AND 542A None PAGE(S) ADDITIONAL INFORMATION None PAGE(S)		8. MANIFEST NUMBER (Use this number on all continuation pages) 0995-01-0002							
UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER				Utah Generator Site Access Permit No. 2103011202		SHIPMENT NUMBER 0995-01-0002		9. CONSIGNEE - Name and Facility EnergySolutions, LLC Clive Disposal Site Interstate 80, Exit 49 Clive, UT 84029		CONTACT Security Department TELEPHONE (Include Area Code) (801)649-2175 DATE							
1. EMERGENCY TELEPHONE NUMBER (Include Area Code) 18004249300		3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST 4		6. CARRIER - Name and Address Hittman Transport Services Inc. 1550 Bear Creek Road Oak Ridge, TN 37830		TELEPHONE NUMBER (Include Area Code) 620-205-7687		EPA I.D. NUMBER		10. CERTIFICATION This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation in accordance with the requirements of 40 CFR Parts 261, 262, and 263, as applicable.							
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		EPA MANIFEST NUMBER		Waste Lowary		TELEPHONE (Include Area Code) 865-850-8898		SHIPPING DATE 07/22/2021		SIGNATURE - Authorized consignee acknowledging waste receipt <i>Wright</i>							
ORGANIZATION Chemtrex (CCN806528)		DOER EPA REGULATED WASTE RECEIVING A MANIFEST ACCOMPANY THIS SHIPMENT? If "Yes," provide Manifest Number		SIGNATURE - Authorized generator acknowledging waste receipt <i>Wright</i>		DATE 7-22-21		AUTHORIZED SIGNATURE <i>Wright</i>		TITLE RAD SHIPPER DATE 7/22/21							
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, ID number, and any additional information)		12. DOT LABEL "RADIOACTIVE"		13. TRANSPORT INDEX		14. PHYSICAL AND CHEMICAL FORM		15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBq (mCi)		17. DOT CLASS		18. TOTAL WEIGHT OR VOLUME (Use appropriate units)		19. IDENTIFICATION NUMBER OF PACKAGE	
Exempt per DOT Regulations 1 Supersack		NA		NA		solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		2,967,000 (8.0190E-02)		NA		680 lbs.		FSU Bag 3	
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		3,1938E+00 (8.6320E-02)		NA		7306 lbs.		FSU Bag 4	
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		2,8819E+00 (7.7890E-02)		NA		6596 lbs.		FSU Bag 5	
Exempt per DOT Regulations 1 Supersack		NA		NA		Solid Oxide		C-14 Cs-137 Eu-152m H-3 Sr-90		2,1132E+00 (5.7277E-02)		NA		4862 lbs.		FSU Bag 7	
FOR CONSIGNEE USE ONLY				20. TERMS AND CONDITIONS													
<input type="checkbox"/> Record Waste Description Inadequate <input type="checkbox"/> Contamination or Leakage Detected <input type="checkbox"/> Unexpected Exposure Rates Detected <input type="checkbox"/> Labels, Markings, etc. Inadequate <input type="checkbox"/> Container Integrity Inadequate <input type="checkbox"/> Other <input type="checkbox"/> No Violations Detected on this Shipment				A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material <u> </u> is (or) <input checked="" type="checkbox"/> is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1. B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC. C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license. D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.													

FORM 540 (03-06)

Matt Jensen
7/22/2021

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams)				SOURCE (kg)
			U-233	U-235	Pu	Total	
4	m3 11.6057 t2 409.8500	kg 11595.6361 ton 12.7820	NP	NP	NP	NP	
ACTIVITY							SOURCE (kg)
ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129			
MBq	1.1162E+01	2.1460E+00	4.2946E-01	NP	NP	(kg) NA	
mCi	3.0168E-01	5.6000E-02	1.1607E-02	NP	NP	(tons) NA	

2. MANIFEST NUMBER 0995-01-0002
3. PAGE 1 OF 2 PAGE(S)
4. SHIPPER NAME Florida State University (RSI) / Energy Solutions
SHIPMENT ID NUMBER 0995-01-0002

DISPOSAL CONTAINER DESCRIPTION

WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

5. CONTAINER IDENTIFICATION NUMBER/GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1a)	7. VOLUME (m3) (g3)	8. WASTE AND CONTAINER WEIGHT (kg) (ton)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2)		11. PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C				
					11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 2A)	ALPHA	BETA-GAMMA				WEIGHT % CHELATING AGENT	RADIONUCLIDES	pCi/gm	MBq
FSU Bag 3/0995	19 Super Sack	3.0897	3084.4283	5.0000E-03	<1.6700E-06	<1.6700E-05	22,59-SOLID-HJ		NA	Oxide/NP	NP	C-14 Cs-137 Eu-152m H-3 Sr-90	1.00181E+00 1.00181E+01 4.99285E+00 4.99285E+00 4.99285E+00	1.1433E-01 1.1433E+00 5.6980E-01 5.6980E-01 5.6980E-01	3.0900E-03 3.0900E-02 1.5400E-02 1.5400E-02 1.5400E-02	AU
		109.1160	3.4000	5.0000E-01	<1.0000E+02	<1.0000E+03										
FSU Bag 4/0995	19 Super Sack	3.3195	3313.9461	5.0000E-03	<1.6700E-06	<1.6700E-05	22,59-SOLID-HJ		NA	Oxide/NP	NP	C-14 Cs-137 Eu-152m H-3 Sr-90	1.00183E+00 1.00183E+01 5.00916E+00 5.00916E+00 5.00916E+00	1.2284E-01 1.2284E+00 6.1420E-01 6.1420E-01 6.1420E-01	5.3200E-03 5.3200E-02 1.6600E-02 1.6600E-02 1.6600E-02	AU
		117.2300	3.6530	5.0000E-01	<1.0000E+02	<1.0000E+03										
FSU Bag 5/0995	19 Super Sack	2.9897	2991.8955	5.0000E-03	<1.6700E-06	<1.6700E-05	22,59-SOLID-HJ		NA	oxide/NP	NP	C-14 Cs-137 Eu-152m H-3 Sr-90	9.99372E-01 9.99372E+00 5.01357E+00 5.01357E+00 5.01357E+00	1.1063E-01 1.1063E+00 5.5500E-01 5.5500E-01 5.5500E-01	2.9900E-03 2.9900E-02 1.5000E-02 1.5000E-02 1.5000E-02	AU
		105.5800	3.2980	5.0000E-01	<1.0000E+02	<1.0000E+03										

Note 1: Container Description Codes. For containers/waste requiring disposal in approved structural overpacks the numerical code must be followed by "OP."

1. Wooden Box or Crate	9. Demineralizer
2. Metal Box	10. Gas Cylinder
3. Plastic Drum or Pail	11. Bulk, Unpackaged Waste
4. Metal Drum or Pail	12. Unpackaged Components
5. Metal Tank or Liner	13. High Integrity Container
6. Concrete Tank or Liner	19. Other, Describe in Item 6, or additional page
7. Polyethylene Tank or Liner	
8. Fiberglass Tank or Liner	

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal	29. Demolition Rubble	38. Evaporator Bottoms/Sludges/Concentrates
21. Incinerator Ash	30. Cation Ion-exchange Media	39. Compactible Trash
22. Soil	31. Anion Ion-exchange Media	40. Noncompatible Trash
23. Gas	32. Mixed Bed Ion-exchange Media	41. Animal Carcass
24. Oil	33. Contaminated Equipment	42. Biological Material (except animal carcass)
25. Aqueous Liquid	34. Organic Liquid (except oil)	43. Activated Material
26. Filter Media	35. Glassware or Labware	44. Sealed Source/Device
27. Mechanical Filter	36. Sealed Source/Device	59. Other, Describe in item 11, or additional page
28. EPA or State Hazardous	37. Paint or Plating	

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S," and the media vendor and brand name must also be identified.

in Item 13, Code 100=NONE REQUIRED.

Solidification	B4. Vinyl Ester Styrene
B0. Cement	B9. Other, Describe in item 13, or additional page
B1. Concrete	B2. Bitumen
B3. Vinyl Chloride	100. None Required.

Matt Semison
7/22/2021

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

EnergySolutions, LLC

2. MANIFEST NUMBER 0995-01-0002

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

3. PAGE 2 OF 2 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION				WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER											16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION <small>(See Note 1 & Note 1A)</small>	7. VOLUME <small>(m3) (ft3)</small>	8. WASTE AND CONTAINER WEIGHT <small>(kg) (ton)</small>	9. SURFACE RADIATION LEVEL <small>(mSv/hr) (mrem/hr)</small>	10. SURFACE CONTAMINATION <small>(MBq/100 cm2) (dpm/100cm2)</small>		11. PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION				
					ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR <small>(See Note 2 & Note 2A)</small>	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER <small>(m3) (FT3)</small>	13. SOLIDIFICATION OR STABILIZATION MEDIA <small>(See Note 3)</small>			INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
FSU Bag 7/0995	19 Super Sack	3.5996	2205.3662	5.0000E-03	<1.6700E-06	<1.6700E-05	22.59-SOLID-HJ	2.2067	NA	Oxide/NP	NF	C-14	1.00075E+00	8.1659E-02	2.2070E-03	AU
		127.1200	2.4310	5.0000E-01	<1.0000E+02	<1.0000E+03		77.9300					Cs-137	1.00075E+01	8.1659E-01	
												Eu-152m	4.98786E+00	4.0700E-01	1.1000E-02	
												H-3	4.98786E+00	4.0700E-01	1.1000E-02	
												Sr-90	4.98785E+00	4.0700E-01	1.1000E-02	
												Subtotal	2.1192E+00	5.7277E-02		
												Total	2.1192E+00	5.7277E-02		
Shipment Totals		12.5985	11595.6361											1.1162E+01	3.0168E-01	
		459.0400	12.7820													

Matt Serison
7/22/2022

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
ISOTOPES REPORT

For Manifest # 0995-01-0002
EnergySolutions, LLC

Isotope	Total Activity	
	(MBq)	(mCi)
C-14	4.2946E-01	1.1607E-02
Cs-137	4.2946E+00	1.1607E-01
Pu-152m	2.1460E+00	5.8000E-02
H-3	2.1460E+00	5.8000E-02
Sr-90	2.1460E+00	5.8000E-02

Matt Serison

7/27/2021

Attachment 5.6 (Continued)
Broker Inventory and Inspection Survey of Packages

PACKAGE ID	mR/hr contact	mR/hr @ 1m	CONTAMINATION	WEIGHT	ACTIVITY () Ci () mCi	CLASS ABC-SU	CONTAINER SPECS	LABELING MARKING	CONTENTS INSPECTED	LOADED
FSU Bag 1	<0.1	<0.1	ND beta/gamma ND alpha	7818 lbs	N/A	AU	Super sack 5 cubic yards	N/A	Bags are sealed. o/s inspected sat	Shipment # 0995-01-0001
FSU Bag 2	<0.1	<0.1	ND beta/gamma ND alpha	7340 lbs	N/A	AU	Super sack 5 cubic yards	N/A	Bags are sealed. o/s inspected sat	Shipment # 0995-01-0001
FSU Bag 3	<0.1	<0.1	ND beta/gamma ND alpha	6890 lbs	N/A	AU	Super sack 5 cubic yards	N/A	Bags are sealed. o/s inspected sat	Shipment # 0995-01-0002
FSU Bag 4	<0.1	<0.1	ND beta/gamma ND alpha	7306 lbs	N/A	AU	Super sack 5 cubic yards	N/A	Bags are sealed. o/s inspected sat	Shipment # 0995-01-0002
FSU Bag 5	<0.1	<0.1	ND beta/gamma ND alpha	6596 lbs	N/A	AU	Super sack 5 cubic yards	N/A	Bags are sealed. o/s inspected sat	Shipment # 0995-01-0002
FSU Bag 6	<0.1	<0.1	ND beta/gamma ND alpha	7925 lbs	N/A	AU	Super sack 5 cubic yards	N/A	Bags are sealed. o/s inspected sat	Shipment # 0995-01-0001
FSU Bag 7	<0.1	<0.1	ND beta/gamma ND alpha	4862 lbs	N/A	AU	Super sack 5 cubic yards	N/A	Bags are sealed. o/s inspected sat	Shipment # 0995-01-0002


Survey Performed by: Gregory A. King  Shipment # 0995-01-0001/0002

Date 07/21/2021

Instrument Type LM-177 179433/ LM-2241-2 131410/ Eber 6112B 150542
 Calibration Date Due 07/15/2022 07/15/2022 12/02/2021

Page 1 of 1

Comments: Background dose rates <0.1. Background Beta /gamma activity <=100dpm. Background alpha 5.8dpm


7/22/2021