APPENDIX G
EnviroBlend® SDS

SAFETY DATA SHEET

EnviroBlend
Metal Waste Treatment by Premier Magnesia, LLC

Issue Date 02-Dec-2014   **Revision Date** 01-12-2022   **Version** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name   ENVIROBLEND® CS

Other means of identification

Product Code   ENVIROBLEND® CS
Synonyms   None

Recommended use of the chemical and restrictions on use

Recommended Use   A specialty blend of magnesium oxide, magnesium hydroxide used for heavy metals remediation.
Uses advised against   No information available

Details of the supplier of the safety data sheet
Manufacturer Address
Premier Magnesia, LLC, 75 Giles Place, Waynesville, NC 28786

Emergency telephone number
Company Phone Number   828-452-4784
24 Hour Emergency Phone Number   Chemtrec 1-800-424-9300
Emergency Telephone   Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
Product dust is classified as a "nuisance particulate, not otherwise regulated" as specified by ACGHI and OSHA. The excessive, long-term inhalation of mineral dusts may contribute to the development of industrial bronchitis, reduced breathing capacity, and may lead to the increased susceptibility to lung disease. Contact with water may cause product to swell, generate some heat and burst its container. Low toxicity.

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Emergency Overview

The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance Fine powder to fine granular   **Physical state** Solid   **Odor** Odorless

Causes mild irritation to the eyes
Low toxicity by skin contact.
Chronic overexposure by inhalation of airborne particulate may irritate upper respiratory system as well as the throat.
Ingestion is an unlikely route of exposure. If ingested in large amounts it may cause irritation, nausea, vomiting, diarrhea, abdominal pain, black stool, pink urine, coma and possibly death.

Hazards not otherwise classified (HNOC)
Other Information
Unknown Acute Toxicity   100% of the mixture consists of ingredient(s) of unknown toxicity

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secret
Magnesium Oxide	1309-48-4	70	
Magnesium Hydroxide	1309-42-8	30	

4. FIRST AID MEASURES

First aid measures

Eye contact   Rinse thoroughly with plenty of water, also under the eyelids.

Skin Contact   Wash with soap and water. Low toxicity by skin contact.

Inhalation   Move victim to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Ingestion   Ingestion is an unlikely route of exposure. If ingested in sufficient quantity and victim is conscious, give 1-2 glasses of water or milk. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms   No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians   Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Water reacts with magnesium oxide producing magnesium hydroxide and heat. Do not allow water to get inside containers: reaction with water will cause product to swell, generate heat, and burst its container. If contact is unavoidable, use sufficient water to safely absorb the heat that may be generated.

Specific hazards arising from the chemical
No information available.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge   None.

Protective equipment and precautions for firefighters
Firefighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions   Ensure adequate ventilation, especially in confined areas.

Environmental precautions

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Environmental precautions	See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Carefully clean up and place material into a suitable container, being careful to avoid creating excessive dust. If conditions warrant, clean up personnel should wear approved respiratory protection, gloves and goggles to prevent irritation from contact and/or inhalation.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Use personal protective equipment as required.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Avoid generation of dust. Do not allow water to get inside containers; reaction with water will cause product to swell, generate heat and burst its container. Exposed, unprotected magnesium oxide will absorb moisture and carbon dioxide from the air.
Incompatible materials	Magnesium Oxide component is soluble in aqueous acids generating heat and steam; violent reaction or ignition with interhalogens (e.g., bromine pentifluoride; chlorine trifluoride). Incandescent reaction with phosphorus pentachloride.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	**ACGIH TLV**	**OSHA PEL**	**NIOSH IDLH**
Magnesium Oxide 1309-48-4	TWA: 10 mg/m^3 inhalable fraction	TWA: 15 mg/m^3 fume, total particulate (vacated) TWA: 10 mg/m^3 fume and total particulate	IDLH: 750 mg/m^3 fume

NIOSH IDLH Provide workers with NIOSH approved respirators in accordance with requirements of 29 CFR 1910. 134 for level of exposure incurred.

Appropriate engineering controls

Engineering Controls	Provide sufficient ventilation, in both volume and air flow patterns to control mist/dust concentrations below allowable exposure limits. Showers. Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye/face protection	Avoid contact with eyes. The use of eye protection is recommended.
Skin and body protection	The use of eye protection, gloves and long sleeve clothing is recommended.
Respiratory protection	Provide workers with NIOSH approved respirators in accordance with requirements of 29 CFR 1910. 134 for level of exposure incurred.
General Hygiene Considerations	Wash hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

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Physical state	Solid		
Appearance	Fine powder to fine granular	**Odor**	Odorless
Color	Brownish	**Odor threshold**	No information available

Property	**Values**	**R e m a r k s • M e t h o d**
pH	10-11	
Melting point/freezing point	Melting pt >2100 °C Melting pt >3800 °F	
Boiling point / boiling range	No information available	
Flash point	No information available	
Evaporation rate	Not Applicable	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	3.56 g/cc	
Water solubility	Slight <1%	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	70-80lb/ft3

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

   Hazardous polymerization   Hazardous polymerization does not occur.

Conditions to avoid
Extremes of temperature and direct sunlight.

Incompatible materials
Magnesium Oxide component is soluble in aqueous acids generating heat and steam; violent reaction or ignition with interhalogens (e.g., bromine pentifluoride; chlorine trifluoride). Incandescent reaction with phosphorus pentachloride.

Hazardous Decomposition Products
Heat and steam.

11. TOXICOLOGICAL INFORMATION

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Information on likely routes of exposure

Product Information	Magnesium Oxide # 1309-48-4 Magnesium Hydroxide #1309-42-8 Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation	Inhalation of fume (not MgO dust particulate) produced upon decomposition of magnesium compounds can produce a febrile reaction and leukocytosis in humans.
Eye contact	Irritating to eyes.
Skin Contact	Low toxicity by skin contact.
Ingestion	Ingestion is an unlikely route of exposure. If ingested in large amounts it may cause irritation, nausea, vomiting, diarrhea, abdominal pain, black stool, pink urine, coma and possibly death.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Magnesium Hydroxide 1309-42-8	= 8500 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms	No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity	100% of the mixture consists of ingredient(s) of unknown toxicity

12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available on any adverse effects of this material on the environment

100% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects   No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	This product does not exhibit any characteristics of a hazardous waste. The product is suitable for landfill disposal. Follow all applicable federal, state and local regulations for safe disposal.

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Contaminated packaging   Do not reuse container.

14. TRANSPORT INFORMATION

DOT   Not regulated Not regulated by DOT as a hazardous material. No hazard class, label or placard required, no UN or NA number assigned.

15. REGULATORY INFORMATION

International Inventories

TSCA   Complies

Chemical Name	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Magnesium Oxide	X	X	X	X	X	X	X	X
Magnesium Hydroxide	X	X	X	X	X	X	X	X

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
This product does not contain any substances reportable under Sections 302, 304 or 313. Sections 311 and 312 do apply. (Routine Reporting and Chemical Inventories)

SARA 311/312 Hazard Categories
Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

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US State Regulations

California Proposition 65
This product does not contain chemicals known to the State of California to cause cancer, birthdefects or other reproductive toxins.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Magnesium Oxide 1309-48-4	X	X	X

U.S. EPA Label Information
EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

NFPA   **Health hazards** 1   **Flammability** 0   **Instability** 0   **Physical and Chemical Properties** -

HMIS   **Health hazards** 0   **Flammability** 0   **Physical hazards** 0   **Personal protection** X

Issue Date   02-Dec-2014
Revision Date   01-12-2022
Revision Note
No information available
Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

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APPENDIX H
Drone Photo Log

Photo 01: Excavation aerial taken October 10, 2024, looking northwest.

Photo 02: Excavation aerial taken October 28, 2024, looking northwest.

Haley & Aldrich, Inc.
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Photo 03: Excavation aerial taken November 7, 2024, looking northwest.

Photo 04: Stockpile aerial taken November 7, 2024, looking southeast.

Photo 05: Excavation aerial taken December 5, 2024, looking northwest.

Photo 06: Repository aerial taken December 5, 2024, looking northwest.

Photo 07: Excavation aerial taken January 8, 2025, looking northwest.

Photo 08: Repository aerial taken January 8, 2025, looking northwest.

Photo 09: Excavation aerial taken January 23, 2025, looking northwest.

Photo 10: Repository aerial taken January 23, 2025, looking northwest.

Photo 11: Excavation aerial taken February 13, 2025, looking northwest.

Photo 12: Repository aerial taken February 13, 2025, looking northwest.

Photo 13: Excavation aerial taken March 26, 2025, looking northwest.

Photo 14: Repository aerial taken March 26, 2025, looking northwest.

Haley & Aldrich, Inc.
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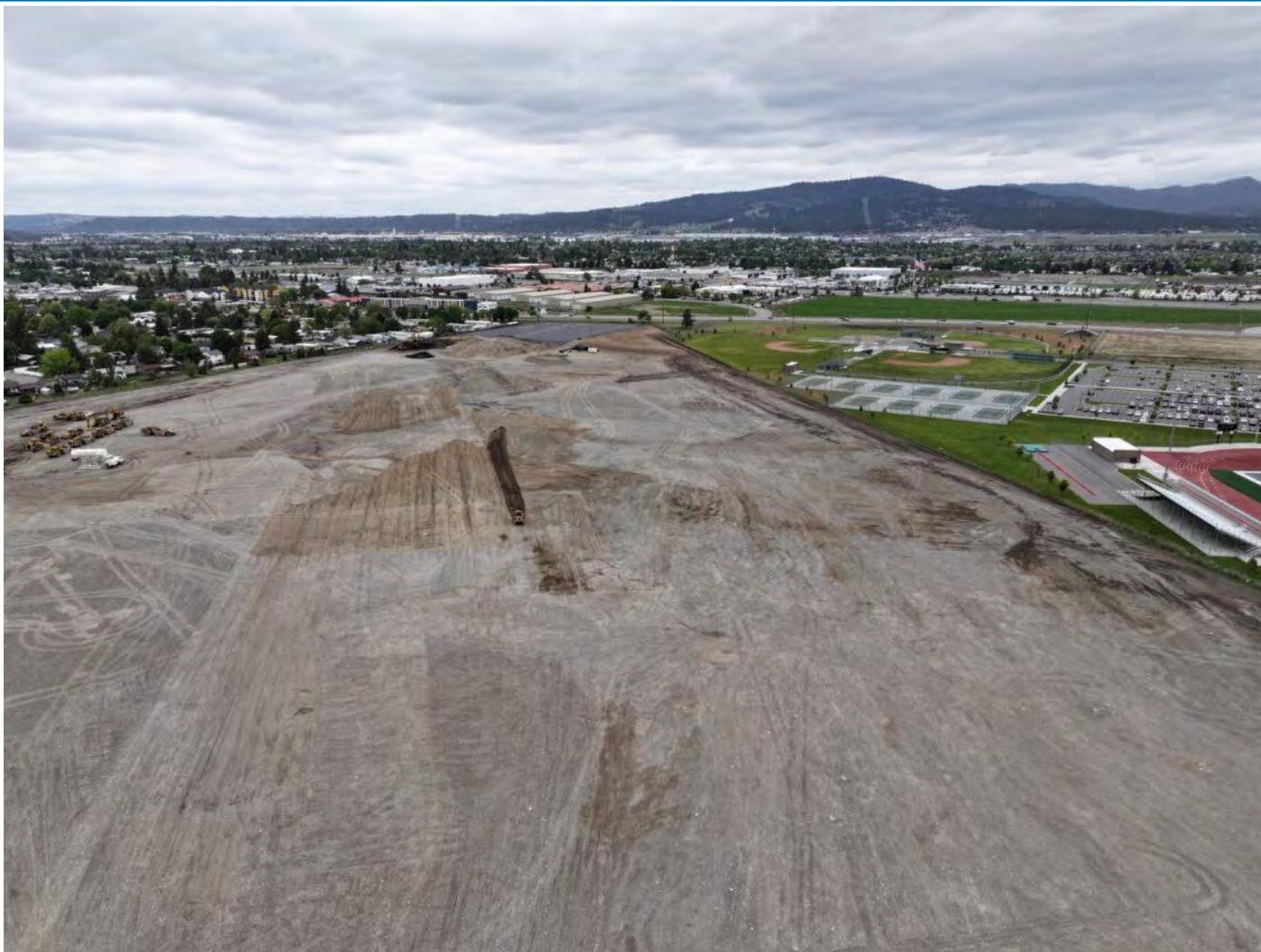
Photo 15: Excavation aerial taken May 14, 2025, looking northwest.

Photo 16: Repository aerial taken May 14, 2025, looking northwest.

APPENDIX I
Certificates of Disposal

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/04/2025   Vehicle# 1
Payment Type Credit Account   Container
Manual Ticket#   Driver
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	105500 lb
In	03/04/2025 12:41:46	Scale1	amarurir		Tare	46260 lb
Out	03/04/2025 13:00:10	Scale1	amarurir		Net	59240 lb
					Tons	29.62

Comments

Product		LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	29.62	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100						SPOKANE
3	WWM-P-Waste Water Manag	100		1				SPOKANE
4	SRHD1-Spokane Regional	100	29.62	Tons				SPOKANE

                                          Total Tax/Fees
                                          Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

WASTE MANAGEMENT

Gra___ ___ Facility
1820 ___ ___aham Road
Medi___ ___ ___ ___9022   Ph: (509)244-0151

Customer Name HALMECONSINC HALME CONS   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/04/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	118700 lb
In	03/04/2025 10:53:2_	Scale1	amanurin		Tare	46360 lb
Out	03/04/2025 11:08:00	Scale1	amanurin		Net	72340 lb
					Tons	36.17

Comments

Product	UOM	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	36.17	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100		%				SPOKANE
3 WWM-P-Waste Water Manag	100		%				SPOKANE
4 SRHD1-Spokane Regional	100	36.17	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic limitation.

Gra_____ Facility
1820____ ___ham Road
Medi_____9022   Ph: (509)244-0151

Customer Name HALMECONSINC HALME CONS   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/04/2025   Vehicle#   1
Payment Type Credit Account   Container
Manual Ticket#   Driver
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	107360 lb
In	03/04/2025 14:36:07	Scale1	amanurin		Tare	46120 lb
Out	03/04/2025 14:49:34	Scale1	amanurin		Net	61240 lb
					Tons	30.62

Comments

Product		(1D)	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	30.62	Tons				SPOKANE
2	ENRGY-Energy Surcharge	100						SPOKANE
3	WWM-P-Waste Water Manag	100						SPOKANE
4	SRHD1-Spokane Regional	100	30.62	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/05/2025   Vehicle#   1
Payment Type Credit Account   Container
Manual Ticket#   Driver
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest 119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

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     Time              Scale      Operator      Inbound   Gross      97880 lb
In  03/05/2025 07:49:59 Scale1     amahurin                Tare       46420 lb
Out 03/05/2025 08:05:31 Scale1     amahurin                Net        51460 lb
                                                           Tons         25.73
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Comments

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Product                         ID#   Qty   UOM     Rate   Tax/Fee   Amount  Origin
------------------------------------------------------------------------------------
1    Spwaste Solid Oth-Tons- 100       25.73 Tons                            SPOKANE
2    ENERGY-Energy Surcharge 100         *                                   SPOKANE
3    WWM-P-Waste Water Manag  100         ?                                   SPOKANE
4    SRED1-Spokane Regional   100       25.73 Tons                           SPOKANE
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                                                    Total Tax/Fees
                                                    Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Graham Facility
1820 Wham Road
Medimont WA 99022   Ph: (509)244-0151

Reprint
Ticket# /43254

WASTE MANAGEMENT

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/05/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD SUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

	Time	Scale	Operator	Inbound	Gross			101720 lb
In	03/05/2025 09:33:04	Scale1	amahuric		Tare			46360 lb
Out	03/05/2025 09:45:54	Scale1	amahuric		Net			55360 lb
					Tons			27.68

Comments

Product		ID#	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	27.68	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100						SPOKANE
3	WWM-P-Waste Water Manag	100						SPOKANE
4	SRHD1-Spokane Regional	100	27.68	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/05/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (GF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	110840 lb
In	03/05/2025 11:07:54	Scale1	amahurin		Tare	46240 lb
Out	03/05/2025 11:23:47	Scale1	amahurin		Net	64600 lb
					Tons	32.30

Comments

	Product	ID	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	32.30	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100				%		
3	WWM-P-Waste Water Manag	100				%		
4	SRHD1-Spokane Regional	100	32.30	Tons				

                                        Total Tax/Fees
                                        Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to techni
limitation.

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/05/2025   Vehicle#   RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   C000084
Destination   Grid
Manifest 119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

	Time	Scale	Operator	Inbound	Gross	
In	03/05/2025 12:49:14	Scale1	amahurin		Gross	103000 lb
Out	03/05/2025 13:05:18	Scale1	amahurin		Tare	46140 lb
					Net	56860 lb
					Tons	28.43

Comments

Product		LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	28.43	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100						SPOKANE
3	WWM-P-Waste Water Manag	100						SPOKANE
4	SRHDT-Spokane Regional	100	28.43	Tons				SPOKANE
								SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/06/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

      Time   Scale   Operator   Inbound   Gross   99420 lb
In 03/06/2025 07:42:25 Scale1   amanurin   Tare   46380 lb
Out 03/06/2025 07:56:39 Scale1   amanurin   Net   53040 lb
                                                              Tons   26.52

Comments

Product   LO%   Qty   UOM   Rate   Tax/Fee   Amount   Origin
----
1   Spwaste Solid Oth-Tons- 100   26.52 Tons   SPOKANE
2   ENERGY-Energy Surcharge 100   ⁴   SPOKANE
3   WWM-P-Waste Water Manag 100   ¹   SPOKANE
4   SRHDI-Spokane Regional   100   26.52 Tons   SPOKANE

                                      Total Tax/Fees
                                      Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Gra[...] Facility   Reprint
1820 [...] ham Road   Ticket# /13341
Medi[...] WASTE MANAGEMENT 9022   Ph: (509)244-0151

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/08/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (.F01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD SUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

      Time   Scale   Operator   Inbound   Gross   99540 lb
In   03/06/2025 09:19:20 Scale1   amahurin   Tare   46300 lb
Out 03/06/2025 09:30:49 Scale1   amahurin   Net   53240 lb
                                                               Tons   26.62

Comments

Product   Ln#   Qty   UOM   Rate   Tax/Fee   Amount Origin
----
1   Spwaste Solid Oth-Tons- 100 26.62 Tons   SPOKANE
2   ENERGY-Energy Surcharge 100   %
3   WWM-P-Waste Water Manag 100   %
4   SRHD1-Spokane Regional   100 26.62 Tons

                                          Total Tax/Fees
                                          Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic[...]
limitation.

Customer Name HALMECONSINC HALME CONST Carrier HALME HALME CONSTRUCTION
Ticket Date   03/06/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

Time	Scale	Operator	Inbound	Gross	103780 lb
In 03/06/2025 10:50:34	Scale1	amahurin		Tare	46180 lb
Out 03/06/2025 11:02:39	Scale1	amahurin		Net	57600 lb
				Tons	28.80

Comments

Product	ID	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	28.80	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	28.80	Tons				SPOKANE

                                      Total Tax/Fees
                                      Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic_
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/06/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD SUN-19615 CVSD SUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

     Time   Scale   Operator   Inbound   Gross   96400 lb
 In 03/06/2025 12:29:43 Scale1   amahurin   Tare   46060 lb
 Out 03/06/2025 12:40:42 Scale1   amahurin   Net   50340 lb
                                                           Tons   25.17

Comments

Product   LD#   Qty   UOM   Rate   Tax/Fee   Amount Origin
----
 1   Spwaste Solid Oth-Tons- 100   25.17 Tons   SPOKANE
 2   ENERGY-Energy Surcharge 100   %   SPOKANE
 3   WWM-P-Waste Water Manag 100   %   SPOKANE
 4   SRHD1-Spokane Regional 100   25.17 Tons   SPOKANE

                                            Total Tax/Fees
                                            Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Reprint
Ticket# 743399

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/06/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   C000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound		
In	03/06/2025 14:09:50	Scale1	amanurin		Gross	100240 lb
Out	03/06/2025 14:20:49	Scale1	amanurin		Tare	46000 lb
					Net	54240 lb
					Tons	27.12

Comments

Product	ID	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	27.12	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100						SPOKANE
3 WWM-P-Waste Water Manag	100						SPOKANE
4 SRHD1-Spokane Regional	100	27.12	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to techni█
limitation.

Gra[___] Facility
1820 [___] ham Road
Medi[___] 9022   WASTE MANAGEMENT
Ph: (509)244-0151

Reprint
Ticket# 743422

Customer Name HALMSCONSINC HA MF CONS   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/07/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	98160 lb
In	03/07/2025 07:49:59	Scale1	amahurin		Tare	46360 lb
Out	03/07/2025 08:01:58	Scale1	amahurin		Net	51800 lb
					Tons	25.90

Comments

Product		LPB	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	25.90	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	25.90	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONS   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/07/2025   Vehicle#   RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD SUN-19615 CVSD SUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	100180 lb
In	03/07/2025 09:21:20	Scale1	AMAHURTN		Tare	46260 lb
Out	03/07/2025 09:33:23	Scale1	AMAHURTN		Net	53920 lb
					Tons	26.96

Comments

Product	LB	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	26.96	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100						SPOKANE
3 WWM-P-Waste Water Manag	100						SPOKANE
4 SRHD1-Spokane Regional	100	26.96	Tons				SPOKANE

                                              Total Tax/Fees
                                              Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Gra____ ___ Facility   Reprint
1820_ ____ham Road_   Ticket# 743457
Medi_____9022   Ph: (509)244-0151

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/07/2025   Vehicle# RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# C000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	97260 lb
In	03/07/2025 10:53:38	Scale1	AMAHURIN		Tare	46140 lb
Out	03/07/2025 11:07:35	Scale1	AMAHURIN		Net	51120 lb
					Tons	25.56

Comments

#	Product		Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	25.56	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100						SPOKANE
3	WWM-P-Waste Water Manag	100						SPOKANE
4	SRHDI-Spokane Regional	100	25.56	Tons				SPOKANE

                                          Total Tax/Fees
                                          Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic_
limitation.

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/07/2025   Vehicle# RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 1
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   1

        Time   Scale   Operator   Inbound   Gross   100020 lb
In 03/07/2025 12:32:06 Scale1   AMAHURTN   Tare   46060 lb
Out 03/07/2025 12:44:33 Scale1   AMAHURTN   Net   53960 lb
                                                          Tons   26.98

Comments

Product	LD	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	26.98	Tons				SPOKANE
2 ENRGY-Energy Surcharge	100		%				SPOKANE
3 WWM-P-Waste Water Manag	100						SPOKANE
4 SRHD1-Spokane Regional	100	26.98	Tons				SPOKANE

                                          Total Tax/Fees
                                          Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic[al]
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/07/2025   Vehicle# RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

	Time	Scale	Operator	Inbound		
In	03/07/2025 14:14:2_	Scale1	AMAHURIN		Gross	99700 lb
Out	03/07/2025 14:26:48	Scale1	AMAHURIN		Tare	45960 lb
					Net	53740 lb
					Tons	26.87

Comments

	Product	LD#	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	26.87	Tons				SPOKANE
2	ENRGY-Energy Surcharge	100						SPOKANE
3	WWM-P-Waste Water Manag	100						SPOKANE
4	SRHD1-Spokane Regional	100	26.87	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONS   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/10/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest 119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD SUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

      Time   Scale   Operator   Inbound   Gross   96760 lb
In 03/10/2025 08:02:13 Scale1 amanurin   Tare   46420 lb
Out 03/10/2025 08:15:53 Scale1 amanurin   Net   50340 lb
                                                          Tons   25.17

Comments

Product	..D#	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	25.17	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100						SPOKANE
3 WWM-P-Waste Water Manag	100						SPOKANE
4 SRHD1-Spokane Regional	100	25.17	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONS   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/10/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

	Time	Scale	Operator	Inbound	Gross	105620 lb
In	03/10/2025 09:38:09	Scale1	amanurin		Tare	46300 lb
Out	03/10/2025 09:51:33	Scale1	amanurin		Net	59320 lb
					Tons	29.66

Comments

Product	UOM	Qty	UOM	Rate	Tax/Fee	Amount Origin
1 Spwaste Solid Oth-Tons-	100	29.66	Tons			SPOKANE
2 ENERGY-Energy Surcharge	100		%			
3 WWM-P-Waste Water Manag	100		%			
4 SRHD1-Spokane Regional	100	29.66	Tons			

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/10/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

```
      Time              Scale     Operator      Inbound   Gross      100400 lb
In  03/10/2025 11:11:28 Scale1    amahurin                Tare        46200 lb
Out 03/10/2025 11:23:16 Scale1    amahurin                Net         54200 lb
                                                          Tons          27.10
```

Comments

```
Product               LD#   Qty  JOM    Rate   Tax/Fee  Amount Origin
-----------------------------------------------------------------------------
1   Spwaste Solid Oth-Tons- 100  27.10  Tons                     SPOKANE
2   ENERGY-Energy Surcharge 100           %                      SPOKANE
3   WWM-P-Waste Water Manag  100           %                      SPOKANE
4   SRHD1-Spokane Regional   100  27.10  Tons                     SPOKANE
```

                                        Total Tax/Fees
                                        Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Gra_____ Facility   Reprint
1820 _____han Road   Ticket# 713569
Medi__WASTE MANAGEMENT_9022   Ph: (509)244-0151

Customer Name HALMECONSINC HALME CONS   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/10/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

      Time   Scale   Operator   Inbound   Gross   96260 lb
In 03/10/2025 12:44:44 Scale1   amanurin   Tare   46100 lb
Out 03/10/2025 12:59:20 Scale1   amanurin   Net   50160 lb
                                                            Tons   25.08

Comments

Product   UOM   Qty   UOM   Rate   Tax/Fee   Amount Origin
----
1   Spwaste Solid Oth-Tons- 100   25.08 Tons   SPOKANE
2   ENERGY-Energy Surcharge 100   %   SPOKANE
3   WWM-P-Waste Water Manag 100   SPOKANE
4   SRHD1-Spokane Regional   100   25.08 Tons   SPOKANE

                                            Total Tax/Fees
                                            Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Reprint
Ticket# 743582

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/10/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	97520 lb
In	03/10/2025 14:20:30	Scale1	amanurin		Tare	46020 lb
Out	03/10/2025 14:32:37	Scale1	amanurin		Net	51500 lb
					Tons	25.75

Comments

Product		Qty	UOM	Rate	Tax/Fee	Amount Origin
1	Spwaste Solid Oth-Tons- 100	25.75	Tons			
2	ENERGY-Energy Surcharge 100		%			SPOKANE
3	WWM-P-Waste Water Manag 100		%			
4	SRHD1-Spokane Regional 100	25.75	Tons			

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/11/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

```
     Time                  Scale      Operator        Inbound    Gross       107320 lb
In   03/11/2025 08:03:11  Scale1     amahurin                    Tare         46400 lb
Out  03/11/2025 08:16:30  Scale1     amahurin                    Net          60920 lb
                                                                 Tons          30.46
```

Comments

```
Product                    LOT    Qty    UOM       Rate   Tax/Fee   Amount  Origin
---------------------------------------------------------------------------------------
1   Spwaste Solid Oth-Tons- 100   30.46  Tons                              SPOKANE
2   ENERGY-Energy Surcharge 100
3   WWM-P-Waste Water Manag  100
4   SRHD1-Spokane Regional   100   30.46  Tons
```

                                         Total Tax/Fees
                                         Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Graham Road Facility
1820 S. Graham Road
Medical Lake, WA 99022   Ph: (509)244-0151

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/11/2025   Vehicle#   RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	103720 lb
In	03/11/2025 09:38:09	Scale1	amahurin		Tare	46300 lb
Out	03/11/2025 09:50:26	Scale1	amahurin		Net	57420 lb
					Tons	28.71

Comments

Product		LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	28.71	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	28.71	Tons				SPOKANE

                                        Total Tax/Fees
                                        Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/11/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

	Time	Scale	Operator	Inbound	Gross	98620 lb
In	03/11/2025 11:15:26	Scale1	amahurin		Tare	46200 lb
Out	03/11/2025 11:28:18	Scale1	amahurin		Net	52420 lb
					Tons	26.21

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	26.21	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100		%				SPOKANE
3 WWM-P-Waste Water Manag	100		%				SPOKANE
4 SRHD1-Spokane Regional	100	26.21	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/11/2025   Vehicle# RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

         Time   Scale   Operator   Inbound   Gross   93680 lb
In 03/11/2025 12:49:15 Scale1   amahurin   Tare   46140 lb
Out 03/11/2025 13:01:43 Scale1   amahurin   Net   47540 lb
                                                               Tons   23.77

Comments

Product   LD%   Qty   UOM   Rate   Tax/Fee   Amount Origin
----
1   Spwaste Solid Oth-Tons- 100   23.77 Tons   SPOKANE
2   ENERGY-Energy Surcharge 100   %   SPOKANE
3   WWM-P-Waste Water Manag 100   %   SPOKANE
4   SRHD1-Spokane Regional   100   23.77 Tons   SPOKANE

                                         Total Tax/Fees
                                         Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/11/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

     Time   Scale   Operator   Inbound   Gross   100180 lb
In 03/11/2025 14:25:12 Scale1   amahurin   Tare   46020 lb
Out 03/11/2025 14:38:51 Scale1   amahurin   Net   54160 lb
                                                          Tons   27.08

Comments

Product	LD	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	27.08	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100		%				SPOKANE
3 WWM-P-Waste Water Manag	100		%				SPOKANE
4 SRHD1-Spokane Regional	100	27.08	Tons				SPOKANE

                                        Total Tax/Fees
                                        Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST Carrier HALME HALME CONSTRUCTION
Ticket Date   03/12/2025   Vehicle# RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	97220 lb
In	03/12/2025 07:54:26	Scale1	amahurin		Tare	46500 lb
Out	03/12/2025 08:07:53	Scale1	amahurin		Net	50720 lb
					Tons	25.36

Comments

Product		LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	25.36	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	25.36	Tons				SPOKANE

                                        Total Tax/Fees
                                        Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/12/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   1
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	101980 lb
In	03/12/2025 11:59:00	Scale1	amahurin		Tare	46460 lb
Out	03/12/2025 12:11:25	Scale1	amahurin		Net	55520 lb
					Tons	27.76

Comments

Product		LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	27.76	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	27.76	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/12/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest 119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

	Time	Scale	Operator	Inbound	Gross	100380 lb
In	03/12/2025 13:38:50	Scale1	amahurin		Tare	46420 lb
Out	03/12/2025 13:52:00	Scale1	amahurin		Net	53960 lb
					Tons	26.98

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	26.98	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100		%				SPOKANE
3 WWM-P-Waste Water Manag	100		%				SPOKANE
4 SRHD1-Spokane Regional	100	26.98	Tons				SPOKANE

                                        Total Tax/Fees
                                        Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Graham Road Facility
1820 S Graham Road
Medical Lake, WA 99022   Ph: (509)244-0151

Original
Ticket# 743785

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/13/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

	Time	Scale	Operator	Inbound	Gross	99000 lb
In	03/13/2025 07:48:42	Scale1	amahurin		Tare	46620 lb
Out	03/13/2025 08:01:17	Scale1	amahurin		Net	52380 lb
					Tons	26.19

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	26.19	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	26.19	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/13/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

```
      Time              Scale      Operator       Inbound   Gross      105940 lb
In  03/13/2025 09:27:45 Scale1     amahurin                 Tare        46620 lb
Out 03/13/2025 09:41:06 Scale1     amahurin                 Net         59320 lb
                                                            Tons          29.66
```

Comments

Product	LD	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	29.66	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100		%				SPOKANE
3 WWM-P-Waste Water Manag	100		%				SPOKANE
4 SRHD1-Spokane Regional	100	29.66	Tons				SPOKANE

                                            Total Tax/Fees
                                            Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Graham Road Facility
1820 S. Graham Road
Medical Lake, WA 99022   Ph: (509)244-0151

Original
Ticket# 743806

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/13/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570wa
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570wa

	Time	Scale	Operator	Inbound	Gross	100360 lb
In	03/13/2025 11:03:01	Scale1	amahurin		Tare	46540 lb
Out	03/13/2025 11:19:18	Scale1	amahurin		Net	53820 lb
					Tons	26.91

Comments

	Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	26.91	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	26.91	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

WM
Graham Road Facility
1820 S. Graham Road
Medical Lake, WA 99022
WASTE MANAGEMENT

Original
Ticket# 743815

Ph: (509)244-0151

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/13/2025   Vehicle# RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

```
      Time                Scale      Operator       Inbound   Gross      97080 lb
In  03/13/2025 12:46:38 Scale1      amahurin                 Tare       46420 lb
Out 03/13/2025 12:59:12 Scale1      amahurin                 Net        50660 lb
                                                             Tons          25.33
```

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	25.33	Tons				SPOKANE
2 ENERGY-Energy Surcharge	100		%				SPOKANE
3 WWM-P-Waste Water Manag	100		%				SPOKANE
4 SRHD1-Spokane Regional	100	25.33	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Graham Road Facility
1820 S. Graham Road
Medical Lake, WA 99022
Ph: (509) 244-0151

Original
Ticket# 743848

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/14/2025   Vehicle#   RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing#   0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator   CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	94300 lb
In	03/14/2025 07:54:57	Scale1	amahurin		Tare	46600 lb
Out	03/14/2025 08:08:30	Scale1	amahurin		Net	47700 lb
					Tons	23.85

Comments

Product		LD%	Qty	UOM	Rate	Tax/Fee	Amount Origin
1	Spwaste Solid Oth-Tons-	100	23.85	Tons			SPOKANE
2	ENERGY-Energy Surcharge	100		%			
3	WWM-P-Waste Water Manag	100		%			
4	SRHD1-Spokane Regional	100	23.85	Tons			

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Graham Road Facility
1820 S. Graham Road
Medical Lake, WA 99022
WASTE MANAGEMENT

Ph: (509)244-0151

Original
Ticket# 743861

Customer Name HALMECONSINC HALME CONST   Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/14/2025   Vehicle# RICK
Payment Type   Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	104280 lb
In	03/14/2025 09:32:53	Scale1	amahurin		Tare	46560 lb
Out	03/14/2025 09:48:31	Scale1	amahurin		Net	57720 lb
					Tons	28.86

Comments

	Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	28.86	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	28.86	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

Customer Name HALMECONSINC HALME CONST Carrier   HALME HALME CONSTRUCTION
Ticket Date   03/21/2025   Vehicle# RICK
Payment Type Credit Account   Container
Manual Ticket#   Driver   RICK
Route   Check#
Hauling Ticket#   Billing# 0000084
Destination   Grid
Manifest   119570WA
Profile   119570WA (LF01: DIESEL FUEL IMPACTED SOIL AND/OR DEBRIS CLEANUP)
Generator CVSD GUN-19615 CVSD GUN CLUB 19615 E SPRAGUE AVE LIBERTY LAKE
PO#   119570WA

	Time	Scale	Operator	Inbound	Gross	111840 lb
In	03/21/2025 08:24:24	Scale1	AMAHURIN		Tare	46520 lb
Out	03/21/2025 08:38:23	Scale1	AMAHURIN		Net	65320 lb
					Tons	32.66

Comments

	Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Spwaste Solid Oth-Tons-	100	32.66	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	32.66	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver's Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

APPENDIX J
Laboratory Proctor Results
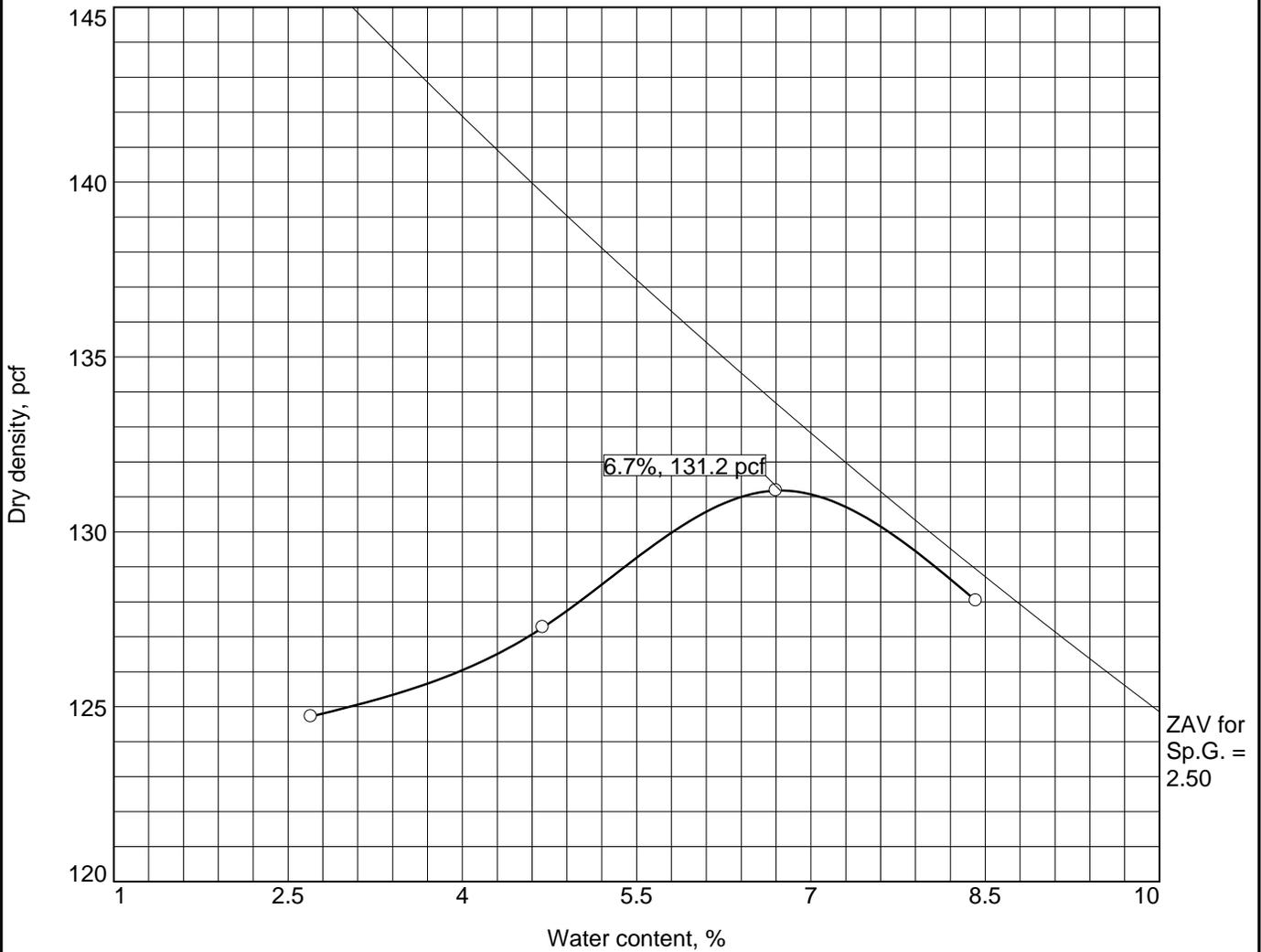
Test specification: ASTM D 1557-07 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/	Classification		Nat.	Sp.G.	LL	PI	% >	% <
Depth	USCS	AASHTO	Moist.				3/4 in.	No.200
grab	GM	-	5.8	2.5	NT	NT	6.0	26.8

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 131.2 pcf	129.4 pcf	SILTY GRAVEL WITH SAND
Optimum moisture = 6.7 %	7.1 %	

Project No. 0208895000   **Client:**

Project: CVSD Soil Characterization and SEPA

Date: 11/20/23

○ **Source of Sample:** Site Soil   **Sample Number:** Soil #1

Remarks:

Significant organic constituent (fines and rootlets). SpG estimated.

HALEY ALDRICH

Figure

Breeyn Greer
Haley & Aldrich, Inc.
505 W Riverside Ave, Ste 550
Spokane, WA 99201

January 10, 2025

Project Number L25027

PROJECT: **CVSD- Haley & Aldrich 2025 Materials**

SUBJECT: **Results of Laboratory Testing**
    Report #1

At your request, we provided laboratory testing services for the subject project. Services were limited to the performance of specific laboratory tests, selected at your discretion.

For this period, our involvement was limited to laboratory testing of six samples delivered to our laboratory on January 7, 2025. Laboratory tests were performed in general accordance with methods listed in the attached *Laboratory Summary* sheets.

If you have questions regarding this report, please call.

Respectfully Submitted,
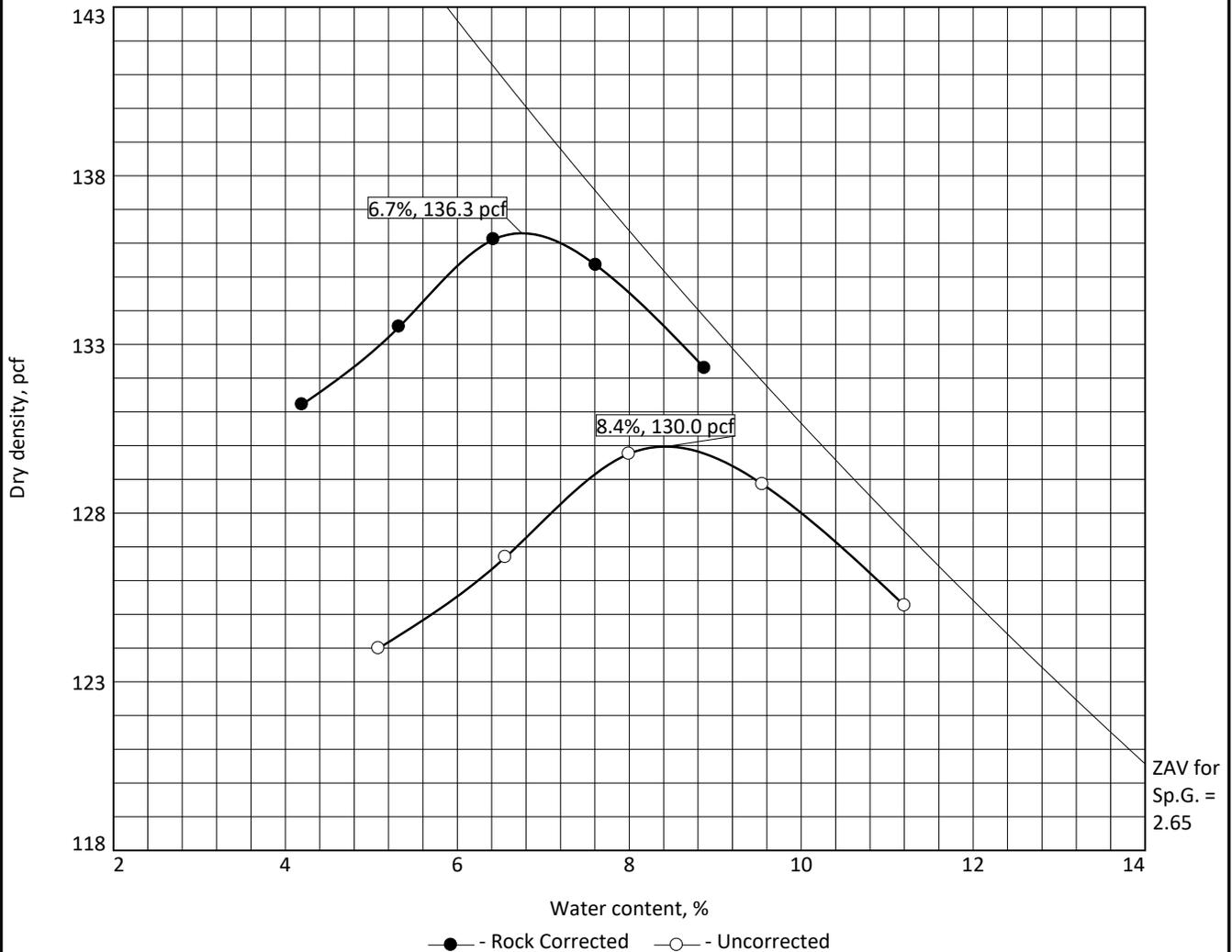Budinger & Associates, Inc.

Kiel Couch
Laboratory Manager

KC/lat/Addressee –
Breeyn Greer – bgreer@haleyaldrich.com

Attachments:
Proctor Laboratory Summary – 1 page
Moisture-Unit Weight Relationship Report – 6 pages

1101 N Fancher Road
Spokane Valley, WA 99212
Tel: 509-535-8841

www.budingerinc.com

9997 Lyle Loop Suite A
Hayden, Idaho 83835
Tel: 208-719-9038

1 of 1

PROCTOR
LABORATORY SUMMARY

	UNITS	TEST METHOD						
LABORATORY NUMBER			25-0009	25-0010	25-0011	25-0012	25-0013	25-0014
SAMPLED BY			Client	Client	Client	Client	Client	Client
SAMPLE TYPE			Bulk	Bulk	Bulk	Bulk	Bulk	Bulk
DATE RECEIVED			1/7/25	1/7/25	1/7/25	1/7/25	1/7/25	1/7/25
SAMPLE DESCRIPTION			Silty sand with gravel, trace clay (Clean 1)	Silty sand with gravel (Clean 2)	Gravelly sand with silt (Clean 3)	Silty sand with gravel (CS-NW-1)	Silty sand and gravel (CS-WR-2)	Sand and gravel with silt (CS-SE-3)
SAMPLE SOURCE			On site	On site	On site	On site	On site	On site
PROCTOR		ASTM D1557						
Maximum Unit Weight	pcf		130.0	136.3	142.1	129.6	130.5	140.0
Optimum Moisture	%		8.4	6.2	6.0	8.2	8.3	6.6
Sample Moisture	%		4.7	4.8	7.4	10.2	5.7	6.0
Bulk Specific Gravity (+3/4")		ASTM C127	2.562	2.673	2.665	2.542	2.582	2.648
Maximum Unit Weight, Corrected	pcf		136.3	144.5	147.0	134.7	137.1	147.1
Optimum Moisture, Corrected	%		6.7	4.5	4.8	6.9	6.7	4.9

Moisture-Unit Weight Relationship

Dry density, pcf (y-axis)
Water content, % (x-axis)

Plotted curves:
- 6.7%, 136.3 pcf (Rock Corrected)
- 8.4%, 130.0 pcf (Uncorrected)

ZAV for Sp.G. = 2.65

—●— - Rock Corrected   —○— - Uncorrected

Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
			4.7	+3/4"= 2.562			23.5	

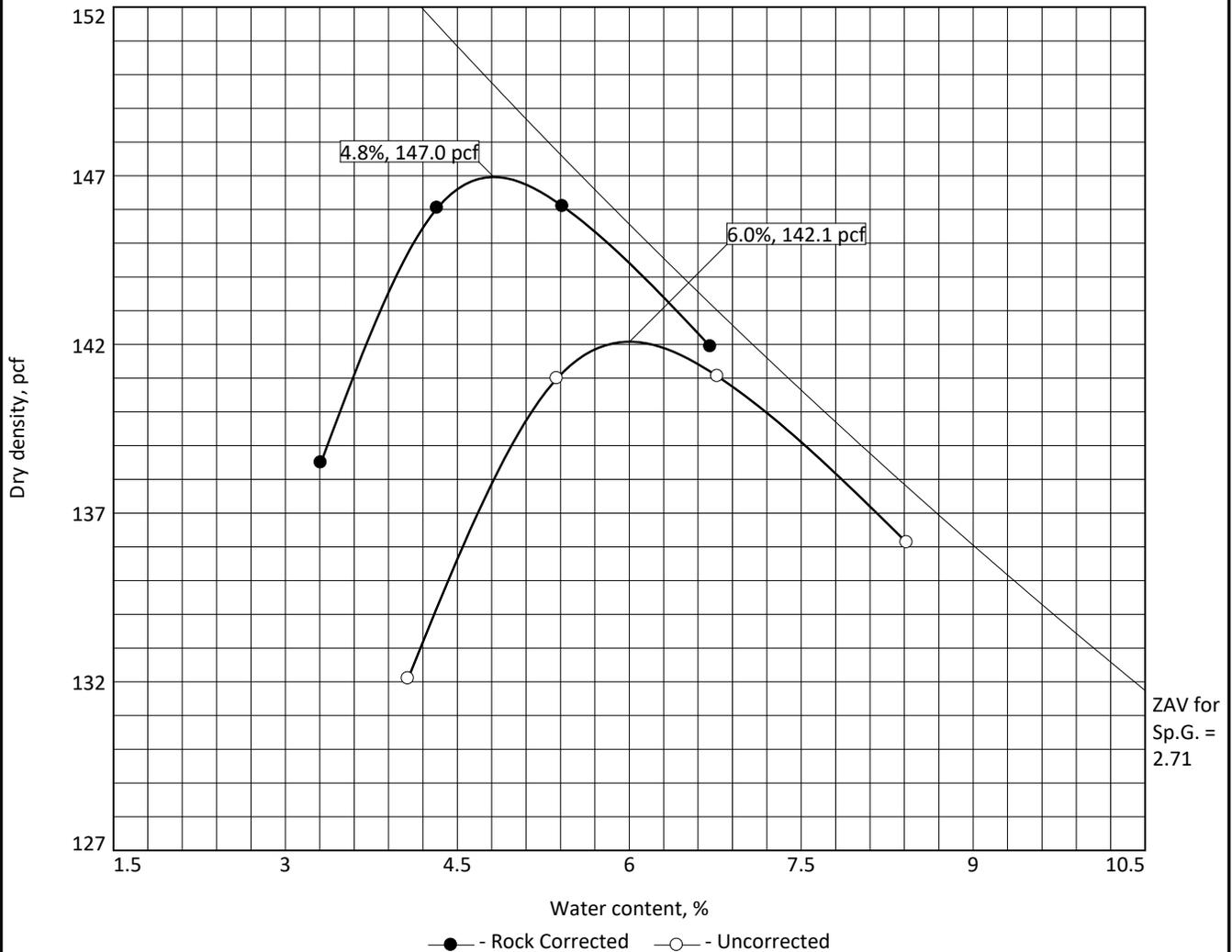| ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 136.3 pcf	130.0 pcf	Silty sand with gravel and trace clay (Clean 1)
Optimum moisture = 6.7 %	8.4 %	

Project No.   L25027   Client: Haley & Aldrich
Project: CVSD- Haley & Aldrich 2025 Materials

○Source of Sample: On-site   Sample Number: 25-0009

Remarks:
 Sampled by Client

BUDINGER & ASSOCIATES, INC.

Date: 1/10/25

Tested By: PK   Checked By: KC

Moisture-Unit Weight Relationship

Dry density, pcf (y-axis: 127 to 152)
Water content, % (x-axis: 1 to 10)

4.5%, 144.5 pcf
6.2%, 136.3 pcf

ZAV for Sp.G. = 2.72

● - Rock Corrected   ○ - Uncorrected

Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/	Classification		Nat.	Sp.G.	LL	PI	% >	% <
Depth	USCS	AASHTO	Moist.				3/4 in.	No.200
			4.8	+3/4"= 2.673			30.0	

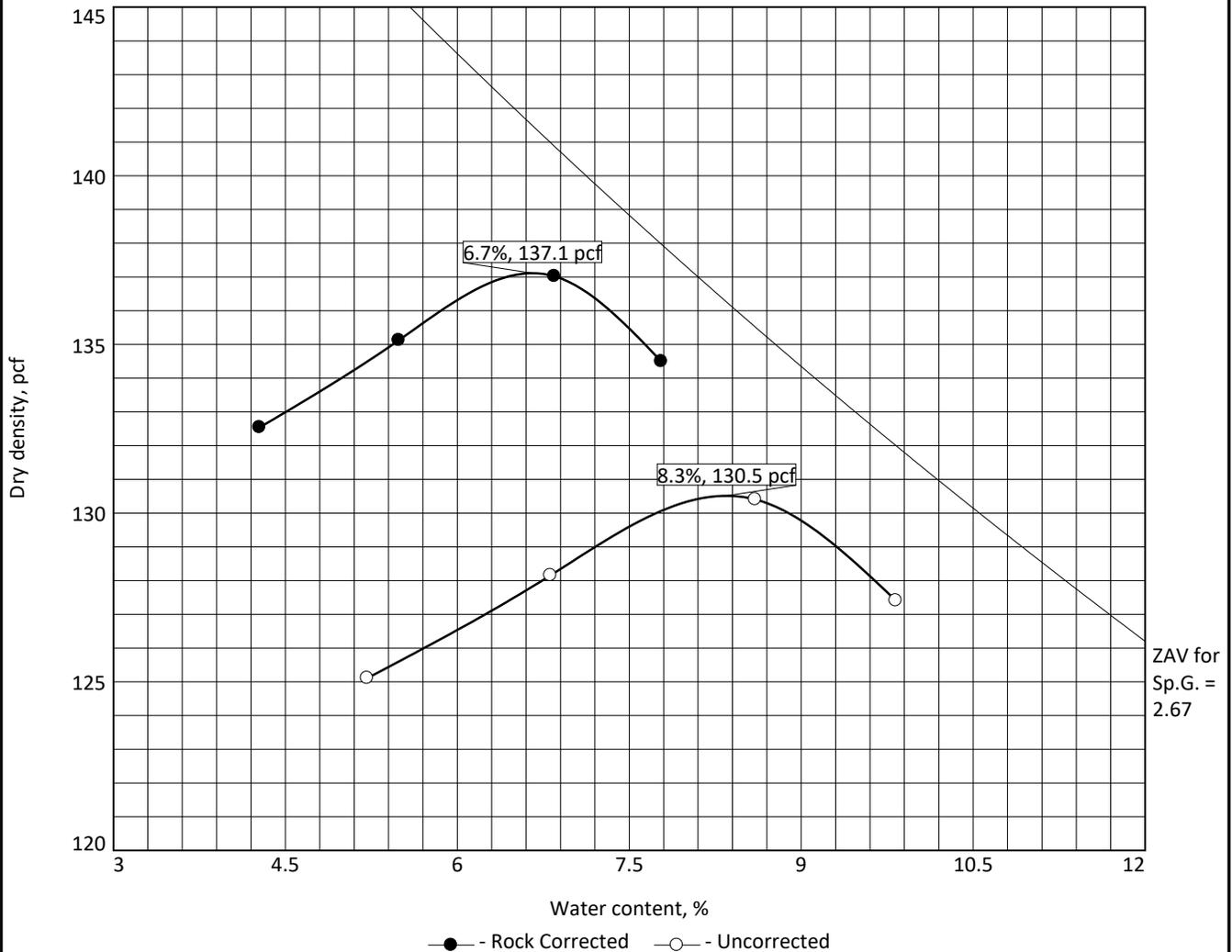| ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 144.5 pcf	136.3 pcf	Silty sand with gravel (Clean 2)
Optimum moisture = 4.5 %	6.2 %	

Project No.   L25027   Client: Haley & Aldrich
Project: CVSD- Haley & Aldrich 2025 Materials

○Source of Sample: On-site   Sample Number: 25-0010

BUDINGER & ASSOCIATES, INC.

Remarks:

Sampled by Client
FOR INFORMATIONAL USE ONLY.
Sample contained 34.6% retained on the 3/4" sieve, Max allowed per ASTM D1557 is 30%. Report only reflects 30% retained

Date: 1/10/25

Tested By: TS_____   Checked By: KC_____

Moisture-Unit Weight Relationship

Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/	Classification		Nat.	Sp.G.	LL	PI	% >	% <
Depth	USCS	AASHTO	Moist.				3/4 in.	No.200
			7.4	+3/4"= 2.665			21.9	

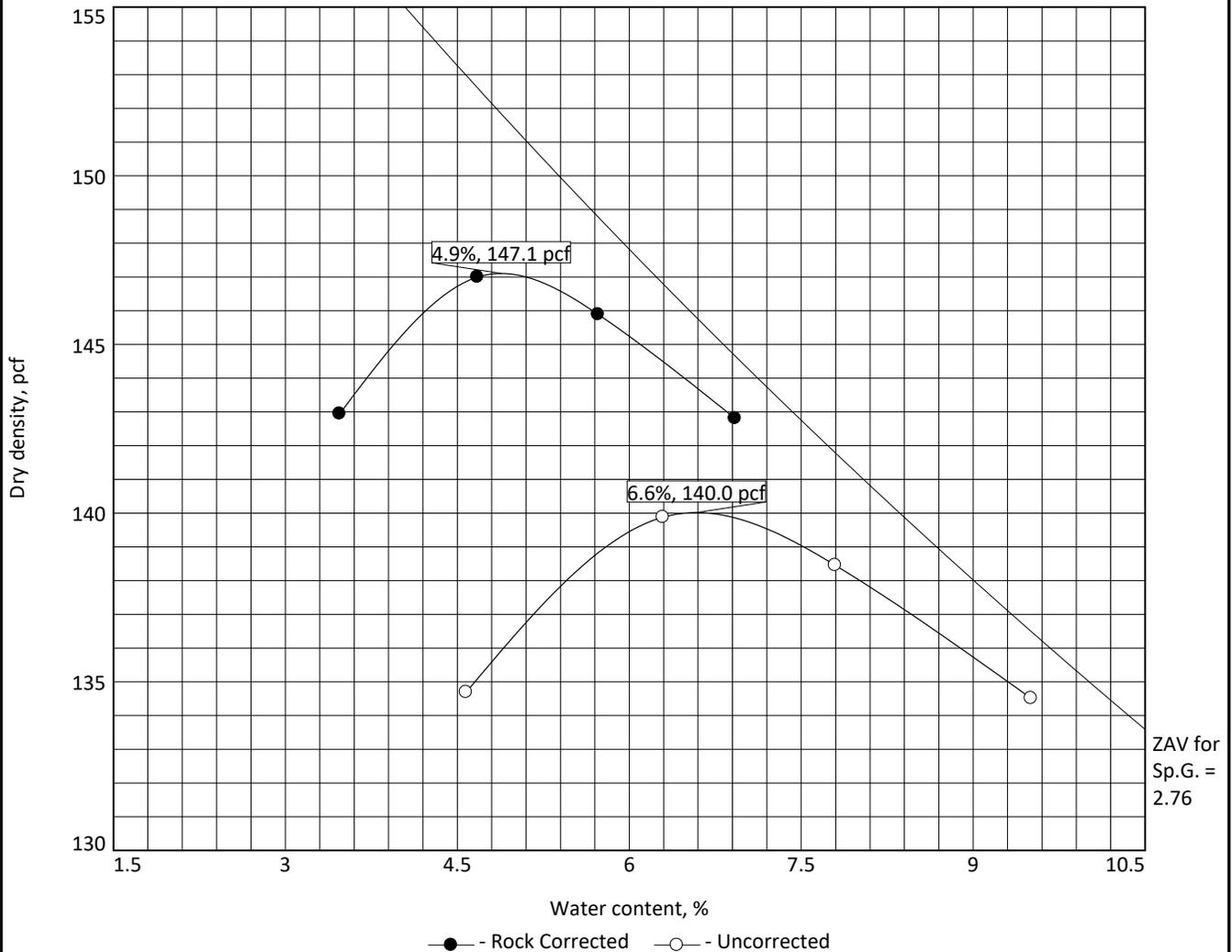| ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 147.0 pcf	142.1 pcf	Gravelly sand with silt (Clean 3)
Optimum moisture = 4.8 %	6.0 %	

Project No.   L25027   Client: Haley & Aldrich

Project: CVSD- Haley & Aldrich 2025 Materials

○Source of Sample: On-site   Sample Number: 25-0011

Remarks:
 Sampled by Client

BUDINGER & ASSOCIATES, INC.

Date: 1/10/25

Tested By: TS   Checked By: KC

Moisture-Unit Weight Relationship

Dry density, pcf (y-axis: 117 to 142)
Water content, % (x-axis: 4 to 13)

- 6.9%, 134.7 pcf
- 8.2%, 129.6 pcf
- ZAV for Sp.G. = 2.65

—●— - Rock Corrected   —○— - Uncorrected

Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
			10.2	+3/4"= 2.542			19.3	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 134.7 pcf	129.6 pcf	Silty sand with gravel (CS-NW-1)
Optimum moisture = 6.9 %	8.2 %	

Project No.   L25027   Client: Haley & Aldrich
Project: CVSD- Haley & Aldrich 2025 Materials

○Source of Sample: On-site   Sample Number: 25-0012

Remarks: Sampled by Client

BUDINGER & ASSOCIATES, INC.

Date: 1/10/25

Tested By: GP   Checked By: KC

Moisture-Unit Weight Relationship

Dry density, pcf (y-axis, 120 to 145)
Water content, % (x-axis, 3 to 12)

6.7%, 137.1 pcf
8.3%, 130.5 pcf

ZAV for Sp.G. = 2.67

●— - Rock Corrected   ○— - Uncorrected

Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
			5.7	+3/4"= 2.582			24.0	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 137.1 pcf	130.5 pcf	Silty sand and gravel (CS-WR-2)
Optimum moisture = 6.7 %	8.3 %	

Project No.   L25027   Client: Haley & Aldrich
Project: CVSD- Haley & Aldrich 2025 Materials

○Source of Sample: On-site   Sample Number: 25-0013

Remarks:
Sampled by Client

BUDINGER & ASSOCIATES, INC.

Date: 1/10/25

Tested By: PK   Checked By: KC

Moisture-Unit Weight Relationship

Chart showing Dry density, pcf (y-axis, 130 to 155) versus Water content, % (x-axis, 1.5 to 10.5).

Data point labels:
- 4.9%, 147.1 pcf
- 6.6%, 140.0 pcf

ZAV for Sp.G. = 2.76

● - Rock Corrected   ○ - Uncorrected

Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/	Classification		Nat.	Sp.G.	LL	PI	% >	% <
Depth	USCS	AASHTO	Moist.				3/4 in.	No.200
			6.0	+3/4"= 2.648			30.0	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 147.1 pcf	140.0 pcf	Sand and gravel with silt (CS-SE-3)
Optimum moisture = 4.9 %	6.6 %	

Project No.   L25027   Client: Haley & Aldrich

Project: CVSD- Haley & Aldrich 2025 Materials

○Source of Sample: On-site   Sample Number: 25-0014

BUDINGER & ASSOCIATES, INC.

Remarks:

Sampled by Client
FOR INFORMATIONAL USE ONLY.
Sample contained 30.5% retained on the 3/4" sieve, Max allowed per ASTM D1557 is 30%. Report only reflects 30% retained

Date: 1/10/25

Tested By: GP   Checked By: KC

APPENDIX K
Northwest Linings Installation Report

NORTHWEST LININGS & GEOTEXTILE PRODUCTS, INC.

• 20824 77th Avenue South • Kent, WA 98032 •
Phone: (253) 872-0244 • Fax: (253) 872-0245
www.northwestlinings.com

LETTER OF TRANSMITTAL

TO:	Halme Construction		DATE: July 16, 2025	JOB #: N23072
	8727 W Hwy 2 #100		ATTENTION: Dylan Miller 509-951-2986 <dylanm@halmeconstruction.com>	
	Spokane WA 99224		RE: CVSD Gun Club Cleanup Project – Cap Liner - As-built Liner Submittal Package	

WE ARE SENDING YOU: ☐ Attached ☐ Under Separate Cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of Letter ☐ Change Order ☐ Submittals ☐ Warranties ☐ Other

Copies	Specification #	Description
1		NWL shop drawing of As-built 60-mil textured HDPE geomembrane liner Panel Layout.
1		As-built QC documentation, including: Panel Placement Form, Trial Weld Log, Panel Seaming Form, Non Destructive Testing Form, Destructive Testing Form, and Repair Report.

These are transmitted as checked below:

☐ For Approval ☐ Approved as submitted ☐ Resubmit ☐ Copies for Approval

☒ For your use ☐ Approved as noted ☐ Submit ☐ Copies for distribution

☐ For review and comment ☐ Returned for corrections ☐ Return ☐ Corrected Prints

☐ For bids due _____ ☐ Other_____

☐ Prints returned after loan to us
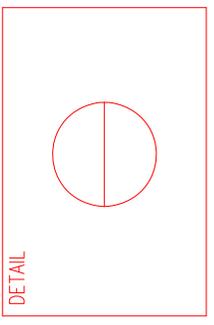
REMARKS:

COPY TO: _____ SIGNED: S.T. Snethen

CVSD Gun Club Cleanup Project
As-built 60-mil textured HDPE liner Panel Layout

Legend:
- **x** - Repair
- - Destructive Test/Repair
- - Patch

0'   30'   60'   120'

Panel labels (partial):
- P-60 #4761 40'
- P-59 #4761 66'
- P-58 #4765 33'
- P-57 #4761 55'
- P-56 #4761 39'
- P-55 #4765 71'
- P-54 #4765 96'
- P-53 #4765 38'
- P-52 #4765 154'
- P-51 #4765 122'
- P-50 #4766 54'
- P-49 #4766 197'
- P-48 #4766 211'
- P-47 #4766 16'
- P-46 #4766 17'
- P-45 #4763 41'
- P-44 #4763 299'
- P-43 #4746 26'
- P-42 #4763 149'
- P-41 #4746 199'
- P-40 #4767 64'
- P-39 #4746 276'
- P-38 #4767 34'
- P-37 #4767 394'
- P-36 #4749 420'
- P-35 #4764 416'
- P-34 #4762 60'
- P-33 #4745 352'
- P-32 #4745 138'
- P-31 #4762 260'
- P-30 #4762 228'
- P-29 #4748 166'
- P-28 #4748 329'
- P-27 #4753 58'
- P-26 #4753 380'
- P-25 #4753 49'
- P-24 #4751 318'
- P-23 #4747 196'
- P-22 #4751 167'
- P-21 #4752 67'
- P-20 #4747 292'
- P-19 #4752 351'
- P-18 #4750 276'
- P-17 #4752 71'
- P-16 #4750 32'
- P-15 #4750 26'
- P-14 #4750 44'
- P-13 #4750 44'
- P-12 #4750 45'
- P-11 #4750 27'
- P-10 #4754 20'
- P-9 #4754 49'
- P-8 #4754 48'
- P-7 #4754 49'
- P-6 #4754 53'
- P-5 #4754 53'
- P-4 #4754 55'
- P-3 #4754 55'
- P-2 #4754 53'
- P-1 #4754 53'

Repair/Destructive labels:
R-1, R-2, R-3, R-4, R-5, R-6, R-8, R-9, R-10, R-11, R-12, R-13, R-14, R-15, R-16, R-17, R-18, R-19, R-20, R-21, R-22, R-23, R-24, R-25, R-26, R-27, R-28
DS-1, DS-2, DS-3, DS-4, DS-5, DS-6, DS-7, DS-8, DS-9, DS-10, DS-11

1 of 1

NORTHWEST LININGS & GEOTEXTILE PRODUCTS, Inc.

www.northwestlinings.com
21000 77TH AVE. SOUTH
KENT, WA. 98032
(253) 872-0244   (253) 872-0245 FAX

JOB NAME:	CVSD Gun Club Cleanup Project
JOB NO.	N 2 3 0 7 2
DATE:	7 16 25
CHECKED:	CS
BY:	TS
SCALE:	AS SHOWN

SHEET NO.

DETAIL

NORTHWEST LININGS & GEOTEXTILE PRODUCTS, Inc.
"Helping to Protect the Environment"
21000 77th Avenue South
Kent, WA 98032
(253) 872-0244 / (800) 729-6954
FAX: (253) 872-0245

Date:	5/13/2025
Job #:	N23072

Panel Placement Form

Project Name:	CVSD GUN CLUB CLEAN UP	**Supervisor:**	R FLACO ARELLANO
Project Location:	SPOKANE, WA	**Engineer:**	BRADY/CODY
Project Description:	CAP	**Contractor:**	HALME CONSTRUCTION
Project Manager:	CS	**Contact:**	BRADY/CODY

Material: 60-MIL HDPE T2

Date	Panel #	Length	Width	Roll Number	Panel Location / Comment
5/13/25	P-1	53'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-2	53'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-3	55'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-4	55'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-5	53'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-6	53'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-7	49'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-8	48'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-9	49'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-10	20'	23.8'	4754	AT WEST SIDE SLOPE
5/13/25	P-11	27'	23.8'	4750	AT WEST SIDE SLOPE
5/13/25	P-12	45'	23.8'	4750	AT WEST SIDE SLOPE
5/13/25	P-13	44'	23.8'	4750	AT WEST SIDE SLOPE
5/13/25	P-14	44'	23.8'	4750	AT WEST SIDE SLOPE
5/13/25	P-15	26'	23.8'	4750	AT WEST SIDE SLOPE
5/13/25	P-16	32'	23.8'	4750	AT WEST SIDE SLOPE
5/13/25	P-17	71'	23.8'	4752	NORTH SIDE END
5/13/25	P-18	276'	23.8'	4750	SOUTH TO NORTH SIDE
5/13/25	P-19	351'	23.8'	4752	N-S ACROSS
5/13/25	P-20	292'	23.8'	4747	N-S ACROSS
5/13/25	P-21	67'	23.8'	4752	AT SOUTH SIDE END
5/13/25	P-22	167'	23.8'	4751	AT NORTH SIDE TO S
5/13/25	P-23	196'	23.8'	4747	SOUTH TO N SIDE END
5/13/25	P-24	318'	23.8'	4751	NORTH TO S SIDE END
5/13/25	P-25	49'	23.8'	4753	AT SOUTH SIDE END
5/14/25	P-26	380'	23.8'	4753	N-S ACROSS
5/14/25	P-27	58'	23.8'	4753	AT SOUTH SIDE END
5/14/25	P-28	329'	23.8'	4748	S-N SIDE END
5/14/25	P-29	166'	23.8'	4748	S-N SIDE END
5/14/25	P-30	228'	23.8'	4762	N-S SIDE
5/14/25	P-31	260'	23.8'	4762	S-N SIDE END
5/14/25	P-32	138'	23.8'	4745	AT NORTH SIDE TO S
5/14/25	P-33	352'	23.8'	4745	AT NORTH SIDE TO S
5/14/25	P-34	60'	23.8'	4762	AT SOUTH SIDE END
5/14/25	P-35	416'	23.8'	4764	N-S ACROSS
5/15/25	P-36	420'	23.8'	4749	S-N SIDE END

Notes: CONTINUED NEXT PAGE.

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Kent, WA 98032
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FAX: (253) 872-0245

Date: 5/15/2025
Job #: N23072

Panel Placement Form

Project Name:	CVSD GUN CLUB CLEAN UP	**Supervisor:**	R FLACO ARELLANO
Project Location:	SPOKANE, WA	**Engineer:**	BRADY/CODY
Project Description:	CAP	**Contractor:**	HALME CONSTRUCTION
Project Manager:	CS	**Contact:**	BRADY/CODY

Material: 60-MIL HDPE T2

Date	Panel #	Length	Width	Roll Number	Panel Location / Comment
5/15/25	P-37	394'	23.8'	4767	N-S ACROSS
5/15/25	P-38	34'	23.8'	4767	AT NORTH SIDE END
5/15/25	P-39	276'	23.8'	4746	N-S ACROSS
5/15/25	P-40	64'	23.8'	4767	AT SOUTH SIDE END
5/15/25	P-41	199'	23.8'	4746	N-S ACROSS
5/15/25	P-42	149'	23.8'	4763	AT SOUTH SIDE END
5/15/25	P-43	26'	23.8'	4746	AT NORTH SIDE END
5/15/25	P-44	299'	23.8'	4763	N-S ACROSS
5/15/25	P-45	41'	23.8'	4763	AT NE CORNER END
5/15/25	P-46	17'	23.8'	4766	AT NE CORNER END
5/15/25	P-47	16'	23.8'	4766	AT NE CORNER END
5/15/25	P-48	211'	23.8'	4766	AT NE CORNER END
5/15/25	P-49	197'	23.8'	4766	AT NE CORNER END
5/15/25	P-50	54'	23.8'	4766	AT WEST CORNER END
5/15/25	P-51	122'	23.8'	4765	AT WEST CORNER END
5/15/25	P-52	154'	23.8'	4765	AT WEST CORNER END
5/19/25	P-53	38'	23.8'	4765	AT N SIDE END
5/19/25	P-54	96'	23.8'	4765	N-S ACROSS
5/19/25	P-55	71'	23.8'	4765	AT N SIDE END
5/19/25	P-56	39'	23.8'	4761	AT SOUTH SIDE END
5/19/25	P-57	55'	23.8'	4761	AT SOUTH SIDE END
5/19/25	P-58	33'	23.8'	4765	AT NORTH SIDE END
5/19/25	P-59	66'	23.8'	4761	S-N AT WEST SIDE END
5/19/25	P-60	40'	23.8'	4761	S-N AT WEST SIDE END

Notes: _____

_____

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Date: 5/13/2025
Job #: N23072

Geomembrane Fusion Weld Trial Log

Project Name:	CVSD GUN CLUB CLEAN UP	Supervisor:	R FLACO ARELLANO
Project Location:	SPOKANE, WA	Engineer:	BRADY/CODY
Project Description:	CAP	Contractor:	HALME CONSTRUCTION
Project Manager:	CS	Contact:	BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Seamer Initials	Machine Number	Wedge Welder		Extruder		Track Peel Values			Tensile Value		
			Wedge Temp	Nip Roller Speed	Barrel Temp	Preheat Temp	In-side	Out-side	Pass/ Fail	LBS/Inch	Rate	Pass/ Fail
5/13/2025 AM	IV	2929	800	6			131	132	Pass	212	2 FM	Pass
							132	137	Pass	211	2 FM	Pass
Comments: 60-MIL HDPE T2							141	135	Pass			
Ambient Temp: 60												
5/13/2025 AM	RP	4478	800	6			125	128	Pass	215	2 FM	Pass
							122	124	Pass	218	2 FM	Pass
Comments: 60-MIL HDPE T2							125	123	Pass			
Ambient Temp: 60												
5/13/2025 PM	RP	4478	800	6			121	124	Pass	211	2 FM	Pass
							119	127	Pass	206	2 FM	Pass
Comments:							122	131	Pass			
Ambient Temp: 68												
5/13/2025 PM	IV	2929	800	6			131	123	Pass	202	2 FM	Pass
							132	127	Pass	200	2 FM	Pass
Comments: 60-MIL HDPE T2							122	128	Pass			
Ambient Temp: 68												
5/14/2025 AM	RP	4478	800	6			121	128	Pass	203	2 FM	Pass
							128	138	Pass	200	2 FM	Pass
Comments:							127	122	Pass			
Ambient Temp: 55												
5/14/2025 AM	IV	2929	800	6			140	136	Pass	198	2 FM	Pass
							129	126	Pass	195	2 FM	Pass
Comments: 60-MIL HDPE T2							143	145	Pass			
Ambient Temp: 55												
5/14/2025 PM	RP	6984			500	500		131	Pass	201	2 FM	Pass
								122	Pass	189	2 FM	Pass
Comments: 60-MIL HDPE T2								129	Pass			
Ambient Temp: 60												
5/15/2025 AM	RP	4478	800	6			133	123	Pass	189	2 FM	Pass
							122	131	Pass	190	2 FM	Pass
Comments: 60-MIL JHDPE T2							124	127	Pass			
Ambient Temp: 50												

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Date: 5/15/2025
Job #: N23072

Geomembrane Fusion Weld Trial Log

Project Name:	CVSD GUN CLUB CLEAN UP	**Supervisor:**	R FLACO ARELLANO	
Project Location:	SPOKANE, WA	**Engineer:**	BRADY/CODY	
Project Description:	CAP	**Contractor:**	HALME CONSTRUCTION	
Project Manager:	CS	**Contact:**	BRADY/CODY	

Material: 60-MIL HDPE T2

Date/ Time	Seamer Initials	Machine Number	Wedge Welder Wedge Temp	Wedge Welder Nip Roller Speed	Extruder Barrel Temp	Extruder Preheat Temp	Track Peel In-side	Track Peel Out-side	Pass/ Fail	Tensile LBS/Inch	Rate	Pass/ Fail
5/15/2025 AM	IV	4047	800	6			120	133	Pass	189	2 FM	Pass
							131	131	Pass	168	2 FM	Pass
Comments: 60-MIL HDPE T2 Ambient Temp: 50							123	123	Pass			
5/15/2025 PM	RP	4478	800	6			120	130	Pass	170	2 FM	Pass
							122	133	Pass	180	2 FM	Pass
Comments: Ambient Temp: 60							118	120	Pass			
5/15/2025 PM	IV	4047	800	6			122	123	Pass	167	2 FM	Pass
							131	123	Pass	177	2 FM	Pass
Comments: 60-MIL HDPE T2 Ambient Temp: 60							134	127	Pass			
5/17/2025 AM	RP	6984			500	500		124	Pass	175	2 FM	Pass
								122	Pass	181	2 FM	Pass
Comments: 60-MIL HDPE T2 Ambient Temp: 45								126	Pass			
5/17/2025 AM	GN	7082			500	500		134	Pass	177	2 FM	Pass
								125	Pass	179	2 FM	Pass
Comments: 60-MIL HDPE T2 Ambient Temp: 45								127	Pass			
5/19/2025 AM	IV	4047	600	6			135	125	Pass	185	2 FM	Pass
							131	127	Pass	191	2 FM	Pass
Comments: 60-MIL HDPE T2 Ambient Temp: 45							123	122	Pass			
5/19/2025 AM	RP	4478	800	6			135	125	Pass	192	2 FM	Pass
							134	119	Pass	187	2 FM	Pass
Comments: Ambient Temp: 45							125	126	Pass			
5/19/2025 AM	MM	6984			500	500		126	Pass	169	2 FM	Pass
								131	Pass	172	2 FM	Pass
Comments: 60-MIL HDPE T2 Ambient Temp: 45								124	Pass			

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Date: 5/13/2025
Job #: N23072

Panel Seaming Form

Project Name:	CVSD GUN CLUB CLEAN UP	Supervisor:	R FLACO ARELLANO
Project Location:	SPOKANE, WA	Engineer:	BRADY/CODY
Project Description:	CAP	Contractor:	HALME CONSTRUCTION
Project Manager:	CS	Contact:	BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Panel Numbers	Seam Length	Seamer Initials	Machine Number	Machine Temp	Ambient Temp	Weather / Comments
5/13/25 AM	P-1/P-2	54'	IV	2929	800	60	P/C TOP-TRENCH END W SLOPE
5/13/25 AM	P-2/P-3	54'	IV	2929	800	60	P/C TOP-TRENCH END W SLOPE
5/13/25 AM	P-3/P-4	53'	IV	2929	800	60	P/C TOP-TRENCH END W SLOPE
5/13/25 AM	P-4/P-5	53'	IV	2929	800	60	P/C TOP-TRENCH END W SLOPE
5/13/25 AM	P-5/P-6	52'	IV	2929	800	60	P/C TOP-TRENCH END W SLOPE
	P-6/P-7	49'	RP	4478	800	60	P/C TOP-TRENCH END W SLOPE
	P-7/P-8	48'	RP	4478	800	60	P/C TOP-TRENCH END W SLOPE
	P-8/P-9	48'	RP	4478	800	60	P/C TOP-TRENCH END W SLOPE
5/13/25 AM	P-10/P-11	24'	RP	4478	800	60	P/C TIE-IN BUTT AT W SLOPE
5/13/25 AM	P-9/10,11	47'	RP	4478	800	60	P/C TOP-TRENCH END W SLOPE
5/13/25 AM	10,11/12	45'	IV	2929	800	60	P/C TOP-TRENCH END W SLOPE
	P-12/P-13	44'	IV	2929	800	60	P/C TOP-TRENCH END W SLOPE
	P-13/P-14	44'	IV	292	800	60	P/C TOP-TRENCH END W SLOPE
	P-15/P-16	28'	RP	4478	800	60	P/C NW CORNER SLOPE
5/13/25 AM	14/15,16	43'	RP	4478	800	60	P/C NW CORNER SLOPE
5/13/25 AM	17/18	24'	RP	4478	800	60	P/C TIE-IN BUTT TOP FLOOR
5/13/25 AM	14,16-1/17,18	346'	RP	4478	800	60	P/C S-N ACROSS
5/13/25 AM	17,18/19	351'	IV	2929	800	60	P/C S-N ACROSS
5/13/25 PM	20/21	24'	IV	2929	800	68	P/C TIE-IN BUTT TOP FLOOR
5/13/25 PM	19/20,21	351'	RP	4478	800	68	P/C S-N ACROSS

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Date: 5/13/2025
Job #: N23072

Panel Seaming Form

Project Name:	CVSD GUN CLUB CLEAN UP	Supervisor:	R FLACO ARELLANO
Project Location:	SPOKANE, WA	Engineer:	BRADY/CODY
Project Description:	CAP	Contractor:	HALME CONSTRUCTION
Project Manager:	CS	Contact:	BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Panel Numbers	Seam Length	Seamer Initials	Machine Number	Machine Temp	Ambient Temp	Weather / Comments
5/13/25 PM	22/23	24'	IV	2929	800	68	P/C TIE-IN BUTTSEAM AT FLOOR
5/13/25 PM	20,21/22,23	362'	IV	2929	800	68	P/C S-N ACROSS OF AREA
5/13/25 PM	24/25	24'	IV	2929	800	68	P/C TIE-IN BUTTSEAM AT FLOOR
5/13/25 PM	22,23/24,25	383'	RP	4478	800	68	P/C S-N ACROSS OF AREA
5/14/25 AM	24,25/26	380'	RP	4478	800	60	P/C N-S ACROSS
5/14/25 AM	27/28	24'	RP	4478	800	60	P/C TIE-IN BUTTSEAM AT FLOOR
5/14/25 AM	26/27,28	387'	IV	4047	800	60	P/C N-S ACROSS
5/14/25 AM	29/30	24'	IV	4047	800	60	P/C TIE-IN BUTTSEAM AT FLOOR
5/14/25 AM	27,28/29,30	394'	IV	4047	800	60	P/C N-S ACROSS
5/14/25 AM	31/32	24'	RP	4478	800	60	P/C TIE-IN BUTTSEAM AT FLOOR
5/14/25 AM	33/34	24'	RP	4478	800	60	P/C TIE-IN BUTTSEAM AT FLOOR
5/14/25 AM	29,30/31,32	398'	RP	4478	800	60	P/C N-S ACROSS
5/14/25 AM	31,32/33,34	412'	IV	4047	800	60	P/C N-S ACROSS
5/14/25 AM	33,34/35	415'	RP	4478	800	60	P/C S-N ACROSS OF AREA
5/15/25 AM	35/36	418'	RP	4478	800	55	P/C N-S ACROSS
5/15/25 AM	36/37	396'	IV	4047	800	55	P/C N-S ACROSS
5/15/25 AM	38/39	24'	RP	4478	800	55	P/C TIE-IN BUTTSEAM AT FLOOR
5/15/25 AM	39/40	24'	RP	4478	800	55	P/C TIE-IN BUTTSEAM AT FLOOR
5/15/25 AM	37/38-40	375'	IV	4047	800	55	P/C N-S ACROSS
5/15/25 AM	41/42	24'	IV	4047	800	55	P/C TIE-IN BUTTSEAM AT FLOOR

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Date: 5/15/2025
Job #: N23072

Panel Seaming Form

Project Name:	CVSD GUN CLUB CLEAN UP	Supervisor: R FLACO ARELLANO
Project Location:	SPOKANE, WA	Engineer: BRADY/CODY
Project Description:	CAP	Contractor: HALME CONSTRUCTION
Project Manager:	CS	Contact: BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Panel Numbers	Seam Length	Seamer Initials	Machine Number	Machine Temp	Ambient Temp	Weather / Comments
5/15/25 AM	38-4.0./41,42	350'	RP	4478	800	55	P/C N-S ACROSS
5/15/25 AM	43/44	24'	RP	4478	800	55	P/C TIE-IN BUTTSEAM AT FLOOR
5/15/25 PM	41,42/43,44	330'	IV	4047	800	64	P/C N-S ACROSS
5/15/25 PM	45/46	18'	IV	4047	800	64	P/C TIE-IN BUTTSEAM AT FLOOR
5/15/25 PM	46/47	18'	IV	4047	800	64	P/C TIE-IN BUTTSEAM AT FLOOR
5/15/25 PM	43,44/45-48	305'	IV	4047	800	64	P/C N-S ACROSS
5/15/25 PM	48/49	211'	RP	4478	800	64	P/C N-S ACROSS
5/15/25 PM	50/51	24'	RP	4478	800	64	P/C TIE-IN BUTTSEAM AT FLOOR
5/15/25 PM	49/50,51	160'	RP	4478	800	64	P/C N-S ACROSS
5/15/25 PM	51/52	155'	IV	4047	800	64	P/C N-S ACROSS
5/19/25 AM	53/54	24'	IV	4047	800	45	P/C TIE-IN BUTTSEAM AT FLOOR
5/19/25 AM	55/56	24'	IV	4047	800	45	P/C TIE-IN BUTTSEAM AT FLOOR
5/19/25 AM	57/58	24'	IV	4047	800	45	P/C TIE-IN BUTTSEAM AT FLOOR
5/19/25 AM	52/53,54	134'	RP	4478	800	45	P/C S-N ACROSS
5/19/25 AM	53,54/55,56	110'	IV	4047	800	45	P/C N-S ACROSS
5/19/25 AM	55,56/57,58	90'	RP	4478	800	45	P/C N-S ACROSS
5/19/25 AM	57,58/59	65'	RP	4478	800	45	P/C N-S ACROSS
5/19/25 AM	59/60	41'	IV	4047	800	45	P/C S-N ACROSS

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Date: 5/13/2025
Job #: N23072

Non Destructive Testing Form

Project Name:	CVSD GUN CLUB CLEAN UP	Supervisor:	R FLACO ARELLANO
Project Location:	SPOKANE, WA	Engineer:	BRADY/CODY
Project Description:	CAP	Contractor:	HALME CONSTRUCTION
Project Manager:	CS	Contact:	BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Panel Numbers	Seamer Initials	Air Pressure Testing						V-Box Pass/ Fail	Comments / Location
			Start Pressure	Start Time	Ending Pressure	End Time	Pressure Loss	Pass/ Fail		
5/13/25 AM	P-1/P-2	IL	30	10:00	30	10:05	0	Pass		AT W SLOPE TOP-END
5/13/25 AM	P-2/P-3	IL	30	10:00	30	10:05	0	Pass		AT W SLOPE TOP-END
5/13/25 AM	P-3/P-4	IL	30	10:00	30	10:05	0	Pass		AT W SLOPE TOP-END
5/13/25 AM	P-4/P-5	IL	30	10:00	30	10:05	0	Pass		AT W SLOPE TOP-END
	P-5/P-6	IL	30	10:00	30	10:05	0	Pass		AT W SLOPE TOP-END
	P-6/P-7	IL	30	10:10	30	10:15	0	Pass		AT W SLOPE TOP-END
	P-7/P-8	IL	30	10:10	30	10:15	0	Pass		AT W SLOPE TOP-END
5/13/25 AM	P-8/P-9	IL	30	10:10	30	10:15	0	Pass		AT W SLOPE TOP-END
5/13/25 AM	P-9/P-10,11	IL	30	10:10	30	10:15	0	Pass		AT W SLOPE TOP-END
5/13/25 AM	10,11/P-12	IL	30	10:10	30	10:15	0	Pass		AT W SLOPE TOP-END
5/13/25 AM	P-10/P-11	IL	30	10:10	30	10:15	0	Pass		24' TIE-IN BUTT W LOPE
	P-12/P-13	IL	30	10:20	30	10:25	0	Pass		AT W SLOPE TOP-END
	P-13/P-14	IL	30	10:20	30	10:25	0	Pass		AT W SLOPE TOP-END
	14,16,15	IL	30	10:20	29	10:25	1	Pass		AT W SLOPE TOP-END
5/13/25 AM	P-15/P-16	IL	30	10:20	30	10:25	0	Pass		NW CORNER TIE-IN SEAM
5/13/25 AM	16,14-1/17,18	IL	30	11:30	29	11:35	1	Pass		N-S ACROSS W TIE-IN BUTT.
5/13/25 AM	P-17/P-18	IL	30	11:40	30	11:45	0	Pass		24' TIE-IN BUTT TOP FLOOR
5/13/25 AM	17,18/19	IL	30	11:40	30	11:45	0	Pass		S-N ACROSS
5/14/25 PM	19/20,21	IL	30	4:00	30	4:05	0	Pass		S-N ACROSS
5/14/25 PM	20/21	IL	30	4:00	30	4:05	0	Pass		24' TIE-IN BUTT TOP FLOOR

**NORTHWEST LININGS &
GEOTEXTILE PRODUCTS, Inc.**
"Helping to Protect the Environment"
21000 77th Avenue South
Kent, WA 98032
(253) 872-0244 / (800) 729-6954
FAX: (253) 872-0245

Date: 5/14/2025
Job #: N23072

Non Destructive Testing Form

Project Name:	CVSD GUN CLUB CLEAN UP	Supervisor:	R FLACO ARELLANO
Project Location:	SPOKANE, WA	Engineer:	BRADY/CODY
Project Description:	CAP	Contractor:	HALME CONSTRUCTION
Project Manager:	CS	Contact:	BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Panel Numbers	Seamer Initials	Air Pressure Testing						V-Box Pass/ Fail	Comments / Location
			Start Pressure	Start Time	Ending Pressure	End Time	Pressure Loss	Pass/ Fail		
5/14/25 PM	20,21/22,23	IL	30	4:00	28	4:05	2	Pass		S-N ACROSS
5/14/25 PM	22,23/24,25	IL	30	4:00	29	4:05	1	Pass		S-N ACROSS
5/14/25 PM	22/23	IL	30	4:00	30	4:05	0	Pass		24' TIE-IN BUTTSEAM
5/14/25 PM	24/25	IL	30	4:00	30	4:05	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	24,25/26	IL	30	10:00	30	10:05	0	Pass		S-N ACROSS
5/17/25 AM	26/27,28	IL	30	10:00	30	10:05	0	Pass		S-N ACROSS
5/17/25 AM	27/28	IL	30	10:00	30	10:05	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	27,28/29,30	IL	30	10:00	29	10:05	1	Pass		S-N ACROSS
5/17/25 AM	29/30	IL	30	10:00	30	10:05	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	29,30/31,32	IL	30	10:00	29	10:05	1	Pass		S-N ACROSS
5/17/25 AM	31,32/33,34	IL	30	10:05	28	10:10	2	Pass		S-N ACROSS
5/17/25 AM	34/33	IL	30	10:05	30	10:10	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	31/32	IL	30	10:05	30	10:10	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	29/30	IL	30	10:05	30	10:10	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	33,34/35	IL	30	10:05	29	10:10	1	Pass		S-N ACROSS
5/17/25 AM	35/36	IL	30	10:20	30	10:25	0	Pass		S-N ACROSS
5/17/25 AM	36/37	IL	30	10:20	30	10:25	0	Pass		S-N ACROSS
5/17/25 AM	37/38-40	IL	30	10:20	29	10:25	1	Pass		S-N ACROSS
5/17/25 AM	38-40/41,42	IL	30	10:20	29	10:25	1	Pass		S-N ACROSS
5/17/25 AM	39/40	IL	30	10:20	30	10:25	0	Pass		24' TIE-IN BUTTSEAM

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Non Destructive Testing Form

Project Name:	CVSD GUN CLUB CLEAN UP
Project Location:	SPOKANE, WA
Project Description:	CAP
Project Manager:	CS

Supervisor:	R FLACO ARELLANO
Engineer:	BRADY/CODY
Contractor:	HALME CONSTRUCTION
Contact:	BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Panel Numbers	Seamer Initials	Start Pressure	Start Time	Ending Pressure	End Time	Pressure Loss	Pass/ Fail	V-Box Pass/ Fail	Comments / Location
5/17/25 AM	39/38	IL	30	10:35	30	10:40	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	41/42	IL	30	10:35	30	10:40	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	43/44	IL	30	10:35	30	10:40	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	41,42/43,44	IL	30	10:35	30	10:40	1	Pass		S-N ACROSS
5/17/25 AM	43,44/48-45	IL	30	10:35	30	10:40	1	Pass		S-N ACROSS
5/17/25 AM	48/49	IL	30	10:45	30	10:50	0	Pass		S-N ACROSS
5/17/25 AM	49/50,51	IL	30	10:45	30	10:50	0	Pass		S-N ACROSS
5/17/25 AM	50,51/52	IL	30	10:45	30	10:50	0	Pass		S-N ACROSS
5/17/25 AM	50/51	IL	30	10:45	30	10:50	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	48/47	IL	30	10:45	30	10:50	0	Pass		24' TIE-IN BUTTSEAM
5/17/25 AM	47/46	IL	30	10:50	30	10:55	0	Pass		18' TIE-IN BUTTSEAM
5/17/25 AM	46/45	IL	30	10:50	30	10:55	0	Pass		18' TIE-IN BUTTSEAM
5/19/25 AM	52/53,54	GBG	30	9:30	30	9:05	0	Pass		S-N ACROSS
5/19/25 AM	53,54/55,56	GBG	30	9:30	29	9:35	1	Pass		S-N ACROSS
5/19/25 AM	55,56/57,58	GBG	30	9:30	30	9:35	0	Pass		S-N ACROSS
5/19/25 AM	57,58/59	GBG	30	9:30	29	9:35	1	Pass		S-N ACROSS
5/19/25 AM	59/60	GBG	30	9:30	30	9:35	0	Pass		24' TIE-IN BUTTSEAM
5/19/25 AM	57/58	GBG	30	9:45	30	9:50	0	Pass		24' TIE-IN BUTTSEAM
5/19/25 AM	55/56	GBG	30	9:45	30	9:50	0	Pass		24' TIE-IN BUTTSEAM
5/19/25 AM	53/54	GBG	30	9:45	30	9:50	0	Pass		24' TIE-IN BUTTSEAM

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Destructive Testing Form

Project Name:	CVSD GUN CLUB CLEAN UP	Supervisor:	R FLACO ARELLANO
Project Location:	SPOKANE, WA	Engineer:	BRADY/CODY
Project Description:	CAP	Contractor:	HALME CONSTRUCTION
Project Manager:	CS	Contact:	BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Panel Numbers	Sample I.D.	Tester Initials	Machine Number	Track Peel Values In-side	Out-side	Pass/ Fail	Tensile Value LBS/ Inch	Rate	Pass/ Fail	Lab Pass / Fail	Peel/ Tensile
5/17/2025 AM	P-13/P-12	DS-1	CS	PT7585	129	133	Pass	2000	2 FM	Pass		
					133	123	Pass	188	2 FM	Pass		
Comments: 60-MIL HDPE T2					132	124	Pass	167	2 FM	Pass		
					146	15	Pass	190	2 FM	Pass		
					127	120	Pass	188	2 FM	Pass		
	P-20/P-19	DS-2	CS	PT7585	124	133	Pass	200	2 FM	Pass		
					128	130	Pass	188	2 FM	Pass		
Comments:					140	123	Pass	167	2 FM	Pass		
					132	133	Pass	170	2 FM	Pass		
					125	125	Pass	188	2 FM	Pass		
5/17/2025 AM	P-23/P-20	DS-3	CS	PT7585	131	130	Pass	200	2 FM	Pass		
					126	123	Pass	183	2 FM	Pass		
Comments: 60-MIL HDPE T2					129	133	Pass	181	2 FM	Pass		
					133	130	Pass	178	2 FM	Pass		
					125	123	Pass	171	2 FM	Pass		
	30/32	DS-4	CS	PT8005	126	122	Pass	167	2 FM	Pass		
					124	123	Pass	166	2 FM	Pass		
Comments:					128	133	Pass	160	2 FM	Pass		
					125	133	Pass	177	2 FM	Pass		
					126	120	Pass	181	2 FM	Pass		
5/15/2025 AM	31/33	DS-5	CS	PT8005	133	123	Pass	191	2 FM	Pass		
					120	133	Pass	171	2 FM	Pass		
Comments: 60-MIL HDPE T2					124	120	Pass	168	2 FM	Pass		
					126	126	Pass	181	2 FM	Pass		
					123	130	Pass	180	2 FM	Pass		
	33/34	DS-6	CS	PT8005	130	133	Pass	188	2 FM	Pass		
					134	122	Pass	167	2 FM	Pass		
Comments:					133	123	Pass	171	2 FM	Pass		
					122	123	Pass	173	2 FM	Pass		
					123	130	Pass	177	2 FM	Pass		
5/17/2025 AM	33/35	DS-7	CS	PT8005	120	123	Pass	192	2 FM	Pass		
					133	130	Pass	174	2 FM	Pass		
Comments:					123	133	Pass	188	2 FM	Pass		
					120	129	Pass	190	2 FM	Pass		
					127	133	Pass	193	2 FM	Pass		
5/17/2025 AM	37/38	DS-8	CS	PT8005	122	120	Pass	167	2 FM	Pass		
					123	133	Pass	173	2 FM	Pass		
Comments: 60-MIL HDPE T2					133	120	Pass	165	2 FM	Pass		
					124	123	Pass	168	2 FM	Pass		
					125	122	Pass	167	2 FM	Pass		

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Date: 5/17/2025
Job #: N23072

Destructive Testing Form

Project Name:	CVSD GUN CLUB CLEAN UP	Supervisor:	R FLACO ARELLANO
Project Location:	SPOKANE, WA	Engineer:	BRADY/CODY
Project Description:	CAP	Contractor:	HALME CONSTRUCTION
Project Manager:	CS	Contact:	BRADY/CODY

Material: 60-MIL HDPE T2

Date/ Time	Panel Numbers	Sample I.D.	Tester Initials	Machine Number	Track Peel Values In-side	Out-side	Pass/ Fail	Tensile Value LBS/ Inch	Rate	Pass/ Fail	Lab Pass / Fail	Peel/ Tensile
5/17/2025 AM	41/44	DS-9	CS	PT8005	123	133	Pass	188	2 FM	Pass		
					120	123	Pass	170	2 FM	Pass		
Comments: 60-MIL HDPE T2					132	120	Pass	166	2 FM	Pass		
					129	123	Pass	159	2 FM	Pass		
					127	129	Pass	171	2 FM	Pass		
5/17/2025 AM	49/51	DS-10	CS	PT8005	119	123	Pass	170	2 FM	Pass		
					123	131	Pass	189	2 FM	Pass		
Comments: 60-MIL HDPE T2					131	123	Pass	170	2 FM	Pass		
					130	129	Pass	166	2 FM	Pass		
					123	127	Pass	177	2 FM	Pass		
5/19/2025 AM	54/55	DS-11	CS	PT8005	126	124	Pass	187	2 FM	Pass		
					123	122	Pass	183	2 FM	Pass		
Comments: 60-MIL HDPE T2					121	124	Pass	191	2 FM	Pass		
					124	122	Pass	182	2 FM	Pass		
					127	125	Pass	185	2 FM	Pass		
Comments:												
Comments:												
Comments:												
Comments:												
Comments:												

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Date: 5/14/2025
Job #: N23072

Repair Report

Project Name:	CVSD GUN CLUB CLEAN UP	
Project Location:	SPOKANE, WA	
Project Description:	CAP	
Project Manager:	CS	

Supervisor:	R FLACO ARELLANO
Engineer:	BRADY/CODY
Contractor:	HALME CONSTRUCTION
Contact:	BRADY/CODY

Date	Repair ID#	Panel Numbers	Extruder Number	Operator Initials	Type of Repair/Detail/Location (I.E.: DS Patch, Rock Hole, Burnout, Failed Seam, ETC.)	V-Box Pass/Fail
5/14/25	R-1	1,2,3/18	6984	RP/GN	2 1'x1' patches over W side tie-in buttseam	Pass
5/14/25	R-2	3,4,5/18	6984	RP/GN	2 1'x1' patches over W side tie-in buttseam	Pass
5/14/25	R-3	5,6,7/18	6984	RP/GN	2 1'x1' patches over W side tie-in buttseam	Pass
5/14/25	R-4	7,8,9/18	6984	RP/GN	2 1'x1' patches over W side tie-in buttseam	Pass
5/14/25	R-5	9,11,12/18	6984	RP/GN	2 1'x1' patches over W side tie-in buttseam	Pass
5/14/25	R-6	9,10/11,12	6984	RP/GN	2 1'x1' patches over 24' tie-in buttseam at W slope	Pass
5/14/25	R-7	12,13/18	6984	RP/GN	DS-1 1'x5' patch over W side tie-in buttseam	Pass
5/14/25	R-8	13/18,17/19	6984	RP/GN	2 1'x1' patches over 24' tie-in buttseam at top	Pass
5/14/25	R-9	13,14,16/17	6984	RP/GN	2 1'x1' patches over W side tie-in buttseam	Pass
5/14/25	R-10	14/15,16	6984	RP/GN	1'x1' patch over NW corner tie-in buttseam	Pass
5/17/25	R-11	19,20/21,23	6984	RP/GN	DS-2 1'x5' and 1'x1' patches over 24' tie-in buttseam	Pass
5/17/25	R-12	23,24/25,26	6984	RP/GN	2 1'x1' patches over 24' tie-in buttseam at top	Pass
5/17/25	R-13	20,22/23,24	6984	RP/GN	DS-3 1'x5' and 1'x1' patches over 24' tie-in buttseam	Pass
5/17/25	R-14	26,27/28,29	6984	RP/GN	2 1'x1' patches over 24' tie-in buttseam at top	Pass
5/17/25	R-15	28,29/30,31	6984	RP/GN	2 1'x1' patches over 24' tie-in buttseam at top	Pass
5/17/25	R-16	30,31/32,33	6984	RP/GN	DS-4-5 1'x5' patches over 24' tie-in buttseam at top	Pass
5/17/25	R-17	31,33/34,35	6984	RP/GN	DS-6-7 1'x5' patches over 24' tie-in buttseam at top	Pass
5/17/25	R-18	37,39/40,42	6984	RP/GN	2 1'x1' patches over 24' tie-in buttseam at top	Pass
5/17/25	R-19	39,41/42,44	6984	RP/GN	2 1'x1' patches over 24' tie-in buttseam at top	Pass
5/17/25	R-20	49,50/51,52	6984	RP/GN	DS-10 1'x5' and 1'x1' patches over 24' tie-in buttseam at top	Pass

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Date: 5/17/2025
Job #: N23072

Repair Report

Project Name: CVSD GUN CLUB CLEAN UP	**Supervisor:** R FLACO ARELLANO
Project Location: SPOKANE, WA	**Engineer:** BRADY/CODY
Project Description: CAP	**Contractor:** HALME CONSTRUCTION
Project Manager: CS	**Contact:** BRADY/CODY

Date	Repair ID#	Panel Numbers	Extruder Number	Operator Initials	Type of Repair/Detail/Location (I.E.: DS Patch, Rock Hole, Burnout, Failed Seam, ETC.)	V-Box Pass/Fail
5/17/25	R-21	44,48/47,46	6984	RP/GN	2 1'x1' patches over tie-in buttseam at E side	Pass
5/17/25	R-22	44/46,45	6984	RP/GN	1'x1' patch over tie-in buttseam at E side	Pass
5/17/25	R-23	41,44/45,43	6984	RP/GN	DS-9 1'x5' and 1'x1' patches over 24' tie-in buttseam	Pass
5/17/25	R-24	37,38/39,41	6984	RP/GN	DS-8 1'x5' and 1'x1' patches over 24' tie-in buttseam	Pass
5/19/25	R-25	52,52/54,55	6984	RP/GN	2 1'x1' patch over 24' tie-in buttseam at E side	Pass
5/19/25	R-26	54,55/56,57	6984	RP/GN	DS-11 1'x5' and 1'x1' patches over 24' tie-in buttseam	Pass
5/19/25	R-27	55,57/58,59	6984	RP/GN	2 1'x1' patches over 24' tie-in buttseam at E side	Pass
5/19/25	R-28	60	6984	RP/GN	9'x15' patch at E side end to trench	Pass

APPENDIX L
Stormwater Swale Sizing Technical Memorandum

HALEY & ALDRICH, INC.
505 W. Riverside Avenue
Suite 450
Spokane, WA 99201
509.960.7447

TECHNICAL MEMORANDUM

April 10, 2025
File No. 0202349-002

TO: City of Liberty Lake
               Luke Michels, P.E.

C: Central Valley School District; Attn: Jay Rowell
               Washington State Department of Ecology; Attn: Ted Uecker

FROM: Haley & Aldrich, Inc.
               Breeyn Greer, P.E., Senior Technical Specialist
               John Haney, P.E., Senior Environmental Engineer

SUBJECT: Former Gun Club Cleanup Action

Dear Luke Michels:

Haley & Aldrich Inc. (Haley & Aldrich), acting on behalf of the Central Valley School District (CVSD), received your email inquiry regarding the Former Gun Club Cleanup, dated February 21, 2025. The Former Gun Club Cleanup action is permitted under City of Liberty Lake (City) Grading Permit GRD2023-0010, dated March 19, 2024, and Mitigated Determination of Non-Significance LUA2023-0046, dated March 1, 2024. Please see the City's comments listed below and our replies *in italics*.

1. **City Comment:** The [Stormwater Pollution Prevention Plan] provided by the contractor only calls for silt fence at the north end of the site around the repository. Although the site is relatively flat in undisturbed areas, there are very large stockpiles of soil around the perimeter of the site (not sure if they are contaminated or clean). I am concerned about erosion from the stockpiles spreading to the neighboring property from late winter/spring rains. The property to the east is owned by the school district, so I will leave it up to them on whether they would like silt fences placed along the east boundary. I am mostly concerned about the residential properties to the west of the site. Do you agree that silt fences should be installed along the western boundary of the site?

   Haley & Aldrich Reply: *The western property perimeter was monitored after the heavy rainfall on Sunday, February 23, 2025, and there was no evidence of offsite stormwater discharge to the west. We concur that offsite sediment discharge would not be tolerated, and, should additional silt fence be warranted in the future, it will be installed at that time.*

2. **City Comment:** I am concerned that there is no discharge for the composite drainage net. Typically, subsurface drainage systems have a pipe and discharge to a disposal location (drywell, infiltration trench, etc.). Based on the relatively shallow geomembrane and the lack of discharge, the cover soil will likely become completely saturated at times from irrigation, snow melt, and rain. This could essentially create an impermeable surface that will create stormwater runoff. The current plans only have a small swale on the west and northwest portions of the repository. My concern is that runoff from the other sides of the repository does not have a safe disposal area. Based on the Spokane Regional Stormwater Manual, could you please provide drainage calcs to show that water from a 10-year storm event will be contained, and that water from a 100-year storm event will have a safe overflow path (at minimum)?

   Haley & Aldrich Reply: *A hydrologic analysis of stormwater flow was conducted under the Spokane Regional Stormwater Manual[1] in response to this comment. The hydrologic analysis was completed for the northern portion of the repository (approximately 80,000 square feet) that drains to the north from the repository crown along alignment 2 shown on the Repository Final Grading Plan, Attachment A. The southern portion of the repository flows freely onto CVSD-owned property and is not at risk of leaving the site.*

   The SRSM specifies the Natural Resource Conservation Service (NRCS) Type 1A 24-hour design storm with the retention of runoff from the 10-year storm and safe conveyance of runoff from the 100-year storm. We modeled the runoff volume generated using the Curve Number Method in Hydraulic Modeling Software (HMS; Version 4.12) for a variety of potentially applicable curve numbers (74 = U.S. Department of Agriculture [USDA] Soil Type C grass, and 100 = smooth HDPE liner surface); see Attachment B. Conservative curve number 100 was ultimately utilized for design; curve number 100 translates precipitation directly to runoff and HMS modeling was not required. To retain the 10-year storm (395 cubic yards; Attachment C) in the infiltration swale, the swale was expanded along the north side of the repository, between the repository and the northern property line (see Attachment A). The expanded swale will retain greater than 400 cubic yards of stormwater. Safe conveyance of the 100-year storm (modeled at 553 cubic yards) will occur via overland flow in the vicinity.

3. **City Comment:** What compaction is specified for the backfill of excavations that are outside of the repository? Is this compaction sufficient for future building construction?

   Haley & Aldrich Reply: *The compaction specified for backfill outside of the repository is 90 percent maximum dry density in accordance with the International Building Code (ICB) Appendix J Section J107.5[2]. Future site use is to be determined by the future owner and compaction will be evaluated at that time. The future developer will likely conduct their own geotechnical evaluation as a component of due diligence in advance of purchase. We understand that City design standards call for 95 percent maximum dry density compaction, below public roadways, sidewalks, and curb and gutter. It will be the responsibility of the future developer to ensure that design standards are met on publicly-owned land.*

---

[1] Spokane County, City of Spokane, and City of Spokane Valley, 2008. "Spokane Regional Stormwater Manual," April.
[2] International Code Council (ICC), 2024. "2024 International Building Code."

HALEY ALDRICH

Attachments:
    A – Repository Final Grading Plan; Rev 1 Markup (C-307)
    B – HMS Output Files for Curve Number 74
    C – Hydrologic Volumetric Analysis

HALEY ALDRICH

SITE BOUNDARY

SWALE EXPANSION

OVERHEAD POWERLINE

BOTTOM OF SWALE
EL. 2041.0'

BOTTOM OF SWALE
EL. 2041.0'

TOP OF REPOSITORY
EL. 2048.5'

2044

OVERLAP STRAW WATTLES (3 FEET MIN.)
OR AS NECESSARY TO STAY ON THE
MIDDLE OF SLOPE

2050

3H:1V
(SEE NOTE 3)

TOP OF FIELD
EL. 2050.5'

AREA
DRAINING TO
SWALE ~80,000
SF

4H:1V

2
C-402

0+00

BOTTOM OF SWALE
EL. 2041.8'

2050

STRAW WATTLES

1
C-500

4H:1V

CROWN
ALIGNMENT
ALONG C/
C-402

FUTURE SOCCER FIELD
70 YDS X 120 YDS WITH
15 FT BUFFER

FLAT PRACTICE AREA

2050   4H:1V

TOP OF FIELD
EL. 2050.5'

1 ISSUED FOR ECOLOGY

BOTTOM OF SWALE
EL. 2042.0'

2050

4H:1V

EXTEND 25 FT PAST REPOSITORY

1.25' DEEP SWALE
4H:1V

2
C-501

1
C-402

N

NOTES

1. MATERIAL SALVAGED FROM THE TOP 0.0 TO 0.5
FEET OF THE REPOSITORY EXCAVATION SHALL
BE USED AS TOPSOIL IN THIS AREA AND IS
EXPECTED TO COVER THE TOP 0.2 FEET OF
DISTURBANCE.

2. TOPSOIL PLACEMENT OVER THE PROPOSED
SOCCER FIELD AND PRACTICE AREA SHALL BE
0.3 FEET THICK WITH THE REMAINING TOPSOIL
TO BE PLACED OVER THE SLOPES AND AREA
NORTH OF THE PROPOSED SOCCER FIELD.

3. SIDE SLOPE TRANSITION FROM 4H:1V TO 3H:1V
AT THE CORNER TO PROVIDE LARGE ENOUGH
AREA FOR FUTURE SOCCER FIELD.

4. A SINGLE ROW OF STRAW WATTLES SHALL BE
PLACED MIDDLE OF SLOPE ON CONTOUR
BETWEEN THE CREST AND TOE OF THE
REPOSITORY FILL SLOPE, OR TO THE BOTTOM
OF SWALE AS SHOWN.

HALEY
ALDRICH

HALEY & ALDRICH
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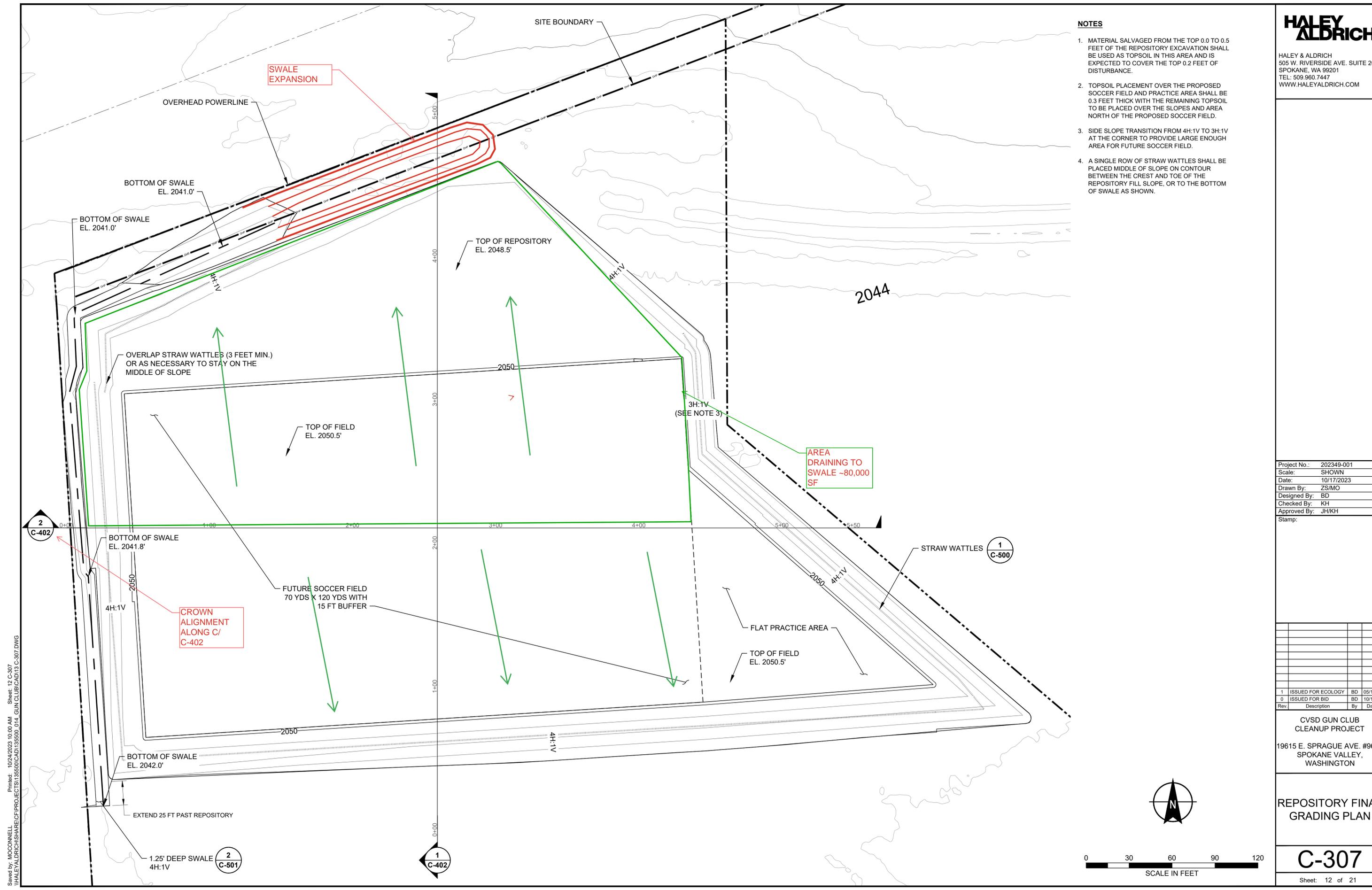
Project No.:	202349-001
Scale:	SHOWN
Date:	10/17/2023
Drawn By:	ZS/MO
Designed By:	BD
Checked By:	KH
Approved By:	JH/KH
Stamp:	

Rev.	Description	By	Date
1	ISSUED FOR ECOLOGY	BD	05/18/23
0	ISSUED FOR BID	BD	10/18/23

CVSD GUN CLUB
CLEANUP PROJECT

19615 E. SPRAGUE AVE. #9656
SPOKANE VALLEY,
WASHINGTON

REPOSITORY FINAL
GRADING PLAN

C-307

Sheet: 12 of 21

0   30   60   90   120
SCALE IN FEET
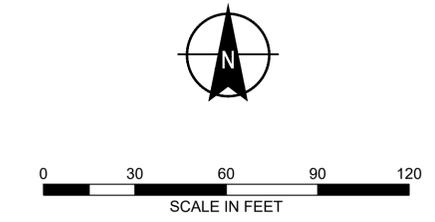
Project: Site Volume

Simulation Run: 010YR_24HR

Simulation Start: 31 December 2024, 24:00

Simulation End: 1 January 2025, 24:00

HMS Version: 4.12

Executed: 27 February 2025, 17:02

Global Parameter Summary - Subbasin

Area (MI2)

Element Name	Area (MI2)
Field	0

Loss Rate: Scs

Element Name	Percent Impervious Area	Curve Number
Field	0	74

Transform: Scs

Element Name	Lag	Unitgraph Type
Field	10	Standard

Global Results Summary

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Field	0	0.04	01Jan2025, 08:55	0.35

Subbasin: Field

Area (MI2) : 0

Loss Rate: Scs

Percent Impervious Area	0
Curve Number	74

Transform: Scs

Lag	10
Unitgraph Type	Standard

Results: Field

Peak Discharge (CFS)	0.04
Time of Peak Discharge	01Jan2025, 08:55
Volume (IN)	0.35
Precipitation Volume (AC - FT)	0.27
Loss Volume (AC - FT)	0.22
Excess Volume (AC - FT)	0.05
Direct Runoff Volume (AC - FT)	0.05
Baseflow Volume (AC - FT)	0

Precipitation and Outflow
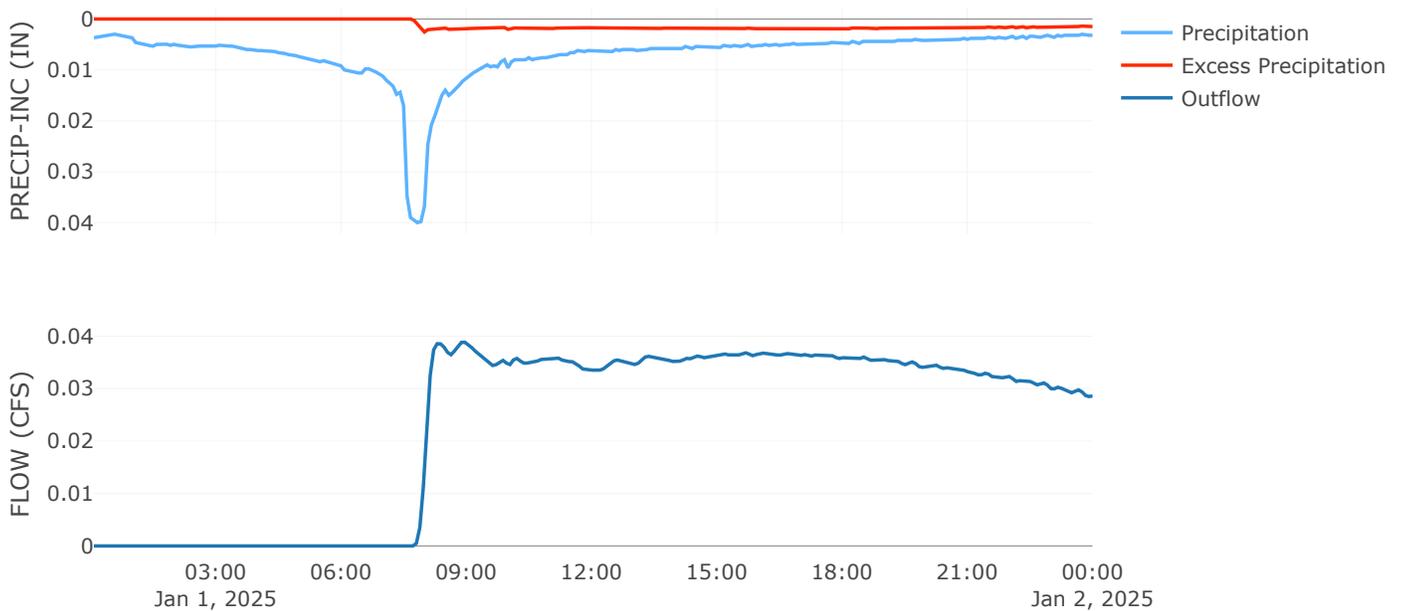
Project: Site Volume

Simulation Run: 100YR_24HR

Simulation Start: 31 December 2024, 24:00

Simulation End: 1 January 2025, 24:00

HMS Version: 4.12

Executed: 27 February 2025, 17:02

Global Parameter Summary - Subbasin

Area (MI2)

Element Name	Area (MI2)
Field	0

Loss Rate: Scs

Element Name	Percent Impervious Area	Curve Number
Field	0	74

Transform: Scs

Element Name	Lag	Unitgraph Type
Field	10	Standard

Global Results Summary

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Field	0	0.24	01Jan2025, 08:05	0.9

Subbasin: Field

Area (MI2) : 0

Loss Rate: Scs

Percent Impervious Area	0
Curve Number	74

Transform: Scs

Lag	10
Unitgraph Type	Standard

Results: Field

Peak Discharge (CFS)	0.24
Time of Peak Discharge	01Jan2025, 08:05
Volume (IN)	0.9
Precipitation Volume (AC - FT)	0.4
Loss Volume (AC - FT)	0.28
Excess Volume (AC - FT)	0.12
Direct Runoff Volume (AC - FT)	0.12
Baseflow Volume (AC - FT)	0

Precipitation and Outflow
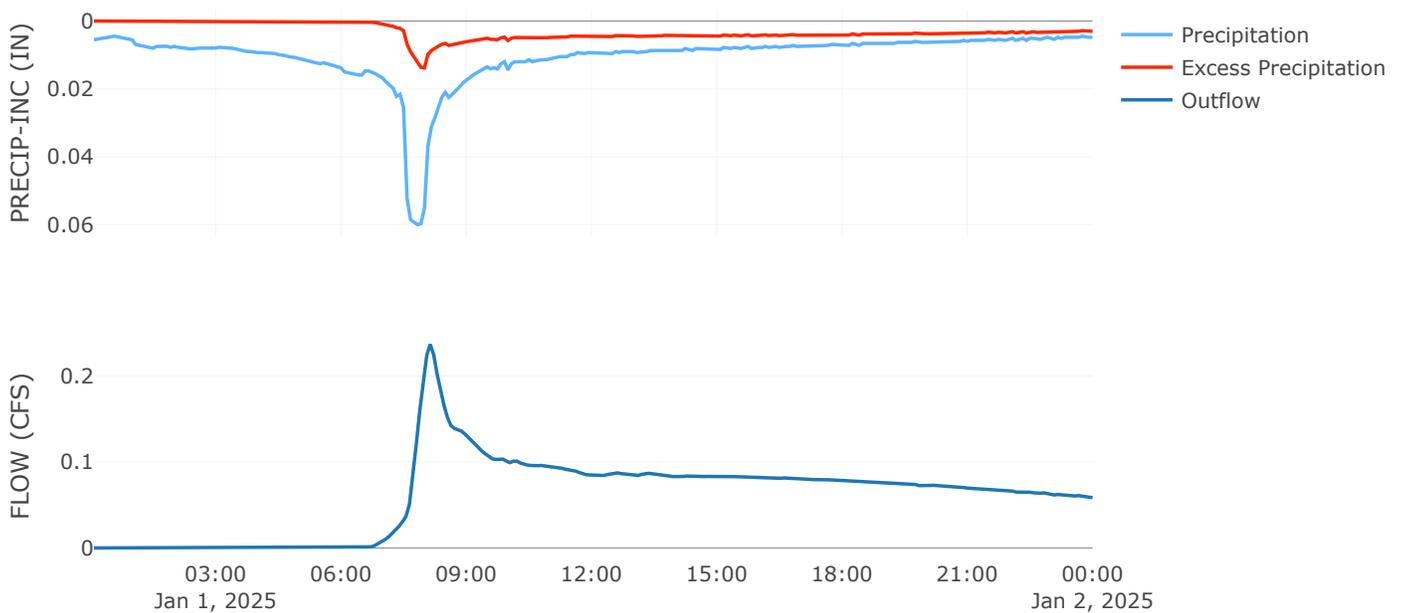
Former Gun Club Stormwater Analysis

			Area	
Rational Method			80000	sf
Q	**(CIA)/Kc**		0.0025	mi^2

Q	(cfs)	Return (i)		
I	(in/hr)	10	2	24-hr
A	(Ac)	100	3	24-hr
Kc	conversion factor 1			

Curve No

74	Class C Grass	USDA Web Soil Survey
61	No Runoff	
99	Parking Lot	

Hydraullic Modeling System (HMS) output

CN 74	Runoff Depth (in)	Volume (ft^3)	Volume (CY)
10 (yr)	0.35	2333	86
100 (yr)	0.9	6000	222

CN 100	Runoff Depth (in)	Storage 20% porosity	Volume (ft^3)	Volume (CY)
10 (yr)	2	0.13	10667	395
100 (yr)	2.8	0.19	14933	553

Current Swale Volume (CY)		240
Approximate Addition (CY)		215
	Sum	455 > 395

APPENDIX M
ProUCL Output

User Selected Options	
Date/Time of Computation	ProUCL 5.2 5/15/2025 2:14:20 PM
From File	20250515_SO-ProUCL_import_file.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1-Methylnaphthalene - Semi-Volatile Organic Compounds (SIM)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	14
		Number of Missing Observations	282
Number of Detects	0	Number of Non-Detects	41
Number of Distinct Detects	0	Number of Distinct Non-Detects	14

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!

Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!

The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 1-Methylnaphthalene - Semi-Volatile Organic Compounds (SIM) was not processed!

2-Methylnaphthalene - Semi-Volatile Organic Compounds (SIM)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	14
		Number of Missing Observations	282
Number of Detects	1	Number of Non-Detects	40
Number of Distinct Detects	1	Number of Distinct Non-Detects	13

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 2-Methylnaphthalene - Semi-Volatile Organic Compounds (SIM) was not processed!

Arsenic - Inorganic Compounds

General Statistics

Total Number of Observations	84	Number of Distinct Observations	36
		Number of Missing Observations	232
Number of Detects	29	Number of Non-Detects	55
Number of Distinct Detects	20	Number of Distinct Non-Detects	27
Minimum Detect	4.2	Minimum Non-Detect	0.84
Maximum Detect	20	Maximum Non-Detect	11
Variance Detects	8.378	Percent Non-Detects	65.48%
Mean Detects	9.072	SD Detects	2.895
Median Detects	9.2	CV Detects	0.319
Skewness Detects	1.576	Kurtosis Detects	6.663
Mean of Logged Detects	2.159	SD of Logged Detects	0.314

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.834	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.898	Detected Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.202	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.189	Detected Data Not Normal at 1% Significance Level

Detected Data Not Normal at 1% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	6.614	KM Standard Error of Mean	0.563
90KM SD	3.113	95% KM (BCA) UCL	7.558
95% KM (t) UCL	7.55	95% KM (Percentile Bootstrap) UCL	7.529
95% KM (z) UCL	7.54	95% KM Bootstrap t UCL	7.455
90% KM Chebyshev UCL	8.302	95% KM Chebyshev UCL	9.067
97.5% KM Chebyshev UCL	10.13	99% KM Chebyshev UCL	12.21

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.286	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.746	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.19	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.162	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	10.93	k star (bias corrected MLE)	9.822
Theta hat (MLE)	0.83	Theta star (bias corrected MLE)	0.924
nu hat (MLE)	633.9	nu star (bias corrected)	569.7
Mean (detects)	9.072		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
86						This is especially true when the sample size is small.									
87						For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates									
88					Minimum	2.538				Mean		6.753			
89					Maximum	20				Median		6.062			
90					SD	2.574				CV		0.381			
91					k hat (MLE)	8.393				k star (bias corrected MLE)		8.101			
92					Theta hat (MLE)	0.805				Theta star (bias corrected MLE)		0.834			
93					nu hat (MLE)	1410				nu star (bias corrected)		1361			
94				Adjusted Level of Significance (β)		0.0471									
95			Approximate Chi Square Value (N/A, α)			1276			Adjusted Chi Square Value (N/A, β)			1275			
96				95% Gamma Approximate UCL		7.201			95% Gamma Adjusted UCL			7.209			
97															
98					Estimates of Gamma Parameters using KM Estimates										
99					Mean (KM)	6.614				SD (KM)		3.113			
100					Variance (KM)	9.689				SE of Mean (KM)		0.563			
101					k hat (KM)	4.514				k star (KM)		4.361			
102					nu hat (KM)	758.4				nu star (KM)		732.7			
103					theta hat (KM)	1.465				theta star (KM)		1.517			
104				80% gamma percentile (KM)		9.028			90% gamma percentile (KM)			10.86			
105				95% gamma percentile (KM)		12.53			99% gamma percentile (KM)			16.1			
106															
107					Gamma Kaplan-Meier (KM) Statistics										
108			Approximate Chi Square Value (732.66, α)			670.9			Adjusted Chi Square Value (732.66, β)			669.8			
109				95% KM Approximate Gamma UCL		7.223			95% KM Adjusted Gamma UCL			7.234			
110															
111					Lognormal GOF Test on Detected Observations Only										
112				Shapiro Wilk Test Statistic		0.898		Shapiro Wilk GOF Test							
113				10% Shapiro Wilk Critical Value		0.937		Detected Data Not Lognormal at 10% Significance Level							
114				Lilliefors Test Statistic		0.21		Lilliefors GOF Test							
115				10% Lilliefors Critical Value		0.148		Detected Data Not Lognormal at 10% Significance Level							
116				Detected Data Not Lognormal at 10% Significance Level											
117															
118					Lognormal ROS Statistics Using Imputed Non-Detects										
119				Mean in Original Scale		6.879			Mean in Log Scale			1.878			
120				SD in Original Scale		2.45			SD in Log Scale			0.307			
121			95% t UCL (assumes normality of ROS data)			7.324			95% Percentile Bootstrap UCL			7.349			
122				95% BCA Bootstrap UCL		7.4			95% Bootstrap t UCL			7.406			
123				95% H-UCL (Log ROS)		7.272									
124															
125				Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution											
126				KM Mean (logged)		1.719			KM Geo Mean			5.578			
127				KM SD (logged)		0.695			95% Critical H Value (KM-Log)			1.997			
128			KM Standard Error of Mean (logged)			0.174			95% H-UCL (KM -Log)			8.267			
129				KM SD (logged)		0.695			95% Critical H Value (KM-Log)			1.997			
130			KM Standard Error of Mean (logged)			0.174									
131															
132					DL/2 Statistics										
133				DL/2 Normal					DL/2 Log-Transformed						
134				Mean in Original Scale		6.015			Mean in Log Scale			1.694			
135				SD in Original Scale		2.859			SD in Log Scale			0.474			
136				95% t UCL (Assumes normality)		6.534			95% H-Stat UCL			6.694			
137				DL/2 is not a recommended method, provided for comparisons and historical reasons											
138															
139					Nonparametric Distribution Free UCL Statistics										
140					Data do not follow a Discernible Distribution										
141															
142					Suggested UCL to Use										
143				95% KM (t) UCL		7.55									
144															
145			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
146			Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
147			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
148															
149	Benzo(a)anthracene - Semi-Volatile Organic Compounds (SIM)														
150															
151					General Statistics										
152			Total Number of Observations			41			Number of Distinct Observations			34			
153									Number of Missing Observations			282			
154				Number of Detects		38			Number of Non-Detects			3			316
155				Number of Distinct Detects		32			Number of Distinct Non-Detects			2			
156				Minimum Detect		0.0043			Minimum Non-Detect			0.0055			
157				Maximum Detect		0.1			Maximum Non-Detect			0.006			
158				Variance Detects		4.8551E-4			Percent Non-Detects			7.317%			
159				Mean Detects		0.0314			SD Detects			0.022			
160				Median Detects		0.0255			CV Detects			0.703			
161				Skewness Detects		1.06			Kurtosis Detects			1.143			
162				Mean of Logged Detects		-3.742			SD of Logged Detects			0.823			
163															
164					Normal GOF Test on Detects Only										
165				Shapiro Wilk Test Statistic		0.915		Shapiro Wilk GOF Test							
166				1% Shapiro Wilk Critical Value		0.916		Detected Data Not Normal at 1% Significance Level							
167				Lilliefors Test Statistic		0.154		Lilliefors GOF Test							
168				1% Lilliefors Critical Value		0.165		Detected Data appear Normal at 1% Significance Level							
169				Detected Data appear Approximate Normal at 1% Significance Level											
170															

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
171				Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
172					KM Mean	0.0294			KM Standard Error of Mean			0.00349			
173					90KM SD	0.0221			95% KM (BCA) UCL			0.0351			
174					95% KM (t) UCL	0.0353			95% KM (Percentile Bootstrap) UCL			0.0351			
175					95% KM (z) UCL	0.0351			95% KM Bootstrap t UCL			0.0361			
176					90% KM Chebyshev UCL	0.0399			95% KM Chebyshev UCL			0.0446			
177					97.5% KM Chebyshev UCL	0.0512			99% KM Chebyshev UCL			0.0641			
178															
179				Gamma GOF Tests on Detected Observations Only											
180					A-D Test Statistic	0.264			Anderson-Darling GOF Test						
181					5% A-D Critical Value	0.76	Detected data appear Gamma Distributed at 5% Significance Level								
182					K-S Test Statistic	0.0802			Kolmogorov-Smirnov GOF						
183					5% K-S Critical Value	0.145	Detected data appear Gamma Distributed at 5% Significance Level								
184				Detected data appear Gamma Distributed at 5% Significance Level											
185															
186				Gamma Statistics on Detected Data Only											
187					k hat (MLE)	1.936			k star (bias corrected MLE)			1.801			
188					Theta hat (MLE)	0.0162			Theta star (bias corrected MLE)			0.0174			
189					nu hat (MLE)	147.2			nu star (bias corrected)			136.9			
190					Mean (detects)	0.0314									
191															
192				Gamma ROS Statistics using Imputed Non-Detects											
193				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
194				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
195				For such situations, GROS method may yield incorrect values of UCLs and BTVs											
196				This is especially true when the sample size is small.											
197				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
198					Minimum	0.0043			Mean			0.0298			
199					Maximum	0.1			Median			0.025			
200					SD	0.0219			CV			0.736			
201					k hat (MLE)	1.862			k star (bias corrected MLE)			1.742			
202					Theta hat (MLE)	0.016			Theta star (bias corrected MLE)			0.0171			
203					nu hat (MLE)	152.7			nu star (bias corrected)			142.9			
204			Adjusted Level of Significance (β)			0.0441									
205		Approximate Chi Square Value (142.86, α)				116.2			Adjusted Chi Square Value (142.86, β)			115.4			
206				95% Gamma Approximate UCL		0.0366			95% Gamma Adjusted UCL			0.0369			
207															
208				Estimates of Gamma Parameters using KM Estimates											
209					Mean (KM)	0.0294			SD (KM)			0.0221			
210					Variance (KM)	4.8704E-4			SE of Mean (KM)			0.00349			
211					k hat (KM)	1.773			k star (KM)			1.659			
212					nu hat (KM)	145.4			nu star (KM)			136.1			
213					theta hat (KM)	0.0166			theta star (KM)			0.0177			
214				80% gamma percentile (KM)		0.045			90% gamma percentile (KM)			0.0598			
215				95% gamma percentile (KM)		0.074			99% gamma percentile (KM)			0.106			
216															
217				Gamma Kaplan-Meier (KM) Statistics											
218		Approximate Chi Square Value (136.08, α)				110.1			Adjusted Chi Square Value (136.08, β)			109.3			
219				95% KM Approximate Gamma UCL		0.0363			95% KM Adjusted Gamma UCL			0.0366			
220															
221				Lognormal GOF Test on Detected Observations Only											
222			Shapiro Wilk Test Statistic			0.946			Shapiro Wilk GOF Test						
223			10% Shapiro Wilk Critical Value			0.947	Detected Data Not Lognormal at 10% Significance Level								
224				Lilliefors Test Statistic		0.129			Lilliefors GOF Test						
225				10% Lilliefors Critical Value		0.13	Detected Data appear Lognormal at 10% Significance Level								
226				Detected Data appear Approximate Lognormal at 10% Significance Level											
227															
228				Lognormal ROS Statistics Using Imputed Non-Detects											
229				Mean in Original Scale		0.0295			Mean in Log Scale			-3.849			
230				SD in Original Scale		0.0223			SD in Log Scale			0.881			
231			95% t UCL (assumes normality of ROS data)			0.0353			95% Percentile Bootstrap UCL			0.0352			
232				95% BCA Bootstrap UCL		0.0354			95% Bootstrap t UCL			0.0359			
233				95% H-UCL (Log ROS)		0.0428									
234															
235				Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution											
236				KM Mean (logged)		-3.864			KM Geo Mean			0.021			
237				KM SD (logged)		0.894			95% Critical H Value (KM-Log)			2.24			
238		KM Standard Error of Mean (logged)				0.141			95% H-UCL (KM -Log)			0.0429			
239				KM SD (logged)		0.894			95% Critical H Value (KM-Log)			2.24			
240		KM Standard Error of Mean (logged)				0.141									
241															
242				DL/2 Statistics											
243			DL/2 Normal						DL/2 Log-Transformed						
244				Mean in Original Scale		0.0293			Mean in Log Scale			-3.896			
245				SD in Original Scale		0.0225			SD in Log Scale			0.965			
246				95% t UCL (Assumes normality)		0.0352			95% H-Stat UCL			0.0461			
247				DL/2 is not a recommended method, provided for comparisons and historical reasons											
248															
249				Nonparametric Distribution Free UCL Statistics											
250				Detected Data appear Approximate Normal Distributed at 1% Significance Level											
251															
252				Suggested UCL to Use											
253					95% KM (t) UCL	0.0353									
254															
255				When a data set follows an approximate distribution passing only one of the GOF tests,											

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
256					it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL										
257															
258			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
259			Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
260			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
261															
262	Benzo(a)pyrene - Semi-Volatile Organic Compounds (SIM)														
263															
264					General Statistics										
265			Total Number of Observations			41				Number of Distinct Observations		35			
266										Number of Missing Observations		282			
267			Number of Detects			39				Number of Non-Detects		2			
268			Number of Distinct Detects			33				Number of Distinct Non-Detects		2			
269			Minimum Detect			0.0061				Minimum Non-Detect		0.006			
270			Maximum Detect			0.089				Maximum Non-Detect		0.05			
271			Variance Detects			5.6599E-4				Percent Non-Detects		4.878%			
272			Mean Detects			0.0404				SD Detects		0.0238			
273			Median Detects			0.038				CV Detects		0.589			
274			Skewness Detects			0.418				Kurtosis Detects		-0.679			
275			Mean of Logged Detects			-3.438				SD of Logged Detects		0.763			
276															
277					Normal GOF Test on Detects Only										
278			Shapiro Wilk Test Statistic			0.939			Shapiro Wilk GOF Test						
279			1% Shapiro Wilk Critical Value			0.917		Detected Data appear Normal at 1% Significance Level							
280			Lilliefors Test Statistic			0.13			Lilliefors GOF Test						
281			1% Lilliefors Critical Value			0.163		Detected Data appear Normal at 1% Significance Level							
282					Detected Data appear Normal at 1% Significance Level										
283															
284					Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs										
285			KM Mean			0.0392				KM Standard Error of Mean		0.00376			
286			90KM SD			0.0237				95% KM (BCA) UCL		0.045			
287			95% KM (t) UCL			0.0455				95% KM (Percentile Bootstrap) UCL		0.0452			
288			95% KM (z) UCL			0.0454				95% KM Bootstrap t UCL		0.046			
289			90% KM Chebyshev UCL			0.0505				95% KM Chebyshev UCL		0.0556			
290			97.5% KM Chebyshev UCL			0.0627				99% KM Chebyshev UCL		0.0766			
291															
292					Gamma GOF Tests on Detected Observations Only										
293			A-D Test Statistic			0.606			Anderson-Darling GOF Test						
294			5% A-D Critical Value			0.758		Detected data appear Gamma Distributed at 5% Significance Level							
295			K-S Test Statistic			0.135			Kolmogorov-Smirnov GOF						
296			5% K-S Critical Value			0.143		Detected data appear Gamma Distributed at 5% Significance Level							
297					Detected data appear Gamma Distributed at 5% Significance Level										
298															
299					Gamma Statistics on Detected Data Only										
300			k hat (MLE)			2.343				k star (bias corrected MLE)		2.18			
301			Theta hat (MLE)			0.0172				Theta star (bias corrected MLE)		0.0185			
302			nu hat (MLE)			182.8				nu star (bias corrected)		170.1			
303			Mean (detects)			0.0404									
304															
305					Gamma ROS Statistics using Imputed Non-Detects										
306			GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
307			GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
308			For such situations, GROS method may yield incorrect values of UCLs and BTVs													
309			This is especially true when the sample size is small.													
310			For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
311			Minimum			0.0061				Mean		0.0393			
312			Maximum			0.089				Median		0.037			
313			SD			0.0238				CV		0.605			
314			k hat (MLE)			2.286				k star (bias corrected MLE)		2.135			
315			Theta hat (MLE)			0.0172				Theta star (bias corrected MLE)		0.0184			
316			nu hat (MLE)			187.5				nu star (bias corrected)		175.1			
317			Adjusted Level of Significance (β)			0.0441									
318			Approximate Chi Square Value (175.08, α)			145.5				Adjusted Chi Square Value (175.08, β)		144.5			
319			95% Gamma Approximate UCL			0.0473				95% Gamma Adjusted UCL		0.0476			
320															
321					Estimates of Gamma Parameters using KM Estimates										
322			Mean (KM)			0.0392				SD (KM)		0.0237			
323			Variance (KM)			5.6110E-4				SE of Mean (KM)		0.00376			
324			k hat (KM)			2.736				k star (KM)		2.552			
325			nu hat (KM)			224.4				nu star (KM)		209.3			
326			theta hat (KM)			0.0143				theta star (KM)		0.0154			
327			80% gamma percentile (KM)			0.057				90% gamma percentile (KM)		0.072			
328			95% gamma percentile (KM)			0.0862				99% gamma percentile (KM)		0.117			
329															
330					Gamma Kaplan-Meier (KM) Statistics										
331			Approximate Chi Square Value (209.29, α)			176.8				Adjusted Chi Square Value (209.29, β)		175.7			
332			95% KM Approximate Gamma UCL			0.0464				95% KM Adjusted Gamma UCL		0.0467			
333															
334					Lognormal GOF Test on Detected Observations Only										
335			Shapiro Wilk Test Statistic			0.899			Shapiro Wilk GOF Test						
336			10% Shapiro Wilk Critical Value			0.948		Detected Data Not Lognormal at 10% Significance Level							
337			Lilliefors Test Statistic			0.175			Lilliefors GOF Test						
338			10% Lilliefors Critical Value			0.129		Detected Data Not Lognormal at 10% Significance Level							
339					Detected Data Not Lognormal at 10% Significance Level										
340															

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
341							Lognormal ROS Statistics Using Imputed Non-Detects								
342				Mean in Original Scale		0.0391				Mean in Log Scale		-3.492			
343				SD in Original Scale		0.024				SD in Log Scale		0.799			
344			95% t UCL (assumes normality of ROS data)			0.0454			95% Percentile Bootstrap UCL			0.0451			
345				95% BCA Bootstrap UCL		0.0451				95% Bootstrap t UCL		0.0456			
346				95% H-UCL (Log ROS)		0.0549									
347															
348						Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution									
349				KM Mean (logged)		-3.489				KM Geo Mean		0.0305			
350				KM SD (logged)		0.788			95% Critical H Value (KM-Log)			2.135			
351			KM Standard Error of Mean (logged)			0.126			95% H-UCL (KM -Log)			0.0544			
352				KM SD (logged)		0.788			95% Critical H Value (KM-Log)			2.135			
353			KM Standard Error of Mean (logged)			0.126									
354															
355							DL/2 Statistics								
356			DL/2 Normal						DL/2 Log-Transformed						
357				Mean in Original Scale		0.0391				Mean in Log Scale		-3.502			
358				SD in Original Scale		0.024				SD in Log Scale		0.831			
359			95% t UCL (Assumes normality)			0.0454				95% H-Stat UCL		0.0567			
360						DL/2 is not a recommended method, provided for comparisons and historical reasons									
361															
362						Nonparametric Distribution Free UCL Statistics									
363						Detected Data appear Normal Distributed at 1% Significance Level									
364															
365							Suggested UCL to Use								
366				95% KM (t) UCL		0.0455									
367															
368			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
369			Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
370			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
371															
372	Benzo(b)fluoranthene - Semi-Volatile Organic Compounds (SIM)														
373															
374						General Statistics									
375			Total Number of Observations			41			Number of Distinct Observations			34			
376									Number of Missing Observations			282			
377				Number of Detects		39				Number of Non-Detects		2			
378				Number of Distinct Detects		33			Number of Distinct Non-Detects			2			
379				Minimum Detect		0.0061				Minimum Non-Detect		0.0054			
380				Maximum Detect		0.11				Maximum Non-Detect		0.05			
381				Variance Detects		7.9504E-4				Percent Non-Detects		4.878%			
382				Mean Detects		0.0433				SD Detects		0.0282			
383				Median Detects		0.04				CV Detects		0.651			
384				Skewness Detects		0.782				Kurtosis Detects		0.0382			
385				Mean of Logged Detects		-3.392				SD of Logged Detects		0.789			
386															
387						Normal GOF Test on Detects Only									
388				Shapiro Wilk Test Statistic		0.925			Shapiro Wilk GOF Test						
389				1% Shapiro Wilk Critical Value		0.917			Detected Data appear Normal at 1% Significance Level						
390				Lilliefors Test Statistic		0.123			Lilliefors GOF Test						
391				1% Lilliefors Critical Value		0.163			Detected Data appear Normal at 1% Significance Level						
392						Detected Data appear Normal at 1% Significance Level									
393															
394						Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs									
395				KM Mean		0.042				KM Standard Error of Mean		0.00444			
396				90KM SD		0.028				95% KM (BCA) UCL		0.0491			
397				95% KM (t) UCL		0.0495			95% KM (Percentile Bootstrap) UCL			0.0491			
398				95% KM (z) UCL		0.0493				95% KM Bootstrap t UCL		0.0501			
399				90% KM Chebyshev UCL		0.0553				95% KM Chebyshev UCL		0.0613			
400				97.5% KM Chebyshev UCL		0.0697				99% KM Chebyshev UCL		0.0862			
401															
402						Gamma GOF Tests on Detected Observations Only									
403				A-D Test Statistic		0.294			Anderson-Darling GOF Test						
404				5% A-D Critical Value		0.759			Detected data appear Gamma Distributed at 5% Significance Level						
405				K-S Test Statistic		0.0836			Kolmogorov-Smirnov GOF						
406				5% K-S Critical Value		0.143			Detected data appear Gamma Distributed at 5% Significance Level						
407						Detected data appear Gamma Distributed at 5% Significance Level									
408															
409						Gamma Statistics on Detected Data Only									
410				k hat (MLE)		2.127				k star (bias corrected MLE)		1.98			
411				Theta hat (MLE)		0.0204				Theta star (bias corrected MLE)		0.0219			
412				nu hat (MLE)		165.9				nu star (bias corrected)		154.4			
413				Mean (detects)		0.0433									
414															
415						Gamma ROS Statistics using Imputed Non-Detects									
416						GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs									
417			GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
418						For such situations, GROS method may yield incorrect values of UCLs and BTVs									
419						This is especially true when the sample size is small.									
420						For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates									
421				Minimum		0.0061				Mean		0.0421			
422				Maximum		0.11				Median		0.038			
423				SD		0.0281				CV		0.668			
424				k hat (MLE)		2.073				k star (bias corrected MLE)		1.937			
425				Theta hat (MLE)		0.0203				Theta star (bias corrected MLE)		0.0217			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
426					nu hat (MLE)	170				nu star (bias corrected)		158.9			
427			Adjusted Level of Significance (β)			0.0441									
428			Approximate Chi Square Value (158.86, α)			130.7				Adjusted Chi Square Value (158.86, β)		129.8			
429			95% Gamma Approximate UCL			0.0511				95% Gamma Adjusted UCL		0.0515			
430															
431				Estimates of Gamma Parameters using KM Estimates											
432					Mean (KM)	0.042				SD (KM)		0.028			
433					Variance (KM)	7.8193E-4				SE of Mean (KM)		0.00444			
434					k hat (KM)	2.255				k star (KM)		2.106			
435					nu hat (KM)	184.9				nu star (KM)		172.7			
436					theta hat (KM)	0.0186				theta star (KM)		0.0199			
437			80% gamma percentile (KM)			0.0625				90% gamma percentile (KM)		0.0807			
438			95% gamma percentile (KM)			0.098				99% gamma percentile (KM)		0.136			
439															
440				Gamma Kaplan-Meier (KM) Statistics											
441		Approximate Chi Square Value (172.68, α)				143.3				Adjusted Chi Square Value (172.68, β)		142.3			
442			95% KM Approximate Gamma UCL			0.0506				95% KM Adjusted Gamma UCL		0.0509			
443															
444				Lognormal GOF Test on Detected Observations Only											
445			Shapiro Wilk Test Statistic			0.933			Shapiro Wilk GOF Test						
446			10% Shapiro Wilk Critical Value			0.948			Detected Data Not Lognormal at 10% Significance Level						
447			Lilliefors Test Statistic			0.131			Lilliefors GOF Test						
448			10% Lilliefors Critical Value			0.129			Detected Data Not Lognormal at 10% Significance Level						
449				Detected Data Not Lognormal at 10% Significance Level											
450															
451				Lognormal ROS Statistics Using Imputed Non-Detects											
452				Mean in Original Scale		0.0419				Mean in Log Scale		-3.45			
453				SD in Original Scale		0.0283				SD in Log Scale		0.829			
454		95% t UCL (assumes normality of ROS data)				0.0493				95% Percentile Bootstrap UCL		0.0492			
455			95% BCA Bootstrap UCL			0.0495				95% Bootstrap t UCL		0.0501			
456			95% H-UCL (Log ROS)			0.0596									
457															
458		Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution													
459				KM Mean (logged)		-3.448				KM Geo Mean		0.0318			
460				KM SD (logged)		0.82				95% Critical H Value (KM-Log)		2.165			
461		KM Standard Error of Mean (logged)				0.131				95% H-UCL (KM -Log)		0.059			
462				KM SD (logged)		0.82				95% Critical H Value (KM-Log)		2.165			
463		KM Standard Error of Mean (logged)				0.131									
464															
465					DL/2 Statistics										
466			DL/2 Normal						DL/2 Log-Transformed						
467				Mean in Original Scale		0.0419				Mean in Log Scale		-3.461			
468				SD in Original Scale		0.0283				SD in Log Scale		0.865			
469			95% t UCL (Assumes normality)			0.0493				95% H-Stat UCL		0.0617			
470			DL/2 is not a recommended method, provided for comparisons and historical reasons												
471															
472				Nonparametric Distribution Free UCL Statistics											
473				Detected Data appear Normal Distributed at 1% Significance Level											
474															
475					Suggested UCL to Use										
476				95% KM (t) UCL		0.0495									
477															
478		Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
479		Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
480		However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
481															
482	Benzo(k)fluoranthene - Semi-Volatile Organic Compounds (SIM)														
483															
484					General Statistics										
485			Total Number of Observations			41				Number of Distinct Observations		28			
486										Number of Missing Observations		282			
487				Number of Detects		32				Number of Non-Detects		9			
488			Number of Distinct Detects			23				Number of Distinct Non-Detects		5			
489				Minimum Detect		0.0026				Minimum Non-Detect		0.005			
490				Maximum Detect		0.037				Maximum Non-Detect		0.05			
491				Variance Detects		7.7266E-5				Percent Non-Detects		21.95%			
492				Mean Detects		0.0156				SD Detects		0.00879			
493				Median Detects		0.0145				CV Detects		0.563			
494				Skewness Detects		0.884				Kurtosis Detects		0.422			
495				Mean of Logged Detects		-4.331				SD of Logged Detects		0.631			
496															
497				Normal GOF Test on Detects Only											
498			Shapiro Wilk Test Statistic			0.921			Shapiro Wilk GOF Test						
499			1% Shapiro Wilk Critical Value			0.904			Detected Data appear Normal at 1% Significance Level						
500			Lilliefors Test Statistic			0.142			Lilliefors GOF Test						
501			1% Lilliefors Critical Value			0.18			Detected Data appear Normal at 1% Significance Level						
502				Detected Data appear Normal at 1% Significance Level											
503															
504			Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs													
505				KM Mean		0.014				KM Standard Error of Mean		0.00147			
506				90KM SD		0.00888				95% KM (BCA) UCL		0.0165			
507				95% KM (t) UCL		0.0165				95% KM (Percentile Bootstrap) UCL		0.0163			
508				95% KM (z) UCL		0.0165				95% KM Bootstrap t UCL		0.0166			
509				90% KM Chebyshev UCL		0.0185				95% KM Chebyshev UCL		0.0205			
510				97.5% KM Chebyshev UCL		0.0232				99% KM Chebyshev UCL		0.0287			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
511															
512					Gamma GOF Tests on Detected Observations Only										
513				A-D Test Statistic		0.323				Anderson-Darling GOF Test					
514				5% A-D Critical Value		0.753		Detected data appear Gamma Distributed at 5% Significance Level							
515				K-S Test Statistic		0.127				Kolmogorov-Smirnov GOF					
516				5% K-S Critical Value		0.157		Detected data appear Gamma Distributed at 5% Significance Level							
517					Detected data appear Gamma Distributed at 5% Significance Level										
518															
519					Gamma Statistics on Detected Data Only										
520				k hat (MLE)		3.097				k star (bias corrected MLE)		2.827			
521				Theta hat (MLE)		0.00504				Theta star (bias corrected MLE)		0.00552			
522				nu hat (MLE)		198.2				nu star (bias corrected)		180.9			
523				Mean (detects)		0.0156									
524															
525					Gamma ROS Statistics using Imputed Non-Detects										
526				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
527				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
528				For such situations, GROS method may yield incorrect values of UCLs and BTVs											
529				This is especially true when the sample size is small.											
530				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
531				Minimum		0.0026				Mean		0.0147			
532				Maximum		0.037				Median		0.014			
533				SD		0.00802				CV		0.544			
534				k hat (MLE)		3.609				k star (bias corrected MLE)		3.361			
535				Theta hat (MLE)		0.00408				Theta star (bias corrected MLE)		0.00438			
536				nu hat (MLE)		295.9				nu star (bias corrected)		275.6			
537			Adjusted Level of Significance (β)			0.0441									
538			Approximate Chi Square Value (275.61, α)			238.2			Adjusted Chi Square Value (275.61, β)			236.9			
539				95% Gamma Approximate UCL		0.017				95% Gamma Adjusted UCL		0.0171			
540															
541					Estimates of Gamma Parameters using KM Estimates										
542				Mean (KM)		0.014				SD (KM)		0.00888			
543				Variance (KM)		7.8806E-5				SE of Mean (KM)		0.00147			
544				k hat (KM)		2.5				k star (KM)		2.333			
545				nu hat (KM)		205				nu star (KM)		191.3			
546				theta hat (KM)		0.00561				theta star (KM)		0.00602			
547				80% gamma percentile (KM)		0.0206				90% gamma percentile (KM)		0.0263			
548				95% gamma percentile (KM)		0.0317				99% gamma percentile (KM)		0.0436			
549															
550					Gamma Kaplan-Meier (KM) Statistics										
551			Approximate Chi Square Value (191.33, α)			160.3			Adjusted Chi Square Value (191.33, β)			159.3			
552				95% KM Approximate Gamma UCL		0.0167				95% KM Adjusted Gamma UCL		0.0169			
553															
554					Lognormal GOF Test on Detected Observations Only										
555				Shapiro Wilk Test Statistic		0.953				Shapiro Wilk GOF Test					
556				10% Shapiro Wilk Critical Value		0.941		Detected Data appear Lognormal at 10% Significance Level							
557				Lilliefors Test Statistic		0.164				Lilliefors GOF Test					
558				10% Lilliefors Critical Value		0.142		Detected Data Not Lognormal at 10% Significance Level							
559					Detected Data appear Approximate Lognormal at 10% Significance Level										
560															
561					Lognormal ROS Statistics Using Imputed Non-Detects										
562				Mean in Original Scale		0.014				Mean in Log Scale		-4.464			
563				SD in Original Scale		0.00859				SD in Log Scale		0.659			
564			95% t UCL (assumes normality of ROS data)			0.0162				95% Percentile Bootstrap UCL		0.0162			
565				95% BCA Bootstrap UCL		0.0164				95% Bootstrap t UCL		0.0167			
566				95% H-UCL (Log ROS)		0.0177									
567															
568					Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution										
569				KM Mean (logged)		-4.501				KM Geo Mean		0.0111			
570				KM SD (logged)		0.739				95% Critical H Value (KM-Log)		2.089			
571			KM Standard Error of Mean (logged)			0.125				95% H-UCL (KM -Log)		0.0186			
572				KM SD (logged)		0.739				95% Critical H Value (KM-Log)		2.089			
573			KM Standard Error of Mean (logged)			0.125									
574															
575					DL/2 Statistics										
576			DL/2 Normal						DL/2 Log-Transformed						
577				Mean in Original Scale		0.0146				Mean in Log Scale		-4.457			
578				SD in Original Scale		0.00897				SD in Log Scale		0.749			
579				95% t UCL (Assumes normality)		0.0169				95% H-Stat UCL		0.0197			
580					DL/2 is not a recommended method, provided for comparisons and historical reasons										
581															
582					Nonparametric Distribution Free UCL Statistics										
583					Detected Data appear Normal Distributed at 1% Significance Level										
584															
585					Suggested UCL to Use										
586				95% KM (t) UCL		0.0165									
587															
588			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
589			Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
590		However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.														
591															
592	Chrysene - Semi-Volatile Organic Compounds (SIM)														
593															
594					General Statistics										
595				Total Number of Observations		41				Number of Distinct Observations		34			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
596											Number of Missing Observations	282			
597				Number of Detects		40					Number of Non-Detects	1			
598				Number of Distinct Detects		33					Number of Distinct Non-Detects	1			
599				Minimum Detect		0.0047					Minimum Non-Detect	0.0054			
600				Maximum Detect		0.083					Maximum Non-Detect	0.0054			
601				Variance Detects		4.7346E-4					Percent Non-Detects	2.439%			
602				Mean Detects		0.0347					SD Detects	0.0218			
603				Median Detects		0.031					CV Detects	0.627			
604				Skewness Detects		0.668					Kurtosis Detects	-0.293			
605				Mean of Logged Detects		-3.601					SD of Logged Detects	0.772			
606															
607					Normal GOF Test on Detects Only										
608				Shapiro Wilk Test Statistic		0.926			Shapiro Wilk GOF Test						
609				1% Shapiro Wilk Critical Value		0.919		Detected Data appear Normal at 1% Significance Level							
610				Lilliefors Test Statistic		0.163			Lilliefors GOF Test						
611				1% Lilliefors Critical Value		0.162		Detected Data Not Normal at 1% Significance Level							
612				Detected Data appear Approximate Normal at 1% Significance Level											
613															
614				Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
615				KM Mean		0.034			KM Standard Error of Mean			0.00343			
616				90KM SD		0.0217			95% KM (BCA) UCL			0.0395			
617				95% KM (t) UCL		0.0398			95% KM (Percentile Bootstrap) UCL			0.0394			
618				95% KM (z) UCL		0.0396			95% KM Bootstrap t UCL			0.0403			
619				90% KM Chebyshev UCL		0.0443			95% KM Chebyshev UCL			0.049			
620				97.5% KM Chebyshev UCL		0.0554			99% KM Chebyshev UCL			0.0682			
621															
622				Gamma GOF Tests on Detected Observations Only											
623				A-D Test Statistic		0.421			Anderson-Darling GOF Test						
624				5% A-D Critical Value		0.758		Detected data appear Gamma Distributed at 5% Significance Level							
625				K-S Test Statistic		0.127			Kolmogorov-Smirnov GOF						
626				5% K-S Critical Value		0.141		Detected data appear Gamma Distributed at 5% Significance Level							
627				Detected data appear Gamma Distributed at 5% Significance Level											
628															
629				Gamma Statistics on Detected Data Only											
630				k hat (MLE)		2.234			k star (bias corrected MLE)			2.083			
631				Theta hat (MLE)		0.0155			Theta star (bias corrected MLE)			0.0167			
632				nu hat (MLE)		178.7			nu star (bias corrected)			166.7			
633				Mean (detects)		0.0347									
634															
635				Gamma ROS Statistics using Imputed Non-Detects											
636				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
637				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
638				For such situations, GROS method may yield incorrect values of UCLs and BTVs											
639				This is especially true when the sample size is small.											
640				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
641				Minimum		0.0047			Mean			0.0341			
642				Maximum		0.083			Median			0.031			
643				SD		0.0218			CV			0.64			
644				k hat (MLE)		2.175			k star (bias corrected MLE)			2.032			
645				Theta hat (MLE)		0.0157			Theta star (bias corrected MLE)			0.0168			
646				nu hat (MLE)		178.3			nu star (bias corrected)			166.6			
647				Adjusted Level of Significance (β)		0.0441									
648				Approximate Chi Square Value (166.63, α)		137.8			Adjusted Chi Square Value (166.63, β)			136.8			
649				95% Gamma Approximate UCL		0.0413			95% Gamma Adjusted UCL			0.0415			
650															
651				Estimates of Gamma Parameters using KM Estimates											
652				Mean (KM)		0.034			SD (KM)			0.0217			
653				Variance (KM)		4.7145E-4			SE of Mean (KM)			0.00343			
654				k hat (KM)		2.451			k star (KM)			2.288			
655				nu hat (KM)		201			nu star (KM)			187.6			
656				theta hat (KM)		0.0139			theta star (KM)			0.0149			
657				80% gamma percentile (KM)		0.0501			90% gamma percentile (KM)			0.0641			
658				95% gamma percentile (KM)		0.0773			99% gamma percentile (KM)			0.106			
659															
660				Gamma Kaplan-Meier (KM) Statistics											
661				Approximate Chi Square Value (187.62, α)		156.9			Adjusted Chi Square Value (187.62, β)			155.9			
662				95% KM Approximate Gamma UCL		0.0406			95% KM Adjusted Gamma UCL			0.0409			
663															
664				Lognormal GOF Test on Detected Observations Only											
665				Shapiro Wilk Test Statistic		0.925			Shapiro Wilk GOF Test						
666				10% Shapiro Wilk Critical Value		0.949		Detected Data Not Lognormal at 10% Significance Level							
667				Lilliefors Test Statistic		0.175			Lilliefors GOF Test						
668				10% Lilliefors Critical Value		0.128		Detected Data Not Lognormal at 10% Significance Level							
669				Detected Data Not Lognormal at 10% Significance Level											
670															
671				Lognormal ROS Statistics Using Imputed Non-Detects											
672				Mean in Original Scale		0.034			Mean in Log Scale			-3.637			
673				SD in Original Scale		0.0219			SD in Log Scale			0.798			
674				95% t UCL (assumes normality of ROS data)		0.0398			95% Percentile Bootstrap UCL			0.0397			
675				95% BCA Bootstrap UCL		0.0398			95% Bootstrap t UCL			0.0403			
676				95% H-UCL (Log ROS)		0.0474									
677															
678				Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution											
679				KM Mean (logged)		-3.642			KM Geo Mean			0.0262			
680				KM SD (logged)		0.798			95% Critical H Value (KM-Log)			2.144			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
681				KM Standard Error of Mean (logged)		0.126				95% H-UCL (KM -Log)		0.0472			
682				KM SD (logged)		0.798				95% Critical H Value (KM-Log)		2.144			
683				KM Standard Error of Mean (logged)		0.126									
684															
685					DL/2 Statistics										
686				DL/2 Normal						DL/2 Log-Transformed					
687				Mean in Original Scale		0.0339				Mean in Log Scale		-3.657			
688				SD in Original Scale		0.0221				SD in Log Scale		0.844			
689				95% t UCL (Assumes normality)		0.0397				95% H-Stat UCL		0.0493			
690				DL/2 is not a recommended method, provided for comparisons and historical reasons											
691															
692				Nonparametric Distribution Free UCL Statistics											
693				Detected Data appear Approximate Normal Distributed at 1% Significance Level											
694															
695					Suggested UCL to Use										
696				95% KM (t) UCL		0.0398									
697															
698				When a data set follows an approximate distribution passing only one of the GOF tests,											
699				it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL											
700															
701			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
702				Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
703			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
704															
705	cPAHs-TEQ - Other														
706															
707					General Statistics										
708				Total Number of Observations		300				Number of Distinct Observations		59			
709										Number of Missing Observations		23			
710				Number of Detects		139				Number of Non-Detects		161			
711				Number of Distinct Detects		49				Number of Distinct Non-Detects		12			
712				Minimum Detect		0.0081				Minimum Non-Detect		0.0045			
713				Maximum Detect		0.2				Maximum Non-Detect		0.01			
714				Variance Detects		0.00156				Percent Non-Detects		53.67%			
715				Mean Detects		0.0569				SD Detects		0.0395			
716				Median Detects		0.05				CV Detects		0.693			
717				Skewness Detects		1.223				Kurtosis Detects		1.681			
718				Mean of Logged Detects		-3.118				SD of Logged Detects		0.752			
719															
720					Normal GOF Test on Detects Only										
721				Shapiro Wilk Test Statistic		0.888			Normal GOF Test on Detected Observations Only						
722				1% Shapiro Wilk P Value		4.441E-16			Detected Data Not Normal at 1% Significance Level						
723				Lilliefors Test Statistic		0.138			Lilliefors GOF Test						
724				1% Lilliefors Critical Value		0.0873			Detected Data Not Normal at 1% Significance Level						
725					Detected Data Not Normal at 1% Significance Level										
726															
727				Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
728				KM Mean		0.0289				KM Standard Error of Mean		0.00216			
729				90KM SD		0.0374				95% KM (BCA) UCL		0.034			
730				95% KM (t) UCL		0.0324				95% KM (Percentile Bootstrap) UCL		0.0331			
731				95% KM (z) UCL		0.0324				95% KM Bootstrap t UCL		0.0323			
732				90% KM Chebyshev UCL		0.0354				95% KM Chebyshev UCL		0.0383			
733				97.5% KM Chebyshev UCL		0.0424				99% KM Chebyshev UCL		0.0504			
734															
735					Gamma GOF Tests on Detected Observations Only										
736				A-D Test Statistic		0.629			Anderson-Darling GOF Test						
737				5% A-D Critical Value		0.765			Detected data appear Gamma Distributed at 5% Significance Level						
738				K-S Test Statistic		0.078			Kolmogorov-Smirnov GOF						
739				5% K-S Critical Value		0.0804			Detected data appear Gamma Distributed at 5% Significance Level						
740					Detected data appear Gamma Distributed at 5% Significance Level										
741															
742					Gamma Statistics on Detected Data Only										
743				k hat (MLE)		2.137				k star (bias corrected MLE)		2.095			
744				Theta hat (MLE)		0.0266				Theta star (bias corrected MLE)		0.0272			
745				nu hat (MLE)		594				nu star (bias corrected)		582.5			
746				Mean (detects)		0.0569									
747															
748					Gamma ROS Statistics using Imputed Non-Detects										
749				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
750			GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
751					For such situations, GROS method may yield incorrect values of UCLs and BTVs										
752					This is especially true when the sample size is small.										
753			For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
754				Minimum		0.0081				Mean		0.0318			
755				Maximum		0.2				Median		0.01			
756				SD		0.0356				CV		1.12			
757				k hat (MLE)		1.219				k star (bias corrected MLE)		1.209			
758				Theta hat (MLE)		0.0261				Theta star (bias corrected MLE)		0.0263			
759				nu hat (MLE)		731.1				nu star (bias corrected)		725.2			
760				Adjusted Level of Significance (β)		0.0492									
761				Approximate Chi Square Value (725.17, α)		663.7				Adjusted Chi Square Value (725.17, β)		663.4			
762				95% Gamma Approximate UCL		0.0347				95% Gamma Adjusted UCL		0.0347			
763															
764					Estimates of Gamma Parameters using KM Estimates										
765				Mean (KM)		0.0289				SD (KM)		0.0374			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
766				Variance (KM)		0.0014					SE of Mean (KM)	0.00216			
767				k hat (KM)		0.597					k star (KM)	0.594			
768				nu hat (KM)		358.5					nu star (KM)	356.2			
769				theta hat (KM)		0.0483					theta star (KM)	0.0486			
770				80% gamma percentile (KM)		0.0476					90% gamma percentile (KM)	0.0753			
771				95% gamma percentile (KM)		0.104					99% gamma percentile (KM)	0.175			
772															
773						**Gamma Kaplan-Meier (KM) Statistics**									
774				Approximate Chi Square Value (356.22, α)		313.5					Adjusted Chi Square Value (356.22, β)	313.3			
775				95% KM Approximate Gamma UCL		0.0328					95% KM Adjusted Gamma UCL	0.0328			
776															
777						**Lognormal GOF Test on Detected Observations Only**									
778				Shapiro Wilk Approximate Test Statistic		0.954				**Shapiro Wilk GOF Test**					
779				10% Shapiro Wilk P Value		6.5580E-4				Detected Data Not Lognormal at 10% Significance Level					
780				Lilliefors Test Statistic		0.0827				**Lilliefors GOF Test**					
781				10% Lilliefors Critical Value		0.0691				Detected Data Not Lognormal at 10% Significance Level					
782						**Detected Data Not Lognormal at 10% Significance Level**									
783															
784						**Lognormal ROS Statistics Using Imputed Non-Detects**									
785				Mean in Original Scale		0.0306					Mean in Log Scale	-4.149			
786				SD in Original Scale		0.0365					SD in Log Scale	1.194			
787				95% t UCL (assumes normality of ROS data)		0.034					95% Percentile Bootstrap UCL	0.0342			
788				95% BCA Bootstrap UCL		0.0344					95% Bootstrap t UCL	0.0341			
789				95% H-UCL (Log ROS)		0.0377									
790															
791						**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**									
792				KM Mean (logged)		-4.331					KM Geo Mean	0.0132			
793				KM SD (logged)		1.24					95% Critical H Value (KM-Log)	2.349			
794				KM Standard Error of Mean (logged)		0.0723					95% H-UCL (KM -Log)	0.0336			
795				KM SD (logged)		1.24					95% Critical H Value (KM-Log)	2.349			
796				KM Standard Error of Mean (logged)		0.0723									
797															
798						**DL/2 Statistics**									
799				**DL/2 Normal**						**DL/2 Log-Transformed**					
800				Mean in Original Scale		0.0288					Mean in Log Scale	-4.348			
801				SD in Original Scale		0.0375					SD in Log Scale	1.257			
802				95% t UCL (Assumes normality)		0.0324					95% H-Stat UCL	0.0338			
803						**DL/2 is not a recommended method, provided for comparisons and historical reasons**									
804															
805						**Nonparametric Distribution Free UCL Statistics**									
806						**Detected Data appear Gamma Distributed at 5% Significance Level**									
807															
808						**Suggested UCL to Use**									
809				95% KM Approximate Gamma UCL		0.0328					95% GROS Approximate Gamma UCL	0.0347			
810															
811				Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
812				Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
813			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
814															
815	Dibenz(a,h)anthracene - Semi-Volatile Organic Compounds (SIM)														
816															
817						**General Statistics**									
818				Total Number of Observations		41				Number of Distinct Observations		24			
819										Number of Missing Observations		282			
820				Number of Detects		14				Number of Non-Detects		27			
821				Number of Distinct Detects		14				Number of Distinct Non-Detects		14			
822				Minimum Detect		0.0046				Minimum Non-Detect		0.005			
823				Maximum Detect		0.014				Maximum Non-Detect		0.05			
824				Variance Detects		7.8148E-6				Percent Non-Detects		65.85%			
825				Mean Detects		0.00804				SD Detects		0.0028			
826				Median Detects		0.0071				CV Detects		0.348			
827				Skewness Detects		0.853				Kurtosis Detects		-0.113			
828				Mean of Logged Detects		-4.877				SD of Logged Detects		0.333			
829															
830						**Normal GOF Test on Detects Only**									
831				Shapiro Wilk Test Statistic		0.913				**Shapiro Wilk GOF Test**					
832				1% Shapiro Wilk Critical Value		0.825				Detected Data appear Normal at 1% Significance Level					
833				Lilliefors Test Statistic		0.209				**Lilliefors GOF Test**					
834				1% Lilliefors Critical Value		0.263				Detected Data appear Normal at 1% Significance Level					
835						**Detected Data appear Normal at 1% Significance Level**									
836															
837						**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**									
838				KM Mean		0.00599				KM Standard Error of Mean		4.0988E-4			
839				90KM SD		0.00235				95% KM (BCA) UCL		0.00687			
840				95% KM (t) UCL		0.00668				95% KM (Percentile Bootstrap) UCL		0.00674			
841				95% KM (z) UCL		0.00667				95% KM Bootstrap t UCL		0.0068			
842				90% KM Chebyshev UCL		0.00722				95% KM Chebyshev UCL		0.00778			
843				97.5% KM Chebyshev UCL		0.00855				99% KM Chebyshev UCL		0.0101			
844															
845						**Gamma GOF Tests on Detected Observations Only**									
846				A-D Test Statistic		0.407				**Anderson-Darling GOF Test**					
847				5% A-D Critical Value		0.735				Detected data appear Gamma Distributed at 5% Significance Level					
848				K-S Test Statistic		0.201				**Kolmogorov-Smirnov GOF**					
849				5% K-S Critical Value		0.229				Detected data appear Gamma Distributed at 5% Significance Level					
850						**Detected data appear Gamma Distributed at 5% Significance Level**									

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
851															
852					Gamma Statistics on Detected Data Only										
853				k hat (MLE)		9.644				k star (bias corrected MLE)		7.625			
854				Theta hat (MLE)		8.3327E-4				Theta star (bias corrected MLE)		0.00105			
855				nu hat (MLE)		270				nu star (bias corrected)		213.5			
856				Mean (detects)		0.00804									
857															
858					Gamma ROS Statistics using Imputed Non-Detects										
859				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
860				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
861				For such situations, GROS method may yield incorrect values of UCLs and BTVs											
862				This is especially true when the sample size is small.											
863				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
864				Minimum		0.0046				Mean		0.00933			
865				Maximum		0.014				Median		0.01			
866				SD		0.00185				CV		0.198			
867				k hat (MLE)		21.67				k star (bias corrected MLE)		20.1			
868				Theta hat (MLE)		4.3061E-4				Theta star (bias corrected MLE)		4.6423E-4			
869				nu hat (MLE)		1777				nu star (bias corrected)		1648			
870			Adjusted Level of Significance (β)			0.0441									
871		Approximate Chi Square Value (N/A, α)				1555				Adjusted Chi Square Value (N/A, β)		1551			
872				95% Gamma Approximate UCL		0.00989				95% Gamma Adjusted UCL		0.00991			
873															
874					Estimates of Gamma Parameters using KM Estimates										
875				Mean (KM)		0.00599				SD (KM)		0.00235			
876				Variance (KM)		5.5343E-6				SE of Mean (KM)		4.0988E-4			
877				k hat (KM)		6.487				k star (KM)		6.029			
878				nu hat (KM)		531.9				nu star (KM)		494.4			
879				theta hat (KM)		9.2364E-4				theta star (KM)		9.9387E-4			
880			80% gamma percentile (KM)			0.00789				90% gamma percentile (KM)		0.00925			
881			95% gamma percentile (KM)			0.0105				99% gamma percentile (KM)		0.0131			
882															
883					Gamma Kaplan-Meier (KM) Statistics										
884		Approximate Chi Square Value (494.36, α)				443.8				Adjusted Chi Square Value (494.36, β)		442.1			
885			95% KM Approximate Gamma UCL			0.00667				95% KM Adjusted Gamma UCL		0.0067			
886															
887					Lognormal GOF Test on Detected Observations Only										
888				Shapiro Wilk Test Statistic		0.953			Shapiro Wilk GOF Test						
889			10% Shapiro Wilk Critical Value			0.895		Detected Data appear Lognormal at 10% Significance Level							
890				Lilliefors Test Statistic		0.184			Lilliefors GOF Test						
891			10% Lilliefors Critical Value			0.208		Detected Data appear Lognormal at 10% Significance Level							
892				Detected Data appear Lognormal at 10% Significance Level											
893															
894					Lognormal ROS Statistics Using Imputed Non-Detects										
895				Mean in Original Scale		0.00544				Mean in Log Scale		-5.3			
896				SD in Original Scale		0.00258				SD in Log Scale		0.401			
897		95% t UCL (assumes normality of ROS data)				0.00612				95% Percentile Bootstrap UCL		0.0061			
898				95% BCA Bootstrap UCL		0.0062				95% Bootstrap t UCL		0.00629			
899				95% H-UCL (Log ROS)		0.00607									
900															
901				Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution											
902				KM Mean (logged)		-5.174				KM Geo Mean		0.00566			
903				KM SD (logged)		0.314				95% Critical H Value (KM-Log)		1.78			
904			KM Standard Error of Mean (logged)			0.0551				95% H-UCL (KM -Log)		0.00649			
905				KM SD (logged)		0.314				95% Critical H Value (KM-Log)		1.78			
906			KM Standard Error of Mean (logged)			0.0551									
907															
908					DL/2 Statistics										
909		DL/2 Normal							DL/2 Log-Transformed						
910				Mean in Original Scale		0.00638				Mean in Log Scale		-5.322			
911				SD in Original Scale		0.00554				SD in Log Scale		0.693			
912			95% t UCL (Assumes normality)			0.00784				95% H-Stat UCL		0.00778			
913				DL/2 is not a recommended method, provided for comparisons and historical reasons											
914															
915					Nonparametric Distribution Free UCL Statistics										
916				Detected Data appear Normal Distributed at 1% Significance Level											
917															
918					Suggested UCL to Use										
919				95% KM (t) UCL		0.00668									
920															
921		Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
922		Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
923		However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
924															
925	Indeno(1,2,3-cd)pyrene - Semi-Volatile Organic Compounds (SIM)														
926															
927					General Statistics										
928			Total Number of Observations			41				Number of Distinct Observations		28			
929										Number of Missing Observations		282			
930				Number of Detects		36				Number of Non-Detects		5			
931				Number of Distinct Detects		24				Number of Distinct Non-Detects		5			
932				Minimum Detect		0.0023				Minimum Non-Detect		0.005			
933				Maximum Detect		0.065				Maximum Non-Detect		0.05			
934				Variance Detects		2.8350E-4				Percent Non-Detects		12.2%			
935				Mean Detects		0.025				SD Detects		0.0168			

Row	Label	Value		Label	Value
936	Median Detects	0.022		CV Detects	0.675
937	Skewness Detects	0.911		Kurtosis Detects	0.251
938	Mean of Logged Detects	-3.966		SD of Logged Detects	0.845
939					
940	**Normal GOF Test on Detects Only**				
941	Shapiro Wilk Test Statistic	0.907		**Shapiro Wilk GOF Test**	
942	1% Shapiro Wilk Critical Value	0.912		Detected Data Not Normal at 1% Significance Level	
943	Lilliefors Test Statistic	0.17		**Lilliefors GOF Test**	
944	1% Lilliefors Critical Value	0.17		Detected Data Not Normal at 1% Significance Level	
945	**Detected Data Not Normal at 1% Significance Level**				
946					
947	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**				
948	KM Mean	0.0227		KM Standard Error of Mean	0.0027
949	90KM SD	0.017		95% KM (BCA) UCL	0.027
950	95% KM (t) UCL	0.0272		95% KM (Percentile Bootstrap) UCL	0.027
951	95% KM (z) UCL	0.0271		95% KM Bootstrap t UCL	0.0278
952	90% KM Chebyshev UCL	0.0308		95% KM Chebyshev UCL	0.0344
953	97.5% KM Chebyshev UCL	0.0395		99% KM Chebyshev UCL	0.0495
954					
955	**Gamma GOF Tests on Detected Observations Only**				
956	A-D Test Statistic	0.432		**Anderson-Darling GOF Test**	
957	5% A-D Critical Value	0.76		Detected data appear Gamma Distributed at 5% Significance Level	
958	K-S Test Statistic	0.12		**Kolmogorov-Smirnov GOF**	
959	5% K-S Critical Value	0.149		Detected data appear Gamma Distributed at 5% Significance Level	
960	**Detected data appear Gamma Distributed at 5% Significance Level**				
961					
962	**Gamma Statistics on Detected Data Only**				
963	k hat (MLE)	1.964		k star (bias corrected MLE)	1.819
964	Theta hat (MLE)	0.0127		Theta star (bias corrected MLE)	0.0137
965	nu hat (MLE)	141.4		nu star (bias corrected)	131
966	Mean (detects)	0.025			
967					
968	**Gamma ROS Statistics using Imputed Non-Detects**				
969	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs				
970	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)				
971	For such situations, GROS method may yield incorrect values of UCLs and BTVs				
972	This is especially true when the sample size is small.				
973	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates				
974	Minimum	0.0023		Mean	0.0233
975	Maximum	0.065		Median	0.02
976	SD	0.0164		CV	0.705
977	k hat (MLE)	1.987		k star (bias corrected MLE)	1.858
978	Theta hat (MLE)	0.0117		Theta star (bias corrected MLE)	0.0125
979	nu hat (MLE)	162.9		nu star (bias corrected)	152.3
980	Adjusted Level of Significance (β)	0.0441			
981	Approximate Chi Square Value (152.34, α)	124.8		Adjusted Chi Square Value (152.34, β)	123.9
982	95% Gamma Approximate UCL	0.0284		95% Gamma Adjusted UCL	0.0286
983					
984	**Estimates of Gamma Parameters using KM Estimates**				
985	Mean (KM)	0.0227		SD (KM)	0.017
986	Variance (KM)	2.8740E-4		SE of Mean (KM)	0.0027
987	k hat (KM)	1.787		k star (KM)	1.673
988	nu hat (KM)	146.5		nu star (KM)	137.2
989	theta hat (KM)	0.0127		theta star (KM)	0.0135
990	80% gamma percentile (KM)	0.0346		90% gamma percentile (KM)	0.046
991	95% gamma percentile (KM)	0.0569		99% gamma percentile (KM)	0.0815
992					
993	**Gamma Kaplan-Meier (KM) Statistics**				
994	Approximate Chi Square Value (137.16, α)	111.1		Adjusted Chi Square Value (137.16, β)	110.2
995	95% KM Approximate Gamma UCL	0.028		95% KM Adjusted Gamma UCL	0.0282
996					
997	**Lognormal GOF Test on Detected Observations Only**				
998	Shapiro Wilk Test Statistic	0.918		**Shapiro Wilk GOF Test**	
999	10% Shapiro Wilk Critical Value	0.945		Detected Data Not Lognormal at 10% Significance Level	
1000	Lilliefors Test Statistic	0.171		**Lilliefors GOF Test**	
1001	10% Lilliefors Critical Value	0.134		Detected Data Not Lognormal at 10% Significance Level	
1002	**Detected Data Not Lognormal at 10% Significance Level**				
1003					
1004	**Lognormal ROS Statistics Using Imputed Non-Detects**				
1005	Mean in Original Scale	0.0227		Mean in Log Scale	-4.105
1006	SD in Original Scale	0.0169		SD in Log Scale	0.888
1007	95% t UCL (assumes normality of ROS data)	0.0272		95% Percentile Bootstrap UCL	0.0271
1008	95% BCA Bootstrap UCL	0.0274		95% Bootstrap t UCL	0.0275
1009	95% H-UCL (Log ROS)	0.0335			
1010					
1011	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**				
1012	KM Mean (logged)	-4.153		KM Geo Mean	0.0157
1013	KM SD (logged)	0.964		95% Critical H Value (KM-Log)	2.313
1014	KM Standard Error of Mean (logged)	0.155		95% H-UCL (KM -Log)	0.0356
1015	KM SD (logged)	0.964		95% Critical H Value (KM-Log)	2.313
1016	KM Standard Error of Mean (logged)	0.155			
1017					
1018	**DL/2 Statistics**				
1019	**DL/2 Normal**			**DL/2 Log-Transformed**	
1020	Mean in Original Scale	0.0228		Mean in Log Scale	-4.142

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1021			SD in Original Scale			0.0171				SD in Log Scale		0.973			
1022			95% t UCL (Assumes normality)			0.0273				95% H-Stat UCL		0.0365			
1023			DL/2 is not a recommended method, provided for comparisons and historical reasons												
1024															
1025			Nonparametric Distribution Free UCL Statistics												
1026			Detected Data appear Gamma Distributed at 5% Significance Level												
1027															
1028			Suggested UCL to Use												
1029			95% KM Adjusted Gamma UCL			0.0282				95% GROS Adjusted Gamma UCL		0.0286			
1030															
1031			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1032			Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1033			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1034															
1035	Lead - Inorganic Compounds														
1036															
1037			General Statistics												
1038			Total Number of Observations			104				Number of Distinct Observations		35			
1039										Number of Missing Observations		212			
1040			Number of Detects			37				Number of Non-Detects		67			
1041			Number of Distinct Detects			28				Number of Distinct Non-Detects		13			
1042			Minimum Detect			11				Minimum Non-Detect		2			
1043			Maximum Detect			240				Maximum Non-Detect		26			
1044			Variance Detects			6029				Percent Non-Detects		64.42%			
1045			Mean Detects			103.1				SD Detects		77.65			
1046			Median Detects			73				CV Detects		0.753			
1047			Skewness Detects			0.52				Kurtosis Detects		-1.271			
1048			Mean of Logged Detects			4.274				SD of Logged Detects		0.941			
1049															
1050			Normal GOF Test on Detects Only												
1051			Shapiro Wilk Test Statistic			0.865			Shapiro Wilk GOF Test						
1052			1% Shapiro Wilk Critical Value			0.814		Detected Data appear Normal at 1% Significance Level							
1053			Lilliefors Test Statistic			0.199			Lilliefors GOF Test						
1054			1% Lilliefors Critical Value			0.168		Detected Data Not Normal at 1% Significance Level							
1055			Detected Data appear Approximate Normal at 1% Significance Level												
1056															
1057			Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs												
1058			KM Mean			39.84				KM Standard Error of Mean		6.589			
1059			90KM SD			65.67				95% KM (BCA) UCL		55.26			
1060			95% KM (t) UCL			50.78				95% KM (Percentile Bootstrap) UCL		52.13			
1061			95% KM (z) UCL			50.68				95% KM Bootstrap t UCL		51.23			
1062			90% KM Chebyshev UCL			59.61				95% KM Chebyshev UCL		68.56			
1063			97.5% KM Chebyshev UCL			80.99				99% KM Chebyshev UCL		105.4			
1064															
1065			Gamma GOF Tests on Detected Observations Only												
1066			A-D Test Statistic			0.818			Anderson-Darling GOF Test						
1067			5% A-D Critical Value			0.766		Detected Data Not Gamma Distributed at 5% Significance Level							
1068			K-S Test Statistic			0.126			Kolmogorov-Smirnov GOF						
1069			5% K-S Critical Value			0.148		Detected data appear Gamma Distributed at 5% Significance Level							
1070			Detected data follow Appr. Gamma Distribution at 5% Significance Level												
1071															
1072			Gamma Statistics on Detected Data Only												
1073			k hat (MLE)			1.529				k star (bias corrected MLE)		1.423			
1074			Theta hat (MLE)			67.42				Theta star (bias corrected MLE)		72.44			
1075			nu hat (MLE)			113.1				nu star (bias corrected)		105.3			
1076			Mean (detects)			103.1									
1077															
1078			Gamma ROS Statistics using Imputed Non-Detects												
1079			GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
1080			GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
1081			For such situations, GROS method may yield incorrect values of UCLs and BTVs												
1082			This is especially true when the sample size is small.												
1083			For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
1084			Minimum			0.01				Mean		37.64			
1085			Maximum			240				Median		0.01			
1086			SD			67.14				CV		1.784			
1087			k hat (MLE)			0.17				k star (bias corrected MLE)		0.172			
1088			Theta hat (MLE)			221.1				Theta star (bias corrected MLE)		219.1			
1089			nu hat (MLE)			35.41				nu star (bias corrected)		35.72			
1090			Adjusted Level of Significance (β)			0.0477									
1091			Approximate Chi Square Value (35.72, α)			23.05				Adjusted Chi Square Value (35.72, β)		22.9			
1092			95% Gamma Approximate UCL			58.34				95% Gamma Adjusted UCL		58.71			
1093															
1094			Estimates of Gamma Parameters using KM Estimates												
1095			Mean (KM)			39.84				SD (KM)		65.67			
1096			Variance (KM)			4313				SE of Mean (KM)		6.589			
1097			k hat (KM)			0.368				k star (KM)		0.364			
1098			nu hat (KM)			76.56				nu star (KM)		75.68			
1099			theta hat (KM)			108.2				theta star (KM)		109.5			
1100			80% gamma percentile (KM)			63.48				90% gamma percentile (KM)		114.4			
1101			95% gamma percentile (KM)			171				99% gamma percentile (KM)		314.9			
1102															
1103			Gamma Kaplan-Meier (KM) Statistics												
1104			Approximate Chi Square Value (75.68, α)			56.64				Adjusted Chi Square Value (75.68, β)		56.41			
1105			95% KM Approximate Gamma UCL			53.23				95% KM Adjusted Gamma UCL		53.45			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1106															
1107					Lognormal GOF Test on Detected Observations Only										
1108				Shapiro Wilk Test Statistic		0.916			Shapiro Wilk GOF Test						
1109				10% Shapiro Wilk Critical Value		0.946		Detected Data Not Lognormal at 10% Significance Level							
1110				Lilliefors Test Statistic		0.127			Lilliefors GOF Test						
1111				10% Lilliefors Critical Value		0.132		Detected Data appear Lognormal at 10% Significance Level							
1112					Detected Data appear Approximate Lognormal at 10% Significance Level										
1113															
1114					Lognormal ROS Statistics Using Imputed Non-Detects										
1115				Mean in Original Scale		41.78				Mean in Log Scale		2.651			
1116				SD in Original Scale		65.01				SD in Log Scale		1.497			
1117			95% t UCL (assumes normality of ROS data)			52.36				95% Percentile Bootstrap UCL		52.45			
1118				95% BCA Bootstrap UCL		52.88				95% Bootstrap t UCL		53.28			
1119				95% H-UCL (Log ROS)		64.85									
1120															
1121				Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution											
1122				KM Mean (logged)		2.28				KM Geo Mean		9.78			
1123				KM SD (logged)		1.715				95% Critical H Value (KM-Log)		2.962			
1124			KM Standard Error of Mean (logged)			0.229				95% H-UCL (KM -Log)		70.19			
1125				KM SD (logged)		1.715				95% Critical H Value (KM-Log)		2.962			
1126			KM Standard Error of Mean (logged)			0.229									
1127															
1128					DL/2 Statistics										
1129				DL/2 Normal					DL/2 Log-Transformed						
1130				Mean in Original Scale		43.24				Mean in Log Scale		2.987			
1131				SD in Original Scale		64.09				SD in Log Scale		1.15			
1132			95% t UCL (Assumes normality)			53.67				95% H-Stat UCL		50.08			
1133				DL/2 is not a recommended method, provided for comparisons and historical reasons											
1134															
1135					Nonparametric Distribution Free UCL Statistics										
1136				Detected Data appear Approximate Normal Distributed at 1% Significance Level											
1137															
1138					Suggested UCL to Use										
1139				95% KM (t) UCL		50.78									
1140															
1141				When a data set follows an approximate distribution passing only one of the GOF tests,											
1142				it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL											
1143															
1144			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
1145				Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
1146			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
1147															
1148	Naphthalene - Semi-Volatile Organic Compounds (SIM)														
1149															
1150					General Statistics										
1151				Total Number of Observations		41			Number of Distinct Observations			15			
1152									Number of Missing Observations			282			
1153				Number of Detects		5			Number of Non-Detects			36			
1154				Number of Distinct Detects		5			Number of Distinct Non-Detects			12			
1155				Minimum Detect		0.0023			Minimum Non-Detect			0.0048			
1156				Maximum Detect		0.0069			Maximum Non-Detect			0.01			
1157				Variance Detects		3.0530E-6			Percent Non-Detects			87.8%			
1158				Mean Detects		0.00526			SD Detects			0.00175			
1159				Median Detects		0.0057			CV Detects			0.332			
1160				Skewness Detects		-1.643			Kurtosis Detects			3.31			
1161				Mean of Logged Detects		-5.311			SD of Logged Detects			0.437			
1162															
1163					Normal GOF Test on Detects Only										
1164				Shapiro Wilk Test Statistic		0.84			Shapiro Wilk GOF Test						
1165				1% Shapiro Wilk Critical Value		0.686		Detected Data appear Normal at 1% Significance Level							
1166				Lilliefors Test Statistic		0.332			Lilliefors GOF Test						
1167				1% Lilliefors Critical Value		0.396		Detected Data appear Normal at 1% Significance Level							
1168				Detected Data appear Normal at 1% Significance Level											
1169				Note GOF tests may be unreliable for small sample sizes											
1170															
1171				Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
1172				KM Mean		0.00269			KM Standard Error of Mean			2.1016E-4			
1173				90KM SD		0.00115			95% KM (BCA) UCL			0.00511			
1174				95% KM (t) UCL		0.00305			95% KM (Percentile Bootstrap) UCL			0.00509			
1175				95% KM (z) UCL		0.00304			95% KM Bootstrap t UCL			0.00291			
1176				90% KM Chebyshev UCL		0.00332			95% KM Chebyshev UCL			0.00361			
1177				97.5% KM Chebyshev UCL		0.00401			99% KM Chebyshev UCL			0.00479			
1178				Note: KM UCLs may be biased low with this dataset. Other substitution method recommended											
1179															
1180					Gamma GOF Tests on Detected Observations Only										
1181				A-D Test Statistic		0.692			Anderson-Darling GOF Test						
1182				5% A-D Critical Value		0.68		Detected Data Not Gamma Distributed at 5% Significance Level							
1183				K-S Test Statistic		0.376			Kolmogorov-Smirnov GOF						
1184				5% K-S Critical Value		0.358		Detected Data Not Gamma Distributed at 5% Significance Level							
1185				Detected Data Not Gamma Distributed at 5% Significance Level											
1186															
1187					Gamma Statistics on Detected Data Only										
1188				k hat (MLE)		8.035			k star (bias corrected MLE)			3.347			
1189				Theta hat (MLE)		6.5467E-4			Theta star (bias corrected MLE)			0.00157			
1190				nu hat (MLE)		80.35			nu star (bias corrected)			33.47			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1191				Mean (detects)		0.00526									
1192															
1193					Gamma ROS Statistics using Imputed Non-Detects										
1194				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
1195				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
1196				For such situations, GROS method may yield incorrect values of UCLs and BTVs											
1197				This is especially true when the sample size is small.											
1198				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
1199				Minimum		0.0023				Mean		0.00942			
1200				Maximum		0.01				Median		0.01			
1201				SD		0.00166				CV		0.177			
1202				k hat (MLE)		19				k star (bias corrected MLE)		17.62			
1203				Theta hat (MLE)		4.9598E-4				Theta star (bias corrected MLE)		5.3465E-4			
1204				nu hat (MLE)		1558				nu star (bias corrected)		1445			
1205				Adjusted Level of Significance (β)		0.0441									
1206				Approximate Chi Square Value (N/A, α)		1358				Adjusted Chi Square Value (N/A, β)		1355			
1207				95% Gamma Approximate UCL		0.01				95% Gamma Adjusted UCL		0.0101			
1208															
1209				Estimates of Gamma Parameters using KM Estimates											
1210				Mean (KM)		0.00269				SD (KM)		0.00115			
1211				Variance (KM)		1.3289E-6				SE of Mean (KM)		2.1016E-4			
1212				k hat (KM)		5.462				k star (KM)		5.079			
1213				nu hat (KM)		447.9				nu star (KM)		416.5			
1214				theta hat (KM)		4.9324E-4				theta star (KM)		5.3048E-4			
1215				80% gamma percentile (KM)		0.00362				90% gamma percentile (KM)		0.00429			
1216				95% gamma percentile (KM)		0.00491				99% gamma percentile (KM)		0.00622			
1217															
1218				Gamma Kaplan-Meier (KM) Statistics											
1219				Approximate Chi Square Value (416.47, α)		370.2				Adjusted Chi Square Value (416.47, β)		368.6			
1220				95% KM Approximate Gamma UCL		0.00303				95% KM Adjusted Gamma UCL		0.00304			
1221				Note: KM UCLs may be biased low with this dataset. Other substitution method recommended											
1222															
1223				Lognormal GOF Test on Detected Observations Only											
1224				Shapiro Wilk Test Statistic		0.749		Shapiro Wilk GOF Test							
1225				10% Shapiro Wilk Critical Value		0.806		Detected Data Not Lognormal at 10% Significance Level							
1226				Lilliefors Test Statistic		0.381		Lilliefors GOF Test							
1227				10% Lilliefors Critical Value		0.319		Detected Data Not Lognormal at 10% Significance Level							
1228				Detected Data Not Lognormal at 10% Significance Level											
1229															
1230				Lognormal ROS Statistics Using Imputed Non-Detects											
1231				Mean in Original Scale		0.00283				Mean in Log Scale		-5.943			
1232				SD in Original Scale		0.00125				SD in Log Scale		0.383			
1233				95% t UCL (assumes normality of ROS data)		0.00316				95% Percentile Bootstrap UCL		0.00316			
1234				95% BCA Bootstrap UCL		0.00318				95% Bootstrap t UCL		0.00325			
1235				95% H-UCL (Log ROS)		0.00315									
1236															
1237				Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution											
1238				KM Mean (logged)		-5.973				KM Geo Mean		0.00255			
1239				KM SD (logged)		0.296				95% Critical H Value (KM-Log)		1.771			
1240				KM Standard Error of Mean (logged)		0.054				95% H-UCL (KM -Log)		0.00289			
1241				KM SD (logged)		0.296				95% Critical H Value (KM-Log)		1.771			
1242				KM Standard Error of Mean (logged)		0.054									
1243				Note: KM UCLs may be biased low with this dataset. Other substitution method recommended											
1244															
1245				DL/2 Statistics											
1246				DL/2 Normal					DL/2 Log-Transformed						
1247				Mean in Original Scale		0.00303				Mean in Log Scale		-5.849			
1248				SD in Original Scale		0.00114				SD in Log Scale		0.288			
1249				95% t UCL (Assumes normality)		0.00333				95% H-Stat UCL		0.00326			
1250				DL/2 is not a recommended method, provided for comparisons and historical reasons											
1251															
1252				Nonparametric Distribution Free UCL Statistics											
1253				Detected Data appear Normal Distributed at 1% Significance Level											
1254															
1255				Suggested UCL to Use											
1256				95% KM (t) UCL		0.00305									
1257															
1258			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1259				Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
1260			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1261															
1262	Naphthalene, Total - Semi-Volatile Organic Compounds (SIM)														
1263															
1264					General Statistics										
1265				Total Number of Observations		41				Number of Distinct Observations		17			
1266										Number of Missing Observations		282			
1267				Number of Detects		5				Number of Non-Detects		36			
1268				Number of Distinct Detects		5				Number of Distinct Non-Detects		13			
1269				Minimum Detect		0.0023				Minimum Non-Detect		0.005			
1270				Maximum Detect		0.015				Maximum Non-Detect		0.01			
1271				Variance Detects		2.2583E-5				Percent Non-Detects		87.8%			
1272				Mean Detects		0.00706				SD Detects		0.00475			
1273				Median Detects		0.0057				CV Detects		0.673			
1274				Skewness Detects		1.497				Kurtosis Detects		3.027			
1275				Mean of Logged Detects		-5.128				SD of Logged Detects		0.669			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1276															
1277				Normal GOF Test on Detects Only											
1278				Shapiro Wilk Test Statistic		0.858			Shapiro Wilk GOF Test						
1279				1% Shapiro Wilk Critical Value		0.686		Detected Data appear Normal at 1% Significance Level							
1280				Lilliefors Test Statistic		0.313			Lilliefors GOF Test						
1281				1% Lilliefors Critical Value		0.396		Detected Data appear Normal at 1% Significance Level							
1282				Detected Data appear Normal at 1% Significance Level											
1283				Note GOF tests may be unreliable for small sample sizes											
1284															
1285				Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
1286				KM Mean		0.00306			KM Standard Error of Mean			4.3136E-4			
1287				90KM SD		0.00223			95% KM (BCA) UCL			0.00574			
1288				95% KM (t) UCL		0.00379			95% KM (Percentile Bootstrap) UCL			0.00563			
1289				95% KM (z) UCL		0.00377			95% KM Bootstrap t UCL			0.00367			
1290				90% KM Chebyshev UCL		0.00436			95% KM Chebyshev UCL			0.00495			
1291				97.5% KM Chebyshev UCL		0.00576			99% KM Chebyshev UCL			0.00736			
1292															
1293				Gamma GOF Tests on Detected Observations Only											
1294				A-D Test Statistic		0.329			Anderson-Darling GOF Test						
1295				5% A-D Critical Value		0.683		Detected data appear Gamma Distributed at 5% Significance Level							
1296				K-S Test Statistic		0.239			Kolmogorov-Smirnov GOF						
1297				5% K-S Critical Value		0.359		Detected data appear Gamma Distributed at 5% Significance Level							
1298				Detected data appear Gamma Distributed at 5% Significance Level											
1299				Note GOF tests may be unreliable for small sample sizes											
1300															
1301				Gamma Statistics on Detected Data Only											
1302				k hat (MLE)		3.02			k star (bias corrected MLE)			1.342			
1303				Theta hat (MLE)		0.00234			Theta star (bias corrected MLE)			0.00526			
1304				nu hat (MLE)		30.2			nu star (bias corrected)			13.42			
1305				Mean (detects)		0.00706									
1306															
1307				Gamma ROS Statistics using Imputed Non-Detects											
1308				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
1309				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
1310				For such situations, GROS method may yield incorrect values of UCLs and BTVs											
1311				This is especially true when the sample size is small.											
1312				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
1313				Minimum		0.0023			Mean			0.00964			
1314				Maximum		0.015			Median			0.01			
1315				SD		0.00179			CV			0.186			
1316				k hat (MLE)		18.52			k star (bias corrected MLE)			17.19			
1317				Theta hat (MLE)		5.2046E-4			Theta star (bias corrected MLE)			5.6102E-4			
1318				nu hat (MLE)		1519			nu star (bias corrected)			1409			
1319				Adjusted Level of Significance (β)		0.0441									
1320				Approximate Chi Square Value (N/A, α)		1323			Adjusted Chi Square Value (N/A, β)			1320			
1321				95% Gamma Approximate UCL		0.0103			95% Gamma Adjusted UCL			0.0103			
1322															
1323				Estimates of Gamma Parameters using KM Estimates											
1324				Mean (KM)		0.00306			SD (KM)			0.00223			
1325				Variance (KM)		4.9927E-6			SE of Mean (KM)			4.3136E-4			
1326				k hat (KM)		1.881			k star (KM)			1.76			
1327				nu hat (KM)		154.3			nu star (KM)			144.3			
1328				theta hat (KM)		0.00163			theta star (KM)			0.00174			
1329				80% gamma percentile (KM)		0.00466			90% gamma percentile (KM)			0.00614			
1330				95% gamma percentile (KM)		0.00757			99% gamma percentile (KM)			0.0108			
1331															
1332				Gamma Kaplan-Meier (KM) Statistics											
1333			Approximate Chi Square Value (144.33, α)			117.6			Adjusted Chi Square Value (144.33, β)			116.7			
1334				95% KM Approximate Gamma UCL		0.00376			95% KM Adjusted Gamma UCL			0.00379			
1335															
1336				Lognormal GOF Test on Detected Observations Only											
1337				Shapiro Wilk Test Statistic		0.951			Shapiro Wilk GOF Test						
1338				10% Shapiro Wilk Critical Value		0.806		Detected Data appear Lognormal at 10% Significance Level							
1339				Lilliefors Test Statistic		0.244			Lilliefors GOF Test						
1340				10% Lilliefors Critical Value		0.319		Detected Data appear Lognormal at 10% Significance Level							
1341				Detected Data appear Lognormal at 10% Significance Level											
1342				Note GOF tests may be unreliable for small sample sizes											
1343															
1344				Lognormal ROS Statistics Using Imputed Non-Detects											
1345				Mean in Original Scale		0.00292			Mean in Log Scale			-6.003			
1346				SD in Original Scale		0.00231			SD in Log Scale			0.536			
1347			95% t UCL (assumes normality of ROS data)			0.00353			95% Percentile Bootstrap UCL			0.00355			
1348				95% BCA Bootstrap UCL		0.00373			95% Bootstrap t UCL			0.00401			
1349				95% H-UCL (Log ROS)		0.00336									
1350															
1351				Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution											
1352				KM Mean (logged)		-5.91			KM Geo Mean			0.00271			
1353				KM SD (logged)		0.412			95% Critical H Value (KM-Log)			1.838			
1354				KM Standard Error of Mean (logged)		0.0875			95% H-UCL (KM -Log)			0.00333			
1355				KM SD (logged)		0.412			95% Critical H Value (KM-Log)			1.838			
1356				KM Standard Error of Mean (logged)		0.0875									
1357				Note: KM UCLs may be biased low with this dataset. Other substitution method recommended											
1358															
1359				DL/2 Statistics											
1360				DL/2 Normal					DL/2 Log-Transformed						

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1361				Mean in Original Scale		0.00349				Mean in Log Scale		-5.742			
1362				SD in Original Scale		0.0021				SD in Log Scale		0.356			
1363				95% t UCL (Assumes normality)		0.00404				95% H-Stat UCL		0.00378			
1364			DL/2 is not a recommended method, provided for comparisons and historical reasons												
1365															
1366			Nonparametric Distribution Free UCL Statistics												
1367			Detected Data appear Normal Distributed at 1% Significance Level												
1368															
1369			Suggested UCL to Use												
1370				95% KM (t) UCL		0.00379									
1371															
1372		Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
1373		Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
1374		However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
1375															