



Massachusetts Department of Environmental Protection
Bureau of Water Resources – Surface Water Discharge (NPDES)
Permitting Program

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Submit through ePlace.
See instructions.**

WM 05, 06, 07

Surface Water Discharge (NPDES Individual) Permit Application

To be filed by all persons required to obtain a permit to discharge Industrial or Non-Industrial Wastewater to waters of the Commonwealth.

A. Facility Information

1. Permit # (if known), name, address, and telephone number of facility producing the discharge:

Permit # (if known)

Name

Street address

City

State

Zip Code

Telephone number (including extension)

E-mail address (optional)

Billing address (if different):

Street/PO Box

City

State

Zip Code

Discharge Site:

Facility Name

Street address

City

State

Zip Code

Ownership: ☐ Individual ☐ Corporation ☐ Partnership ☐ Other (specify):

Status: ☐ Private ☐ Public ☐ Other (specify):

Major/Minor: ☐ Major ☐ Minor

2. Contact Person:

Give the name, title, and work telephone number of a person who is thoroughly familiar with the operation of the facility, with the facts reported in this application, and can be contacted by the Surface Water Discharge (NPDES) Program if necessary.

Name

Title

Telephone Number (including extension)

DEP Use Only
Application #
Date Received



Massachusetts Department of Environmental Protection
Bureau of Water Resources – Surface Water Discharge (NPDES) Permitting Program
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A. Facility Information (cont.)

3. Facility Status:

☐ Existing ☐ Proposed

4. Does the project affect a site of historic or archeological significance, as defined in regulations of the Massachusetts Historical Commission, 950 CMR 71.00?

☐ Yes ☐ No

5. Does this project require a filing under 301 CRM 11.00, the Massachusetts Environmental Policy Act (MEPA)?

☐ Yes ☐ No

If yes, has a filing been made?

☐ Yes ☐ No

6. Submit a copy of the required US EPA Forms to MassDEP:

The Forms are located at the following link: <https://www.epa.gov/npdes-permits/epa-npdes-permit-forms-attachments-new-england>

B. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of applicant

Date Signed

Printed name of applicant

Name of Preparer

Title

Title

Telephone Number (including extension)



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March 31, 2023

Mr. George Papadopoulos
Environmental Engineer
United States Environmental Protection Agency
5 P.O. Square, Suite 100
Boston, MA 02109-3912

Subject: Pilgrim Nuclear Power Station – National Pollutant Discharge Elimination System
Permit #MA0003557 Modification Application

Mr. Papadopoulos,

Holtec Decommissioning International, LLC (HDI) is providing this submittal package to the United States Environmental Protection Agency (USEPA) to propose modification to National Pollutant Discharge Elimination System Permit (NPDES) permit #MA0003557 for Pilgrim Nuclear Power Station (PNPS) located in Plymouth, Massachusetts. The contents of this submittal package include:

- Statement of Facts
- USEPA Form 3510-1 and attachments
- USEPA Form 3510-2C and attachments

Please note, all existing stormwater discharges under the current permit are not subject to this modification and therefore USEPA Form 3510-2F is not required with this request.

In addition, a hard copy of the USEPA forms and relevant attachments will be sent directly for your attention to the address provided above.

HDI believes that the information presented is complete and accurate to allow for comprehensive review of the NPDES permit modification proposal. Should the USEPA have any questions, comments, or requires additional materials, please feel free to contact Mr. Ben Reynolds, HDI Director of Environmental Affairs, or myself at (856-797-0900, ext. 3578).

Sincerely

Jean Fleming
Vice President, Licensing, Regulatory Affairs, & PSA
Holtec International

APPLICATION FOR MODIFICATION TO
NPDES PERMIT NO. MA0003557

STATEMENT OF FACTS

Holtec Decommissioning International, LLC (“Holtec”) submits this application for a modification to the existing National Pollutant Discharge Elimination System (“NPDES”) Permit No. MA0003557 to authorize a temporary discharge of non-radiological pollutants in an industrial wastewater at the Pilgrim Nuclear Power Station (“PNPS”) into Cape Cod Bay.

A. APPLICANT

APPLICANT

Holtec Decommissioning International, LLC
1 Holtec Boulevard
Camden, NJ 08104

FACILITY

Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360

CONTACT

Dave Noyes
Compliance Manager
Pilgrim Nuclear Power Station
(508) 830-7826

B. DESCRIPTION OF THE FACILITY

PNPS is a former 670 megawatt electricity-generating power plant adjacent to Cape Cod Bay. The facility occupies approximately 140 acres and is located on the western shore of Cape Cod Bay, occupying one mile of continuous shoreline frontage. Commercial operation of the station began in December 1972, when the facility was owned by Boston Edison Company. In 1999, Entergy assumed ownership of the facility. Holtec acquired PNPS from Entergy in 2019 and is in the process of decommissioning the facility under a Post Shutdown Decommissioning Activities Report (PSDAR) as revised.

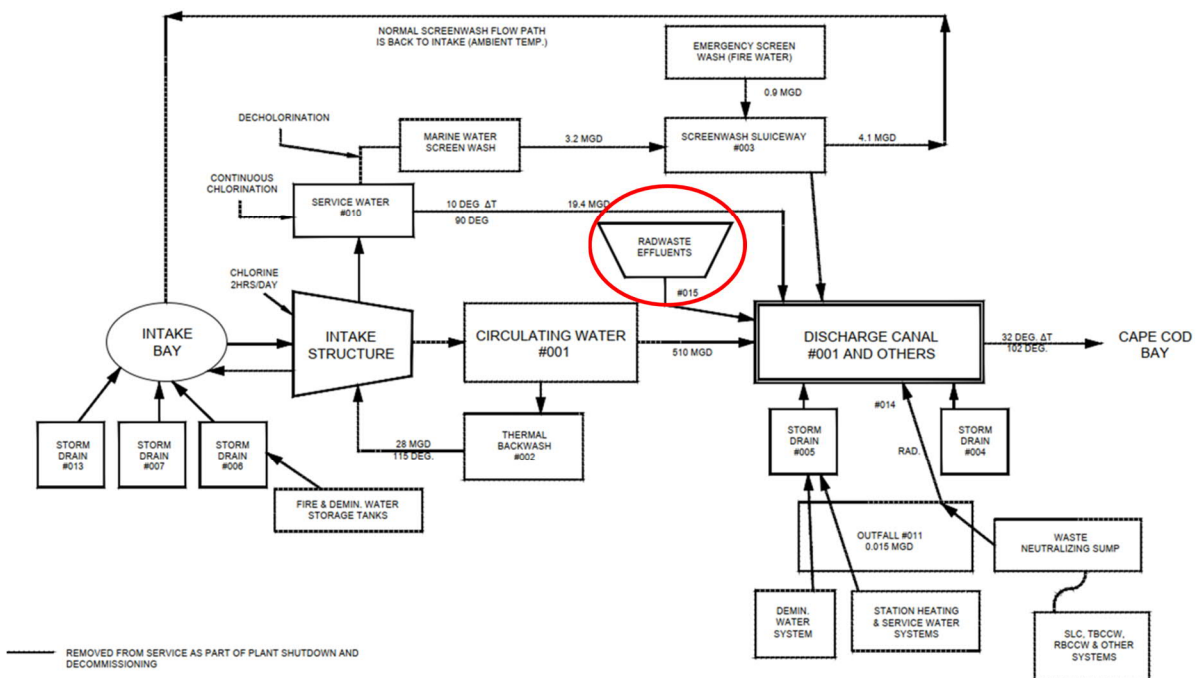
C. EXISTING PERMIT

United State Environmental Protection Agency (“EPA”) issued the Final NPDES Permit No. MA0003557 on January 30, 2020 covering ongoing wastewater discharges at the Facility. While the Station permanently ceased generating electricity on May 31, 2019, certain discharges to Cape Cod Bay continue, including cooling water used to absorb waste heat from the spent fuel pool, process water, and stormwater. With the removal of the remaining spent fuel rods from the spent fuel pool, permitted Clean

Water Act ("CWA") currently discharges from the site are limited to stormwater and cooling water used for auxiliary heating systems and dilution. There remains approximately 1.1 million gallons of water stored at the facility, comprised of water from the spent fuel pool that contains varying levels of radioactivity. The term "pollutant" in the CWA excludes "radioactive materials" regulated by the Nuclear Regulatory Commission ("NRC") under the Atomic Energy Act. Consequently, the Final NPDES Permit does not include any numeric limits on such radioactive materials. Rather, the disposal of radioactive materials is overseen by the NRC¹. The existing permit does not authorize the discharge of non-radiological pollutants in the spent fuel pool water (including but not limited to, boron). See Section B, Paragraph 2 of the NPDES Permit

D. DESCRIPTION OF PROPOSED MODIFICATION

Holtec is seeking to modify Section B, Paragraph 2 of the NPDES Permit to include Outfall #015 (Radwaste Effluent) which is combined with flow in the discharge canal pursuant to the following diagram:



During plant operation, the Spent Fuel Pool ("SFP") water volume remained substantially unchanged other than minor SFP Cooling System loss into waste collection systems and routed to radiological waste collection and makeup from the Condensate Storage and Transfer System to account for minor loss and evaporation. The SFP Cooling System was essentially continuously run providing filtration and demineralization of the segregated volume. During biennial refueling outages, the volume of water was interconnected with the water in the reactor cavity and dryer separator pit. Circulating water systems commingled and mixed these two normally segregated volumes. During refueling and maintenance activities, permanently installed and temporary filtration systems were used to reduce any impurities being generated by the activities. At the end of each refueling outage, a portion of this commingled

¹ Part I, Section A, Paragraph 23: The discharge of radioactive materials shall be in accordance with and regulated by the Nuclear Regulatory Commission (NRC) requirements (10 C.F.R Part 20 and NRC Technical Specifications set forth in facility operating license, DPR-35)

volume was drained to condensate storage tanks with any remainder that exceeded onsite water volume storage capability being filtered, demineralized, verified to meet radiological and non-radiological quality standards and discharged. The last discharge of any water having resided for any period of time in the SFP, occurred in 2015. Following the permanent shutdown of Pilgrim in 2019, spent fuel assemblies stored in the pool were transferred to dry cask storage in a stand-alone Independent Spent Fuel Storage Installation ("ISFSI"). The racks that stored the fuel have been removed and disposed of and the pool is currently being used to package radiological materials such as the reactor vessel internal components for ultimate disposal. Following the completion of the packaging campaign the SFP water will be drained to the Torus for final disposition. Under the terms of this proposed NPDES Permit modification, the water will be filtered using a Solids Collection Filter Top-Loading Canister System, routed to a mixed bed resin/charcoal demineralizer for radiological and chemical (including organic) contaminant removal, radiologically characterized, and then discharged via Outfall #015 in batches of approximately 19,000 gallons and diluted into the plants discharge canal and further diluted in the Cape Cod Bay.

E. REGULATION OF SPENT FUEL POOL

The CWA prohibits the discharge of pollutants, including heat, into certain types of water bodies from facilities such as PNPS, except in conformance with a NPDES permit issued by EPA or an authorized state. The CWA also requires that the location, design, construction, and capacity of cooling water intake structures ("CWIS") at such facilities reflect the best technology available for minimizing adverse environmental impact. EPA is the NPDES permitting authority in Massachusetts and last issued a NPDES permit for PNPS in 2020. The disposal of radioactive materials is overseen by the NRC.

This application for modification of NPDES Permit No. MA0003557 to authorize discharge of a new source of industrial wastewater is submitted as required by Section 301(a) and 402 of the Clean Water Act, and 40 CFR 122.21 and 122.62.

A separate Water Discharge Permit will be obtained as required by the Massachusetts Clean Waters Act, as amended (M.G.L. Chapter 21 §§26-53).

F. EFFLUENT LIMIT GUIDELINES

The facility is subject to the Best Practicable Control Technology Currently Available ("BPT") Effluent Limitation Guidelines ("ELGs") applicable to the Steam Electric Power Generating Point Source Category specified in 40 CFR 423.12(b)(1) and (2) for pH and PCBs; 40 CFR 423.12(b)(3) for TSS and Oil and Grease in low-volume waste sources; and 40 CFR 423.12(b)(6) for free available chlorine in once-through cooling water.

The industrial wastewater proposed for discharge is a New Source, thus the discharge is also subject to the ELGs specified at 40 CFR 423.15(a)(1) and (2) for pH and PCBs; and 40 CFR 423.15(a)(3) for TSS and Oil and Grease in low-volume waste sources.

The permittee is authorized to discharge non-contact cooling water from the Salt Service Water system, classified as low volume waste, through Outfall 010 in the existing NPDES permit for the facility. The Salt Service Water system will be used during discharges from new Outfall 015 to meet NRC

requirements. Outfall 010 is monitored under the existing permit for Flow, Intake Velocity, Temperature, Temperature Rise, pH, TSS, Oil and Grease and Total Residual Oxidants.

The industrial wastewater will be treated and then discharged through an internal outfall designated Outfall 015 and will not rely on dilution from the Outfall 010 flow to meet discharge limits.

A summary of the analytical results for treated water, intake water (i.e., Cape Cod bay seawater), and the three source volumes presently contained in the Spent Fuel Pool, Reactor Cavity/Dryer Separator Pit and Torus analytical results are provided in Table 1, included as an attachment to this Statement of Fact. The quality of the water presently stored in the Torus generally represents the volume with the highest concentrations of pollutants. Water from the Torus was processed through the treatment system and discharged into a treated water tank. Sample TWT A was collected from the treated water tank and represents the performance of the treatment system in reducing the pollutant concentrations in water drawn from the volume with highest pollutant concentrations. The three water volumes will be combined in the Torus prior to commencing discharge. The blended water quality will be generally better than the water used to generate the treated water volume analytical results presented in this Statement of Facts and the NPDES modification application. Thus, the analytical results for the treated water represent a conservative characterization of the anticipated water quality prior to discharge.

A comparison of detected pollutants in the treated water with applicable ELGs is provided below.

Table 2. Comparison of Detected Pollutant Concentrations in the Treated Wastewater with Applicable Effluent Limitation Guidelines

Parameter	Detected Value	Effluent Limit Guideline	
		Daily Maximum	Monthly Average
Total Suspended Solids	1.0 mg/L	100.0 mg/L	30.0 mg/L
pH	6.87 S.U.	6.0 – 9.0 S.U.	
Oil & Grease	1.47 mg/L	20.0 mg/L	15.0 mg/L

mg/l = milligrams per liter; S.U. = standard units

Other pollutants detected at trace levels in the treated water include copper at 1.39 micrograms per liter (µg/L), zinc at 36.1 µg/L and total residual oxidants at 0.0449 mg/L. While not directly applicable to the discharge proposed in this application, ELGs for these pollutants have been established for these pollutants in wastewater produced from other discharges common to Steam Electric Power Generating plants. For example, the ELG concentration for copper in chemical metal cleaning wastewater is 1,000 µg/L. Similarly, the ELG concentration for zinc in cooling tower blowdown wastewater is 1,000 µg/L. The ELG concentrations for total residual oxidants are a daily maximum of 0.5 mg/L and monthly average of 0.2 mg/L. The concentrations for these pollutants in the treated wastewater are well below these ELGs for similar discharges from Steam Electric Power Generating Category plants. Further, the water intended for treatment and discharge has not been chlorinated during power plant operations and will not be chlorinated during its management and treatment for discharge.

G. TECHNOLOGY-BASED LIMITS (“TBELS”)

The industrial wastewater discharge from Outfall 015 may be subject to site-specific TBELs for pollutants present in the treated wastewater that are not subject to applicable ELGs. Site-specific TBELs

are generally determined using Best Professional Judgment in consideration of the appropriate standard (BPT, BCT, BAT or NSPS) for determination of TBELs.

The pollutants detected in the treated water that are not subject to promulgated ELGs for the industry category and discharge type associated with Outfall 015 include chemical oxygen demand (COD), boron, copper, lead, nickel and zinc. COD and boron are present in the treated water at concentrations well below concentrations detected in the intake water. The intake water quality is representative of the Cape Cod Bay receiving water quality. Both COD and boron are naturally occurring chemical characteristics of seawater.

The existing permit includes a discharge limit of 5,600 µg/L for boron (approximately 1 mg/L above the receiving water concentration). The boron concentration in the treated and intake waters are 36.7 µg/L and 4,290 µg/L, respectively, consequently, there is no potential for the discharge from Outfall 015 to increase boron concentrations in the receiving water.

Copper (1.39 µg/L) and lead (0.660 µg/L) are present in the treated water at very low concentrations and will be further reduced in the untreated wastewater after blending with the volumes in the Spent Fuel Pool and Reactor Cavity/Dryer Separator Pit which do not contain detectable concentrations of these metals. Zinc is present at 36.1 µg/L in the treated water and also will be reduced in the blended water. Lead and zinc will likely be diluted to non-detectable levels after mixing with the Outfall 010 flow in the discharge canal. The concentration of copper in the treated water (1.39 µg/L) is similar to the concentration in the intake water (1.69 µg/L) and will therefore have little to no effect on the receiving water ambient concentration.

Based on these facts, while TBELs could be developed for pollutants that do not have applicable ELGs for the Outfall 015 discharge, there is no need to establish TBELs for these pollutants given the lack of potential for adverse effect, further discussed below regarding Water Quality-Based Effluent Limits (WQBELs).

H. Water Quality-Based Effluents Limits

The water quality results, as presented in Tables A through E of USEPA Form 2C (and associated attachments for the treated wastewater to be discharged through Outfall 015 confirms that there is no reasonable potential for discharge of pollutants at concentrations or masses² sufficient to cause adverse environmental impacts in Cape Cod Bay.

The discharge will be monitored at an internal outfall directly from the treated water tank. Discharge limits will apply at the internal outfall. The discharge from Outfall 015 will combine with the Salt Service Water discharge at the head of the discharge canal and undergo mixing before reaching the end of the canal where it will enter Cape Cod Bay. The ratio of Outfall 015 plant water flow to Outfall 010 Salt Service Water flow will be a minimum of 1:20. Based on the analytical results for the Treated Water, it is likely that the concentrations of detected pollutants in the treated water will be mixed to levels below laboratory detection limits, except in cases where the receiving water (Cape Cod Bay) already contains measurable concentrations of the constituents.

² Masses calculated in USEPA Form 3510-2C based on a 19,000-gallon volume.

There will be insufficient thermal load in the Outfall 015 discharge to substantially change the ambient temperature of the discharge from Outfall 010 due to its moderate temperature and low volume (5 percent or less) of the Outfall 010 flow.

A comparison of detected pollutant concentrations above reporting limits in the treated wastewater with available water quality standards, screening criteria and other relevant criteria, including pollutants with applicable ELGs, is provided below.

Table 3. Comparison of Detected Pollutant Concentrations Above Reporting Limits in the Treated Wastewater with Water Quality Standards, Screening Criteria, NPDES Required Detection Limits, Existing NPDES Permit Limits and Cape Cod Bay Ambient Seawater Concentrations

Parameter	Treated Water Concentration	EPA Aquatic Life Criteria Salt Water CMC (Acute)	NOAA Screening Levels for Marine Surface Water (Acute)	NPDES Minimum Level of Detection	Discharge Limits in Existing NPDES Permit for Other Outfalls ¹	Intake Water Concentration (Ambient Seawater)
Chemical Oxygen Demand	18.1 mg/L	--	--	--	--	531 mg/L
Total Suspended Solids	1.00 mg/L	--	--	--	30 mg/L	4.10 mg/L
pH	6.87 S.U.	6.5 – 9 S.U.	--	--	6.5 – 8.5 S.U.	8.07 S.U.
Boron	36.7 µg/L	--	--	--	5,600 µg/L	4,290 µg/L
Copper	1.39 µg/L	4.8 µg/L	--	3 4.8 µg/L	--	1.69 µg/L
Lead	0.660 µg/L	210 µg/L	--	0.5 µg/L	--	< 2.50 µg/L
Nickel	2.02 µg/L	74 µg/L	--	20 µg/L	--	< 3.0 µg/L
Zinc	36.1 µg/L	90 µg/L	90 µg/L	15 µg/L	--	< 66.0 µg/L
Oil & Grease	1.47 mg/L	--	--	--	15 mg/L	< 1.11 µg/L
Total Phenol	1.67 µg/L	--	--	--	--	4.04 µg/L

¹ Listed value is the most stringent limit listed in the existing permit for once-through cooling water and other industrial wastewater discharges.

I. ANTI-BACKSLIDING/ANTIDEGRADATION

The proposed permit modification is consistent with the requirements to meet anti-backsliding provisions of the Clean Water Act, Section 402(o) and 40 CFR §122.44(l)(i)(A), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. The proposed permit modification contains effluent limitations at least as stringent as the current permit.

The treated water proposed for discharge through Outfall 015 will be subject to TBELs including applicable ELGs and site-specific TBELs as determined during the EPA's NPDES permitting process. Water Quality Based Effluent Limits ("WQBELs") also may be set for the new discharge to ensure preservation of existing uses in Cape Cod Bay.

Cape Cod Bay is a Class SA surface water. Discharges to the bay are allowed if authorized by an NPDES permit and a State Water Discharge Permit. No limits for Outfall 015 will be less stringent than those in the existing permit.

The industrial wastewater proposed for discharge will contain low concentrations of a small number of pollutants that would meet existing discharge limits for the facility (where a limit exists) and are either below potentially applicable water quality standards and screening criteria, or lower than or similar to the ambient concentrations of the same constituents in Cape Cod Bay seawater. The discharge will meet appropriate TBELs and WQBELs at an internal outfall, then the concentrations will be diluted by mixing with once-through cooling water in the discharge canal. The Salt Service Water is not being used to meet discharge limits for Outfall 015; however, the dilution afforded by mixing of the Outfall 015 discharge with the Outfall 010 discharge will result in generally non-detectable concentrations of pollutants from Outfall 015 at the end of discharge canal.

The low-level pollutant concentrations in the treated industrial wastewater when discharged to Cape Cod Bay, support a conclusion that the proposed discharge from Outfall 015 is not expected to adversely affect receiving water bodies or result in any degradation of water quality.

J. PROPOSED MONITORING

Proposed monitoring, reporting requirements and limits are presented below.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ^{\1}	
		Monthly Average or Total	Maximum Daily	Measurement Frequency	Sample type
Flow	MGD	Report ^{\2}	0.019	Daily ^{\3}	Flow Meter ^{\4}
Days of Operation	Days	Report ^{\3}	--	Daily ^{\3}	Count
pH	S.U.	-- 6.5 – 8.5		1 Month ^{\3}	Grab
Oil and Grease	mg/L	15	20	1/Month ^{\3}	Grab
Total Suspended Solids	mg/L	30	100	1/Month ^{\3}	Grab
Temperature, Effluent	°F	--	Report	1/Month ^{\3}	Grab

\1 Measurements to be collected at the internal outfall at the treated water tank in use for the daily discharge, and upstream of the release of the discharge to the Discharge Canal.

\2 Total discharged for the month.

\3 When discharging.

\4 Discharge volume may be measured using a flow meter or by recording the volume of treated water in the tank on the day of discharge prior to discharge of the tank volume.

K. ALL OTHER PERMIT CONDITIONS AND STANDARD CONDITIONS REMAIN IN EFFECT

All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit in accordance with 314 CMR 2.10.

L. Proposed Public Process

Date of Notice [TBD]

Date of Public Hearing [TBD]

Table 1

Analytical Results for Treated Water Tank, Source Water Volumes and Intake Water

Parameter	CAS #	Units	Treated Water Tank	Reactor Cavity/Dryer Separator Pit	Spent Fuel Pool	Torus	Intake
Conventional and Non-Conventional Pollutants							
BOD		MG/L	< 1.00	< 10.0	< 10.0	1.00	< 10.0
COD		MG/L	18.1	< 8.95	< 8.95	39.2	531
Total Organic Carbon		MG/L	< 0.330	< 165	< 165	0.528	0.509
Total Suspended Solids		MG/L	1.00	< 5.70	< 5.70	< 0.570	4.10
Nitrogen, Ammonia	7664-41-7	MG/L	< 0.0170	0.0230	0.0300	< 0.0170	0.196
pH		S.U.	6.87	7.07	7.27	7.43	8.07
Toxic Metals, Cyanide, and Total Phenols							
Antimony	7440-36-0	UG/L	< 1.00	< 10.0	< 10.0	< 1.00	< 5.00
Arsenic	7440-38-2	UG/L	< 2.00	< 20.0	< 20.0	< 2.00	< 40.0
Beryllium	7440-41-7	UG/L	< 0.200	< 2.00	< 2.00	< 0.200	< 1.00
Boron	7440-42-8	UG/L	36.7	177	185	169	4290
Cadmium	7440-43-9	UG/L	< 0.300	< 3.00	< 3.00	< 0.300	< 1.50
Chromium	7440-47-3	UG/L	< 3.00	< 30.0	< 30.0	< 3.00	< 15.0
Copper	7440-50-8	UG/L	1.39	< 3.00	< 3.00	< 0.300	1.69
Lead	7439-92-1	UG/L	0.660	< 5.00	< 5.00	< 0.500	< 2.50
Mercury	7439-97-6	UG/L	< 0.0670	< 0.670	< 0.670	< 0.0670	< 0.0670
Nickel	7440-02-0	UG/L	0.600	31.1	32.9	2.93	< 3.00
Selenium	7782-49-2	UG/L	< 1.50	< 15.0	< 15.0	< 1.50	< 30.0
Silver	7440-22-4	UG/L	< 0.300	< 3.00	< 3.00	< 0.300	< 1.50
Thallium	7440-28-0	UG/L	< 0.600	< 6.00	< 6.00	< 0.600	< 3.00
Zinc	7440-66-6	UG/L	36.1	726	798	1400	< 66.0
Cyanide, Total	57-12-5	UG/L	< 1.67	< 8.35	< 8.35	< 1.67	< 1.67
Total Phenol		UG/L	< 1.67	10.5	< 8.34	< 1.67	4.04
Organic Toxic Pollutants (GC/MS Fraction - Volatile Compounds)							
Acrolein	107-02-8	UG/L	< 1.67	< 1.67	< 1.67	< 1.67	< 1.67
Acrylonitrile	107-13-1	UG/L	< 1.67	< 1.67	< 1.67	< 1.67	< 1.67
Benzene	71-43-2	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Bromoform	75-25-2	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Carbon tetrachloride	56-23-5	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Chlorobenzene	108-90-7	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Chlorodibromomethane ^a	124-48-1	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Chloroethane	75-00-3	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
2-Chloroethylvinyl ether	110-75-8	UG/L	< 1.67	< 1.67	< 1.67	< 1.67	< 1.67
Chloroform	67-66-3	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Dichlorobromomethane ^b	75-27-4	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
1,1-Dichloroethane	75-34-3	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
1,2-Dichloroethane	107-06-2	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
1,1-Dichloroethylene	75-35-4	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
1,2-Dichloropropane	78-87-5	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
1,3-Dichloropropylene	542-75-6	UG/L	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500
Ethylbenzene	100-41-4	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Methyl Bromide ^c	74-83-9	UG/L	< 0.337	< 0.337	< 0.337	< 0.337	< 0.337
Methyl Chloride ^d	74-87-3	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Methylene chloride [*]	75-09-2	UG/L	0.580	0.740	0.750	1.88	0.880
1,1,2,2-Tetrachloroethane	79-34-5	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Tetrachloroethylene	127-18-4	UG/L	< 0.333	< 0.333	< 0.333	3.44	< 0.333
Toluene	108-88-3	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
trans-1,2-Dichloroethylene	156-60-5	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
1,1,1-Trichloroethane	71-55-6	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333

1,1,2-Trichloroethane	79-00-5	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Trichloroethylene	79-01-6	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Vinyl chloride	75-01-4	UG/L	< 0.333	< 0.333	< 0.333	< 0.333	< 0.333
Organic Toxic Pollutants (GS/MS Fraction - Acid Compounds)							
2-Chlorophenol	95-57-8	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
2,4-Dichlorophenol	120-83-2	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
2,4-Dimethylphenol	105-67-9	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 4.63
4,6-dinitro-o-cresol/e	534-52-1	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
2,4-Dinitrophenol	51-28-5	UG/L	< 4.78	< 50.0	< 50.0	< 4.74	< 2.78
2-Nitrophenol	88-75-5	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
4-Nitrophenol	100-02-7	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
p-chloro-m-cresol/f	59-50-7	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
Pentachlorophenol	87-86-5	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
Phenol	108-95-2	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
2,4,6-Trichlorophenol	88-06-2	UG/L	< 2.87	< 30.0	< 30.0	< 2.84	< 2.78
Organic Toxic Pollutants (GC/MS Fraction - Pesticides/PCBs)							
Aroclor-1016	12674-11-2	UG/L	< 0.0317	< 0.333	< 0.333	< 0.0315	< 0.0309
Aroclor-1221	11104-28-2	UG/L	< 0.0317	< 0.333	< 0.333	< 0.0315	< 0.0309
Aroclor-1232	11141-16-5	UG/L	< 0.0317	< 0.333	< 0.333	< 0.0315	< 0.0309
Aroclor-1242	53469-21-9	UG/L	< 0.0317	< 0.333	< 0.333	< 0.0315	< 0.0309
Aroclor-1248	12672-29-6	UG/L	< 0.0317	< 0.333	< 0.333	< 0.0315	0.0455
Aroclor-1254	11097-69-1	UG/L	< 0.0317	< 0.333	< 0.333	< 0.0315	< 0.0309
Aroclor-1260	11096-82-5	UG/L	< 0.0317	< 0.333	< 0.333	< 0.0315	< 0.0309
Aroclor-Total	PCBTOT	UG/L	< 0.0317	< 0.333	< 0.333	< 0.0315	0.0455
Certain Conventional and Non-Conventional Pollutants							
Chlorine, Total Residual		MG/L	0.0449	0.0183	0.0220	0.0170	< 0.0170
Oil & Grease		MG/L	1.47	< 1.37	1.46	1.44	< 1.11
PFAS/PFOA							
Perfluorododecanoic acid (PFDOA)	307-55-1	NG/L	< 0.572	--	--	--	< 0.530
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	NG/L	< 0.693	--	--	--	< 0.642
Perfluoroheptanoic acid (PFHpA)	375-85-9	NG/L	< 0.572	--	--	--	< 0.530
Perfluorohexanoic acid (PFHxA)	307-24-4	NG/L	< 0.693	--	--	--	< 0.642
Perfluorobutane sulfonic acid (PFBS)	375-73-5	NG/L	< 0.572	--	--	--	< 0.530
Perfluorooctanoic acid (PFOA)	335-67-1	NG/L	< 0.693	--	--	--	< 0.642
Hexafluoropropyleneoxide dimer acid (HFPO-DA)(Gen-X)	13252-13-6	NG/L	< 0.572	--	--	--	< 0.530
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	NG/L	< 0.572	--	--	--	< 0.530
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	2355-31-9	NG/L	< 1.14	--	--	--	< 1.06
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	2991-50-6	NG/L	< 1.14	--	--	--	< 1.06
Perfluorotetradecanoic acid (PFTDA)	376-06-7	NG/L	< 0.693	--	--	--	< 0.642
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	NG/L	< 0.572	--	--	--	< 0.530
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	756426-58-1	NG/L	< 0.572	--	--	--	< 0.530

Perfluorononanoic acid (PFNA)	375-95-1	NG/L	< 0.572	--	--	--	< 0.530
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	763051-92-9	NG/L	< 0.572	--	--	--	< 0.530
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	NG/L	< 0.572	--	--	--	< 0.530
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	919005-14-4	NG/L	< 0.572	--	--	--	< 0.530
Perfluorodecanoic acid (PFDA)	335-76-2	NG/L	< 0.676	--	--	--	< 0.626

UG/L = micrograms per liter

MG/L - milligrams per liter

NG/L = nanograms per liter

-- = Not Analyzed

\a = Dibromochloromethane

\b = Bromodichloromethane

\c = Bromomethane

\d = Chloromethane

\e = 2-Methyl-4,6-dinitrophenol

\f = 4-Chloro-3-methylphenol

* Methylene chloride is a common laboratory contaminant and is likely not present in the water volumes tested. It was detected in the lab blank for the Torus sample, and detected in all of the analyzed samples at similar trace levels, including in the Intake (seawater) sample. These facts, considered collectively, indicate that the methylene

Application to Modify NPDES Permit No. MA0003557

for

Authorization to Discharge Plant Water

Pilgrim Nuclear Power Station

Plymouth, MA

Holtec Decommissioning International, LLC

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Figure 7-B. Outfall Locations

USEPA Form 3510-2C

Figure 2.1 - NPDES Permitted Outfalls Flow Diagram, Current Status, and Proposed Outfall 015

Attachment 3.2A – Operations Contributing to Flow for Outfall 015

Attachment 3.1B - Treatment Units for Outfall 015

Attachment 3.1C – Laboratory Reports

3.1C-1 – Source Volume Laboratory Reports

3.1C-2 – Treated Water Tank and Intake Laboratory Reports

FORM 3510-1

EPA Identification Number		NPDES Permit Number		Facility Name		Form Approved 03/05/19 OMB No. 2040-0004	
Form 1 NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater GENERAL INFORMATION					
SECTION 1. ACTIVITIES REQUIRING AN NPDES PERMIT (40 CFR 122.21(f) and (f)(1))							
Activities Requiring an NPDES Permit	1.1 Applicants <i>Not Required</i> to Submit Form 1						
	1.1.1	Is the facility a new or existing publicly owned treatment works ? If yes, STOP. Do NOT complete ☐ No Form 1. Complete Form 2A.	1.1.2	Is the facility a new or existing treatment works treating domestic sewage ? If yes, STOP. Do NOT ☐ No complete Form 1. Complete Form 2S.			
	1.2 Applicants <i>Required</i> to Submit Form 1						
	1.2.1	Is the facility a concentrated animal feeding operation or a concentrated aquatic animal production facility ? ☐ Yes → Complete Form 1 ☐ No and Form 2B.	1.2.2	Is the facility an existing manufacturing, commercial, mining, or silvicultural facility that is currently discharging process wastewater ? ☐ Yes → Complete Form ☐ No 1 and Form 2C.			
	1.2.3	Is the facility a new manufacturing, commercial, mining, or silvicultural facility that has not yet commenced to discharge ? ☐ Yes → Complete Form 1 ☐ No and Form 2D.	1.2.4	Is the facility a new or existing manufacturing, commercial, mining, or silvicultural facility that discharges only nonprocess wastewater ? ☐ Yes → Complete Form ☐ No 1 and Form 2E.			
	1.2.5						
	Is the facility a new or existing facility whose discharge is composed entirely of stormwater associated with industrial activity or whose discharge is composed of both stormwater and non-stormwater ? ☐ Yes → Complete Form 1 ☐ No and Form 2F unless exempted by 40 CFR 122.26(b)(14)(x) or (b)(15).						
SECTION 2. NAME, MAILING ADDRESS, AND LOCATION (40 CFR 122.21(f)(2))							
Name, Mailing Address, and Location	2.1 Facility Name						
	2.2 EPA Identification Number						
	2.3 Facility Contact						
	Name (first and last)		Title		Phone number		
	Email address						
2.4 Facility Mailing Address							
Street or P.O. box							
City or town		State		ZIP code			

EPA Identification Number		NPDES Permit Number		Facility Name		Form Approved 03/05/19 OMB No. 2040-0004	
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Name, Mailing Address, and Location Continued	2.5	Facility Location						
		Street, route number, or other specific identifier						
		County name			County code (if known)			
		City or town		State		ZIP code		

SECTION 3. SIC AND NAICS CODES (40 CFR 122.21(f)(3))							
SIC and NAICS Codes	3.1	SIC Code(s)		Description (optional)			
	3.2	NAICS Code(s)		Description (optional)			

SECTION 4. OPERATOR INFORMATION (40 CFR 122.21(f)(4))							
Operator Information	4.1	Name of Operator					
	4.2	Is the name you listed in Item 4.1 also the owner?					
	☐ Yes ☐ No						
	4.3	Operator Status					
☐ Public—federal ☐ Public—state ☐ Other public (specify) _____ ☐ Private ☐ Other (specify) _____							
4.4	Phone Number of Operator						

Operator Information Continued	4.5	Operator Address					
		Street or P.O. Box					
		City or town		State		ZIP code	
		Email address of operator					

SECTION 5. INDIAN LAND (40 CFR 122.21(f)(5))							
Indian Land	5.1	Is the facility located on Indian Land?					
	☐ Yes ☐ No						

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
SECTION 6. EXISTING ENVIRONMENTAL PERMITS (40 CFR 122.21(f)(6))			
Existing Environmental Permits	6.1	Existing Environmental Permits (check all that apply and print or type the corresponding permit number for each)	
		☐ NPDES (discharges to surface water)	☐ RCRA (hazardous wastes)
		☐ PSD (air emissions)	☐ Nonattainment program (CAA)
		☐ Ocean dumping (MPRSA)	☐ Dredge or fill (CWA Section 404)
		☐ UIC (underground injection of fluids)	☐ NESHAPs (CAA)
		☐ Other (specify) _____	
SECTION 7. MAP (40 CFR 122.21(f)(7))			
Map	7.1	Have you attached a topographic map containing all required information to this application? (See instructions for specific requirements.) ☐ Yes ☐ No ☐ CAFO—Not Applicable (See requirements in Form 2B.)	
SECTION 8. NATURE OF BUSINESS (40 CFR 122.21(f)(8))			
Nature of Business	8.1	Describe the nature of your business.	
SECTION 9. COOLING WATER INTAKE STRUCTURES (40 CFR 122.21(f)(9))			
Cooling Water Intake Structures	9.1	Does your facility use cooling water? ☐ Yes ☐ No → SKIP to Item 10.1.	
	9.2	Identify the source of cooling water. (Note that facilities that use a cooling water intake structure as described at 40 CFR 125, Subparts I and J may have additional application requirements at 40 CFR 122.21(r). Consult with your NPDES permitting authority to determine what specific information needs to be submitted and when.)	
SECTION 10. VARIANCE REQUESTS (40 CFR 122.21(f)(10))			
Variance Requests	10.1	Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(m)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)	
		☐ Fundamentally different factors (CWA Section 301(n))	☐ Water quality related effluent limitations (CWA Section 302(b)(2))
		☐ Non-conventional pollutants (CWA Section 301(c) and (g))	☐ Thermal discharges (CWA Section 316(a))
		☐ Not applicable	

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
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SECTION 11. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	11.1	In Column 1 below, mark the sections of Form 1 that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.	
		Column 1	Column 2
	☐	Section 1: Activities Requiring an NPDES Permit	☐ w/ attachments
	☐	Section 2: Name, Mailing Address, and Location	☐ w/ attachments
	☐	Section 3: SIC Codes	☐ w/ attachments
	☐	Section 4: Operator Information	☐ w/ attachments
	☐	Section 5: Indian Land	☐ w/ attachments
	☐	Section 6: Existing Environmental Permits	☐ w/ attachments
	☐	Section 7: Map	☐ w/ topographic map ☐ w/ additional attachments
	☐	Section 8: Nature of Business	☐ w/ attachments
	☐	Section 9: Cooling Water Intake Structures	☐ w/ attachments
	☐	Section 10: Variance Requests	☐ w/ attachments
	☐	Section 11: Checklist and Certification Statement	☐ w/ attachments
	11.2	Certification Statement <i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i>	
	Name (print or type first and last name)	Official title	
	Signature	Date signed	

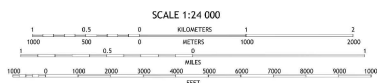
Form 3510-1

Figure 7-A. Site Location



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000 meter grid (Universal Transverse Mercator, Zone 18T)
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery: U.S. Navy, August 2018, September 2018
Roads: U.S. Census Bureau, 2018
Hydrography: National Hydrography Dataset, 1999 - 2019
Contours: National Elevation Dataset, 2019
Boundaries: Multiple sources; see metadata file 2018 - 2019
Wetlands: FWS National Wetlands Inventory 2008 - 2011



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the
National Geospatial Program US Topo Product Standard.



1	2	1 Duxbury
3	4	2 Duxbury CE II
5	6	3 Plymouth
7	8	4 Weymouth
9	10	5 Sagamore
11	12	6 Sandwich CE II

ROAD CLASSIFICATION	
Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route
	State Route

MANOMET, MA
2021

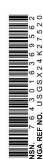


Figure 7-A. Site Location

Form 3510-1

Figure 7-B. Outfall Locations



Figure 7-B. Outfall Locations

FORM 3510-2C

EPA Identification Number		NPDES Permit Number		Facility Name		Form Approved 03/05/19 OMB No. 2040-0004	
Form 2C NPDES			U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURE OPERATIONS				
SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))							
Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.					
		Outfall Number	Receiving Water Name	Latitude		Longitude	
				° ' "		° ' "	
				° ' "		° ' "	
				° ' "		° ' "	
SECTION 2. LINE DRAWING (40 CFR 122.21(g)(2))							
Line Drawing	2.1	Have you attached a line drawing to this application that shows the water flow through your facility with a water balance? (See instructions for drawing requirements. See Exhibit 2C-1 at end of instructions for example.) ☐ Yes ☐ No					
SECTION 3. AVERAGE FLOWS AND TREATMENT (40 CFR 122.21(g)(3))							
Average Flows and Treatment	3.1	For each outfall identified under Item 1.1, provide average flow and treatment information. Add additional sheets if necessary.					
		Outfall Number _____					
		Operations Contributing to Flow					
		Operation			Average Flow		
					mgd		
					mgd		
					mgd		
					mgd		
		Treatment Units					
		Description (include size, flow rate through each treatment unit, retention time, etc.)		Code from Table 2C-1		Final Disposal of Solid or Liquid Wastes Other Than by Discharge	

EPA Identification Number		NPDES Permit Number		Facility Name		Form Approved 03/05/19 OMB No. 2040-0004	
Average Flows and Treatment Continued	3.1 cont.	**Outfall Number** _____					
		Operations Contributing to Flow					
		Operation			Average Flow		
					mgd		
					mgd		
					mgd		
					mgd		
		Treatment Units					
		Description (include size, flow rate through each treatment unit, retention time, etc.)			Code from Table 2C-1		Final Disposal of Solid or Liquid Wastes Other Than by Discharge
		Outfall Number _____					
		Operations Contributing to Flow					
		Operation			Average Flow		
					mgd		
					mgd		
					mgd		
					mgd		
		Treatment Units					
		Description (include size, flow rate through each treatment unit, retention time, etc.)			Code from Table 2C-1		Final Disposal of Solid or Liquid Wastes Other Than by Discharge
System Users	3.2	Are you applying for an NPDES permit to operate a privately owned treatment works? ☐ Yes ☐ No → SKIP to Section 4.					
	3.3	Have you attached a list that identifies each user of the treatment works? ☐ Yes ☐ No					

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
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SECTION 4. INTERMITTENT FLOWS (40 CFR 122.21(g)(4))

Intermittent Flows	4.1	Except for storm runoff, leaks, or spills, are any discharges described in Sections 1 and 3 intermittent or seasonal? ☐ Yes ☐ No → SKIP to Section 5.						
	4.2	Provide information on intermittent or seasonal flows for each applicable outfall. Attach additional pages, if necessary.						
		Outfall Number	Operation (list)	Frequency		Flow Rate		Duration
				Average Days/Week	Average Months/Year	Long-Term Average	Maximum Daily	
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days

SECTION 5. PRODUCTION (40 CFR 122.21(g)(5))

Applicable ELGs	5.1	Do any effluent limitation guidelines (ELGs) promulgated by EPA under Section 304 of the CWA apply to your facility? ☐ Yes ☐ No → SKIP to Section 6.			
	5.2	Provide the following information on applicable ELGs.			
		ELG Category	ELG Subcategory		Regulatory Citation
		Steam Electric Power Generating Industry			
Production-Based Limitations	5.3	Are any of the applicable ELGs expressed in terms of production (or other measure of operation)? ☐ Yes ☐ No → SKIP to Section 6.			
	5.4	Provide an actual measure of daily production expressed in terms and units of applicable ELGs.			
		Outfall Number	Operation, Product, or Material	Quantity per Day	Unit of Measure

SECTION 6. IMPROVEMENTS (40 CFR 122.21(g)(6))

Upgrades and Improvements	6.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
	☐ Yes ☐ No → SKIP to Item 6.3.				
	6.2	Briefly identify each applicable project in the table below.			
	Brief Identification and Description of Project	Affected Outfalls (list outfall number)	Source(s) of Discharge	Final Compliance Dates	
				Required	Projected
	6.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? <i>(optional item)</i>			
☐ Yes ☐ No ☐ Not applicable					

SECTION 7. EFFLUENT AND INTAKE CHARACTERISTICS (40 CFR 122.21(g)(7))

Effluent and Intake Characteristics	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.				
	Table A. Conventional and Non-Conventional Pollutants				
	7.1	Are you requesting a waiver from your NPDES permitting authority for one or more of the Table A pollutants for any of your outfalls?			
	☐ Yes ☐ No → SKIP to Item 7.3.				
	7.2	If yes, indicate the applicable outfalls below. Attach waiver request and other required information to the application.			
	Outfall Number _____ Outfall Number _____ Outfall Number _____				
	7.3	Have you completed monitoring for all Table A pollutants at each of your outfalls for which a waiver has not been requested and attached the results to this application package?			
	☐ Yes ☐ No; a waiver has been requested from my NPDES permitting authority for all pollutants at all outfalls.				
	Table B. Toxic Metals, Cyanide, Total Phenols, and Organic Toxic Pollutants				
	7.4	Do any of the facility's processes that contribute wastewater fall into one or more of the primary industry categories listed in Exhibit 2C-3? (See end of instructions for exhibit.)			
☐ Yes ☐ No → SKIP to Item 7.8.					
7.5	Have you checked "Testing Required" for all toxic metals, cyanide, and total phenols in Section 1 of Table B?				
☐ Yes ☐ No					
7.6	List the applicable primary industry categories and check the boxes indicating the required GC/MS fraction(s) identified in Exhibit 2C-3.				
	Primary Industry Category	Required GC/MS Fraction(s) (Check applicable boxes.)			
		☐ Volatile	☐ Acid	☐ Base/Neutral	☐ Pesticide
		☐ Volatile	☐ Acid	☐ Base/Neutral	☐ Pesticide
		☐ Volatile	☐ Acid	☐ Base/Neutral	☐ Pesticide

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
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Effluent and Intake Characteristics Continued	7.7	Have you checked "Testing Required" for all required pollutants in Sections 2 through 5 of Table B for each of the GC/MS fractions checked in Item 7.6? ☐ Yes ☐ No	
	7.8	Have you checked "Believed Present" or "Believed Absent" for all pollutants listed in Sections 1 through 5 of Table B where testing is not required? ☐ Yes ☐ No	
	7.9	Have you provided (1) quantitative data for those Section 1, Table B, pollutants for which you have indicated testing is required or (2) quantitative data or other required information for those Section 1, Table B, pollutants that you have indicated are "Believed Present" in your discharge? ☐ Yes ☐ No	
	7.10	Does the applicant qualify for a small business exemption under the criteria specified in the instructions? ☐ Yes → Note that you qualify at the top of Table B, then SKIP to Item 7.12. ☐ No	
	7.11	Have you provided (1) quantitative data for those Sections 2 through 5, Table B, pollutants for which you have determined testing is required or (2) quantitative data or an explanation for those Sections 2 through 5, Table B, pollutants you have indicated are "Believed Present" in your discharge? ☐ Yes ☐ No	
	Table C. Certain Conventional and Non-Conventional Pollutants		
	7.12	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table C for all outfalls? ☐ Yes ☐ No	
	7.13	Have you completed Table C by providing (1) quantitative data for those pollutants that are limited either directly or indirectly in an ELG and/or (2) quantitative data or an explanation for those pollutants for which you have indicated "Believed Present"? ☐ Yes ☐ No	
	Table D. Certain Hazardous Substances and Asbestos		
	7.14	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table D for all outfalls? ☐ Yes ☐ No	
	7.15	Have you completed Table D by (1) describing the reasons the applicable pollutants are expected to be discharged and (2) by providing quantitative data, if available? ☐ Yes ☐ No	
	Table E. 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD)		
	7.16	Does the facility use or manufacture one or more of the 2,3,7,8-TCDD congeners listed in the instructions, or do you know or have reason to believe that TCDD is or may be present in the effluent? ☐ Yes → Complete Table E. ☐ No → SKIP to Section 8.	
	7.17	Have you completed Table E by reporting <i>qualitative</i> data for TCDD? ☐ Yes ☐ No	
SECTION 8. USED OR MANUFACTURED TOXICS (40 CFR 122.21(g)(9))			
Used or Manufactured Toxics	8.1	Is any pollutant listed in Table B a substance or a component of a substance used or manufactured at your facility as an intermediate or final product or byproduct? ☐ Yes ☐ No → SKIP to Section 9.	
	8.2	List the pollutants below.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 9. BIOLOGICAL TOXICITY TESTS (40 CFR 122.21(g)(11))

Biological Toxicity Tests	9.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made within the last three years on (1) any of your discharges or (2) on a receiving water in relation to your discharge? ☐ Yes ☐ No → SKIP to Section 10.			
	9.2	Identify the tests and their purposes below.			
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?	Date Submitted
				☐ Yes ☐ No	
				☐ Yes ☐ No	

SECTION 10. CONTRACT ANALYSES (40 CFR 122.21(g)(12))

Contract Analyses	10.1	Were any of the analyses reported in Section 7 performed by a contract laboratory or consulting firm? ☐ Yes ☐ No → SKIP to Section 11.		
	10.2	Provide information for each contract laboratory or consulting firm below.		
		Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
	Name of laboratory/firm			
	Laboratory address			
	Phone number			

SECTION 11. ADDITIONAL INFORMATION (40 CFR 122.21(g)(13))

Additional Information	11.1	Has the NPDES permitting authority requested additional information? ☐ Yes ☐ No → SKIP to Section 12.	
	11.2	List the information requested and attach it to this application.	
	1.	4.	
	2.	5.	

SECTION 12. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	12.1	In Column 1 below, mark the sections of Form 2C that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.			
		Column 1	Column 2		
		☐ Section 1: Outfall Location	☐ w/ attachments		
		☐ Section 2: Line Drawing	☐ w/ line drawing ☐ w/ additional attachments		
		☐ Section 3: Average Flows and Treatment	☐ w/ attachments ☐ w/ list of each user of privately owned treatment works		
		☐ Section 4: Intermittent Flows	☐ w/ attachments		
		☐ Section 5: Production	☐ w/ attachments		
		☐ Section 6: Improvements	☐ w/ attachments ☐ w/ optional additional sheets describing any additional pollution control plans		
		☐ Section 7: Effluent and Intake Characteristics	☐ w/ request for a waiver and supporting information ☐ w/ small business exemption request ☐ w/ Table A ☐ w/ explanation for identical outfalls ☐ w/ Table C ☐ w/ other attachments ☐ w/ Table E ☐ w/ Table B ☐ w/ Table D ☐ w/ analytical results as an attachment		
		☐ Section 8: Used or Manufactured Toxics	☐ w/ attachments		
		☐ Section 9: Biological Toxicity Tests	☐ w/ attachments		
		☐ Section 10: Contract Analyses	☐ w/ attachments		
		☐ Section 11: Additional Information	☐ w/ attachments		
		☐ Section 12: Checklist and Certification Statement	☐ w/ attachments		
	12.2	Certification Statement <i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i>			
<table style="width: 100%; border: none;"> <tr> <td style="width: 60%; border: 1px solid black; padding: 5px;">Name (print or type first and last name)</td> <td style="width: 40%; border: 1px solid black; padding: 5px;">Official title</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">Signature</td> <td style="border: 1px solid black; padding: 5px;">Date signed</td> </tr> </table>		Name (print or type first and last name)	Official title	Signature	Date signed
Name (print or type first and last name)	Official title				
Signature	Date signed				

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EPA Identification Number	NPDES Permit Number	Facility Name	Outfall Number
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TABLE A. CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(iii))¹

	Pollutant	Waiver Requested (if applicable)	Units (specify)	Effluent				Intake (Optional)	
				Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
☐ Check here if you have applied to your NPDES permitting authority for a waiver for <i>all</i> of the pollutants listed on this table for the noted outfall.									
1.	Biochemical oxygen demand (BOD ₅)	☐	Concentration						
			Mass						
2.	Chemical oxygen demand (COD)	☐	Concentration						
			Mass						
3.	Total organic carbon (TOC)	☐	Concentration						
			Mass						
4.	Total suspended solids (TSS)	☐	Concentration						
			Mass						
5.	Ammonia (as N)	☐	Concentration						
			Mass						
6.	Flow	☐	Rate						
7.	Temperature (winter)	☐	°C	°C					
	Temperature (summer)	☐	°C	°C					
8.	pH (minimum)	☐	Standard units	s.u.					
	pH (maximum)	☐	Standard units	s.u.					

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)			
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses		
☐	Check here if you qualify as a small business per the instructions to Form 2C and, therefore, do not need to submit quantitative data for any of the organic toxic pollutants in Sections 2 through 5 of this table. Note, however, that you must still indicate in the appropriate column of this table if you believe any of the pollutants listed are present in your discharge.												
Section 1. Toxic Metals, Cyanide, and Total Phenols													
1.1	Antimony, total (7440-36-0)	☐	☐	☐	Concentration								
					Mass								
1.2	Arsenic, total (7440-38-2)	☐	☐	☐	Concentration								
					Mass								
1.3	Beryllium, total (7440-41-7)	☐	☐	☐	Concentration								
					Mass								
1.4	Cadmium, total (7440-43-9)	☐	☐	☐	Concentration								
					Mass								
1.5	Chromium, total (7440-47-3)	☐	☐	☐	Concentration								
					Mass								
1.6	Copper, total (7440-50-8)	☐	☐	☐	Concentration								
					Mass								
1.7	Lead, total (7439-92-1)	☐	☐	☐	Concentration								
					Mass								
1.8	Mercury, total (7439-97-6)	☐	☐	☐	Concentration								
					Mass								
1.9	Nickel, total (7440-02-0)	☐	☐	☐	Concentration								
					Mass								
1.10	Selenium, total (7782-49-2)	☐	☐	☐	Concentration								
					Mass								
1.11	Silver, total (7440-22-4)	☐	☐	☐	Concentration								
					Mass								

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
1.12	Thallium, total (7440-28-0)	☐	☐	☐	Concentration							
					Mass							
1.13	Zinc, total (7440-66-6)	☐	☐	☐	Concentration							
					Mass							
1.14	Cyanide, total (57-12-5)	☐	☐	☐	Concentration							
					Mass							
1.15	Phenols, total	☐	☐	☐	Concentration							
					Mass							
Section 2. Organic Toxic Pollutants (GC/MS Fraction—Volatile Compounds)												
2.1	Acrolein (107-02-8)	☐	☐	☐	Concentration							
					Mass							
2.2	Acrylonitrile (107-13-1)	☐	☐	☐	Concentration							
					Mass							
2.3	Benzene (71-43-2)	☐	☐	☐	Concentration							
					Mass							
2.4	Bromoform (75-25-2)	☐	☐	☐	Concentration							
					Mass							
2.5	Carbon tetrachloride (56-23-5)	☐	☐	☐	Concentration							
					Mass							
2.6	Chlorobenzene (108-90-7)	☐	☐	☐	Concentration							
					Mass							
2.7	Chlorodibromomethane (124-48-1)	☐	☐	☐	Concentration							
					Mass							
2.8	Chloroethane (75-00-3)	☐	☐	☐	Concentration							
					Mass							

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
2.9	2-chloroethylvinyl ether (110-75-8)	☐	☐	☐	Concentration						
					Mass						
2.10	Chloroform (67-66-3)	☐	☐	☐	Concentration						
					Mass						
2.11	Dichlorobromomethane (75-27-4)	☐	☐	☐	Concentration						
					Mass						
2.12	1,1-dichloroethane (75-34-3)	☐	☐	☐	Concentration						
					Mass						
2.13	1,2-dichloroethane (107-06-2)	☐	☐	☐	Concentration						
					Mass						
2.14	1,1-dichloroethylene (75-35-4)	☐	☐	☐	Concentration						
					Mass						
2.15	1,2-dichloropropane (78-87-5)	☐	☐	☐	Concentration						
					Mass						
2.16	1,3-dichloropropylene (542-75-6)	☐	☐	☐	Concentration						
					Mass						
2.17	Ethylbenzene (100-41-4)	☐	☐	☐	Concentration						
					Mass						
2.18	Methyl bromide (74-83-9)	☐	☐	☐	Concentration						
					Mass						
2.19	Methyl chloride (74-87-3)	☐	☐	☐	Concentration						
					Mass						
2.20	Methylene chloride (75-09-2)	☐	☐	☐	Concentration						
					Mass						
2.21	1,1,2,2- tetrachloroethane (79-34-5)	☐	☐	☒	Concentration						
					Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
2.22	Tetrachloroethylene (127-18-4)	☐	☐	☐	Concentration						
					Mass						
2.23	Toluene (108-88-3)	☐	☐	☐	Concentration						
					Mass						
2.24	1,2-trans-dichloroethylene (156-60-5)	☐	☐	☐	Concentration						
					Mass						
2.25	1,1,1-trichloroethane (71-55-6)	☐	☐	☐	Concentration						
					Mass						
2.26	1,1,2-trichloroethane (79-00-5)	☐	☐	☐	Concentration						
					Mass						
2.27	Trichloroethylene (79-01-6)	☐	☐	☐	Concentration						
					Mass						
2.28	Vinyl chloride (75-01-4)	☐	☐	☐	Concentration						
					Mass						
Section 3. Organic Toxic Pollutants (GC/MS Fraction—Acid Compounds)											
3.1	2-chlorophenol (95-57-8)	☐	☐	☐	Concentration						
					Mass						
3.2	2,4-dichlorophenol (120-83-2)	☐	☐	☐	Concentration						
					Mass						
3.3	2,4-dimethylphenol (105-67-9)	☐	☐	☐	Concentration						
					Mass						
3.4	4,6-dinitro-o-cresol (534-52-1)	☐	☐	☐	Concentration						
					Mass						
3.5	2,4-dinitrophenol (51-28-5)	☐	☐	☐	Concentration						
					Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
3.6	2-nitrophenol (88-75-5)	☐	☐	☐	Concentration						
					Mass						
3.7	4-nitrophenol (100-02-7)	☐	☐	☐	Concentration						
					Mass						
3.8	p-chloro-m-cresol (59-50-7)	☐	☐	☐	Concentration						
					Mass						
3.9	Pentachlorophenol (87-86-5)	☐	☐	☐	Concentration						
					Mass						
3.10	Phenol (108-95-2)	☐	☐	☐	Concentration						
					Mass						
3.11	2,4,6-trichlorophenol (88-05-2)	☐	☐	☐	Concentration						
					Mass						
Section 4. Organic Toxic Pollutants (GC/MS Fraction—Base /Neutral Compounds)											
4.1	Acenaphthene (83-32-9)	☐	☐	☐	Concentration						
					Mass						
4.2	Acenaphthylene (208-96-8)	☐	☐	☐	Concentration						
					Mass						
4.3	Anthracene (120-12-7)	☐	☐	☐	Concentration						
					Mass						
4.4	Benzidine (92-87-5)	☐	☐	☐	Concentration						
					Mass						
4.5	Benzo (a) anthracene (56-55-3)	☐	☐	☐	Concentration						
					Mass						
4.6	Benzo (a) pyrene (50-32-8)	☐	☐	☐	Concentration						
					Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.7	3,4-benzofluoranthene (205-99-2)	☐	☐	☐	Concentration						
					Mass						
4.8	Benzo (ghi) perylene (191-24-2)	☐	☐	☐	Concentration						
					Mass						
4.9	Benzo (k) fluoranthene (207-08-9)	☐	☐	☐	Concentration						
					Mass						
4.10	Bis (2-chloroethoxy) methane (111-91-1)	☐	☐	☐	Concentration						
					Mass						
4.11	Bis (2-chloroethyl) ether (111-44-4)	☐	☐	☐	Concentration						
					Mass						
4.12	Bis (2-chloroisopropyl) ether (102-80-1)	☐	☐	☐	Concentration						
					Mass						
4.13	Bis (2-ethylhexyl) phthalate (117-81-7)	☐	☐	☐	Concentration						
					Mass						
4.14	4-bromophenyl phenyl ether (101-55-3)	☐	☐	☐	Concentration						
					Mass						
4.15	Butyl benzyl phthalate (85-68-7)	☐	☐	☐	Concentration						
					Mass						
4.16	2-chloronaphthalene (91-58-7)	☐	☐	☐	Concentration						
					Mass						
4.17	4-chlorophenyl phenyl ether (7005-72-3)	☐	☐	☐	Concentration						
					Mass						
4.18	Chrysene (218-01-9)	☐	☐	☐	Concentration						
					Mass						
4.19	Dibenzo (a,h) anthracene (53-70-3)	☐	☐	☐	Concentration						
					Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.20	1,2-dichlorobenzene (95-50-1)	☐	☐	☐	Concentration						
					Mass						
4.21	1,3-dichlorobenzene (541-73-1)	☐	☐	☐	Concentration						
					Mass						
4.22	1,4-dichlorobenzene (106-46-7)	☐	☐	☐	Concentration						
					Mass						
4.23	3,3-dichlorobenzidine (91-94-1)	☐	☐	☐	Concentration						
					Mass						
4.24	Diethyl phthalate (84-66-2)	☐	☐	☐	Concentration						
					Mass						
4.25	Dimethyl phthalate (131-11-3)	☐	☐	☐	Concentration						
					Mass						
4.26	Di-n-butyl phthalate (84-74-2)	☐	☐	☐	Concentration						
					Mass						
4.27	2,4-dinitrotoluene (121-14-2)	☐	☐	☐	Concentration						
					Mass						
4.28	2,6-dinitrotoluene (606-20-2)	☐	☐	☐	Concentration						
					Mass						
4.29	Di-n-octyl phthalate (117-84-0)	☐	☐	☐	Concentration						
					Mass						
4.30	1,2-Diphenylhydrazine (as azobenzene) (122-66-7)	☐	☐	☐	Concentration						
					Mass						
4.31	Fluoranthene (206-44-0)	☐	☐	☐	Concentration						
					Mass						
4.32	Fluorene (86-73-7)	☐	☐	☐	Concentration						
					Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.33	Hexachlorobenzene (118-74-1)	☐	☐	☐	Concentration						
					Mass						
4.34	Hexachlorobutadiene (87-68-3)	☐	☐	☐	Concentration						
					Mass						
4.35	Hexachlorocyclopentadiene (77-47-4)	☐	☐	☐	Concentration						
					Mass						
4.36	Hexachloroethane (67-72-1)	☐	☐	☐	Concentration						
					Mass						
4.37	Indeno (1,2,3-cd) pyrene (193-39-5)	☐	☐	☐	Concentration						
					Mass						
4.38	Isophorone (78-59-1)	☐	☐	☐	Concentration						
					Mass						
4.39	Naphthalene (91-20-3)	☐	☐	☐	Concentration						
					Mass						
4.40	Nitrobenzene (98-95-3)	☐	☐	☐	Concentration						
					Mass						
4.41	N-nitrosodimethylamine (62-75-9)	☐	☐	☐	Concentration						
					Mass						
4.42	N-nitrosodi-n-propylamine (621-64-7)	☐	☐	☐	Concentration						
					Mass						
4.43	N-nitrosodiphenylamine (86-30-6)	☐	☐	☐	Concentration						
					Mass						
4.44	Phenanthrene (85-01-8)	☐	☐	☐	Concentration						
					Mass						
4.45	Pyrene (129-00-0)	☐	☐	☐	Concentration						
					Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.46	1,2,4-trichlorobenzene (120-82-1)	☐	☐	☐	Concentration						
					Mass						
Section 5. Organic Toxic Pollutants (GC/MS Fraction—Pesticides)											
5.1	Aldrin (309-00-2)	☐	☐	☐	Concentration						
					Mass						
5.2	α-BHC (319-84-6)	☐	☐	☐	Concentration						
					Mass						
5.3	β-BHC (319-85-7)	☐	☐	☐	Concentration						
					Mass						
5.4	γ-BHC (58-89-9)	☐	☐	☐	Concentration						
					Mass						
5.5	δ-BHC (319-86-8)	☐	☐	☐	Concentration						
					Mass						
5.6	Chlordane (57-74-9)	☐	☐	☐	Concentration						
					Mass						
5.7	4,4'-DDT (50-29-3)	☐	☐	☐	Concentration						
					Mass						
5.8	4,4'-DDE (72-55-9)	☐	☐	☐	Concentration						
					Mass						
5.9	4,4'-DDD (72-54-8)	☐	☐	☐	Concentration						
					Mass						
5.10	Dieldrin (60-57-1)	☐	☐	☐	Concentration						
					Mass						
5.11	α-endosulfan (115-29-7)	☐	☐	☐	Concentration						
					Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
5.12	β-endosulfan (115-29-7)	☐	☐	☐	Concentration						
					Mass						
5.13	Endosulfan sulfate (1031-07-8)	☐	☐	☐	Concentration						
					Mass						
5.14	Endrin (72-20-8)	☐	☐	☐	Concentration						
					Mass						
5.15	Endrin aldehyde (7421-93-4)	☐	☐	☐	Concentration						
					Mass						
5.16	Heptachlor (76-44-8)	☐	☐	☐	Concentration						
					Mass						
5.17	Heptachlor epoxide (1024-57-3)	☐	☐	☐	Concentration						
					Mass						
5.18	PCB-1242 (53469-21-9)	☐	☐	☐	Concentration						
					Mass						
5.19	PCB-1254 (11097-69-1)	☐	☐	☐	Concentration						
					Mass						
5.20	PCB-1221 (11104-28-2)	☐	☐	☐	Concentration						
					Mass						
5.21	PCB-1232 (11141-16-5)	☐	☐	☐	Concentration						
					Mass						
5.22	PCB-1248 (12672-29-6)	☐	☐	☐	Concentration						
					Mass						
5.23	PCB-1260 (11096-82-5)	☐	☐	☐	Concentration						
					Mass						
5.24	PCB-1016 (12674-11-2)	☐	☐	☐	Concentration						
					Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v)) ¹											
	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
5.25	Toxaphene (8001-35-2)	☐	☐	☐	Concentration						
					Mass						

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))¹

	Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
☐ Check here if you believe all pollutants on Table C to be present in your discharge from the noted outfall. You need <i>not</i> complete the "Presence or Absence" column of Table C for each pollutant.										
☐ Check here if you believe all pollutants on Table C to be absent in your discharge from the noted outfall. You need <i>not</i> complete the "Presence or Absence" column of Table C for each pollutant.										
1.	Bromide (24959-67-9)	☐	☐	Concentration						
				Mass						
2.	Chlorine, total residual	☐	☐	Concentration						
				Mass						
3.	Color	☐	☐	Concentration						
				Mass						
4.	Fecal coliform	☐	☐	Concentration						
				Mass						
5.	Fluoride (16984-48-8)	☐	☐	Concentration						
				Mass						
6.	Nitrate-nitrite	☐	☐	Concentration						
				Mass						
7.	Nitrogen, total organic (as N)	☐	☐	Concentration						
				Mass						
8.	Oil and grease	☐	☐	Concentration						
				Mass						
9.	Phosphorus (as P), total (7723-14-0)	☐	☐	Concentration						
				Mass						
10.	Sulfate (as SO ₄) (14808-79-8)	☐	☐	Concentration						
				Mass						
11.	Sulfide (as S)	☐	☐	Concentration						
				Mass						

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))¹

	Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
12.	Sulfite (as SO ₃) (14265-45-3)	☐	☐	Concentration						
				Mass						
13.	Surfactants	☐	☐	Concentration						
				Mass						
14.	Aluminum, total (7429-90-5)	☐	☐	Concentration						
				Mass						
15.	Barium, total (7440-39-3)	☐	☐	Concentration						
				Mass						
16.	Boron, total (7440-42-8)	☐	☐	Concentration						
				Mass						
17.	Cobalt, total (7440-48-4)	☐	☐	Concentration						
				Mass						
18.	Iron, total (7439-89-6)	☐	☐	Concentration						
				Mass						
19.	Magnesium, total (7439-95-4)	☐	☐	Concentration						
				Mass						
20.	Molybdenum, total (7439-98-7)	☐	☐	Concentration						
				Mass						
21.	Manganese, total (7439-96-5)	☐	☐	Concentration						
				Mass						
22.	Tin, total (7440-31-5)	☐	☐	Concentration						
				Mass						
23.	Titanium, total (7440-32-6)	☐	☐	Concentration						
				Mass						

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi)) ¹											
	Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)		
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses	
24.	Radioactivity										
	Alpha, total	☐	☐	Concentration							
				Mass							
	Beta, total	☐	☐	Concentration							
				Mass							
	Radium, total	☐	☐	Concentration							
				Mass							
	Radium 226, total	☐	☐	Concentration							
				Mass							

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
1.	Asbestos	☐	☐		
2.	Acetaldehyde	☐	☐		
3.	Allyl alcohol	☐	☐		
4.	Allyl chloride	☐	☐		
5.	Amyl acetate	☐	☐		
6.	Aniline	☐	☐		
7.	Benzonitrile	☐	☐		
8.	Benzyl chloride	☐	☐		
9.	Butyl acetate	☐	☐		
10.	Butylamine	☐	☐		
11.	Captan	☐	☐		
12.	Carbaryl	☐	☐		
13.	Carbofuran	☐	☐		
14.	Carbon disulfide	☐	☐		
15.	Chlorpyrifos	☐	☐		
16.	Coumaphos	☐	☐		
17.	Cresol	☐	☐		
18.	Crotonaldehyde	☐	☐		
19.	Cyclohexane	☐	☐		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
20.	2,4-D (2,4-dichlorophenoxyacetic acid)	☐	☐		
21.	Diazinon	☐	☐		
22.	Dicamba	☐	☐		
23.	Dichlobenil	☐	☐		
24.	Dichlone	☐	☐		
25.	2,2-dichloropropionic acid	☐	☐		
26.	Dichlorvos	☐	☐		
27.	Diethyl amine	☐	☐		
28.	Dimethyl amine	☐	☐		
29.	Dinitrobenzene	☐	☐		
30.	Diquat	☐	☐		
31.	Disulfoton	☐	☐		
32.	Diuron	☐	☐		
33.	Epichlorohydrin	☐	☐		
34.	Ethion	☐	☐		
35.	Ethylene diamine	☐	☐		
36.	Ethylene dibromide	☐	☐		
37.	Formaldehyde	☐	☐		
38.	Furfural	☐	☐		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
39.	Guthion	☐	☐		
40.	Isoprene	☐	☐		
41.	Isopropanolamine	☐	☐		
42.	Kelthane	☐	☐		
43.	Kepone	☐	☐		
44.	Malathion	☐	☐		
45.	Mercaptodimethur	☐	☐		
46.	Methoxychlor	☐	☐		
47.	Methyl mercaptan	☐	☐		
48.	Methyl methacrylate	☐	☐		
49.	Methyl parathion	☐	☐		
50.	Mevinphos	☐	☐		
51.	Mexacarbate	☐	☐		
52.	Monoethyl amine	☐	☐		
53.	Monomethyl amine	☐	☐		
54.	Naled	☐	☐		
55.	Naphthenic acid	☐	☐		
56.	Nitrotoluene	☐	☐		
57.	Parathion	☐	☐		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
58.	Phenolsulfonate	☐	☐		
59.	Phosgene	☐	☐		
60.	Propargite	☐	☐		
61.	Propylene oxide	☐	☐		
62.	Pyrethrins	☐	☐		
63.	Quinoline	☐	☐		
64.	Resorcinol	☐	☐		
65.	Strontium	☐	☐		
66.	Strychnine	☐	☐		
67.	Styrene	☐	☐		
68.	2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	☐	☐		
69.	TDE (tetrachlorodiphenyl ethane)	☐	☐		
70.	2,4,5-TP [2-(2,4,5-trichlorophenoxy) propanoic acid]	☐	☐		
71.	Trichlorofon	☐	☐		
72.	Triethanolamine	☐	☐		
73.	Triethylamine	☐	☐		
74.	Trimethylamine	☐	☐		
75.	Uranium	☐	☐		
76.	Vanadium	☐	☐		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
77.	Vinyl acetate	☐	☐		
78.	Xylene	☐	☐		
79.	Xylenol	☐	☐		
80.	Zirconium	☐	☐		

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE E. 2,3,7,8 TETRACHLORODIBENZO P DIOXIN (2,3,7,8 TCDD) (40 CFR 122.21(g)(7)(viii))

Pollutant	TCDD Congeners Used or Manufactured	Presence or Absence (check one)		Results of Screening Procedure
		Believed Present	Believed Absent	
2,3,7,8-TCDD	☐	☐	☐	

FORM 3510-2C

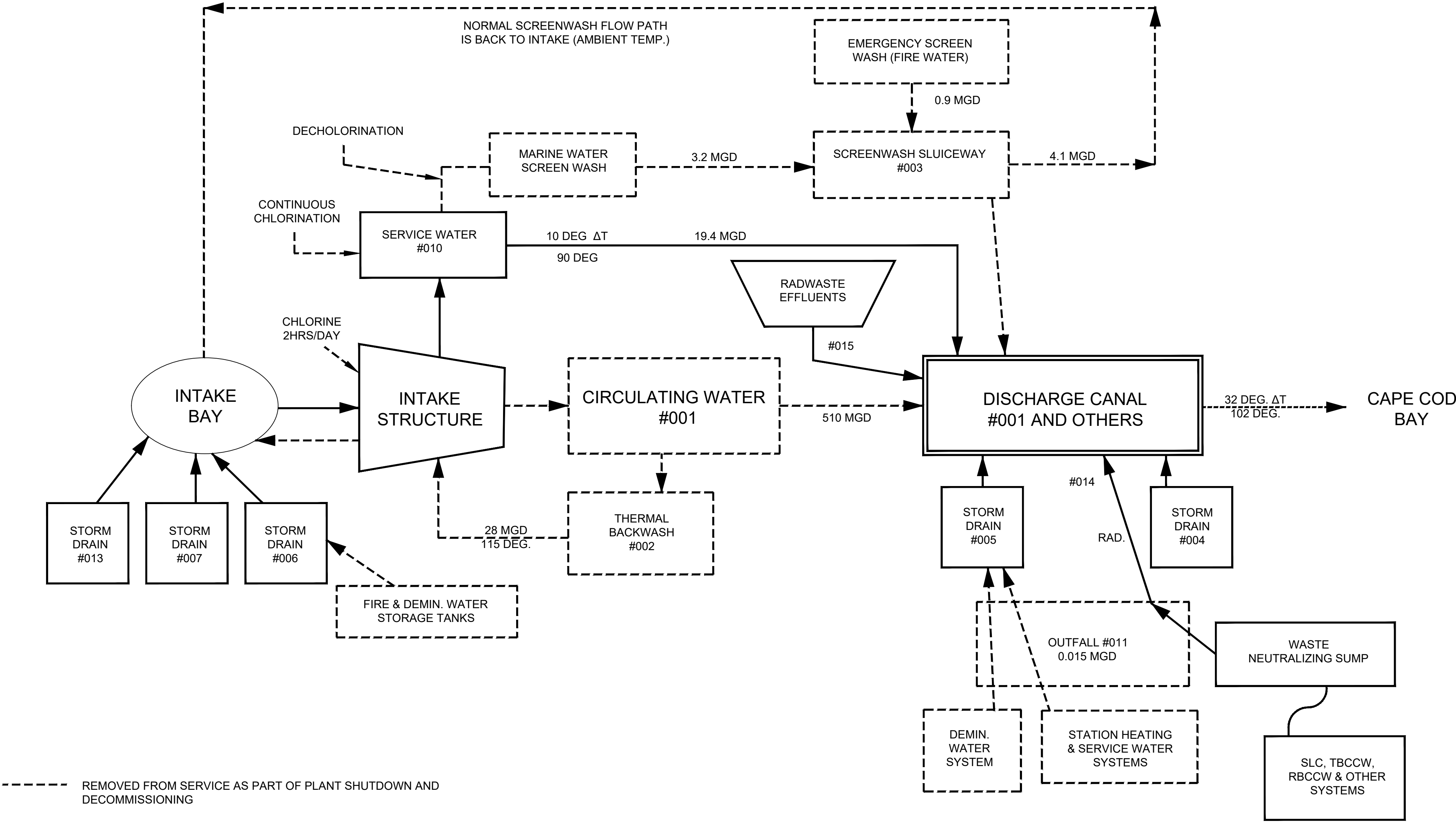
Figure 2.1

NPDES Permitted Outfalls Flow Diagram, Current Status,
and Proposed Outfall 015

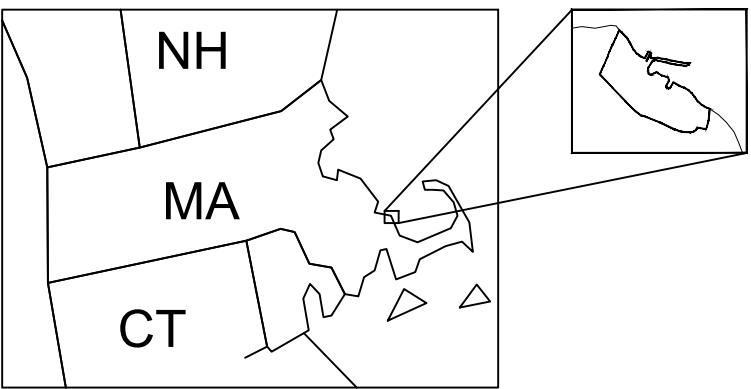
Figure 2.1 NPDES Permitted Outfalls Flow Diagram, Current Status and Proposed Outfall 015

NOTES:

1. THIS DIAGRAM SHOWS THE BASIC ELEMENTS RELATED TO NPDES PERMIT OUTFALLS FOR PILGRIM STATION.
2. PILGRIM DRAWS SEAWATER FROM CAPE COD BAY THROUGH THE INTAKE EMBAYMENT INTO THE INTAKE STRUCTURE.
3. THIS SEAWATER SUPPLIES ONCE-THROUGH COOLING WATER TO THE CIRCULATION WATER AND (SALT) SERVICE WATER SYSTEM
4. MAXIMUM DAILY FLOWS PERMITTED ARE SHOWN IN MGD (MILLION GALLONS PER DAY).
5. DASHED LINES REPRESENT FORMER FLOW.
6. THERMAL LIMITS ARE SHOWN, WHERE APPLICABLE.
7. STORMWATER IN CABLE VAULTS DISCHARGED THROUGH STORMWATER OUTFALLS 004, 005 AND 007 IN ACCORDANCE WITH PART 1.A.7 OF NPDES PERMIT.
8. OUTFALL #015 IS THE PROPOSED NEW OUTFALL.



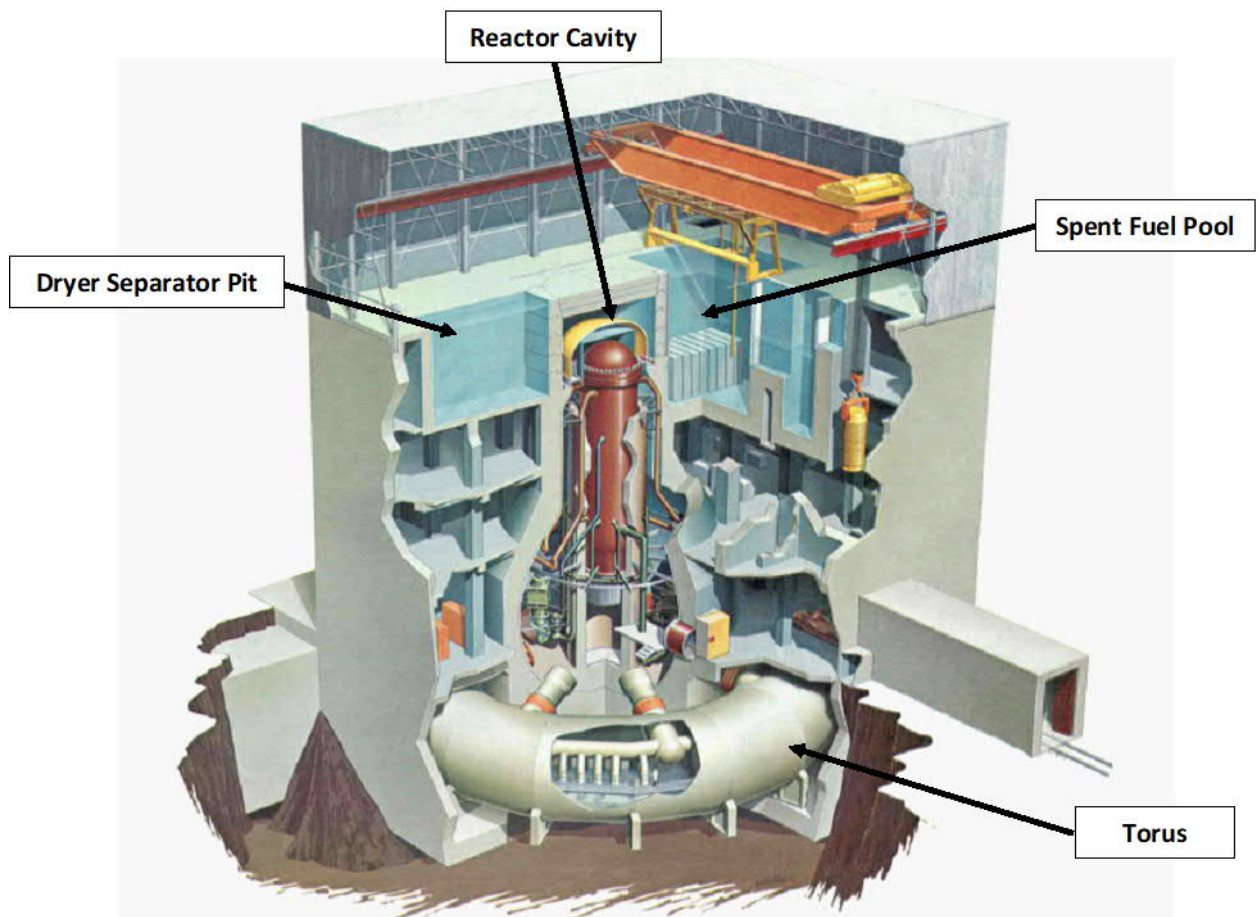
WATER FLOW DIAGRAM
PILGRIM NUCLEAR POWER STATION
PLYMOUTH, MA



See Form 3510-2C - Attachment 3.1B for flow diagram specific to proposed Outfall 015

FORM 3510-2C - ATTACHMENT 3.1A
Operations Contributing to Flow for Outfall 015

The water volumes proposed for discharge through Outfall #015 after their treatment include inventories currently stored in the Reactor Cavity / Dryer Separator Pit (approximately volume 400,000 gallons), Spent Fuel Pool (approximate volume 280,000 gallons) and Torus (approximate volume 285,000 gallons). These volumes were originally filled using a demineralized Plymouth town water source prior to the initial plant operation in 1972. The same demineralized town water source was also used for periodic makeup to account for any leakage and evaporation. During operation, these volumes functionally supported power generation and periodic refueling as depicted in the graphic below and as described in the following sections:



1. Water in the Reactor Cavity / Dryer Separator Pit was stored in the facility's Condensate Storage Tanks while the plant was generating electricity. On an interval not to exceed 2 years, the reactor was shutdown to exchange roughly 200 of the spent nuclear fuel assemblies with new equivalents. During these outage periods and following reactor shutdown, the water in the Condensate Storage Tanks was transferred to the Reactor Cavity and Dryer Separator Pit to provide a medium for safe transfer of the fuel assemblies underwater between the reactor and the spent fuel pool. Stringent programs for foreign material exclusion prevented the introduction of chemicals and materials that could damage the nuclear fuel. During

decommissioning, water in the Reactor Cavity / Dryer Separator Pit provides for radiological shielding of irradiated component removal including underwater waste generation, consolidation, and packaging activities. During these activities, local filtration provides for removal of any fine solid debris that is generated.

2. Water in the Spent Fuel Pool was used to remove decay heat from the spent nuclear fuel assemblies stored in the facility until the fuel was moved to onsite storage in an Independent Spent Fuel Storage Installation (ISFSI) that utilize a dry cask system for containment, security, and cooling. Heat generated in the Spent Fuel Pool was removed by operation of the Fuel Cooling and Demineralization System with heat ultimately rejected through a closed cooling water system to the once-through Salt Service Water System. The Fuel Pool Cooling and Demineralization system utilizes filtration and demineralization to maintain a high degree of water quality to prevent chemical interactions with the spent fuel assemblies. During decommissioning, water in the Spent Fuel Pool provides for radiological shielding of irradiated component packaging and removal activities. During these activities, local filtration provides for removal of any fine solid debris that is generated.
3. Water in the Torus was required to provide a quenching function for steam from the reactor's safety relief valves during abnormal and transient conditions. The water also provided a surge volume to limit the pressurization of the plant's primary containment and was a credited source of makeup to the reactor under emergency conditions. Although requirements for water quality were not as stringent as those established for the operating reactor, Reactor Cavity / Dryer Separator Pit, or Spent Fuel Pool, the water was maintained with a high degree of quality to satisfy fuel warranty standards. During decommissioning, the torus is solely utilized as a repository for excess water not needed for waste generation, handling, and disposal activities. Following the completion of these activities, it is expected that the water from the Reactor Cavity / Dryer Separator Pit and Spent Fuel Pool will be transferred to the Torus to await final disposition and subsequent reactor building dismantlement.

Source Water Volumes Chemical Characterization Summary

Analytical sampling was performed in accordance with Form 2C instructions and at direction from the permitting agencies for water contained in the Spent Fuel Pool, Reactor Cavity/Dryer Separator Pit and Torus. A summary of the analytical results for the source volumes (Spent Fuel Pool, Reactor Cavity/Dryer Separator Pit and Torus) are provided in Table 3.1A below. Laboratory reports are provided in Attachment 3.1C.

Table 3.1A
Analytical Results for Source Water Volumes

Parameter	CAS #	Units	Reactor Cavity/Dryer Separator Pit			Spent Fuel Pool			Torus		
			Result	DL	RL	Result	DL	RL	Result	DL	RL
Conventional and Non-Conventional Pollutants (Table A)											
BOD		MG/L	ND dU	10.0	20.0	ND dU	10.0	20.0	ND dU	1.00	2.00
COD		MG/L	ND U	8.95	20.0	ND U	8.95	20.0	39.2	8.95	20.0
Total Organic Carbon		MG/L	ND U	165	500	ND U	165	500	0.528 J	0.330	1.00
Total Suspended Solids		MG/L	ND U	5.70	25.0	ND U	5.70	25.0	ND U	0.570	2.50
Nitrogen, Ammonia	7664-41-7	MG/L	0.0230 J	0.0170	0.0500	0.0300 J	0.0170	0.0500	ND U	0.0170	0.0500
pH		S.U.	7.07 H	0.0100	0.100	7.27 H	0.0100	0.100	7.43 H	0.0100	0.100
Toxic Metals, Cyanide, and Total Phenols (Table B -Section 1)											
Antimony	7440-36-0	UG/L	ND U	10.0	30.0	ND U	10.0	30.0	ND U	1.00	3.00
Arsenic	7440-38-2	UG/L	ND U	20.0	50.0	ND U	20.0	50.0	ND U	2.00	5.00
Beryllium	7440-41-7	UG/L	ND U	2.00	5.00	ND U	2.00	5.00	ND U	0.200	0.500
Boron	7440-42-8	UG/L	177	52.0	150	185	52.0	150	169	5.20	15.0
Cadmium	7440-43-9	UG/L	ND U	3.00	10.0	ND U	3.00	10.0	ND U	0.300	1.00
Chromium	7440-47-3	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	3.00	10.0
Copper	7440-50-8	UG/L	ND U	3.00	20.0	ND U	3.00	20.0	ND U	0.300	2.00
Lead	7439-92-1	UG/L	ND U	5.00	20.0	ND U	5.00	20.0	ND U	0.500	2.00
Mercury	7439-97-6	UG/L	ND U	0.670	2.00	ND U	0.670	2.00	ND U	0.0670	0.200
Nickel	7440-02-0	UG/L	31.1	6.00	20.0	32.9	6.00	20.0	2.93	0.600	2.00
Selenium	7782-49-2	UG/L	ND U	15.0	50.0	ND U	15.0	50.0	ND U	1.50	5.00
Silver	7440-22-4	UG/L	ND U	3.00	10.0	ND U	3.00	10.0	ND U	0.300	1.00
Thallium	7440-28-0	UG/L	ND U	6.00	20.0	ND U	6.00	20.0	ND U	0.600	2.00
Zinc	7440-66-6	UG/L	726	33.0	200	798	33.0	200	1400	3.30	20.0
Cyanide, Total	57-12-5	UG/L	ND U	8.35	25.0	ND U	8.35	25.0	ND U	1.67	5.00
Total Phenol		UG/L	10.5 J	8.34	50.0	ND U	8.34	50.0	ND U	1.67	10.0
Table B Section 2 - Organic Toxic Pollutants (GC/MS Fraction - Volatile Compounds)											
Acrolein	107-02-8	UG/L	ND U	1.67	5.00	ND U	1.67	5.00	ND U	1.67	5.00
Acrylonitrile	107-13-1	UG/L	ND U	1.67	5.00	ND U	1.67	5.00	ND U	1.67	5.00
Benzene	71-43-2	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Bromoform	75-25-2	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Carbon tetrachloride	56-23-5	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Chlorobenzene	108-90-7	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Chlorodibromomethane ^{1a}	124-48-1	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Chloroethane	75-00-3	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
2-Chloroethylvinyl ether	110-75-8	UG/L	ND U	1.67	5.00	ND U	1.67	5.00	ND U	1.67	5.00
Chloroform	67-66-3	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Dichlorobromomethane ^{1b}	75-27-4	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
1,1-Dichloroethane	75-34-3	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
1,2-Dichloroethane	107-06-2	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
1,1-Dichloroethylene	75-35-4	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
1,2-Dichloropropane	78-87-5	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
1,3-Dichloropropylene	542-75-6	UG/L	ND U	0.500	2.00	ND U	0.500	2.00	ND U	0.500	2.00
Ethylbenzene	100-41-4	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Methyl Bromide ^{1c}	74-83-9	UG/L	ND U	0.337	1.00	ND U	0.337	1.00	ND U	0.337	1.00
Methyl Chloride ^{1d}	74-87-3	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Methylene chloride*	75-09-2	UG/L	0.740 J	0.500	2.00	0.750 J	0.500	2.00	1.88 BJ	0.500	2.00
1,1,2,2-Tetrachloroethane	79-34-5	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Tetrachloroethylene	127-18-4	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	3.44	0.333	1.00
Toluene	108-88-3	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
trans-1,2-Dichloroethylene	156-60-5	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
1,1,1-Trichloroethane	71-55-6	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
1,1,2-Trichloroethane	79-00-5	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Trichloroethylene	79-01-6	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Vinyl chloride	75-01-4	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.333	1.00
Table B-Section 3 - Organic Toxic Pollutants (GS/MS Fraction - Acid Compounds)											
2-Chlorophenol	95-57-8	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
2,4-Dichlorophenol	120-83-2	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
2,4-Dimethylphenol	105-67-9	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
4,6-dinitro-o-cresol/e	534-52-1	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
2,4-Dinitrophenol	51-28-5	UG/L	ND U	50.0	200	ND U	50.0	200	ND U	4.74	18.9
2-Nitrophenol	88-75-5	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
4-Nitrophenol	100-02-7	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
p-chloro-m-cresol\f	59-50-7	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
Pentachlorophenol	87-86-5	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
Phenol	108-95-2	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
2,4,6-Trichlorophenol	88-06-2	UG/L	ND U	30.0	100	ND U	30.0	100	ND U	2.84	9.47
Table B Section 5 - Organic Toxic Pollutants (GC/MS Fraction - Pesticides/PCBs)											
Aroclor-1016	12674-11-2	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.0315	0.0947
Aroclor-1221	11104-28-2	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.0315	0.0947
Aroclor-1232	11141-16-5	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.0315	0.0947
Aroclor-1242	53469-21-9	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.0315	0.0947
Aroclor-1248	12672-29-6	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.0315	0.0947
Aroclor-1254	11097-69-1	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.0315	0.0947
Aroclor-1260	11096-82-5	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.0315	0.0947
Aroclor-Total	PCBTOT	UG/L	ND U	0.333	1.00	ND U	0.333	1.00	ND U	0.0315	0.0947
Table C - Certain Conventional and Non-Conventional Pollutants											
Chlorine, Total Residual		MG/L	0.0183 JH	0.0170	0.0500	0.0220 HJ	0.0170	0.0500	ND HU	0.0170	0.0500
Oil & Grease		MG/L	ND U	1.37	4.90	1.46 J	1.36	4.85	1.44 J	1.35	4.81

Table 3.1A
Analytical Results for Source Water Volumes

Bolded result indicates pollutant was at or detected above the DL
DL = Method Detection Limit
RL = Reporting Limit
UG/L = micrograms per liter
MG/L - milligrams per liter
U = Analyte was analyzed for, but not detected above the MDL
J = Value is estimated
B = The target analyte was detected in the associated blank
H = Analytical holding time was exceeded
d = 5-day BOD--The 2:1 depletion requirement was not met for this sample

\a = Dibromochloromethane
\b = Bromodichloromethane
\c = Bromomethane
\d = Chloromethane
\e = 2-Methyl-4,6-dinitrophenol
\f = 4-Chloro-3-methylphenol

* Methylene chloride is a common laboratory contaminant and is likely not present in the water volumes tested. It was detected in the lab blank for the Torus sample, and detected in all of the analyzed samples at similar trace levels, including in the Intake (seawater) sample. These facts, considered collectively, indicate that the methylene chloride detections are not present in any of the samples.

FORM 3510-2C - ATTACHMENT 3.1B

Treatment Units for Outfall 015

Form 2c Attachment 3.1B

After being commingled in the Torus, water treatment and discharge will be accomplished as follows and as depicted in the graphic below:

1. Water will undergo mechanical filtration using a Solids Collection Filter Top-Loading Canister System (Mechanical Filter [Exhibit 2C-2 Code 1-T]). The canister system has a rated flow of 85 gallons per minute (gpm) and contains 2 micron sized filter elements having an effective filtration size of 0.75 micron once the filter begins to load with solids. The filter cartridge is changed out when the vendor established differential pressure limit is reached or when radiological conditions could impact handling and disposal of the removed canister, whichever occurs first.

Following mechanical filtration, water is routed to a mixed bed resin demineralizer (Mixed Bed Resin / Charcoal [Exhibit 2C-2 Code 2-J/2-A]) for radiological and chemical (including organic) contaminant removal. The demineralizer has a rated flow of 100 gpm and is loaded with 20 cubic feet (cu ft) of mixed bed resin (60 / 40 anion / cation mix) and 10 cu ft of granular activated charcoal. Demineralization effectiveness is monitored by sampling effluent for silica. The presence of detectable levels of silica is a precursor to degraded effectiveness necessitating changeout of resin / charcoal mix.

Spent treatment media from both units will be shipped off-site for disposal at an appropriately licensed facility. Concentrated liquid (or semi-liquid) waste from the three onsite water volumes that is not acceptable for discharge because of radiological concern is expected to be shipped off-site for disposal at an appropriately licensed facility as well.

2. Less than 20,000 gallons of the demineralized effluent will be collected in an onsite Treated Water Storage Tank (*). Once established as radiologically acceptable for discharge, the maximum discharge flow rate will be determined and credited dilution of up to 5 Salt Service Water Pumps, rated for 3,000 gpm each, will be established. This dilution flow enters the facility discharge canal through the Salt Service Water Discharge Header piping at the head of the canal. The Outfall #015 discharge will then commence not to exceed the flow rate limit established based on radiological considerations. The maximum capacity of the radwaste discharge flow based on pump performance is limited to approximately 150 gpm. Outfall #015 discharge point is in the southeast corner of the discharge canal.

Treated Water and Intake Volumes Chemical Characterization Summary

Analytical sampling was performed in accordance with Form 2C instructions and at direction from the permitting agencies for source water obtained from the Torus and treated with the system described above. A sample of Cape Cod Bay seawater also was collected from the Intake structure and analyzed for the same pollutants and water quality characteristics as the treated water sample.

The quality of the water presently stored in the Torus generally represents the volume with the highest concentrations of pollutants (See Table 3.1A). Water from the Torus was processed through the treatment system and discharged into a treated water tank. Sample TWT A was collected from the treated water tank and represents the performance of the treatment system in reducing the pollutant concentrations in water drawn from the volume (Torus) with highest pollutant concentrations. The

three water volumes will be combined in the Torus prior to commencing discharge. The blended water quality will be generally better than the water used to generate the treated water volume analytical results presented in this Statement of Fact and the NPDES modification application. Thus, the analytical results for the treated water represent a conservative characterization of the anticipated water quality prior to discharge.

A summary of the analytical results for the Treated Water and Intake samples are provided in Form 3510-2C, Tables A, B and C, and in Table 3.1B, below. Laboratory reports are provided in Attachment 3.1C.

Total beta radioactivity is noted as “Believed Present” in Form 3510-2C, Table C, but analytical results are not provided because radiologic discharges for Pilgrim Nuclear Power Station are regulated by the NRC.

Notes:

1. * Denotes compliance sampling location at the Treated Water Storage Tank

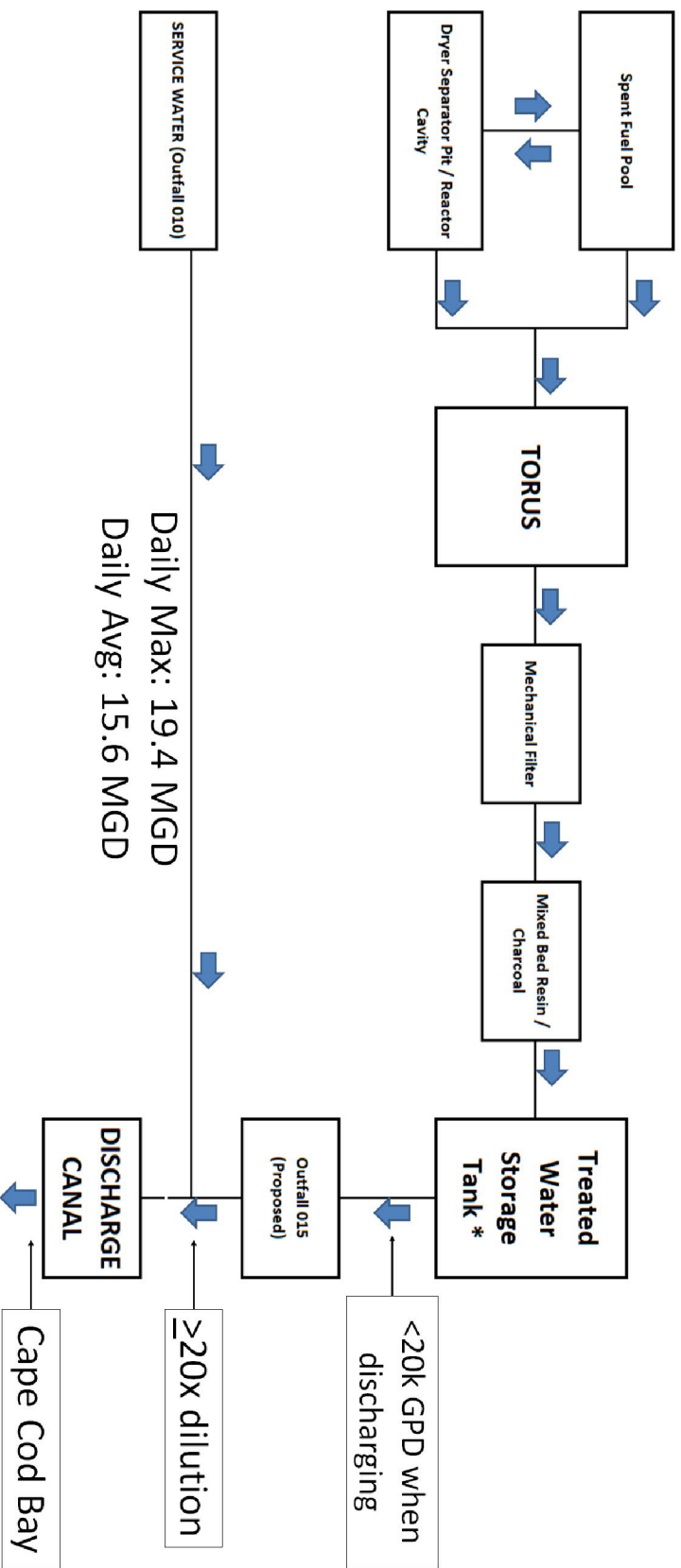


Table 3.1B
Analytical Results for Source Water Volumes

Parameter	CAS #	Units	Treated Water Tank			Intake				
			Result	DL	RL	Result	DL	RL		
Conventional and Non-Conventional Pollutants (Table A)										
BOD		MG/L	ND	dUH	1.00	2.00	ND	dU	10.0	20.0
COD		MG/L	18.1	J	8.95	20.0	531		44.8	100
Total Organic Carbon		MG/L	ND	U	0.330	1.00	0.509	J	0.330	1.00
Total Suspended Solids		MG/L	1.00	J	0.570	2.50	4.10		0.570	2.50
Nitrogen, Ammonia	7664-41-7	MG/L	ND	U	0.0170	0.0500	0.196		0.0170	0.0500
pH		S.U.	6.87	H	0.0100	0.100	8.07	H	0.0100	0.100
Toxic Metals, Cyanide, and Total Phenols (Table B -Section 1)										
Antimony	7440-36-0	UG/L	ND	U	1.00	3.00	ND	U	5.00	15.0
Arsenic	7440-38-2	UG/L	ND	U	2.00	5.00	ND	U	40.0	100
Beryllium	7440-41-7	UG/L	ND	U	0.200	0.500	ND	U	1.00	2.50
Boron	7440-42-8	UG/L	36.7		5.20	15.0	4290		260	750
Cadmium	7440-43-9	UG/L	ND	U	0.300	1.00	ND	U	1.50	5.00
Chromium	7440-47-3	UG/L	ND	U	3.00	10.0	ND	U	15.0	50.0
Copper	7440-50-8	UG/L	1.39	J	0.300	2.00	1.69	J	1.50	10.0
Lead	7439-92-1	UG/L	0.660	J	0.500	2.00	ND	U	2.50	10.0
Mercury	7439-97-6	UG/L	ND	U	0.0670	0.200	ND	UHH	0.0670	0.200
Nickel	7440-02-0	UG/L	2.02		0.600	2.00	ND	U	3.00	10.0
Selenium	7782-49-2	UG/L	ND	U	1.50	5.00	ND	U	30.0	100
Silver	7440-22-4	UG/L	ND	U	0.300	1.00	ND	U	1.50	5.00
Thallium	7440-28-0	UG/L	ND	U	0.600	2.00	ND	U	3.00	10.0
Zinc	7440-66-6	UG/L	36.1		3.30	20.0	ND	U	66.0	400
Cyanide, Total	57-12-5	UG/L	ND	U	1.67	5.00	ND	U	1.67	5.00
Total Phenol		UG/L	ND	U	1.67	5.00	4.04	J	1.67	10.0
Table B Section 2 - Organic Toxic Pollutants (GC/MS Fraction - Volatile Compounds)										
Acrolein	107-02-8	UG/L	ND	HU	1.67	5.00	ND	U	1.67	5.00
Acrylonitrile	107-13-1	UG/L	ND	HU	1.67	5.00	ND	U	1.67	5.00
Benzene	71-43-2	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Bromoform	75-25-2	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Carbon tetrachloride	56-23-5	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Chlorobenzene	108-90-7	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Chlorodibromomethane ^{la}	124-48-1	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Chloroethane	75-00-3	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
2-Chloroethylvinyl ether	110-75-8	UG/L	ND	U	1.67	5.00	ND	U	1.67	5.00
Chloroform	67-66-3	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Dichlorobromomethane ^{lb}	75-27-4	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
1,1-Dichloroethane	75-34-3	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
1,2-Dichloroethane	107-06-2	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
1,1-Dichloroethylene	75-35-4	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
1,2-Dichloropropane	78-87-5	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
1,3-Dichloropropylene	542-75-6	UG/L	ND	U	0.500	2.00	ND	U	0.500	2.00
Ethylbenzene	100-41-4	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Methyl Bromide ^{lc}	74-83-9	UG/L	ND	U	0.337	1.00	ND	U	0.337	1.00
Methyl Chloride ^{ld}	74-87-3	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Methylene chloride*	75-09-2	UG/L	0.580	J	0.500	2.00	0.880	J	0.500	2.00
1,1,2,2-Tetrachloroethane	79-34-5	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Tetrachloroethylene	127-18-4	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Toluene	108-88-3	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
trans-1,2-Dichloroethylene	156-60-5	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
1,1,1-Trichloroethane	71-55-6	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
1,1,2-Trichloroethane	79-00-5	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Trichloroethylene	79-01-6	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Vinyl chloride	75-01-4	UG/L	ND	U	0.333	1.00	ND	U	0.333	1.00
Table B-Section 3 - Organic Toxic Pollutants (GS/MS Fraction - Acid Compounds)										
2-Chlorophenol	95-57-8	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26
2,4-Dichlorophenol	120-83-2	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26
2,4-Dimethylphenol	105-67-9	UG/L	ND	U	2.87	9.56	ND	U	4.63	18.5
4,6-dinitro-o-cresol/e	534-52-1	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26
2,4-Dinitrophenol	51-28-5	UG/L	ND	U	4.78	19.1	ND	U	2.78	9.26
2-Nitrophenol	88-75-5	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26
4-Nitrophenol	100-02-7	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26
p-chloro-m-cresol*f	59-50-7	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26
Pentachlorophenol	87-86-5	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26
Phenol	108-95-2	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26
2,4,6-Trichlorophenol	88-06-2	UG/L	ND	U	2.87	9.56	ND	U	2.78	9.26

Table 3.1B
Analytical Results for Source Water Volumes

Table B Section 5 - Organic Toxic Pollutants (GC/MS Fraction - Pesticides/PCBs)									
Aroclor-1016	12674-11-2	UG/L	ND U	0.0317	0.0952	ND hU	0.0309	0.000928	
Aroclor-1221	11104-28-2	UG/L	ND U	0.0317	0.0952	ND hU	0.0309	0.000928	
Aroclor-1232	11141-16-5	UG/L	ND U	0.0317	0.0952	ND hU	0.0309	0.000928	
Aroclor-1242	53469-21-9	UG/L	ND U	0.0317	0.0952	ND hU	0.0309	0.000928	
Aroclor-1248	12672-29-6	UG/L	ND U	0.0317	0.0952	0.0455 hJ	0.0309	0.000928	
Aroclor-1254	11097-69-1	UG/L	ND U	0.0317	0.0952	ND hU	0.0309	0.000928	
Aroclor-1260	11096-82-5	UG/L	ND U	0.0317	0.0952	ND hU	0.0309	0.000928	
Aroclor-Total	PCBTOT	UG/L	ND U	0.0317	0.0952	0.0455 hJ	0.0309	0.000928	
Table C - Certain Conventional and Non-Conventional Pollutants									
Chlorine, Total Residual		MG/L	0.0449 HJ	0.0170	0.0500	ND HU	0.0170	0.0500	
Oil & Grease		MG/L	1.47 J	1.37	4.90	ND U	1.11	3.97	
PFAS/PFOA									
Perfluorododecanoic acid (PFDOA)	307-55-1	NG/L	ND U	0.572	1.73	ND U	0.530	1.61	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	NG/L	ND U	0.693	1.73	ND U	0.642	1.61	
Perfluoroheptanoic acid (PFHpA)	375-85-9	NG/L	ND U	0.572	1.73	ND U	0.530	1.61	
Perfluorohexanoic acid (PFHxA)	307-24-4	NG/L	ND U	0.693	1.73	ND U	0.642	1.61	
Perfluorobutane sulfonic acid (PFBS)	375-73-5	NG/L	ND U	0.572	1.54	ND U	0.530	1.43	
Perfluorooctanoic acid (PFOA)	335-67-1	NG/L	ND U	0.693	1.73	ND U	0.642	1.61	
Hexafluoropropyleneoxide dimer acid (HFPO-DA)(Gen-X)	13252-13-6	NG/L	ND U	0.572	1.73	ND U	0.530	1.61	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	NG/L	ND U	0.572	1.73	ND U	0.530	1.61	
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	2355-31-9	NG/L	ND U	1.14	3.47	ND U	1.06	3.21	
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	2991-50-6	NG/L	ND U	1.14	3.47	ND U	1.06	3.21	
Perfluorotetradecanoic acid (PFTDA)	376-06-7	NG/L	ND U	0.693	1.73	ND U	0.642	1.61	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	NG/L	ND U	0.572	1.73	ND U	0.530	1.61	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	756426-58-1	NG/L	ND U	0.572	1.62	ND U	0.530	1.50	
Perfluorononanoic acid (PFNA)	375-95-1	NG/L	ND U	0.572	1.73	ND U	0.530	1.61	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	763051-92-9	NG/L	ND U	0.572	1.63	ND U	0.530	1.51	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	NG/L	ND U	0.572	1.58	ND U	0.530	1.46	
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	919005-14-4	NG/L	ND U	0.572	1.73	ND U	0.530	1.61	
Perfluorodecanoic acid (PFDA)	335-76-2	NG/L	ND U	0.676	1.73	ND U	0.626	1.61	

Bolded result indicates pollutant was at or detected above the DL
DL = Method Detection Limit
RL = Reporting Limit
UG/L = micrograms per liter
MG/L - milligrams per liter
NG/L = nanograms per liter
U = Analyte was analyzed for, but not detected above the MDL
J = Value is estimated
B = The target analyte was detected in the associated blank
H = Analytical holding time was exceeded
d = 5-day BOD--The 2:1 depletion requirement was not met for this sample
h = Preparation or preservation holding time was exceeded

\a = Dibromochloromethane
\b = Bromodichloromethane
\c = Bromomethane
\d = Chloromethane
\e = 2-Methyl-4,6-dinitrophenol
\f = 4-Chloro-3-methylphenol

Table 3.1B
Analytical Results for Source Water Volumes

* Methylene chloride is a common laboratory contaminant and is likely not present in the water volumes tested. It was detected in the lab blank for the Torus sample, and detected in all of the analyzed samples at similar trace levels, including in the Intake (seawater) sample. These facts, considered collectively, indicate that the methylene chloride detections are not present in any of

FORM 3510-2C - ATTACHMENT 3.1C

Attachment 3.1C – Laboratory Reports

FORM 3510-2C - ATTACHMENT 3.1C

3.1C-1 – Source Volume Laboratory Reports

March 14, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 612631

Dear Laura Hageman:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 01, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Chain of Custody form did not contain a relinquished signature. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

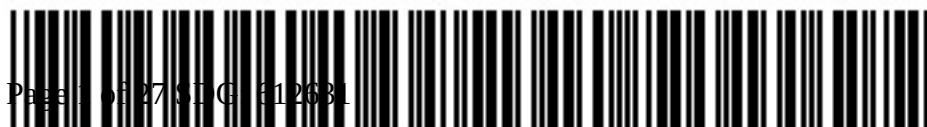
Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,

Anna Johnson for
Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 612631 GEL Work Order: 612631

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Cavity
Sample ID: 612631001
Matrix: Water
Collect Date: 28-FEB-23 11:00
Receive Date: 01-MAR-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Micro-biology												
<i>SM 5210B BOD, 5DAY "As Received"</i>												
BOD, 5 DAY	dU	ND	10.0	20.0	mg/L			JW2	03/01/23	1647	2392103	1
Spectrometric Analysis												
<i>SM4500CL_G Total Residual Chlorine "As Received"</i>												
Chlorine, Residual	JH	0.0183	0.0170	0.0500	mg/L			1 HH2	03/02/23	1013	2392276	2
Titration and Ion Analysis												
<i>EPA 150.1 pH "As Received"</i>												
pH at Temp 12.4C	H	7.07	0.0100	0.100	SU			1 HH2	03/03/23	0806	2392951	3
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
1,1,1-Trichloroethane	U	ND	0.333	1.00	ug/L			1 JEB	03/02/23	1928	2392603	4
71-55-6												
1,1,2,2-Tetrachloroethane	U	ND	0.333	1.00	ug/L			1				
79-34-5												
1,1,2-Trichloroethane	U	ND	0.333	1.00	ug/L			1				
79-00-5												
1,1-Dichloroethane	U	ND	0.333	1.00	ug/L			1				
75-34-3												
1,1-Dichloroethylene	U	ND	0.333	1.00	ug/L			1				
75-35-4												
1,2-Dichloroethane	U	ND	0.333	1.00	ug/L			1				
107-06-2												
1,2-Dichloropropane	U	ND	0.333	1.00	ug/L			1				
78-87-5												
1,3-Dichloropropylene	U	ND	0.500	2.00	ug/L			1				
542-75-6												
2-Chloroethylvinyl ether	U	ND	1.67	5.00	ug/L			1				
110-75-8												
Acrolein	U	ND	1.67	5.00	ug/L			1				
107-02-8												
Acrylonitrile	U	ND	1.67	5.00	ug/L			1				
107-13-1												

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID:
Sample ID: 612631001

Project:
Client ID: CDEC00107
CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
Benzene	U	ND	0.333	1.00	ug/L		1					
71-43-2												
Bromodichloromethane	U	ND	0.333	1.00	ug/L		1					
75-27-4												
Bromoform	U	ND	0.333	1.00	ug/L		1					
75-25-2												
Bromomethane	U	ND	0.337	1.00	ug/L		1					
74-83-9												
Carbon tetrachloride	U	ND	0.333	1.00	ug/L		1					
56-23-5												
Chlorobenzene	U	ND	0.333	1.00	ug/L		1					
108-90-7												
Chloroethane	U	ND	0.333	1.00	ug/L		1					
75-00-3												
Chloroform	U	ND	0.333	1.00	ug/L		1					
67-66-3												
Chloromethane	U	ND	0.333	1.00	ug/L		1					
74-87-3												
Dibromochloromethane	U	ND	0.333	1.00	ug/L		1					
124-48-1												
Ethylbenzene	U	ND	0.333	1.00	ug/L		1					
100-41-4												
Methylene chloride	J	0.740	0.500	2.00	ug/L		1					
75-09-2												
Tetrachloroethylene	U	ND	0.333	1.00	ug/L		1					
127-18-4												
Toluene	U	ND	0.333	1.00	ug/L		1					
108-88-3												
Trichloroethylene	U	ND	0.333	1.00	ug/L		1					
79-01-6												
Vinyl chloride	U	ND	0.333	1.00	ug/L		1					
75-01-4												
trans-1,2-Dichloroethylene	U	ND	0.333	1.00	ug/L		1					
156-60-5												

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	SM 5210B		
2	SM 4500-Cl G		

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Cavity
Sample ID: 612631001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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3	EPA 150.1											
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4	EPA 624.1											
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Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	EPA 624.1 Volatiles Method List "As Received"	48.5 ug/L	50.0	97	(72%-125%)
1,2-Dichloroethane-d4	EPA 624.1 Volatiles Method List "As Received"	52.3 ug/L	50.0	105	(73%-129%)
Toluene-d8	EPA 624.1 Volatiles Method List "As Received"	42.7 ug/L	50.0	85	(75%-123%)

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Spent Fuel Pool
Sample ID: 612631002
Matrix: Water
Collect Date: 28-FEB-23 11:10
Receive Date: 01-MAR-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Micro-biology												
<i>SM 5210B BOD, 5DAY "As Received"</i>												
BOD, 5 DAY	dU	ND	10.0	20.0	mg/L		JW2	03/01/23	1647	2392103	1	
Spectrometric Analysis												
<i>SM4500CL_G Total Residual Chlorine "As Received"</i>												
Chlorine, Residual	HJ	0.0220	0.0170	0.0500	mg/L		1 HH2	03/02/23	1014	2392276	2	
Titration and Ion Analysis												
<i>EPA 150.1 pH "As Received"</i>												
pH at Temp 14.1C	H	7.27	0.0100	0.100	SU		1 HH2	03/03/23	0808	2392951	3	
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
1,1,1-Trichloroethane 71-55-6	U	ND	0.333	1.00	ug/L		1 JEB	03/02/23	1951	2392603	4	
1,1,2,2-Tetrachloroethane 79-34-5	U	ND	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane 79-00-5	U	ND	0.333	1.00	ug/L		1					
1,1-Dichloroethane 75-34-3	U	ND	0.333	1.00	ug/L		1					
1,1-Dichloroethylene 75-35-4	U	ND	0.333	1.00	ug/L		1					
1,2-Dichloroethane 107-06-2	U	ND	0.333	1.00	ug/L		1					
1,2-Dichloropropane 78-87-5	U	ND	0.333	1.00	ug/L		1					
1,3-Dichloropropylene 542-75-6	U	ND	0.500	2.00	ug/L		1					
2-Chloroethylvinyl ether 110-75-8	U	ND	1.67	5.00	ug/L		1					
Acrolein 107-02-8	U	ND	1.67	5.00	ug/L		1					
Acrylonitrile 107-13-1	U	ND	1.67	5.00	ug/L		1					

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Spent Fuel Pool
Sample ID: 612631002

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch Mtd.
Volatile Organics											
<i>EPA 624.1 Volatiles Method List "As Received"</i>											
Benzene	U	ND	0.333	1.00	ug/L		1				
71-43-2											
Bromodichloromethane	U	ND	0.333	1.00	ug/L		1				
75-27-4											
Bromoform	U	ND	0.333	1.00	ug/L		1				
75-25-2											
Bromomethane	U	ND	0.337	1.00	ug/L		1				
74-83-9											
Carbon tetrachloride	U	ND	0.333	1.00	ug/L		1				
56-23-5											
Chlorobenzene	U	ND	0.333	1.00	ug/L		1				
108-90-7											
Chloroethane	U	ND	0.333	1.00	ug/L		1				
75-00-3											
Chloroform	U	ND	0.333	1.00	ug/L		1				
67-66-3											
Chloromethane	U	ND	0.333	1.00	ug/L		1				
74-87-3											
Dibromochloromethane	U	ND	0.333	1.00	ug/L		1				
124-48-1											
Ethylbenzene	U	ND	0.333	1.00	ug/L		1				
100-41-4											
Methylene chloride	J	0.750	0.500	2.00	ug/L		1				
75-09-2											
Tetrachloroethylene	U	ND	0.333	1.00	ug/L		1				
127-18-4											
Toluene	U	ND	0.333	1.00	ug/L		1				
108-88-3											
Trichloroethylene	U	ND	0.333	1.00	ug/L		1				
79-01-6											
Vinyl chloride	U	ND	0.333	1.00	ug/L		1				
75-01-4											
trans-1,2-Dichloroethylene	U	ND	0.333	1.00	ug/L		1				
156-60-5											

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SM 5210B	
2	SM 4500-Cl G	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Spent Fuel Pool
Sample ID: 612631002

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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3	EPA 150.1											
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4	EPA 624.1											
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Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	EPA 624.1 Volatiles Method List "As Received"	47.2 ug/L	50.0	94	(72%-125%)
1,2-Dichloroethane-d4	EPA 624.1 Volatiles Method List "As Received"	51.4 ug/L	50.0	103	(73%-129%)
Toluene-d8	EPA 624.1 Volatiles Method List "As Received"	42.2 ug/L	50.0	84	(75%-123%)

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: March 8, 2023

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HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Contact: Laura Hageman

Workorder: 612631

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Micro-biology											
Batch	2392103										
QC1205334491	612667001	DUP									
BOD, 5 DAY		17.1		17.6	mg/L	3.28	^	(+/-8.00)	JW2	03/01/23	16:47
QC1205334489	LCS										
BOD, 5 DAY	198			201	mg/L			(85%-115%)		03/01/23	16:47
QC1205334488	MB										
BOD, 5 DAY				0.0350	mg/L					03/01/23	16:47
QC1205334490	SEED										
BOD, 5 DAY				0.626	mg/L					03/01/23	16:47
Spectrometric Analysis											
Batch	2392276										
QC1205334708	612474001	DUP									
Chlorine, Residual	HU	ND	HU	ND	mg/L	N/A			HH2	03/02/23	10:11
QC1205334707	LCS										
Chlorine, Residual	0.500			0.529	mg/L			(74%-112%)		03/02/23	10:09
QC1205334706	MB										
Chlorine, Residual		U		ND	mg/L					03/02/23	10:08
QC1205334709	612474001	PS									
Chlorine, Residual	0.500	HU	ND	H	0.526	mg/L		104	(67%-128%)	03/02/23	10:12
Titration and Ion Analysis											
Batch	2392951										
QC1205335750	612535001	DUP									
pH	H	6.06	H	6.05	SU	0.165		(0%-5%)	HH2	03/03/23	08:05

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Titration and Ion Analysis											
Batch	2392951										
QC1205335748	LCS										
pH	7.00			7.03	SU		100	(99%-101%)	HH2	03/03/23	08:01
Volatile-GC/MS											
Batch	2392603										
QC1205335232	LCS										
1,1,1-Trichloroethane	50.0			54.7	ug/L		109	(75%-136%)	JEB	03/02/23	12:42
1,1,2,2-Tetrachloroethane	50.0			44.2	ug/L		88	(68%-126%)			
1,1,2-Trichloroethane	50.0			43.7	ug/L		87	(73%-120%)			
1,1-Dichloroethane	50.0			47.1	ug/L		94	(76%-123%)			
1,1-Dichloroethylene	50.0			50.2	ug/L		100	(67%-133%)			
1,2-Dichloroethane	50.0			53.7	ug/L		107	(68%-124%)			
1,2-Dichloropropane	50.0			44.8	ug/L		90	(74%-121%)			
1,3-Dichloropropylene	100			91.5	ug/L		92	(75%-129%)			
2-Chloroethylvinyl ether	250			220	ug/L		88	(62%-126%)			
Benzene	50.0			49.4	ug/L		99	(74%-118%)			
Bromodichloromethane	50.0			53.0	ug/L		106	(73%-133%)			
Bromoform	50.0			47.0	ug/L		94	(69%-130%)			
Bromomethane	50.0			48.6	ug/L		97	(68%-140%)			

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QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2392603										
Carbon tetrachloride	50.0			54.6	ug/L		109	(73%-140%)	JEB	03/02/23	12:42
Chlorobenzene	50.0			44.5	ug/L		89	(76%-120%)			
Chloroethane	50.0			40.5	ug/L		81	(70%-131%)			
Chloroform	50.0			50.9	ug/L		102	(77%-126%)			
Chloromethane	50.0			36.5	ug/L		73	(60%-139%)			
Dibromochloromethane	50.0			47.2	ug/L		94	(75%-133%)			
Ethylbenzene	50.0			44.9	ug/L		90	(75%-121%)			
Methylene chloride	50.0			42.4	ug/L		85	(69%-120%)			
Tetrachloroethylene	50.0			46.9	ug/L		94	(74%-124%)			
Toluene	50.0			44.1	ug/L		88	(74%-118%)			
Trichloroethylene	50.0			50.1	ug/L		100	(76%-124%)			
Vinyl chloride	50.0			42.0	ug/L		84	(67%-134%)			
trans-1,2-Dichloroethylene	50.0			47.2	ug/L		94	(71%-127%)			
**1,2-Dichloroethane-d4	50.0			51.5	ug/L		103	(73%-129%)			
**Bromofluorobenzene	50.0			48.9	ug/L		98	(72%-125%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2392603										
**Toluene-d8	50.0			42.3	ug/L		85	(75%-123%)	JEB	03/02/23	12:42
QC1205335233 LCS											
Acrolein	250			300	ug/L		120	(63%-141%)		03/02/23	14:12
Acrylonitrile	250			304	ug/L		121	(67%-128%)			
**1,2-Dichloroethane-d4	50.0			52.7	ug/L		105	(73%-129%)			
**Bromofluorobenzene	50.0			47.3	ug/L		95	(72%-125%)			
**Toluene-d8	50.0			43.7	ug/L		87	(75%-123%)			
QC1205335234 MB											
1,1,1-Trichloroethane			U	ND	ug/L					03/02/23	14:37
1,1,2,2-Tetrachloroethane			U	ND	ug/L						
1,1,2-Trichloroethane			U	ND	ug/L						
1,1-Dichloroethane			U	ND	ug/L						
1,1-Dichloroethylene			U	ND	ug/L						
1,2-Dichloroethane			U	ND	ug/L						
1,2-Dichloropropane			U	ND	ug/L						
1,3-Dichloropropylene			U	ND	ug/L						

GEL LABORATORIES LLC

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QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2392603										
2-Chloroethylvinyl ether			U	ND	ug/L				JEB	03/02/23	14:37
Acrolein			U	ND	ug/L						
Acrylonitrile			U	ND	ug/L						
Benzene			U	ND	ug/L						
Bromodichloromethane			U	ND	ug/L						
Bromoform			U	ND	ug/L						
Bromomethane			U	ND	ug/L						
Carbon tetrachloride			U	ND	ug/L						
Chlorobenzene			U	ND	ug/L						
Chloroethane			U	ND	ug/L						
Chloroform			U	ND	ug/L						
Chloromethane			U	ND	ug/L						
Dibromochloromethane			U	ND	ug/L						
Ethylbenzene			U	ND	ug/L						
Methylene chloride			U	ND	ug/L						

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2392603										
Tetrachloroethylene			U	ND	ug/L				JEB	03/02/23	14:37
Toluene			U	ND	ug/L						
Trichloroethylene			U	ND	ug/L						
Vinyl chloride			U	ND	ug/L						
trans-1,2-Dichloroethylene			U	ND	ug/L						
**1,2-Dichloroethane-d4	50.0			47.5	ug/L		95	(73%-129%)			
**Bromofluorobenzene	50.0			49.0	ug/L		98	(72%-125%)			
**Toluene-d8	50.0			43.8	ug/L		88	(75%-123%)			
QC1205335235 612516007 PS											
1,1,1-Trichloroethane	50.0	U	ND	55.4	ug/L		111	(67%-135%)		03/02/23	20:15
1,1,2,2-Tetrachloroethane	50.0	U	ND	40.5	ug/L		81	(58%-138%)			
1,1,2-Trichloroethane	50.0	U	ND	43.2	ug/L		86	(70%-126%)			
1,1-Dichloroethane	50.0	U	ND	47.9	ug/L		96	(70%-126%)			
1,1-Dichloroethylene	50.0	U	ND	49.5	ug/L		99	(61%-137%)			
1,2-Dichloroethane	50.0	U	ND	54.4	ug/L		109	(64%-129%)			
1,2-Dichloropropane	50.0	U	ND	44.7	ug/L		89	(68%-127%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2392603										
1,3-Dichloropropylene	100			88.0	ug/L		88	(74%-123%)	JEB	03/02/23	20:15
2-Chloroethylvinyl ether	250	U	ND	242	ug/L		97	(64%-123%)			
Benzene	50.0	U	ND	48.7	ug/L		97	(65%-122%)			
Bromodichloromethane	50.0	U	ND	53.3	ug/L		107	(68%-137%)			
Bromoform	50.0	U	ND	44.6	ug/L		89	(62%-138%)			
Bromomethane	50.0	U	ND	58.0	ug/L		116	(61%-142%)			
Carbon tetrachloride	50.0	U	ND	55.2	ug/L		110	(63%-144%)			
Chlorobenzene	50.0	U	ND	44.1	ug/L		88	(63%-123%)			
Chloroethane	50.0	U	ND	48.8	ug/L		98	(64%-134%)			
Chloroform	50.0	U	ND	51.8	ug/L		104	(69%-133%)			
Chloromethane	50.0	U	ND	43.6	ug/L		87	(45%-142%)			
Dibromochloromethane	50.0	U	ND	46.7	ug/L		93	(68%-142%)			
Ethylbenzene	50.0	U	ND	45.1	ug/L		90	(65%-124%)			
Methylene chloride	50.0	J	0.810	42.7	ug/L		84	(62%-125%)			
Tetrachloroethylene	50.0	U	ND	46.2	ug/L		92	(64%-129%)			

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QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2392603										
Toluene	50.0	U	ND	44.0	ug/L		88	(63%-121%)	JEB	03/02/23	20:15
Trichloroethylene	50.0	U	ND	51.4	ug/L		103	(66%-126%)			
Vinyl chloride	50.0	U	ND	50.1	ug/L		100	(58%-139%)			
trans-1,2-Dichloroethylene	50.0	U	ND	47.7	ug/L		95	(65%-130%)			
**1,2-Dichloroethane-d4	50.0		51.6	50.9	ug/L		102	(73%-129%)			
**Bromofluorobenzene	50.0		47.2	47.6	ug/L		95	(72%-125%)			
**Toluene-d8	50.0		41.5	41.3	ug/L		83	(75%-123%)			
QC1205335236 612516007 PS											
Acrolein	250	U	ND	226	ug/L		91	(51%-142%)		03/02/23	21:03
Acrylonitrile	250	U	ND	302	ug/L		121	(60%-135%)			
**1,2-Dichloroethane-d4	50.0		51.6	50.2	ug/L		100	(73%-129%)			
**Bromofluorobenzene	50.0		47.2	47.3	ug/L		95	(72%-125%)			
**Toluene-d8	50.0		41.5	40.9	ug/L		82	(75%-123%)			
QC1205335237 612516007 PSD											
1,1,1-Trichloroethane	50.0	U	ND	56.0	ug/L	1	112	(0%-20%)		03/02/23	20:39
1,1,2,2-Tetrachloroethane	50.0	U	ND	41.3	ug/L	2	83	(0%-20%)			
1,1,2-Trichloroethane	50.0	U	ND	43.4	ug/L	0	87	(0%-20%)			

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QC Summary

Workorder: 612631

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Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS												
Batch	2392603											
1,1-Dichloroethane	50.0	U	ND		48.8	ug/L	2	98	(0%-20%)	JEB	03/02/23	20:39
1,1-Dichloroethylene	50.0	U	ND		50.1	ug/L	1	100	(0%-20%)			
1,2-Dichloroethane	50.0	U	ND		55.0	ug/L	1	110	(0%-20%)			
1,2-Dichloropropane	50.0	U	ND		45.6	ug/L	2	91	(0%-20%)			
1,3-Dichloropropylene	100				89.7	ug/L	2	90	(0%-20%)			
2-Chloroethylvinyl ether	250	U	ND		236	ug/L	3	95	(0%-20%)			
Benzene	50.0	U	ND		49.7	ug/L	2	99	(0%-20%)			
Bromodichloromethane	50.0	U	ND		54.3	ug/L	2	109	(0%-20%)			
Bromoform	50.0	U	ND		46.6	ug/L	4	93	(0%-20%)			
Bromomethane	50.0	U	ND		57.3	ug/L	1	115	(0%-20%)			
Carbon tetrachloride	50.0	U	ND		55.8	ug/L	1	112	(0%-20%)			
Chlorobenzene	50.0	U	ND		44.3	ug/L	0	89	(0%-20%)			
Chloroethane	50.0	U	ND		48.2	ug/L	1	96	(0%-20%)			
Chloroform	50.0	U	ND		52.5	ug/L	1	105	(0%-20%)			
Chloromethane	50.0	U	ND		42.7	ug/L	2	85	(0%-20%)			

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QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2392603										
Dibromochloromethane	50.0	U	ND	47.4	ug/L	2	95	(0%-20%)	JEB	03/02/23	20:39
Ethylbenzene	50.0	U	ND	45.0	ug/L	0	90	(0%-20%)			
Methylene chloride	50.0	J	0.810	43.3	ug/L	1	85	(0%-20%)			
Tetrachloroethylene	50.0	U	ND	46.5	ug/L	1	93	(0%-20%)			
Toluene	50.0	U	ND	44.3	ug/L	1	89	(0%-20%)			
Trichloroethylene	50.0	U	ND	52.2	ug/L	2	104	(0%-20%)			
Vinyl chloride	50.0	U	ND	49.4	ug/L	1	99	(0%-20%)			
trans-1,2-Dichloroethylene	50.0	U	ND	48.1	ug/L	1	96	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		51.6	52.3	ug/L		105	(73%-129%)			
**Bromofluorobenzene	50.0		47.2	49.7	ug/L		99	(72%-125%)			
**Toluene-d8	50.0		41.5	42.2	ug/L		84	(75%-123%)			
QC1205335238 612516007 PSD											
Acrolein	250	U	ND	232	ug/L	2	93	(0%-20%)		03/02/23	21:26
Acrylonitrile	250	U	ND	307	ug/L	1	123	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		51.6	51.1	ug/L		102	(73%-129%)			
**Bromofluorobenzene	50.0		47.2	48.7	ug/L		97	(72%-125%)			

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QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2392603										
**Toluene-d8	50.0	41.5		41.5	ug/L		83	(75%-123%)	JEB	03/02/23	21:26

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.
- C Analyte has been confirmed by GC/MS analysis
- B The target analyte was detected in the associated blank.
- E Concentration of the target analyte exceeds the instrument calibration range
- A The TIC is a suspected aldol-condensation product
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- H Analytical holding time was exceeded
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- h Preparation or preservation holding time was exceeded
- R Sample results are rejected
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- D Results are reported from a diluted aliquot of the sample
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- JNX Non Calibrated Compound
- UJ Compound cannot be extracted
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- N1 See case narrative
- Y QC Samples were not spiked with this compound

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QC Summary

Workorder: 612631

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
R	Per section 9.3.4.1 of	Method 1664 Revision B,	due to matrix spike recovery issues,	this result may not be reported or used for regulatory compliance purposes.							
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).	Quantitation is based on nearest internal standard response factor									
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
J	See case narrative for an explanation										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 612631

GC/MS Volatile

Product: Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer

Analytical Method: EPA 624.1

Analytical Procedure: GL-OA-E-026 REV# 29

Analytical Batch: 2392603

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612631001	Cavity
612631002	Spent Fuel Pool
1205335232	Laboratory Control Sample (LCS)
1205335233	Laboratory Control Sample (LCS)
1205335234	Method Blank (MB)
1205335235	612516007(NonSDG) Post Spike (PS)
1205335236	612516007(NonSDG) Post Spike (PS)
1205335237	612516007(NonSDG) Post Spike Duplicate (PSD)
1205335238	612516007(NonSDG) Post Spike Duplicate (PSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

General Chemistry

Product: Biochemical Oxygen Demand

Analytical Method: SM 5210B

Analytical Procedure: GL-GC-E-045 REV# 28

Analytical Batch: 2392103

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612631001	Cavity
612631002	Spent Fuel Pool
1205334488	Method Blank (MB)
1205334489	Laboratory Control Sample (LCS)
1205334490	BOD Seed (SEED)
1205334491	612667001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information**30% Difference Replicate Statement**

Testing replicates for samples 612631001 (Cavity) and 612631002 (Spent Fuel Pool) show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes.

Technical Information**2:1 Depletion Requirement**

The following samples in this batch did not meet the 2:1 depletion requirement. 612631001 (Cavity) and 612631002 (Spent Fuel Pool).

Miscellaneous Information**Additional Comments**

A limited sample was given for analysis due to HIRAD. 612631001 (Cavity) and 612631002 (Spent Fuel Pool).

Product: Total Residual Chlorine

Analytical Method: SM 4500-Cl G

Analytical Procedure: GL-GC-E-076 REV# 17

Analytical Batch: 2392276

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612631001	Cavity
612631002	Spent Fuel Pool
1205334706	Method Blank (MB)
1205334707	Laboratory Control Sample (LCS)
1205334708	612474001(Torus-Avantech Influent) Sample Duplicate (DUP)
1205334709	612474001(Torus-Avantech Influent) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information**Holding Times**

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1205334708 (Torus-Avantech InfluentDUP)		Received 28-FEB-23, out of holding 27-FEB-23
1205334709 (Torus-Avantech InfluentPS)		Received 28-FEB-23, out of holding 27-FEB-23
612631001 (Cavity)		Received 01-MAR-23, out of holding 28-FEB-23
612631002 (Spent Fuel Pool)		Received 01-MAR-23, out of holding 28-FEB-23

Miscellaneous Information

Additional Comments

10mL sample aliquots analyzed due to high radioactivity. 612631001 (Cavity) and 612631002 (Spent Fuel Pool).

Product: pH

Analytical Method: EPA 150.1

Analytical Procedure: GL-GC-E-008 REV# 26

Analytical Batch: 2392951

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#

Client Sample Identification

612631001	Cavity
612631002	Spent Fuel Pool
1205335748	Laboratory Control Sample (LCS)
1205335750	612535001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1205335750 (Non SDG 612535001DUP)		Received 01-MAR-23, out of holding 28-FEB-23
612631001 (Cavity)		Received 01-MAR-23, out of holding 28-FEB-23
612631002 (Spent Fuel Pool)		Received 01-MAR-23, out of holding 28-FEB-23

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDEC</u>		SDG/AR/COC/Work Order: <u>612631</u>	
Received By: <u>GM</u>		Date Received: <u>3/1/23</u>	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx-Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other	
		<u>7714 2970 2379</u>	
Suspected Hazard Information		*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. UN#: <u>2910</u>	
A) Shipped as a DOT Hazardous?		Hazard Class Shipped: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___	
B) Did the client designate the samples are to be received as radioactive?		COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?		Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>600</u> CPM mR/Hr Classified as: Rad 1 <u>Rad 3</u>	
D) Did the client designate samples are hazardous?		COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?		If D or E is yes, select Hazards below. ☐ PCB's ☐ Flammable ☐ Foreign Soil ☐ RCRA ☐ Asbestos ☐ Beryllium ☐ Other:	
Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)	
1	Shipping containers received intact and sealed?	Yes ☒ No ☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	Yes ☒ No ☐	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	Yes ☒ No ☐	Preservation Method: <u>0</u> Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>5</u>
4	Daily check performed and passed on IR temperature gun?	Yes ☒ No ☐	Temperature Device Serial #: <u>2-23</u> Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	Yes ☒ No ☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	Yes ☒ No ☐	Sample ID's and Containers Affected: If Preservation added, Lot#: _____ If Yes, are Encores or Soil Kits present for solids? Yes ___ No ☒ NA ___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ☒ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ☒ No ___ NA ___ Sample ID's and containers affected:
7	Do any samples require Volatile Analysis?	Yes ☒ No ☐	ID's and tests affected:
8	Samples received within holding time?	Yes ☒ No ☐	ID's and containers affected:
9	Sample ID's on COC match ID's on bottles?	Yes ☒ No ☐	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
10	Date & time on COC match date & time on bottles?	Yes ☒ No ☐	Circle Applicable: No container count on COC Other (describe)
11	Number of containers received match number indicated on COC?	Yes ☒ No ☐	
12	Are sample containers identifiable as GEL provided by use of GEL labels?	Yes ☒ No ☐	Circle Applicable: <u>Not relinquished</u> Other (describe)
13	COC form is properly signed in relinquished/received sections?	Yes ☒ No ☐	
Comments (Use Continuation Form if needed):			

PM (or PMA) review: Initials

MG

Date

3/1/23

Page

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GL-CHL-SR-001 Rev 7

List of current GEL Certifications as of 08 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

March 16, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 612850

Dear Laura Hageman:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 02, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. One of the sample containers for Spent Fuel Pool (2,3,7,8 TCDD) was broken and received empty. Client was notified via email. 612850002(*Spent Fuel Pool*).

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,

Anna Johnson for
Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 612850 GEL Work Order: 612850

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Cavity
Sample ID: 612850001
Matrix: Water
Collect Date: 28-FEB-23 11:00
Receive Date: 02-MAR-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Carbon Analysis

SM 5310 B Total Organic/Inorganic Carbon "As Received"

Total Organic Carbon Average	U	ND	165	500	mg/L		500 TSM	03/11/23	0102	2394332	1
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Flow Injection Analysis

EPA 335.4 Cyanide, Total "As Received"

Cyanide, Total	U	ND	8.35	25.0	ug/L	5.00	1 AXH3	03/07/23	0652	2393707	2
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EPA 420.4 Total Phenols "As Received"

Total Phenol	J	10.5	8.34	50.0	ug/L	5.00	1 AXH3	03/08/23	0545	2393715	3
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Ion Chromatography

SW846 9056 Anions, Liquid "As Received"

Chloride		10.4	+/-0.351	0.134	0.400	mg/L	2 JLD1	03/08/23	2001	2395176	4
16887-00-6											
Bromide	U	ND	+/-0.0224	0.0670	0.200	mg/L	1 JLD1	03/08/23	1132	2395176	5
24959-67-9											
Fluoride	U	ND	+/-0.0110	0.0330	0.100	mg/L	1				
16984-48-8											
Sulfate		3.19	+/-0.115	0.133	0.400	mg/L	1				
14808-79-8											

Mercury Analysis-CVAA

EPA 245 Mercury "As Received"

Mercury	U	ND	+/-0.224	0.670	2.00	ug/L	10.0	1 JP2	03/07/23	0930	2393582	6
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Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Antimony	U	ND	+/-3.33	10.0	30.0	ug/L	10.0	1 PRB	03/10/23	1418	2393615	7
7440-36-0												
Arsenic	U	ND	+/-6.67	20.0	50.0	ug/L	10.0	1				
7440-38-2												
Beryllium	U	ND	+/-0.667	2.00	5.00	ug/L	10.0	1				
7440-41-7												
Boron		177	+/-19.5	52.0	150	ug/L	10.0	1				
7440-42-8							10.0					

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID:
Sample ID: Cavity
612850001

Project:
Client ID: CDEC00107
CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time	Batch Mtd.
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Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Cadmium	U	ND	+/-1.00	3.00	10.0	ug/L		1
7440-43-9								
Chromium	U	ND	+/-10.0	30.0	100	ug/L	10.0	1
7440-47-3								
Copper	U	ND	+/-1.00	3.00	20.0	ug/L	10.0	1
7440-50-8								
Lead	U	ND	+/-1.67	5.00	20.0	ug/L	10.0	1
7439-92-1								
Nickel		31.1	+/-2.53	6.00	20.0	ug/L	10.0	1
7440-02-0								
Selenium	U	ND	+/-5.00	15.0	50.0	ug/L	10.0	1
7782-49-2								
Silver	U	ND	+/-1.00	3.00	10.0	ug/L	10.0	1
7440-22-4								
Thallium	U	ND	+/-2.00	6.00	20.0	ug/L	10.0	1
7440-28-0								
Zinc		726	+/-37.9	33.0	200	ug/L	10.0	1
7440-66-6								

Nutrient Analysis

EPA 350.1 Nitrogen, Ammonia "As Received"

Nitrogen, Ammonia	J	0.0230	0.0170	0.0500	mg/L		1 AXH3 03/09/23 0954 23948288
7664-41-7							

Oil & Grease Analysis

EPA 1664A/B n-Hexane Extractable Material (O&G) "As Received"

Oil and Grease	U	ND	1.37	4.90	mg/L		DXB7 03/15/23 0627 23984109
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Semi-Volatile-GC/MS

EPA 625.1 SVOA, Liquid "As Received"

2,4,6-Trichlorophenol	U	ND	30.0	100	ug/L	0.0100	1 LL2 03/07/23 1934 2393835 10
88-06-2							
2,4-Dichlorophenol	U	ND	30.0	100	ug/L	0.0100	1
120-83-2							
2,4-Dimethylphenol	U	ND	30.0	100	ug/L	0.0100	1
105-67-9							
2,4-Dinitrophenol	U	ND	50.0	200	ug/L	0.0100	1
51-28-5							
2-Chlorophenol	U	ND	30.0	100	ug/L	0.0100	1
95-57-8							

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Certificate of Analysis

Company : HDI, Inc.
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Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID:
Sample ID: 612850001

Project:
Client ID: CDEC00107
CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Semi-Volatile-GC/MS

EPA 625.1 SVOA, Liquid "As Received"

2-Methyl-4,6-dinitrophenol	U	ND	30.0	100	ug/L	0.0100	1					
534-52-1												
2-Nitrophenol	U	ND	30.0	100	ug/L	0.0100	1					
88-75-5												
4-Chloro-3-methylphenol	U	ND	30.0	100	ug/L	0.0100	1					
59-50-7												
4-Nitrophenol	U	ND	30.0	100	ug/L	0.0100	1					
100-02-7												
Pentachlorophenol	U	ND	30.0	100	ug/L	0.0100	1					
87-86-5												
Phenol	U	ND	30.0	100	ug/L	0.0100	1					
108-95-2												

Semi-Volatiles-PCB

EPA 608.3 PCB, Liquid (SPE) "As Received"

Aroclor-1016	U	ND	0.333	1.00	ug/L	0.0100	1	NS2	03/07/23	1831	2393981	11
12674-11-2												
Aroclor-1221	U	ND	0.333	1.00	ug/L	0.0100	1					
11104-28-2												
Aroclor-1232	U	ND	0.333	1.00	ug/L	0.0100	1					
11141-16-5												
Aroclor-1242	U	ND	0.333	1.00	ug/L	0.0100	1					
53469-21-9												
Aroclor-1248	U	ND	0.333	1.00	ug/L	0.0100	1					
12672-29-6												
Aroclor-1254	U	ND	0.333	1.00	ug/L	0.0100	1					
11097-69-1												
Aroclor-1260	U	ND	0.333	1.00	ug/L	0.0100	1					
11096-82-5												
Aroclor-Total	U	ND	0.333	1.00	ug/L	0.0100	1					
PCBTOT												

Solids Analysis

SM 2540D Total Suspended Solids (TSS) "As Received"

Total Suspended Solids	U	ND	5.70	25.0	mg/L		CH6	03/06/23	0801	2393734	12	
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Spectrometric Analysis

EPA 410.4 Chemical Oxygen Demand "As Received"

COD	U	ND	8.95	20.0	mg/L		1 HH2	03/07/23	1311	2394297	13	
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GEL LABORATORIES LLC

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Cavity
Sample ID: 612850001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time	Batch Mtd.
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The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 420.4	EPA 420.4 Phenols, Total in liquid PREP	ES2	03/07/23	1100	2393714
EPA 608.3	EPA 608.3 PCB Prep Liquid (SPE)	JM12	03/07/23	0949	2393980
EPA 245.1/245.2 Prep	EPA 245 Mercury	RM4	03/06/23	1217	2393581
EPA 335.4	EPA 335.4 Total Cyanide	ES2	03/06/23	1203	2393706
EPA 200.2	ICP-MS 200.2 PREP	CD3	03/06/23	1615	2393614
EPA 625.1	BNA Liq. Prep-EPA 625 Analysis	DG3	03/07/23	1245	2393834

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SM 5310 B	
2	EPA 335.4	
3	EPA 420.4	
4	SW846 9056	
5	SW846 9056	
6	EPA 245.1/245.2	
7	EPA 200.8	
8	EPA 350.1	
9	EPA 1664A/1664B	
10	EPA 625.1	
11	EPA 608.3	
12	SM 2540D	
13	EPA 410.4	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	EPA 625.1 SVOA, Liquid "As Received"	650 ug/L	1000	65	(37%-132%)
Phenol-d5	EPA 625.1 SVOA, Liquid "As Received"	254 ug/L	1000	25	(15%-85%)
2-Fluorophenol	EPA 625.1 SVOA, Liquid "As Received"	351 ug/L	1000	35	(11%-79%)
Nitrobenzene-d5	EPA 625.1 SVOA, Liquid "As Received"	301 ug/L	500	60	(39%-112%)
2-Fluorobiphenyl	EPA 625.1 SVOA, Liquid "As Received"	311 ug/L	500	62	(39%-112%)
p-Terphenyl-d14	EPA 625.1 SVOA, Liquid "As Received"	307 ug/L	500	61	(24%-129%)
Decachlorobiphenyl	EPA 608.3 PCB, Liquid (SPE) "As	1.75 ug/L	2.00	88	(38%-133%)

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Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Cavity
Sample ID: 612850001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
4cmx		Received"										
		EPA 608.3 PCB, Liquid (SPE) "As Received"			1.48 ug/L	2.00	74			(33%-109%)		

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Spent Fuel Pool
Sample ID: 612850002
Matrix: Water
Collect Date: 28-FEB-23 11:10
Receive Date: 02-MAR-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Carbon Analysis

SM 5310 B Total Organic/Inorganic Carbon "As Received"

Total Organic Carbon Average	U	ND	165	500	mg/L		500 TSM	03/11/23	0122	2394332	1
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Flow Injection Analysis

EPA 335.4 Cyanide, Total "As Received"

Cyanide, Total	U	ND	8.35	25.0	ug/L	5.00	1 AXH3	03/07/23	0653	2393707	2
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EPA 420.4 Total Phenols "As Received"

Total Phenol	U	ND	8.34	50.0	ug/L	5.00	1 AXH3	03/08/23	0546	2393715	3
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Ion Chromatography

SW846 9056 Anions, Liquid "As Received"

Bromide	U	ND	+/-0.0224	0.0670	0.200	mg/L	1 JLD1	03/08/23	1203	2395176	4
24959-67-9											
Fluoride	U	ND	+/-0.0110	0.0330	0.100	mg/L	1				
16984-48-8											
Sulfate		3.15	+/-0.114	0.133	0.400	mg/L	1				
14808-79-8											
Chloride		9.11	+/-0.307	0.134	0.400	mg/L	2 JLD1	03/08/23	2033	2395176	5
16887-00-6											

Mercury Analysis-CVAA

EPA 245 Mercury "As Received"

Mercury	U	ND	+/-0.224	0.670	2.00	ug/L	10.0	1 JP2	03/07/23	0932	2393582	6
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Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Antimony	U	ND	+/-3.33	10.0	30.0	ug/L	10.0	1 PRB	03/10/23	1432	2393615	7
7440-36-0												
Arsenic	U	ND	+/-6.67	20.0	50.0	ug/L	10.0	1				
7440-38-2												
Beryllium	U	ND	+/-0.667	2.00	5.00	ug/L	10.0	1				
7440-41-7												
Boron		185	+/-19.6	52.0	150	ug/L	10.0	1				
7440-42-8							10.0					

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID:
Sample ID:

Spent Fuel Pool
612850002

Project:
Client ID: CDEC00107
CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst	Date	Time	Batch Mtd.
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Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Cadmium	U	ND	+/-1.00	3.00	10.0	ug/L		1		
7440-43-9										
Chromium	U	ND	+/-10.0	30.0	100	ug/L	10.0	1		
7440-47-3										
Copper	U	ND	+/-1.00	3.00	20.0	ug/L	10.0	1		
7440-50-8										
Lead	U	ND	+/-1.67	5.00	20.0	ug/L	10.0	1		
7439-92-1										
Nickel		32.9	+/-2.59	6.00	20.0	ug/L	10.0	1		
7440-02-0										
Selenium	U	ND	+/-5.00	15.0	50.0	ug/L	10.0	1		
7782-49-2										
Silver	U	ND	+/-1.00	3.00	10.0	ug/L	10.0	1		
7440-22-4										
Thallium	U	ND	+/-2.00	6.00	20.0	ug/L	10.0	1		
7440-28-0										
Zinc		798	+/-41.4	33.0	200	ug/L	10.0	1		
7440-66-6										

Nutrient Analysis

EPA 350.1 Nitrogen, Ammonia "As Received"

Nitrogen, Ammonia	J	0.0300		0.0170	0.0500	mg/L		1	AXH3	03/09/23	0955	23948288
7664-41-7												

Oil & Grease Analysis

EPA 1664A/B n-Hexane Extractable Material (O&G) "As Received"

Oil and Grease	J	1.46		1.36	4.85	mg/L			DXB7	03/15/23	0627	23984109
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Semi-Volatile-GC/MS

EPA 625.1 SVOA, Liquid "As Received"

2,4,6-Trichlorophenol	U	ND		30.0	100	ug/L	0.0100	1	LL2	03/07/23	2002	2393835	10
88-06-2													
2,4-Dichlorophenol	U	ND		30.0	100	ug/L	0.0100	1					
120-83-2													
2,4-Dimethylphenol	U	ND		30.0	100	ug/L	0.0100	1					
105-67-9													
2,4-Dinitrophenol	U	ND		50.0	200	ug/L	0.0100	1					
51-28-5													
2-Chlorophenol	U	ND		30.0	100	ug/L	0.0100	1					
95-57-8													

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Spent Fuel Pool
Sample ID: 612850002
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Semi-Volatile-GC/MS												
<i>EPA 625.1 SVOA, Liquid "As Received"</i>												
2-Methyl-4,6-dinitrophenol	U	ND	30.0	100	ug/L	0.0100	1					
534-52-1												
2-Nitrophenol	U	ND	30.0	100	ug/L	0.0100	1					
88-75-5												
4-Chloro-3-methylphenol	U	ND	30.0	100	ug/L	0.0100	1					
59-50-7												
4-Nitrophenol	U	ND	30.0	100	ug/L	0.0100	1					
100-02-7												
Pentachlorophenol	U	ND	30.0	100	ug/L	0.0100	1					
87-86-5												
Phenol	U	ND	30.0	100	ug/L	0.0100	1					
108-95-2												
Semi-Volatiles-PCB												
<i>EPA 608.3 PCB, Liquid (SPE) "As Received"</i>												
Aroclor-1016	U	ND	0.333	1.00	ug/L	0.0100	1	NS2	03/07/23	1845	2393981	11
12674-11-2												
Aroclor-1221	U	ND	0.333	1.00	ug/L	0.0100	1					
11104-28-2												
Aroclor-1232	U	ND	0.333	1.00	ug/L	0.0100	1					
11141-16-5												
Aroclor-1242	U	ND	0.333	1.00	ug/L	0.0100	1					
53469-21-9												
Aroclor-1248	U	ND	0.333	1.00	ug/L	0.0100	1					
12672-29-6												
Aroclor-1254	U	ND	0.333	1.00	ug/L	0.0100	1					
11097-69-1												
Aroclor-1260	U	ND	0.333	1.00	ug/L	0.0100	1					
11096-82-5												
Aroclor-Total	U	ND	0.333	1.00	ug/L	0.0100	1					
PCBTOT												
Solids Analysis												
<i>SM 2540D Total Suspended Solids (TSS) "As Received"</i>												
Total Suspended Solids	U	ND	5.70	25.0	mg/L			CH6	03/06/23	0801	2393734	12
Spectrometric Analysis												
<i>EPA 410.4 Chemical Oxygen Demand "As Received"</i>												
COD	U	ND	8.95	20.0	mg/L			1 HH2	03/07/23	1311	2394297	13

GEL LABORATORIES LLC

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Certificate of Analysis

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Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Spent Fuel Pool
Sample ID: 612850002

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst	Date	Time	Batch Mtd.
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The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 420.4	EPA 420.4 Phenols, Total in liquid PREP	ES2	03/07/23	1100	2393714
EPA 245.1/245.2 Prep	EPA 245 Mercury	RM4	03/06/23	1217	2393581
EPA 200.2	ICP-MS 200.2 PREP	CD3	03/06/23	1615	2393614
EPA 608.3	EPA 608.3 PCB Prep Liquid (SPE)	JM12	03/07/23	0949	2393980
EPA 625.1	BNA Liq. Prep-EPA 625 Analysis	DG3	03/07/23	1245	2393834
EPA 335.4	EPA 335.4 Total Cyanide	ES2	03/06/23	1203	2393706

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SM 5310 B	
2	EPA 335.4	
3	EPA 420.4	
4	SW846 9056	
5	SW846 9056	
6	EPA 245.1/245.2	
7	EPA 200.8	
8	EPA 350.1	
9	EPA 1664A/1664B	
10	EPA 625.1	
11	EPA 608.3	
12	SM 2540D	
13	EPA 410.4	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	EPA 625.1 SVOA, Liquid "As Received"	838 ug/L	1000	84	(37%-132%)
Phenol-d5	EPA 625.1 SVOA, Liquid "As Received"	320 ug/L	1000	32	(15%-85%)
2-Fluorophenol	EPA 625.1 SVOA, Liquid "As Received"	415 ug/L	1000	42	(11%-79%)
Nitrobenzene-d5	EPA 625.1 SVOA, Liquid "As Received"	390 ug/L	500	78	(39%-112%)
2-Fluorobiphenyl	EPA 625.1 SVOA, Liquid "As Received"	400 ug/L	500	80	(39%-112%)
p-Terphenyl-d14	EPA 625.1 SVOA, Liquid "As Received"	407 ug/L	500	81	(24%-129%)
Decachlorobiphenyl	EPA 608.3 PCB, Liquid (SPE) "As	1.56 ug/L	2.00	78	(38%-133%)

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Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Spent Fuel Pool
Sample ID: 612850002

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
4cmx		Received"										
		EPA 608.3 PCB, Liquid (SPE) "As Received"			1.39 ug/L	2.00	69				(33%-109%)	

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QC Summary

Report Date: March 15, 2023

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HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Contact: Laura Hageman

Workorder: 612850

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Carbon Analysis											
Batch	2394332										
QC1205338199	612934002	DUP									
Total Organic Carbon Average		5.05		5.14	mg/L	1.65		(0%-20%)	TSM	03/11/23	02:41
QC1205338197	LCS										
Total Organic Carbon Average	10.0			9.71	mg/L		97.1	(80%-120%)		03/11/23	00:50
QC1205338196	MB										
Total Organic Carbon Average			U	ND	mg/L					03/11/23	00:40
QC1205338201	612934002	PS									
Total Organic Carbon Average	10.0	5.05		14.5	mg/L		94.8	(65%-120%)		03/11/23	03:01
Flow Injection Analysis											
Batch	2393707										
QC1205337068	613066001	DUP									
Cyanide, Total		U	ND	U	ND	ug/L	N/A		AXH3	03/07/23	07:11
QC1205337063	LCS										
Cyanide, Total	50.0			48.2	ug/L		96.4	(90%-110%)		03/07/23	06:47
QC1205337062	MB										
Cyanide, Total			U	ND	ug/L					03/07/23	06:42
QC1205337069	613066001	MS									
Cyanide, Total	100	U	ND	101	ug/L		101	(90%-110%)		03/07/23	07:13
Batch	2393715										
QC1205337077	LCS										
Total Phenol	50.0			45.2	ug/L		90.4	(90%-110%)	AXH3	03/08/23	05:34

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QC Summary

Workorder: 612850

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Flow Injection Analysis											
Batch	2393715										
QC1205337076	MB										
Total Phenol			U	ND	ug/L				AXH3	03/08/23	05:33
QC1205337078	612516014	MS									
Total Phenol	50.0	U	ND	44.7	ug/L		89.5*	(90%-110%)		03/08/23	05:38
QC1205337079	612516014	MSD									
Total Phenol	50.0	U	ND	46.6	ug/L	4.07	93.2	(0%-20%)		03/08/23	05:39
Ion Chromatography											
Batch	2395176										
QC1205339686	613338001	DUP									
Bromide		J	0.169	J	0.169	mg/L	0.0593	^	(+/-0.200)	JLD1	03/08/23 14:11
Chloride			17.9		17.8	mg/L	0.171		(0%-20%)		03/08/23 18:26
Fluoride			0.448		0.451	mg/L	0.556	^	(+/-0.100)		03/08/23 14:11
Sulfate			25.5		25.6	mg/L	0.137		(0%-20%)		03/08/23 18:26
QC1205339685	LCS										
Bromide	1.25				1.27	mg/L		102	(90%-110%)		03/08/23 13:07
Chloride	5.00				5.10	mg/L		102	(90%-110%)		
Fluoride	2.50				2.51	mg/L		101	(90%-110%)		
Sulfate	10.0				10.1	mg/L		101	(90%-110%)		
QC1205339684	MB										
Bromide			U	ND	mg/L					03/08/23	12:35
Chloride			U	ND	mg/L						

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Parmname				NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Ion Chromatography															
Batch 2395176															
Fluoride							U	ND	mg/L				JLD1	03/08/23	12:35
Sulfate							U	ND	mg/L						
QC1205339687 613338001 PS															
Bromide				1.25	J	0.169		1.39	mg/L		97.9	(90%-110%)		03/08/23	14:43
Chloride				5.00		3.58		9.15	mg/L		111 *	(90%-110%)		03/08/23	18:58
Fluoride				2.50		0.448		2.90	mg/L		98.1	(90%-110%)		03/08/23	14:43
Sulfate				10.0		5.11		15.7	mg/L		106	(90%-110%)		03/08/23	18:58
Metals Analysis - ICPMS															
Batch 2393615															
QC1205336814 612850001 DUP															
Antimony					U	ND	U	ND	ug/L	N/A			PRB	03/10/23	14:22
Arsenic					U	ND	U	ND	ug/L	N/A					
Beryllium					U	ND	U	ND	ug/L	N/A					
Boron						177		170	ug/L	3.52 ^		(+/-150)			
Cadmium					U	ND	U	ND	ug/L	N/A					
Chromium					U	ND	U	ND	ug/L	N/A					
Copper					U	ND	U	ND	ug/L	N/A					
Lead					U	ND	U	ND	ug/L	N/A					

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2393615										
Nickel		31.1		31.9	ug/L	2.66 ^		(+/-20.0)	PRB	03/10/23	14:22
Selenium	U	ND	U	ND	ug/L	N/A					
Silver	U	ND	U	ND	ug/L	N/A					
Thallium	U	ND	U	ND	ug/L	N/A					
Zinc		726		710	ug/L	2.15 ^		(+/-200)			
QC1205336813 LCS											
Antimony	500			511	ug/L		102	(85%-115%)		03/10/23	14:15
Arsenic	500			509	ug/L		102	(85%-115%)			
Beryllium	500			542	ug/L		108	(85%-115%)			
Boron	1000			1040	ug/L		104	(85%-115%)			
Cadmium	500			516	ug/L		103	(85%-115%)			
Chromium	500			535	ug/L		107	(85%-115%)			
Copper	500			543	ug/L		109	(85%-115%)			
Lead	500			523	ug/L		105	(85%-115%)			
Nickel	500			532	ug/L		106	(85%-115%)			
Selenium	500			512	ug/L		102	(85%-115%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2393615										
Silver	500			517	ug/L		103	(85%-115%)	PRB	03/10/23	14:15
Thallium	500			512	ug/L		102	(85%-115%)			
Zinc	500			510	ug/L		102	(85%-115%)			
QC1205336812 MB											
Antimony			U	ND	ug/L					03/10/23	14:12
Arsenic			U	ND	ug/L						
Beryllium			U	ND	ug/L						
Boron			U	ND	ug/L						
Cadmium			U	ND	ug/L						
Chromium			U	ND	ug/L						
Copper			U	ND	ug/L						
Lead			U	ND	ug/L						
Nickel			U	ND	ug/L						
Selenium			U	ND	ug/L						
Silver			U	ND	ug/L						
Thallium			U	ND	ug/L						

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2393615										
Zinc			U	ND	ug/L				PRB	03/10/23	14:12
QC1205336815 612850001 MS											
Antimony	500	U	ND	513	ug/L		102	(75%-125%)		03/10/23	14:25
Arsenic	500	U	ND	506	ug/L		101	(75%-125%)			
Beryllium	500	U	ND	521	ug/L		104	(75%-125%)			
Boron	1000		177	1190	ug/L		101	(75%-125%)			
Cadmium	500	U	ND	520	ug/L		104	(75%-125%)			
Chromium	500	U	ND	521	ug/L		104	(75%-125%)			
Copper	500	U	ND	531	ug/L		106	(75%-125%)			
Lead	500	U	ND	525	ug/L		105	(75%-125%)			
Nickel	500		31.1	553	ug/L		104	(75%-125%)			
Selenium	500	U	ND	501	ug/L		100	(75%-125%)			
Silver	500	U	ND	509	ug/L		102	(75%-125%)			
Thallium	500	U	ND	509	ug/L		101	(75%-125%)			
Zinc	500		726	1260	ug/L		106	(75%-125%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2393615										
QC1205336816	612850001	SDILT									
Antimony	U	ND	U	ND	ug/L	N/A		(0%-10%)	PRB	03/10/23	14:29
Arsenic	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Beryllium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Boron		17.7	J	5.31	ug/L	50.4		(0%-10%)			
Cadmium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Chromium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Copper	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Lead	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Nickel		3.11	U	ND	ug/L	N/A		(0%-10%)			
Selenium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Silver	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Thallium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Zinc		72.6	J	13.6	ug/L	6.56		(0%-10%)			
Metals Analysis-Mercury											
Batch	2393582										
QC1205336738	612859001	DUP									
Mercury	U	ND	U	ND	ug/L	N/A			JP2	03/07/23	09:40

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-Mercury											
Batch	2393582										
QC1205336737	LCS										
Mercury	2.00			1.99	ug/L		99.6	(85%-115%)	JP2	03/07/23	09:22
QC1205336736	MB										
Mercury			U	ND	ug/L					03/07/23	09:20
QC1205336739	612859001	MS									
Mercury	2.00	U	ND	2.00	ug/L		100	(75%-125%)		03/07/23	09:42
QC1205336740	612859001	SDILT									
Mercury		U	ND	U	ND	ug/L	N/A	(0%-10%)		03/07/23	09:43
Nutrient Analysis											
Batch	2394828										
QC1205339099	612516014	DUP									
Nitrogen, Ammonia			0.460	0.385	mg/L	17.8	^	(+/-0.100)	AXH3	03/09/23	12:26
QC1205339098	LCS										
Nitrogen, Ammonia	1.00			1.02	mg/L		102	(90%-110%)		03/09/23	09:31
QC1205339097	MB										
Nitrogen, Ammonia			J	0.0210	mg/L					03/09/23	09:30
QC1205339100	612516014	PS									
Nitrogen, Ammonia	1.00		0.0920	0.858	mg/L		76.6*	(90%-110%)		03/09/23	12:28
Oil & Grease Analysis											
Batch	2398410										
QC1205345721	LCS										
Oil and Grease	40.0			35.7	mg/L		89.3	(78%-114%)	DXB7	03/15/23	06:27
QC1205345720	MB										
Oil and Grease			U	ND	mg/L					03/15/23	06:27

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Oil & Grease Analysis											
Batch	2398410										
QC1205345723	611553001	MS									
Oil and Grease	40.8	U	ND	38.3	mg/L		91.3	(78%-114%)	DXB7	03/15/23	06:27
Semi-Volatile-GC/MS											
Batch	2393835										
QC1205337319	LCS										
2,4,6-Trichlorophenol	50.0			38.5	ug/L		77	(50%-127%)	LL2	03/07/23	19:07
2,4-Dichlorophenol	50.0			36.9	ug/L		74	(50%-119%)			
2,4-Dimethylphenol	50.0			29.2	ug/L		58	(46%-99%)			
2,4-Dinitrophenol	50.0			43.4	ug/L		87	(28%-151%)			
2-Chlorophenol	50.0			34.2	ug/L		68	(46%-107%)			
2-Methyl-4,6-dinitrophenol	50.0			49.0	ug/L		98	(42%-149%)			
2-Nitrophenol	50.0			41.3	ug/L		83	(50%-115%)			
4-Chloro-3-methylphenol	50.0			37.9	ug/L		76	(50%-118%)			
4-Nitrophenol	50.0			15.1	ug/L		30	(21%-110%)			
Pentachlorophenol	50.0			30.9	ug/L		62	(42%-132%)			
Phenol	50.0			16.1	ug/L		32	(12%-90%)			
**2,4,6-Tribromophenol	100			76.0	ug/L		76	(37%-132%)			
**2-Fluorobiphenyl	50.0			35.5	ug/L		71	(39%-112%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2393835										
**2-Fluorophenol	100			38.3	ug/L		38	(11%-79%)	LL2	03/07/23	19:07
**Nitrobenzene-d5	50.0			34.9	ug/L		70	(39%-112%)			
**Phenol-d5	100			29.6	ug/L		30	(15%-85%)			
**p-Terphenyl-d14	50.0			33.3	ug/L		67	(24%-129%)			
QC1205337318 MB											
2,4,6-Trichlorophenol			U	ND	ug/L					03/07/23	18:40
2,4-Dichlorophenol			U	ND	ug/L						
2,4-Dimethylphenol			U	ND	ug/L						
2,4-Dinitrophenol			U	ND	ug/L						
2-Chlorophenol			U	ND	ug/L						
2-Methyl-4,6-dinitrophenol			U	ND	ug/L						
2-Nitrophenol			U	ND	ug/L						
4-Chloro-3-methylphenol			U	ND	ug/L						
4-Nitrophenol			U	ND	ug/L						
Pentachlorophenol			U	ND	ug/L						
Phenol			U	ND	ug/L						

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2393835										
**2,4,6-Tribromophenol	100			77.1	ug/L		77	(37%-132%)	LL2	03/07/23	18:40
**2-Fluorobiphenyl	50.0			39.9	ug/L		80	(39%-112%)			
**2-Fluorophenol	100			40.9	ug/L		41	(11%-79%)			
**Nitrobenzene-d5	50.0			41.5	ug/L		83	(39%-112%)			
**Phenol-d5	100			33.6	ug/L		34	(15%-85%)			
**p-Terphenyl-d14	50.0			33.2	ug/L		66	(24%-129%)			
QC1205337320 612859003 MS											
2,4,6-Trichlorophenol	108	U	ND	78.3	ug/L		73	(47%-130%)		03/07/23	20:56
2,4-Dichlorophenol	108	U	ND	77.6	ug/L		72	(49%-119%)			
2,4-Dimethylphenol	108	U	ND	61.9	ug/L		58	(40%-111%)			
2,4-Dinitrophenol	108	U	ND	88.8	ug/L		83	(25%-154%)			
2-Chlorophenol	108	U	ND	78.0	ug/L		73	(42%-113%)			
2-Methyl-4,6-dinitrophenol	108	U	ND	102	ug/L		95	(30%-145%)			
2-Nitrophenol	108	U	ND	85.5	ug/L		80	(42%-120%)			
4-Chloro-3-methylphenol	108	U	ND	84.8	ug/L		79	(42%-123%)			
4-Nitrophenol	108	U	ND	51.4	ug/L		48	(20%-98%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2393835										
Pentachlorophenol	108	U	ND	64.7	ug/L		60	(36%-139%)	LL2	03/07/23	20:56
Phenol	108	U	ND	55.1	ug/L		51	(23%-71%)			
**2,4,6-Tribromophenol	215		78.7	151	ug/L		70	(37%-132%)			
**2-Fluorobiphenyl	108		37.9	68.9	ug/L		64	(39%-112%)			
**2-Fluorophenol	215		39.5	106	ug/L		49	(11%-79%)			
**Nitrobenzene-d5	108		37.7	70.9	ug/L		66	(39%-112%)			
**Phenol-d5	215		30.9	102	ug/L		48	(15%-85%)			
**p-Terphenyl-d14	108		26.8	75.0	ug/L		70	(24%-129%)			
QC1205337321 612859003 MSD											
2,4,6-Trichlorophenol	108	U	ND	288	ug/L	114*	268*	(0%-79%)		03/07/23	21:23
2,4-Dichlorophenol	108	U	ND	261	ug/L	108*	242*	(0%-42%)			
2,4-Dimethylphenol	108	U	ND	212	ug/L	110*	197*	(0%-42%)			
2,4-Dinitrophenol	108	U	ND	368	ug/L	122*	342*	(0%-106%)			
2-Chlorophenol	108	U	ND	246	ug/L	104*	228*	(0%-78%)			
2-Methyl-4,6-dinitrophenol	108	U	ND	411	ug/L	120*	383*	(0%-86%)			
2-Nitrophenol	108	U	ND	277	ug/L	106*	258*	(0%-69%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2393835										
4-Chloro-3-methylphenol	108	U	ND	306	ug/L	113*	285*	(0%-41%)	LL2	03/07/23	21:23
4-Nitrophenol	108	U	ND	209	ug/L	121*	194*	(0%-110%)			
Pentachlorophenol	108	U	ND	262	ug/L	121*	244*	(0%-82%)			
Phenol	108	U	ND	176	ug/L	105*	163*	(0%-42%)			
**2,4,6-Tribromophenol	215		78.7	594	ug/L		276*	(37%-132%)			
**2-Fluorobiphenyl	108		37.9	242	ug/L		225*	(39%-112%)			
**2-Fluorophenol	215		39.5	335	ug/L		156*	(11%-79%)			
**Nitrobenzene-d5	108		37.7	228	ug/L		212*	(39%-112%)			
**Phenol-d5	215		30.9	325	ug/L		151*	(15%-85%)			
**p-Terphenyl-d14	108		26.8	256	ug/L		238*	(24%-129%)			
Semi-Volatiles-PCB											
Batch	2393981										
QC1205337604	LCS										
Aroclor-1016	1.00			0.704	ug/L		70	(50%-101%)	NS2	03/07/23	18:18
Aroclor-1260	1.00			0.783	ug/L		78	(46%-108%)			
**4cmx	0.200			0.134	ug/L		67	(33%-109%)			
**Decachlorobiphenyl	0.200			0.161	ug/L		81	(38%-133%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	2393981										
QC1205337603	MB										
Aroclor-1016			U	ND	ug/L				NS2	03/07/23	18:05
Aroclor-1221			U	ND	ug/L						
Aroclor-1232			U	ND	ug/L						
Aroclor-1242			U	ND	ug/L						
Aroclor-1248			U	ND	ug/L						
Aroclor-1254			U	ND	ug/L						
Aroclor-1260			U	ND	ug/L						
Aroclor-Total			U	ND	ug/L						
**4cmx	0.200			0.123	ug/L		62	(33%-109%)			
**Decachlorobiphenyl	0.200			0.146	ug/L		73	(38%-133%)			
QC1205337605	612878001	MS									
Aroclor-1016	1.00	U	ND	0.618	ug/L		62	(32%-112%)		03/07/23	19:37
Aroclor-1260	1.00	U	ND	0.579	ug/L		58	(32%-126%)			
**4cmx	0.200		0.133	0.129	ug/L		64	(33%-109%)			
**Decachlorobiphenyl	0.200		0.135	0.132	ug/L		66	(38%-133%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	2393981										
QC1205337606	612878001	MSD									
Aroclor-1016	1.00	U	ND	0.719	ug/L	15	72	(0%-27%)	NS2	03/07/23	19:50
Aroclor-1260	1.00	U	ND	0.716	ug/L	21	72	(0%-29%)			
**4cmx	0.200		0.133	0.138	ug/L		69	(33%-109%)			
**Decachlorobiphenyl	0.200		0.135	0.149	ug/L		74	(38%-133%)			

Solids Analysis											
Batch	2393734										
QC1205337143	613035001	DUP									
Total Suspended Solids		U	ND	U	ND	mg/L	N/A		CH6	03/06/23	08:01
QC1205337140	LCS										
Total Suspended Solids	500				497	mg/L	99.4	(95%-105%)		03/06/23	08:01
QC1205337139	MB										
Total Suspended Solids			U	ND	mg/L					03/06/23	08:01

Spectrometric Analysis											
Batch	2394297										
QC1205338112	612952001	DUP									
COD		U	ND	U	ND	mg/L	N/A		HH2	03/07/23	13:11
QC1205338111	LCS										
COD	500				495	mg/L	99.1	(90%-110%)		03/07/23	13:11
QC1205338110	MB										
COD			U	ND	mg/L					03/07/23	13:11
QC1205338113	612952001	MS									
COD	500	U	ND		507	mg/L	101	(90%-110%)		03/07/23	13:11

Notes:

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
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The Qualifiers in this report are defined as follows:

U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
J	Value is estimated
P	Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.
C	Analyte has been confirmed by GC/MS analysis
B	The target analyte was detected in the associated blank.
E	Concentration of the target analyte exceeds the instrument calibration range
A	The TIC is a suspected aldol-condensation product
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
N	Metals--The Matrix spike sample recovery is not within specified control limits
N	Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
H	Analytical holding time was exceeded
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
D	Results are reported from a diluted aliquot of the sample
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
JNX	Non Calibrated Compound
UJ	Compound cannot be extracted
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
Y	QC Samples were not spiked with this compound
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612850

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
J	See case narrative for an explanation										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 612850

GC/MS Semivolatile

Product: Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

Analytical Method: EPA 625.1

Analytical Procedure: GL-OA-E-009 REV# 46

Analytical Batch: 2393835

Preparation Method: EPA 625.1

Preparation Procedure: GL-OA-E-013 REV# 35

Preparation Batch: 2393834

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205337318	Method Blank (MB)
1205337319	Laboratory Control Sample (LCS)
1205337320	612859003(NonSDG) Matrix Spike (MS)
1205337321	612859003(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CCV Requirements

All Calibration Verification Standards (CCV) did meet the acceptance criteria as outlined in Table 6 in Method 625.1. The analytes which failed on the included Continuing Calibration Summary report were within the %acceptance criteria for the respective analyte or within 60%-140% for analytes not listed in Table 6. The data were reported.

Quality Control (QC) Information

Surrogate Recoveries

The MSD (See Below) did not meet surrogate recovery acceptance criteria. The MSD had a final volume of 3.5 mL, while the parent and MS had a final volume of 1.0 mL. Because the recoveries were biased high and target analytes were not detected in the associated parent sample above the reporting limit, the data were reported.

Sample	Analyte	Value
1205337321 (Non SDG 612859003MSD)	2, 4, 6-Tribromophenol	276* (37%-132%)

	2-Fluorobiphenyl	225* (39%-112%)
	2-Fluorophenol	156* (11%-79%)
	Nitrobenzene-d5	212* (39%-112%)
	Phenol-d5	151* (15%-85%)
	p-Terphenyl-d14	238* (24%-129%)

Spike Recovery Statement

The MSD (See Below) spike recoveries were not within the acceptance limits. The MSD had a final volume of 3.5 mL, while the parent and MS had a final volume of 1.0 mL. Because the recoveries were biased high and target analytes were not detected in the associated parent sample above the reporting limit, the data were reported.

Sample	Analyte	Value
1205337321 (Non SDG 612859003MSD)	2, 4, 6-Trichlorophenol	268* (47%-130%)
	2, 4-Dichlorophenol	242* (49%-119%)
	2, 4-Dimethylphenol	197* (40%-111%)
	2, 4-Dinitrophenol	342* (25%-154%)
	2-Chlorophenol	228* (42%-113%)
	2-Methyl-4, 6-dinitrophenol	383* (30%-145%)
	2-Nitrophenol	258* (42%-120%)
	4-Chloro-3-methylphenol	285* (42%-123%)
	4-Nitrophenol	194* (20%-98%)
	Pentachlorophenol	244* (36%-139%)
	Phenol	163* (23%-71%)

MS/MSD Relative Percent Difference (RPD) Statement

The RPD values between the MS and MSD, (See Below), were not within the acceptance limits. The MSD had a final volume of 3.5 mL, while the parent and MS had a final volume of 1.0 mL. The biased high recoveries in the MSD when compared to the MS attributed to the RPD failure. The data were reported.

Sample	Analyte	Value
1205337320MS and 1205337321MSD (Non SDG 612859003)	2, 4, 6-Trichlorophenol	RPD 114* (0%-79%)
	2, 4-Dichlorophenol	RPD 108* (0%-42%)
	2, 4-Dimethylphenol	RPD 110* (0%-42%)
	2, 4-Dinitrophenol	RPD 122* (0%-106%)
	2-Chlorophenol	RPD 104* (0%-78%)
	2-Methyl-4, 6-dinitrophenol	RPD 120* (0%-86%)
	2-Nitrophenol	RPD 106* (0%-69%)
	4-Chloro-3-methylphenol	RPD 113* (0%-41%)

	4-Nitrophenol	RPD 121* (0%-110%)
	Pentachlorophenol	RPD 121* (0%-82%)
	Phenol	RPD 105* (0%-42%)

Miscellaneous Information

Additional Comments

Diphenylamine Statement

Diphenylamine has superseded the reporting of N-Nitroso-diphenylamine. As per the EPA, N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine. Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine are therefore reported as Diphenylamine on all reports and forms.

GC Semivolatile PCB

Product: Analysis of The Analysis of Polychlorinated Biphenyls by GC/ECD by ECD

Analytical Method: EPA 608.3

Analytical Procedure: GL-OA-E-040 REV# 25

Analytical Batch: 2393981

Preparation Method: EPA 608.3

Preparation Procedure: GL-OA-E-070 REV# 11

Preparation Batch: 2393980

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205337603	Method Blank (MB)
1205337604	Laboratory Control Sample (LCS)
1205337605	612878001(NonSDG) Matrix Spike (MS)
1205337606	612878001(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Preparation/Analytical Method Verification

All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns.

Miscellaneous Information

Manual integrations

Samples (See Below) required manual integration to correctly position the baseline as set in the calibration standard injections.

Sample	Analyte	Value
1205337604 (LCS)	Aroclor-1260	Result 0.783ug/L
1205337606 (Non SDG 612878001MSD)	Aroclor-1016	Result 0.719ug/L
	Decachlorobiphenyl	Result 0.149ug/L
612850001 (Cavity)	Decachlorobiphenyl	Result 1.75ug/L

Metals

Product: Determination of Metals by ICP-MS

Analytical Method: EPA 200.8

Analytical Procedure: GL-MA-E-014 REV# 35

Analytical Batch: 2393615

Preparation Method: EPA 200.2

Preparation Procedure: GL-MA-E-016 REV# 18

Preparation Batch: 2393614

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205336812	Method Blank (MB)
1205336813	ICP-MS Laboratory Control Sample (LCS)
1205336816	612850001(CavityL) Serial Dilution (SD)
1205336814	612850001(CavityD) Sample Duplicate (DUP)
1205336815	612850001(CavityS) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement

For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Technical Information

Preparation Information

The samples in this SDG were prepared with less starting material than stated in the SOP due to the radioactivity concerns of the samples- ALARA.

Product: Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

Analytical Method: EPA 245.1/245.2

Analytical Procedure: GL-MA-E-010 REV# 39

Analytical Batch: 2393582

Preparation Method: EPA 245.1/245.2 Prep

Preparation Procedure: GL-MA-E-010 REV# 39

Preparation Batch: 2393581

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205336736	Method Blank (MB)CVAA
1205336737	Laboratory Control Sample (LCS)
1205336740	612859001(NonSDGL) Serial Dilution (SD)
1205336738	612859001(NonSDGD) Sample Duplicate (DUP)
1205336739	612859001(NonSDGS) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Preparation Information

The samples in this SDG were prepared with less starting material than stated in the SOP due to the radioactivity concerns of the samples- ALARA. 612850001 (Cavity) and 612850002 (Spent Fuel Pool).

General Chemistry

Product: Carbon, Total Organic

Analytical Method: SM 5310 B

Analytical Procedure: GL-GC-E-093 REV# 21

Analytical Batch: 2394332

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity

612850002	Spent Fuel Pool
1205338196	Method Blank (MB)
1205338197	Laboratory Control Sample (LCS)
1205338199	612934002(NonSDG) Sample Duplicate (DUP)
1205338201	612934002(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions

The following samples 612850001 (Cavity) and 612850002 (Spent Fuel Pool) in this sample group were diluted due to limited sample quantity. The following samples was limited due to RADII. 612850001 (Cavity) and 612850002 (Spent Fuel Pool). Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	612850	
	001	002
Total Organic Carbon Average	500X	500X

Product: Cyanide, Total

Analytical Method: EPA 335.4

Analytical Procedure: GL-GC-E-095 REV# 23

Analytical Batch: 2393707

Preparation Method: EPA 335.4

Preparation Procedure: GL-GC-E-067 REV# 24

Preparation Batch: 2393706

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205337062	Method Blank (MB)
1205337063	Laboratory Control Sample (LCS)
1205337068	613066001(NonSDG) Sample Duplicate (DUP)
1205337069	613066001(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where

applicable, with the following exceptions.

Technical Information

Sample Preservation/Integrity

Samples 1205337068 (Non SDG 613066001DUP) and 1205337069 (Non SDG 613066001MS) in this sample group did not meet the preservation requirements of the method.

Sample Dilutions

Samples were diluted at the prep step due to the highly radioactive and/or hazardous matrix of samples: 612850001 (Cavity) and 612850002 (Spent Fuel Pool). Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Product: Total Phenols

Analytical Method: EPA 420.4

Analytical Procedure: GL-GC-E-102 REV# 10

Analytical Batches: 2393715 and 2393714

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205337076	Method Blank (MB)
1205337077	Laboratory Control Sample (LCS)
1205337078	612516014(NonSDG) Matrix Spike (MS)
1205337079	612516014(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The spike recovery falls outside of the established acceptance limits. Since both the spike duplicate recovery and the RPD between the spike and spike duplicate fall within acceptance limits, the data is reported.

Analyte	Sample	Value
Total Phenol	1205337078 (Non SDG 612516014MS)	89.5* (90%-110%)

Technical Information

Sample Dilutions

Samples were diluted at the prep step due to the highly radioactive and/or hazardous matrix of samples: 612850001 (Cavity) and 612850002 (Spent Fuel Pool). Dilutions may be required for many reasons, including to

minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Product: Ion Chromatography

Analytical Method: SW846 9056

Analytical Procedure: GL-GC-E-086 REV# 30

Analytical Batch: 2395176

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205339684	Method Blank (MB)
1205339685	Laboratory Control Sample (LCS)
1205339686	613338001(NonSDG) Sample Duplicate (DUP)
1205339687	613338001(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Chloride	1205339687 (Non SDG 613338001PS)	111* (90%-110%)

Technical Information

Sample Dilutions

The following samples 1205339686 (Non SDG 613338001DUP), 1205339687 (Non SDG 613338001PS), 612850001 (Cavity) and 612850002 (Spent Fuel Pool) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	612850	
	001	002
Chloride	2X	2X

Product: Ammonia Nitrogen

Preparation Method: EPA 350.1

Preparation Procedure: GL-GC-E-106 REV# 10

Preparation Batch: 2394828

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205339097	Method Blank (MB)
1205339098	Laboratory Control Sample (LCS)
1205339099	612516014(NonSDG) Sample Duplicate (DUP)
1205339100	612516014(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Nitrogen, Ammonia	1205339100 (Non SDG 612516014PS)	76.6* (90%-110%)

Technical Information

Sample Dilutions

The following samples 1205339099 (Non SDG 612516014DUP) and 1205339100 (Non SDG 612516014PS) in this sample group were diluted due to matrix interference. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Product: n-Hexane Extractable Material

Analytical Method: EPA 1664A/1664B

Analytical Procedure: GL-GC-E-094 REV# 18

Analytical Batch: 2398410

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205345720	Method Blank (MB)
1205345721	Laboratory Control Sample (LCS)

1205345723

611553001(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Solids, Total Suspended

Analytical Method: SM 2540D

Analytical Procedure: GL-GC-E-012 REV# 18

Analytical Batch: 2393734

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205337139	Method Blank (MB)
1205337140	Laboratory Control Sample (LCS)
1205337143	613035001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments

A reduced aliquot was used due to limited volume. The client did not provide an entire 1 liter aliquot. 612850001 (Cavity) and 612850002 (Spent Fuel Pool).

Product: COD

Analytical Method: EPA 410.4

Analytical Procedure: GL-GC-E-061 REV# 21

Analytical Batch: 2394297

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612850001	Cavity
612850002	Spent Fuel Pool
1205338110	Method Blank (MB)
1205338111	Laboratory Control Sample (LCS)
1205338112	612952001(NonSDG) Sample Duplicate (DUP)
1205338113	612952001(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

612850

Client: <u>CDEC</u>		SDG/AR/COC/Work Order:	
Received By: <u>AM</u>		Date Received: <u>3/2/23</u>	
Carrier and Tracking Number		Circle Applicable: <u>MSR</u> <u>FedEx Express</u> <u>FedEx Ground</u> <u>UPS</u> <u>Field Services</u> <u>Courier</u> <u>Other</u> <u>7714 4371 B485 #1-4</u> <u>#5-5</u> <u>#2-5</u> <u>#3-5</u> <u>#4-2</u>	
Suspected Hazard Information	Yes ☐ No ☒	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	Yes ☐ No ☒	Hazard Class Shipped: <u>UN# 2910</u> If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☐ No ☒	
B) Did the client designate the samples are to be received as radioactive?	Yes ☐ No ☒	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	Yes ☐ No ☒	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>-3</u> CPM/mR/hr Classified as: Rad 1 ☐ Rad 2 ☒ Rad 3 ☐	
D) Did the client designate samples are hazardous?	Yes ☐ No ☒	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	Yes ☐ No ☒	If D or E is yes, select Hazards below. PCB's ☐ Flammable ☐ Foreign Soil ☐ RCRA ☐ Asbestos ☐ Beryllium ☐ Other: ☐	
Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)	
1	Shipping containers received intact and sealed?	Yes ☒ No ☐ NA ☐	Circle Applicable: Seals broken ☐ Damaged container ☐ Leaking container ☐ Other (describe) ☐
2	Chain of custody documents included with shipment?	Yes ☒ No ☐ NA ☐	Circle Applicable: Client contacted and provided COC ☐ COC created upon receipt ☐
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	Yes ☒ No ☐ NA ☐	Preservation Method: Wet Ice ☐ Ice Packs ☐ Dry ice ☐ None ☐ Other: ☐ *all temperatures are recorded in Celsius TEMP: <u> </u>
4	Daily check performed and passed on IR temperature gun?	Yes ☒ No ☐ NA ☐	Temperature Device Serial #: <u>2-23</u> Secondary Temperature Device Serial # (If Applicable): ☐
5	Sample containers intact and sealed?	Yes ☒ No ☐ NA ☐	Circle Applicable: Seals broken ☐ Damaged container ☐ Leaking container ☐ Other (describe) ☒ <u>Spent Fuel Pool - LTCCD bottle rec'd broken + empty</u>
6	Samples requiring chemical preservation at proper pH?	Yes ☒ No ☐ NA ☐	Sample ID's and Containers Affected: <u>proper preservation indicated</u>
7	Do any samples require Volatile Analysis?	Yes ☒ No ☐ NA ☐	If Preservation added, Lot#: ☐ If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☐ NA ☐ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ☐ No ☐ NA ☐ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ☐ No ☐ NA ☐ Sample ID's and containers affected: ☐
8	Samples received within holding time?	Yes ☒ No ☐ NA ☐	ID's and tests affected: ☐
9	Sample ID's on COC match ID's on bottles?	Yes ☒ No ☐ NA ☐	ID's and containers affected: ☐
10	Date & time on COC match date & time on bottles?	Yes ☒ No ☐ NA ☐	Circle Applicable: No dates on containers ☐ No times on containers ☐ COC missing info ☐ Other (describe) ☐
11	Number of containers received match number indicated on COC?	Yes ☒ No ☐ NA ☐	Circle Applicable: No container count on COC ☐ Other (describe) ☐
12	Are sample containers identifiable as GEL provided by use of GEL labels?	Yes ☒ No ☐ NA ☐	Circle Applicable: Not relinquished ☐ Other (describe) ☐
13	COC form is properly signed in relinquished/received sections?	Yes ☒ No ☐ NA ☐	
Comments (Use Continuation Form if needed):			
PM (or PMA) review: Initials <u>AD</u> Date <u>3/3/23</u> Page <u>1</u> of <u>1</u>			

Anna Johnson

From: Erin Trent
Sent: Monday, March 6, 2023 10:06 AM
To: Laura Hageman; Anna Johnson
Cc: Team Trent
Subject: RE: Broken container for 2,3,7,8 TCDD (612850)

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Laura,
If you sent 3 bottles for TCDD, then we should be fine. Do you remember if 3 were sent?

Erin Trent
Project Manager



2040 Savage Road, Charleston, SC 29407 | PO Box 30712, Charleston, SC 29417
Office Direct: 843.769.7374 | Office Main: 843.556.8171 | Fax: 843.766.1178
E-Mail: erin.trent@gel.com | Website: www.gel.com

Analytical Testing



From: Laura Hageman <l.hageman@holtec.com>
Sent: Monday, March 6, 2023 9:59 AM
To: Anna Johnson <Anna.Johnson@gel.com>
Cc: Team Trent <Team.Trent@gel.com>; Erin Trent <Erin.Trent@gel.com>
Subject: RE: Broken container for 2,3,7,8 TCDD (612850)

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Thank you for the information. I am sorry I did not reply sooner (we are off on Fridays). Is there enough sample for the analysis to be performed or will another sample need to be sent?

Thank you,

Laura Hageman

Chemistry Superintendent/ BHI Site Manager
Pilgrim Nuclear Power Station
(508) 830-8184 (w)
(508) 254-5594 (c)

From: Anna Johnson <Anna.Johnson@gel.com>
Sent: Friday, March 3, 2023 9:59 AM
To: Laura Hageman <l.hageman@holtec.com>
Cc: Team Trent <Team.Trent@gel.com>
Subject: Broken container for 2,3,7,8 TCDD (612850)

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Clicking links or opening attachments could lead to infecting your computer or Holtec's servers with malicious viruses.

Hello,
we received sample container Spent Fuel Pool for 2,3,7,8 TCDD broken and empty, please advise how we should proceed.
See attachment for reference,
Thanks!

Anna Johnson
Project Manager Assistant



2040 Savage Road, Charleston, SC 29407 | PO Box 30712, Charleston, SC 29417
Office Main: 843.556.8171 | Fax: 843.766.1178
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Analytical Testing



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List of current GEL Certifications as of 15 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

March 15, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 612643

Dear Laura Hageman:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 01, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Chain of Custody form did not contain a relinquished signature. All sample containers arrived without any visible signs of tampering or breakage. The following additional comments were noted at receipt: (insert text box).. Only received 18 containers, and the chain of custody states that there are 19 containers. Client was notified via email and advised to proceed with analysis.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,

Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 612643 GEL Work Order: 612643

The Qualifiers in this report are defined as follows:

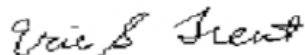
- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- J Value is estimated
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Torus-Avantech Influent
Sample ID: 612643001
Matrix: Water
Collect Date: 27-FEB-23 09:05
Receive Date: 01-MAR-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Carbon Analysis

SM 5310 B Total Organic/Inorganic Carbon "As Received"

Total Organic Carbon Average	J	0.528	0.330	1.00	mg/L		1	TSM	03/13/23	1908	2392379	1
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Flow Injection Analysis

EPA 335.4 Cyanide, Total "As Received"

Cyanide, Total	U	ND	1.67	5.00	ug/L	1.00	1	AXH3	03/06/23	1029	2392920	2
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EPA 420.4 Total Phenols "As Received"

Total Phenol	U	ND	1.67	10.0	ug/L	1.00	1	AXH3	03/08/23	0542	2393715	3
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Ion Chromatography

SW846 9056 Anions, Liquid "As Received"

Chloride		79.0	+/-2.69	1.68	5.00	mg/L		25	JLD1	03/02/23	2356	2392884	4
16887-00-6													
Bromide		0.269	+/-0.0241	0.0670	0.200	mg/L		1	JLD1	03/02/23	1837	2392884	5
24959-67-9													
Fluoride	U	ND	+/-0.0110	0.0330	0.100	mg/L		1					
16984-48-8													
Sulfate		8.51	+/-0.287	0.133	0.400	mg/L		1					
14808-79-8													

Mercury Analysis-CVAA

EPA 245 Mercury "As Received"

Mercury	U	ND	+/-0.0226	0.0670	0.200	ug/L	1.00	1	JP2	03/03/23	1038	2392284	6
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Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Zinc		1400	+/-70.0	3.30	20.0	ug/L	1.00	1	BAJ	03/07/23	0450	2392298	7
7440-66-6													
Antimony	U	ND	+/-0.333	1.00	3.00	ug/L	1.00	1	BAJ	03/07/23	1603	2392298	8
7440-36-0													
Arsenic	U	ND	+/-0.667	2.00	5.00	ug/L	1.00	1					
7440-38-2													
Beryllium	U	ND	+/-0.0667	0.200	0.500	ug/L	1.00	1					
7440-41-7													
							1.00						

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Torus-Avantech Influent
Sample ID: 612643001
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Boron		169	+/-8.64	5.20	15.0	ug/L		1				
7440-42-8												
Cadmium	U	ND	+/-0.100	0.300	1.00	ug/L	1.00	1				
7440-43-9												
Chromium	U	ND	+/-1.00	3.00	10.0	ug/L	1.00	1				
7440-47-3												
Copper	U	ND	+/-0.100	0.300	2.00	ug/L	1.00	1				
7440-50-8												
Lead	U	ND	+/-0.167	0.500	2.00	ug/L	1.00	1				
7439-92-1												
Nickel		2.93	+/-0.248	0.600	2.00	ug/L	1.00	1				
7440-02-0												
Selenium	U	ND	+/-0.500	1.50	5.00	ug/L	1.00	1				
7782-49-2												
Silver	U	ND	+/-0.100	0.300	1.00	ug/L	1.00	1				
7440-22-4												
Thallium	U	ND	+/-0.200	0.600	2.00	ug/L	1.00	1				
7440-28-0												

Nutrient Analysis

EPA 350.1 Nitrogen, Ammonia "As Received"

Nitrogen, Ammonia	U	ND		0.0170	0.0500	mg/L		1	AXH3	03/09/23	0939	23948289
7664-41-7												

Oil & Grease Analysis

EPA 1664A/B n-Hexane Extractable Material (O&G) "As Received"

Oil and Grease	J	1.44		1.35	4.81	mg/L			DXB7	03/14/23	0546	239689610
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Semi-Volatile-GC/MS

EPA 625.1 SVOA, Liquid "As Received"

2,4,6-Trichlorophenol	U	ND		2.84	9.47	ug/L	0.000947	1	LL2	03/02/23	2324	239187111
88-06-2												
2,4-Dichlorophenol	U	ND		2.84	9.47	ug/L	0.000947	1				
120-83-2												
2,4-Dimethylphenol	U	ND		2.84	9.47	ug/L	0.000947	1				
105-67-9												
2,4-Dinitrophenol	U	ND		4.74	18.9	ug/L	0.000947	1				
51-28-5												
2-Chlorophenol	U	ND		2.84	9.47	ug/L	0.000947	1				
95-57-8												

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Report Date: March 15, 2023

Client Sample ID: Torus-Avantech Influent
Sample ID: 612643001
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Semi-Volatile-GC/MS												
<i>EPA 625.1 SVOA, Liquid "As Received"</i>												
2-Methyl-4,6-dinitrophenol 534-52-1	U	ND	2.84	9.47	ug/L	0.000947	1					
2-Nitrophenol 88-75-5	U	ND	2.84	9.47	ug/L	0.000947	1					
4-Chloro-3-methylphenol 59-50-7	U	ND	2.84	9.47	ug/L	0.000947	1					
4-Nitrophenol 100-02-7	U	ND	2.84	9.47	ug/L	0.000947	1					
Pentachlorophenol 87-86-5	U	ND	2.84	9.47	ug/L	0.000947	1					
Phenol 108-95-2	U	ND	2.84	9.47	ug/L	0.000947	1					
Semi-Volatiles-PCB												
<i>EPA 608.3 PCB, Liquid (SPE) "As Received"</i>												
Aroclor-1016 12674-11-2	U	ND	0.0315	0.0947	ug/L	0.000947	1	YS1	03/05/23	1854	2392610	12
Aroclor-1221 11104-28-2	U	ND	0.0315	0.0947	ug/L	0.000947	1					
Aroclor-1232 11141-16-5	U	ND	0.0315	0.0947	ug/L	0.000947	1					
Aroclor-1242 53469-21-9	U	ND	0.0315	0.0947	ug/L	0.000947	1					
Aroclor-1248 12672-29-6	U	ND	0.0315	0.0947	ug/L	0.000947	1					
Aroclor-1254 11097-69-1	U	ND	0.0315	0.0947	ug/L	0.000947	1					
Aroclor-1260 11096-82-5	U	ND	0.0315	0.0947	ug/L	0.000947	1					
Aroclor-Total PCBTOT	U	ND	0.0315	0.0947	ug/L	0.000947	1					
Solids Analysis												
<i>SM 2540D Total Suspended Solids (TSS) "As Received"</i>												
Total Suspended Solids	U	ND	0.570	2.50	mg/L			CH6	03/02/23	0751	2392261	13
Spectrometric Analysis												
<i>EPA 410.4 Chemical Oxygen Demand "As Received"</i>												
COD		39.2	8.95	20.0	mg/L			1 HH2	03/03/23	1403	2392846	14

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Torus-Avantech Influent
Sample ID: 612643001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst	Date	Time	Batch Mtd.
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The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	CD3	03/02/23	1550	2392297
EPA 245.1/245.2 Prep	EPA 245 Mercury	RM4	03/02/23	1125	2392283
EPA 420.4	EPA 420.4 Phenols, Total in liquid PREP	ES2	03/07/23	1100	2393714
EPA 335.4	EPA 335.4 Total Cyanide	ES2	03/03/23	1208	2392919
EPA 608.3	EPA 608.3 PCB Prep Liquid (SPE)	JM12	03/03/23	1053	2392608
EPA 625.1	BNA Liq. Prep-EPA 625 Analysis	TH1	03/02/23	1149	2391868

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SM 5310 B	
2	EPA 335.4	
3	EPA 420.4	
4	SW846 9056	
5	SW846 9056	
6	EPA 245.1/245.2	
7	EPA 200.8	
8	EPA 200.8	
9	EPA 350.1	
10	EPA 1664A/1664B	
11	EPA 625.1	
12	EPA 608.3	
13	SM 2540D	
14	EPA 410.4	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Nitrobenzene-d5	EPA 625.1 SVOA, Liquid "As Received"	34.8 ug/L	47.4	74	(39%-112%)
2-Fluorobiphenyl	EPA 625.1 SVOA, Liquid "As Received"	34.4 ug/L	47.4	73	(39%-112%)
p-Terphenyl-d14	EPA 625.1 SVOA, Liquid "As Received"	19.4 ug/L	47.4	41	(24%-129%)
2,4,6-Tribromophenol	EPA 625.1 SVOA, Liquid "As Received"	54.4 ug/L	94.7	57	(37%-132%)
Phenol-d5	EPA 625.1 SVOA, Liquid "As Received"	16.8 ug/L	94.7	18	(15%-85%)
2-Fluorophenol	EPA 625.1 SVOA, Liquid "As Received"	22.9 ug/L	94.7	24	(11%-79%)

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Report Date: March 15, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Torus-Avantech Influent
Sample ID: 612643001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Decachlorobiphenyl		EPA 608.3 PCB, Liquid (SPE) "As Received"			0.154 ug/L	0.189	81					(38%-133%)
4cmx		EPA 608.3 PCB, Liquid (SPE) "As Received"			0.124 ug/L	0.189	66					(33%-109%)

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QC Summary

Report Date: March 15, 2023

Page 1 of 17

HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Laura Hageman

Contact:
Workorder: 612643

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Carbon Analysis											
Batch	2392379										
QC1205334900	612533001	DUP									
Total Organic Carbon Average	U	ND	U	ND	mg/L	N/A			TSM	03/13/23	17:26
QC1205334899	LCS										
Total Organic Carbon Average	10.0			9.84	mg/L		98.4	(80%-120%)		03/13/23	16:34
QC1205334898	MB										
Total Organic Carbon Average			U	ND	mg/L					03/13/23	16:25
QC1205334902	612533001	PS									
Total Organic Carbon Average	10.0	U	ND	10.2	mg/L		101	(65%-120%)		03/13/23	18:06
Flow Injection Analysis											
Batch	2392920										
QC1205335700	612715002	DUP									
Cyanide, Total	U	ND	U	ND	ug/L	N/A			AXH3	03/06/23	10:43
QC1205335697	LCS										
Cyanide, Total	50.0			50.0	ug/L		100	(90%-110%)		03/06/23	10:12
QC1205335696	MB										
Cyanide, Total			U	ND	ug/L					03/06/23	10:11
QC1205335701	612715002	MS									
Cyanide, Total	100	U	ND	105	ug/L		105	(90%-110%)		03/06/23	10:44
Batch	2393715										
QC1205337077	LCS										
Total Phenol	50.0			45.2	ug/L		90.4	(90%-110%)	AXH3	03/08/23	05:34

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QC Summary

Workorder: 612643

Page 2 of 17

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Flow Injection Analysis											
Batch	2393715										
QC1205337076	MB										
Total Phenol			U	ND	ug/L				AXH3	03/08/23	05:33
QC1205337078	612516014	MS									
Total Phenol	50.0	U	ND	44.7	ug/L		89.5*	(90%-110%)		03/08/23	05:38
QC1205337079	612516014	MSD									
Total Phenol	50.0	U	ND	46.6	ug/L	4.07	93.2	(0%-20%)		03/08/23	05:39
Ion Chromatography											
Batch	2392884										
QC1205335640	612772001	DUP									
Bromide		U	ND	U	ND	mg/L	N/A		JLD1	03/02/23	21:48
Chloride			9.58		9.56	mg/L	0.192	(0%-20%)			
Fluoride			0.279		0.278	mg/L	0.251 ^	(+/-0.100)			
Sulfate			261		260	mg/L	0.403	(0%-20%)		03/03/23	02:35
QC1205335639	LCS										
Bromide	1.25			1.31	mg/L		105	(90%-110%)		03/02/23	18:05
Chloride	5.00			4.98	mg/L		99.5	(90%-110%)			
Fluoride	2.50			2.50	mg/L		100	(90%-110%)			
Sulfate	10.0			10.2	mg/L		102	(90%-110%)			
QC1205335638	MB										
Bromide			U	ND	mg/L					03/02/23	17:34
Chloride			U	ND	mg/L						

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QC Summary

Workorder: 612643

Page 3 of 17

Parmname				NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time	
Ion Chromatography																
Batch 2392884																
Fluoride							U	ND	mg/L				JLD1	03/02/23	17:34	
Sulfate							U	ND	mg/L							
QC1205335641 612772001 PS																
Bromide				1.25	U	ND		1.28	mg/L		102	(90%-110%)			03/02/23	23:24
Chloride				5.00		9.58		15.4	mg/L		117*	(90%-110%)				
Fluoride				2.50		0.279		2.66	mg/L		95.2	(90%-110%)				
Sulfate				10.0		10.4		21.0	mg/L		105	(90%-110%)			03/03/23	03:07
Metals Analysis - ICPMS																
Batch 2392298																
QC1205334767 612643001 DUP																
Antimony					U	ND	U	ND	ug/L	N/A				BAJ	03/07/23	16:07
Arsenic					U	ND	U	ND	ug/L	N/A						
Beryllium					U	ND	U	ND	ug/L	N/A						
Boron						169		176	ug/L	3.83		(0%-20%)				
Cadmium					U	ND	U	ND	ug/L	N/A						
Chromium					U	ND	U	ND	ug/L	N/A						
Copper					U	ND	U	ND	ug/L	N/A						
Lead					U	ND	U	ND	ug/L	N/A						

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2392298										
Nickel		2.93		2.86	ug/L	2.35 ^		(+/-2.00)	BAJ	03/07/23	16:07
Selenium	U	ND	U	ND	ug/L	N/A					
Silver	U	ND	U	ND	ug/L	N/A					
Thallium	U	ND	U	ND	ug/L	N/A					
Zinc		1400		1460	ug/L	4.38		(0%-20%)		03/07/23	04:53
QC1205334766 LCS											
Antimony	50.0			53.7	ug/L		107	(85%-115%)		03/07/23	16:00
Arsenic	50.0			50.8	ug/L		102	(85%-115%)			
Beryllium	50.0			54.9	ug/L		110	(85%-115%)			
Boron	100			103	ug/L		103	(85%-115%)			
Cadmium	50.0			53.9	ug/L		108	(85%-115%)			
Chromium	50.0			51.9	ug/L		104	(85%-115%)			
Copper	50.0			53.1	ug/L		106	(85%-115%)			
Lead	50.0			52.7	ug/L		105	(85%-115%)			
Nickel	50.0			53.2	ug/L		106	(85%-115%)			
Selenium	50.0			51.9	ug/L		104	(85%-115%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2392298										
Silver	50.0			55.0	ug/L		110	(85%-115%)	BAJ	03/07/23	16:00
Thallium	50.0			53.2	ug/L		106	(85%-115%)			
Zinc	50.0			52.4	ug/L		105	(85%-115%)		03/07/23	04:46
QC1205334765 MB											
Antimony			U	ND	ug/L					03/07/23	15:56
Arsenic			U	ND	ug/L						
Beryllium			U	ND	ug/L						
Boron			U	ND	ug/L						
Cadmium			U	ND	ug/L						
Chromium			U	ND	ug/L						
Copper			U	ND	ug/L						
Lead			U	ND	ug/L						
Nickel			U	ND	ug/L						
Selenium			U	ND	ug/L						
Silver			U	ND	ug/L						
Thallium			U	ND	ug/L						

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2392298										
Zinc			U	ND	ug/L				BAJ	03/07/23	04:43
QC1205334768 612643001 MS											
Antimony	50.0	U	ND	54.2	ug/L		108	(75%-125%)		03/07/23	16:11
Arsenic	50.0	U	ND	51.5	ug/L		103	(75%-125%)			
Beryllium	50.0	U	ND	55.1	ug/L		110	(75%-125%)			
Boron	100		169	270	ug/L		101	(75%-125%)			
Cadmium	50.0	U	ND	52.7	ug/L		105	(75%-125%)			
Chromium	50.0	U	ND	52.7	ug/L		105	(75%-125%)			
Copper	50.0	U	ND	53.8	ug/L		107	(75%-125%)			
Lead	50.0	U	ND	50.7	ug/L		101	(75%-125%)			
Nickel	50.0		2.93	54.6	ug/L		103	(75%-125%)			
Selenium	50.0	U	ND	50.7	ug/L		101	(75%-125%)			
Silver	50.0	U	ND	52.7	ug/L		105	(75%-125%)			
Thallium	50.0	U	ND	50.9	ug/L		102	(75%-125%)			
Zinc	50.0		1400	1480	ug/L		N/A	(75%-125%)		03/07/23	04:57

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2392298										
QC1205334769	612643001	SDILT									
Antimony	U	ND	U	ND	ug/L	N/A		(0%-10%)	BAJ	03/07/23	16:14
Arsenic	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Beryllium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Boron		169		40.3	ug/L	19		(0%-10%)			
Cadmium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Chromium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Copper	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Lead	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Nickel		2.93	J	0.674	ug/L	15.1		(0%-10%)			
Selenium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Silver	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Thallium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Zinc		1400		299	ug/L	6.87		(0%-10%)		03/07/23	05:00
Metals Analysis-Mercury											
Batch	2392284										
QC1205334717	612518001	DUP									
Mercury	U	ND	U	ND	ug/L	N/A			JP2	03/03/23	10:30

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-Mercury											
Batch	2392284										
QC1205334716	LCS										
Mercury	2.00			1.97	ug/L		98.5	(85%-115%)	JP2	03/03/23	10:25
QC1205334715	MB										
Mercury			U	ND	ug/L					03/03/23	10:23
QC1205334718	612518001	MS									
Mercury	2.00	U	ND	1.80	ug/L		89.8	(75%-125%)		03/03/23	10:31
QC1205334719	612518001	SDILT									
Mercury		U	ND	U	ND	ug/L	N/A	(0%-10%)		03/03/23	10:33
Nutrient Analysis											
Batch	2394828										
QC1205339099	612516014	DUP									
Nitrogen, Ammonia			0.460	0.385	mg/L	17.8	^	(+/-0.100)	AXH3	03/09/23	12:26
QC1205339098	LCS										
Nitrogen, Ammonia	1.00			1.02	mg/L		102	(90%-110%)		03/09/23	09:31
QC1205339097	MB										
Nitrogen, Ammonia			J	0.0210	mg/L					03/09/23	09:30
QC1205339100	612516014	PS									
Nitrogen, Ammonia	1.00		0.0920	0.858	mg/L		76.6*	(90%-110%)		03/09/23	12:28
Oil & Grease Analysis											
Batch	2396896										
QC1205342505	LCS										
Oil and Grease	40.0			36.4	mg/L		91	(78%-114%)	DXB7	03/14/23	05:46
QC1205342504	MB										
Oil and Grease			U	ND	mg/L					03/14/23	05:46

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Oil & Grease Analysis											
Batch	2396896										
QC1205342507	611175001	MS									
Oil and Grease	40.0	J	1.98	38.3	mg/L		90.8	(78%-114%)	DXB7	03/14/23	05:46
Semi-Volatile-GC/MS											
Batch	2391871										
QC1205334196	LCS										
2,4,6-Trichlorophenol	50.0			42.1	ug/L		84	(50%-127%)	LL2	03/02/23	17:26
2,4-Dichlorophenol	50.0			37.2	ug/L		74	(50%-119%)			
2,4-Dimethylphenol	50.0			26.8	ug/L		54	(46%-99%)			
2,4-Dinitrophenol	50.0			47.1	ug/L		94	(28%-151%)			
2-Chlorophenol	50.0			32.0	ug/L		64	(46%-107%)			
2-Methyl-4,6-dinitrophenol	50.0			55.1	ug/L		110	(42%-149%)			
2-Nitrophenol	50.0			43.7	ug/L		87	(50%-115%)			
4-Chloro-3-methylphenol	50.0			37.8	ug/L		76	(50%-118%)			
4-Nitrophenol	50.0			15.5	ug/L		31	(21%-110%)			
Pentachlorophenol	50.0			32.1	ug/L		64	(42%-132%)			
Phenol	50.0			15.7	ug/L		31	(12%-90%)			
**2,4,6-Tribromophenol	100			84.1	ug/L		84	(37%-132%)			
**2-Fluorobiphenyl	50.0			38.6	ug/L		77	(39%-112%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2391871										
**2-Fluorophenol	100			38.2	ug/L		38	(11%-79%)	LL2	03/02/23	17:26
**Nitrobenzene-d5	50.0			37.3	ug/L		75	(39%-112%)			
**Phenol-d5	100			29.3	ug/L		29	(15%-85%)			
**p-Terphenyl-d14	50.0			37.4	ug/L		75	(24%-129%)			
QC1205334195 MB											
2,4,6-Trichlorophenol			U	ND	ug/L					03/02/23	16:59
2,4-Dichlorophenol			U	ND	ug/L						
2,4-Dimethylphenol			U	ND	ug/L						
2,4-Dinitrophenol			U	ND	ug/L						
2-Chlorophenol			U	ND	ug/L						
2-Methyl-4,6-dinitrophenol			U	ND	ug/L						
2-Nitrophenol			U	ND	ug/L						
4-Chloro-3-methylphenol			U	ND	ug/L						
4-Nitrophenol			U	ND	ug/L						
Pentachlorophenol			U	ND	ug/L						
Phenol			U	ND	ug/L						

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2391871										
**2,4,6-Tribromophenol	100			75.9	ug/L		76	(37%-132%)	LL2	03/02/23	16:59
**2-Fluorobiphenyl	50.0			34.8	ug/L		70	(39%-112%)			
**2-Fluorophenol	100			35.9	ug/L		36	(11%-79%)			
**Nitrobenzene-d5	50.0			35.6	ug/L		71	(39%-112%)			
**Phenol-d5	100			26.8	ug/L		27	(15%-85%)			
**p-Terphenyl-d14	50.0			36.1	ug/L		72	(24%-129%)			
QC1205334197 612518003 MS											
2,4,6-Trichlorophenol	100	U	ND	65.6	ug/L		66	(47%-130%)		03/02/23	22:29
2,4-Dichlorophenol	100	U	ND	57.7	ug/L		58	(49%-119%)			
2,4-Dimethylphenol	100	U	ND	44.1	ug/L		44	(40%-111%)			
2,4-Dinitrophenol	100	U	ND	55.2	ug/L		55	(25%-154%)			
2-Chlorophenol	100	U	ND	54.7	ug/L		55	(42%-113%)			
2-Methyl-4,6-dinitrophenol	100	U	ND	68.6	ug/L		69	(30%-145%)			
2-Nitrophenol	100	U	ND	60.0	ug/L		60	(42%-120%)			
4-Chloro-3-methylphenol	100	U	ND	67.5	ug/L		67	(42%-123%)			
4-Nitrophenol	100	U	ND	37.2	ug/L		37	(20%-98%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2391871										
Pentachlorophenol	100	U	ND	48.7	ug/L		49	(36%-139%)	LL2	03/02/23	22:29
Phenol	100	U	ND	36.1	ug/L		36	(23%-71%)			
**2,4,6-Tribromophenol	200		53.6	128	ug/L		64	(37%-132%)			
**2-Fluorobiphenyl	100		27.0	56.1	ug/L		56	(39%-112%)			
**2-Fluorophenol	200		29.3	75.7	ug/L		38	(11%-79%)			
**Nitrobenzene-d5	100		27.2	52.9	ug/L		53	(39%-112%)			
**Phenol-d5	200		19.5	66.7	ug/L		33	(15%-85%)			
**p-Terphenyl-d14	100		22.2	62.0	ug/L		62	(24%-129%)			
QC1205334198 612518003 MSD											
2,4,6-Trichlorophenol	100	U	ND	84.4	ug/L	25	84	(0%-79%)		03/02/23	22:57
2,4-Dichlorophenol	100	U	ND	80.1	ug/L	32	80	(0%-42%)			
2,4-Dimethylphenol	100	U	ND	60.1	ug/L	31	60	(0%-42%)			
2,4-Dinitrophenol	100	U	ND	66.9	ug/L	19	67	(0%-106%)			
2-Chlorophenol	100	U	ND	70.3	ug/L	25	70	(0%-78%)			
2-Methyl-4,6-dinitrophenol	100	U	ND	84.0	ug/L	20	84	(0%-86%)			
2-Nitrophenol	100	U	ND	85.0	ug/L	34	85	(0%-69%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2391871										
4-Chloro-3-methylphenol	100	U	ND	88.3	ug/L	27	88	(0%-41%)	LL2	03/02/23	22:57
4-Nitrophenol	100	U	ND	48.2	ug/L	26	48	(0%-110%)			
Pentachlorophenol	100	U	ND	58.7	ug/L	19	59	(0%-82%)			
Phenol	100	U	ND	47.9	ug/L	28	48	(0%-42%)			
**2,4,6-Tribromophenol	200		53.6	166	ug/L		83	(37%-132%)			
**2-Fluorobiphenyl	100		27.0	73.0	ug/L		73	(39%-112%)			
**2-Fluorophenol	200		29.3	95.3	ug/L		48	(11%-79%)			
**Nitrobenzene-d5	100		27.2	72.1	ug/L		72	(39%-112%)			
**Phenol-d5	200		19.5	88.2	ug/L		44	(15%-85%)			
**p-Terphenyl-d14	100		22.2	68.3	ug/L		68	(24%-129%)			
Semi-Volatiles-PCB											
Batch	2392610										
QC1205335249	LCS										
Aroclor-1016	1.00			0.717	ug/L		72	(50%-101%)	YS1	03/05/23	17:18
Aroclor-1260	1.00			0.717	ug/L		72	(46%-108%)			
**4cmx	0.200			0.121	ug/L		61	(33%-109%)			
**Decachlorobiphenyl	0.200			0.155	ug/L		77	(38%-133%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	2392610										
QC1205335250	LCSD										
Aroclor-1016	1.00			0.741	ug/L	3	74	(0%-26%)	YS1	03/05/23	17:30
Aroclor-1260	1.00			0.728	ug/L	1	73	(0%-26%)			
**4cmx	0.200			0.122	ug/L		61	(33%-109%)			
**Decachlorobiphenyl	0.200			0.159	ug/L		80	(38%-133%)			
QC1205335248	MB										
Aroclor-1016			U	ND	ug/L					03/05/23	17:06
Aroclor-1221			U	ND	ug/L						
Aroclor-1232			U	ND	ug/L						
Aroclor-1242			U	ND	ug/L						
Aroclor-1248			U	ND	ug/L						
Aroclor-1254			U	ND	ug/L						
Aroclor-1260			U	ND	ug/L						
Aroclor-Total			U	ND	ug/L						
**4cmx	0.200			0.112	ug/L		56	(33%-109%)			
**Decachlorobiphenyl	0.200			0.150	ug/L		75	(38%-133%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
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Solids Analysis

Batch	2392261										
QC1205334828	612682001	DUP									
Total Suspended Solids			118	118	mg/L	0	^	(+/-50.0)	CH6	03/02/23	07:51
QC1205334666	LCS										
Total Suspended Solids	500			503	mg/L			101 (95%-105%)		03/02/23	07:51
QC1205334667	LCSD										
Total Suspended Solids	500			500	mg/L	0.598		100 (0%-5%)		03/02/23	07:51
QC1205334665	MB										
Total Suspended Solids			U	ND	mg/L					03/02/23	07:51

Spectrometric Analysis

Batch	2392846										
QC1205335587	612421001	DUP									
COD			46.2	55.5	mg/L	18.3	^	(+/-20.0)	HH2	03/03/23	14:03
QC1205335586	LCS										
COD	500			493	mg/L			98.5 (90%-110%)		03/03/23	14:03
QC1205335585	MB										
COD			U	ND	mg/L					03/03/23	14:03
QC1205335588	612421001	MS									
COD	500		46.2	549	mg/L			100 (90%-110%)		03/03/23	14:03

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.
- C Analyte has been confirmed by GC/MS analysis
- B The target analyte was detected in the associated blank.
- E Concentration of the target analyte exceeds the instrument calibration range

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
A	The TIC is a suspected aldol-condensation product										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
N	Metals--The Matrix spike sample recovery is not within specified control limits										
N	Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
H	Analytical holding time was exceeded										
**	Analyte is a surrogate compound										
<	Result is less than value reported										
>	Result is greater than value reported										
h	Preparation or preservation holding time was exceeded										
R	Sample results are rejected										
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.										
d	5-day BOD--The 2:1 depletion requirement was not met for this sample										
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.										
D	Results are reported from a diluted aliquot of the sample										
N/A	RPD or %Recovery limits do not apply.										
ND	Analyte concentration is not detected above the detection limit										
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria										
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range										
JNX	Non Calibrated Compound										
UJ	Compound cannot be extracted										
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.										
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies										
N1	See case narrative										
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.										
Y	QC Samples were not spiked with this compound										
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.										
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
J	See case narrative for an explanation										

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
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N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 612643

GC/MS Semivolatile

Product: Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

Analytical Method: EPA 625.1

Analytical Procedure: GL-OA-E-009 REV# 46

Analytical Batch: 2391871

Preparation Method: EPA 625.1

Preparation Procedure: GL-OA-E-013 REV# 35

Preparation Batch: 2391868

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205334195	Method Blank (MB)
1205334196	Laboratory Control Sample (LCS)
1205334197	612518003(NonSDG) Matrix Spike (MS)
1205334198	612518003(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CCV Requirements

Not all Calibration Verification Standards (CCV) met the acceptance criteria as outlined in Table 6 in Method 625.1. The target analyte 2-Methyl-4,6-dinitrophenol was outside the acceptance criteria. As the analyte was not detected in the associated client samples, the biased high response had no adverse impact on the reported data. All other analytes which failed on the included Continuing Calibration Summary report were within the %acceptance criteria for the respective analyte or within 60%-140% for analytes not listed in Table 6. The data were reported.

Miscellaneous Information

Additional Comments

Diphenylamine Statement

Diphenylamine has superseded the reporting of N-Nitroso-diphenylamine. As per the EPA, N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine. Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine are therefore reported as Diphenylamine on all reports and forms.

GC Semivolatile PCB

Product: Analysis of The Analysis of Polychlorinated Biphenyls by GC/ECD by ECD

Analytical Method: EPA 608.3

Analytical Procedure: GL-OA-E-040 REV# 25

Analytical Batch: 2392610

Preparation Method: EPA 608.3

Preparation Procedure: GL-OA-E-070 REV# 11

Preparation Batch: 2392608

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205335248	Method Blank (MB)
1205335249	Laboratory Control Sample (LCS)
1205335250	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Preparation/Analytical Method Verification

All samples and QC in this batch were cleaned using alumina in order to remove oil and other high molecular weight interferences. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns.

Miscellaneous Information

Additional Comments

The column 1 has been chosen as the primary column. The data are reported from the column 1 for all samples in this batch.

Metals

Product: Determination of Metals by ICP-MS

Analytical Method: EPA 200.8

Analytical Procedure: GL-MA-E-014 REV# 35

Analytical Batch: 2392298

Preparation Method: EPA 200.2

Preparation Procedure: GL-MA-E-016 REV# 18

Preparation Batch: 2392297

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205334765	Method Blank (MB) ICP-MS
1205334766	Laboratory Control Sample (LCS)
1205334769	612643001(Torus-Avantech InfluentL) Serial Dilution (SD)
1205334767	612643001(Torus-Avantech InfluentD) Sample Duplicate (DUP)
1205334768	612643001(Torus-Avantech InfluentS) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement

For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Product: Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

Analytical Method: EPA 245.1/245.2

Analytical Procedure: GL-MA-E-010 REV# 39

Analytical Batch: 2392284

Preparation Method: EPA 245.1/245.2 Prep

Preparation Procedure: GL-MA-E-010 REV# 39

Preparation Batch: 2392283

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205334715	Method Blank (MB) CVAA
1205334716	Laboratory Control Sample (LCS)
1205334719	612518001(NonSDGL) Serial Dilution (SD)
1205334717	612518001(NonSDGD) Sample Duplicate (DUP)
1205334718	612518001(NonSDGS) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

General Chemistry

Product: Carbon, Total Organic

Analytical Method: SM 5310 B

Analytical Procedure: GL-GC-E-093 REV# 21

Analytical Batch: 2392379

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205334898	Method Blank (MB)
1205334899	Laboratory Control Sample (LCS)
1205334900	612533001(NonSDG) Sample Duplicate (DUP)
1205334902	612533001(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions

Samples 1205334900 (Non SDG 612533001DUP) and 1205334902 (Non SDG 612533001PS) were diluted based on historical data. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Sample Re-analysis

Samples 1205334898 (MB) and 1205334899 (LCS) were re-analyzed due to CCV failure. The reanalysis data with passing instrument QC was reported. Samples 1205334900 (Non SDG 612533001DUP), 1205334902 (Non SDG 612533001PS) and 612643001 (Torus-Avantech Influent) were re-analyzed due to (its) proximity to an overrange sample. The results from the reanalysis are reported.

Product: Cyanide, Total

Analytical Method: EPA 335.4

Analytical Procedure: GL-GC-E-095 REV# 23

Analytical Batch: 2392920

Preparation Method: EPA 335.4

Preparation Procedure: GL-GC-E-067 REV# 24

Preparation Batch: 2392919

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205335696	Method Blank (MB)
1205335697	Laboratory Control Sample (LCS)
1205335700	612715002(NonSDG) Sample Duplicate (DUP)
1205335701	612715002(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Total Phenols

Analytical Method: EPA 420.4

Analytical Procedure: GL-GC-E-102 REV# 10

Analytical Batches: 2393715 and 2393714

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205337076	Method Blank (MB)
1205337077	Laboratory Control Sample (LCS)
1205337078	612516014(NonSDG) Matrix Spike (MS)
1205337079	612516014(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The spike recovery falls outside of the established acceptance limits. Since both the spike duplicate recovery and the RPD between the spike and spike duplicate fall within acceptance limits, the data is reported.

Analyte	Sample	Value
Total Phenol	1205337078 (Non SDG 612516014MS)	89.5* (90%-110%)

Product: Ion Chromatography**Analytical Method:** SW846 9056**Analytical Procedure:** GL-GC-E-086 REV# 30**Analytical Batch:** 2392884

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205335638	Method Blank (MB)
1205335639	Laboratory Control Sample (LCS)
1205335640	612772001(NonSDG) Sample Duplicate (DUP)
1205335641	612772001(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information**Matrix Spike (MS)/Post Spike (PS) Recovery Statement**

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Chloride	1205335641 (Non SDG 612772001PS)	117* (90%-110%)

Technical Information**Sample Dilutions**

The following samples 1205335640 (Non SDG 612772001DUP), 1205335641 (Non SDG 612772001PS) and 612643001 (Torus-Avantech Influent) were diluted because target analyte concentrations exceeded the calibration range. The following samples 1205335640 (Non SDG 612772001DUP) and 1205335641 (Non SDG 612772001PS) in this sample group were diluted due to matrix interference. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	612643
	001
Chloride	25X

Product: Ammonia Nitrogen**Preparation Method:** EPA 350.1**Preparation Procedure:** GL-GC-E-106 REV# 10

Preparation Batch: 2394828

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205339097	Method Blank (MB)
1205339098	Laboratory Control Sample (LCS)
1205339099	612516014(NonSDG) Sample Duplicate (DUP)
1205339100	612516014(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Nitrogen, Ammonia	1205339100 (Non SDG 612516014PS)	76.6* (90%-110%)

Technical Information

Sample Dilutions

The following samples 1205339099 (Non SDG 612516014DUP) and 1205339100 (Non SDG 612516014PS) in this sample group were diluted due to matrix interference. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Product: n-Hexane Extractable Material

Analytical Method: EPA 1664A/1664B

Analytical Procedure: GL-GC-E-094 REV# 18

Analytical Batch: 2396896

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205342504	Method Blank (MB)
1205342505	Laboratory Control Sample (LCS)
1205342507	611175001(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Solids, Total Suspended**Analytical Method:** SM 2540D**Analytical Procedure:** GL-GC-E-012 REV# 18**Analytical Batch:** 2392261

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205334665	Method Blank (MB)
1205334666	Laboratory Control Sample (LCS)
1205334667	Laboratory Control Sample Duplicate (LCSD)
1205334828	612682001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information**Additional Comments**

Sample filtration took > 10 minutes; therefore as prescribed in the method, a reduced aliquot was used.
1205334828 (Non SDG 612682001DUP).

Product: COD**Analytical Method:** EPA 410.4**Analytical Procedure:** GL-GC-E-061 REV# 21**Analytical Batch:** 2392846

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612643001	Torus-Avantech Influent
1205335585	Method Blank (MB)
1205335586	Laboratory Control Sample (LCS)
1205335587	612421001(NonSDG) Sample Duplicate (DUP)
1205335588	612421001(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDEC</u>		SDG/AR/COC/Work Order: <u>012643</u>	
Received By: <u>[Signature]</u>		Date Received: _____	
Carrier and Tracking Number		Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other	
		<u>MsTR 771416195704</u> 1-6° 2-3° 3-2°	
Suspected Hazard Information	Yes ☐ No ☒	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	Yes ☒ No ☐	Hazard Class Shipped: _____ UN#: <u>291</u> If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☐ No ☐	
B) Did the client designate the samples are to be received as radioactive?	Yes ☒ No ☐	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	Yes ☒ No ☐	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>50</u> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	Yes ☒ No ☐	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	Yes ☒ No ☐	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____	
Sample Receipt Criteria		Yes	NA
1	Shipping containers received intact and sealed?	☒	☐
2	Chain of custody documents included with shipment?	☒	☐
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	☒	☐
4	Daily check performed and passed on IR temperature gun?	☒	☐
5	Sample containers intact and sealed?	☒	☐
6	Samples requiring chemical preservation at proper pH?	☒	☐
7	Do any samples require Volatile Analysis?	☒	☒
8	Samples received within holding time?	☒	☐
9	Sample ID's on COC match ID's on bottles?	☒	☐
10	Date & time on COC match date & time on bottles?	☒	☐
11	Number of containers received match number indicated on COC?	☒	☒
12	Are sample containers identifiable as GEL provided by use of GEL labels?	☒	☐
13	COC form is properly signed in relinquished/received sections?	☒	☒
Comments (Use Continuation Form if needed):			
Circle Applicable: Seals broken Damaged container Leaking container Other (describe) Circle Applicable: Client contacted and provided COC COC created upon receipt Preservation Method: <u>Wet Ice</u> Ice Packs Dry ice None Other: _____ *all temperatures are recorded in Celsius TEMP: <u>5°</u> Temperature Device Serial #: <u>2-23</u> Secondary Temperature Device Serial # (If Applicable): _____ Circle Applicable: Seals broken Damaged container Leaking container Other (describe) Sample ID's and Containers Affected: If Preservation added, Lot#: _____ If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☐ NA ☐ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ☐ No ☐ NA ☐ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ☐ No ☐ NA ☐ Sample ID's and containers affected: ID's and tests affected: ID's and containers affected: Circle Applicable: No dates on containers No times on containers COC missing info Other (describe) Circle Applicable: No container count on COC Other (describe) <u>ONLY RECEIVED 18</u> Circle Applicable: <u>Not relinquished</u> Other (describe)			

PM (or PMA) review: Initials

MG

Date

3/2/23

Page

1 of 1

GL-CHL-SR-001 Rev 7

Max Gloth

From: Laura Hageman <l.hageman@holtec.com>
Sent: Thursday, March 2, 2023 1:37 PM
To: Max Gloth
Subject: RE: Missing container 612643

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Great, thank you for following up and I apologize for the confusion.

Laura Hageman

Chemistry Superintendent/ BHI Site Manager
Pilgrim Nuclear Power Station
(508) 830-8184 (w)
(508) 254-5594 (c)

From: Max Gloth <Max.Gloth@gel.com>
Sent: Thursday, March 2, 2023 1:35 PM
To: Laura Hageman <l.hageman@holtec.com>
Subject: RE: Missing container 612643

CAUTION: This email came from a source OUTSIDE of Holtec!!
Do not click any links or open any attachments unless you trust the sender and know the contents to be safe.
Clicking links or opening attachments could lead to infecting your computer or Holtec's servers with malicious viruses.

We are missing one container of the SVOC/Pesticides/PCBs 1L Amber. We should have enough to proceed with analysis.

From: Laura Hageman <l.hageman@holtec.com>
Sent: Thursday, March 2, 2023 10:19 AM
To: Max Gloth <Max.Gloth@gel.com>
Cc: Team Trent <Team.Trent@gel.com>
Subject: RE: Missing container 612643

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Can you tell me which is missing? See below for list of bottles that should have been included:

SVOC/Pesticides/PCBs= 6x 1L Amber
2,3,7,8 TCCD= 3x 1L Amber
Metals= 250ml poly with Nitric
Cyanide= 250ml poly with Sodium Hydroxide
TOC= 150 ml Amber with Sulfuric
Anions- 250ml poly

Boron= 250ml poly with Nitric
COD-125ml poly with sulfuric
TSS= 1L ml Poly
Ammonia= 125 ml poly with sulfuric
Phenols= 250 ml amber with sulfuric
Oil and grease= 1Lml Amber with Hydrochloric Acid

Thank you,

Laura Hageman

Chemistry Superintendent/ BHI Site Manager
Pilgrim Nuclear Power Station
(508) 830-8184 (w)
(508) 254-5594 (c)

From: Max Gloth <Max.Gloth@gel.com>
Sent: Thursday, March 2, 2023 10:06 AM
To: Laura Hageman <l.hageman@holtec.com>
Cc: Team Trent <Team.Trent@gel.com>
Subject: Missing container 612643

CAUTION: This email came from a source OUTSIDE of Holtec!!
Do not click any links or open any attachments unless you trust the sender and know the contents to be safe.
Clicking links or opening attachments could lead to infecting your computer or Holtec's servers with malicious viruses.

Notifying you that we only received 18 containers, while the chain of custody states that there should be 19. Please advise. See attachment for reference, thank you.

Max Gloth
Project Manager Assistant



2040 Savage Road, Charleston, SC 29407 | PO Box 30712, Charleston, SC 29417
Office Main: 843.556.8171 | Fax: 843.766.1178
E-Mail: max.gloth@gel.com | Website: www.gel.com

Analytical Testing



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List of current GEL Certifications as of 15 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

March 13, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 612474

Dear Laura Hageman:

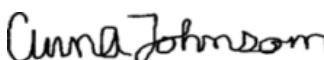
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 28, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Chain of Custody form did not contain a relinquished signature. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,



Anna Johnson for
Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 612474 GEL Work Order: 612474

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Torus-Avantech Influent
Sample ID: 612474001
Matrix: Water
Collect Date: 27-FEB-23 09:05
Receive Date: 28-FEB-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Micro-biology												
<i>SM 5210B BOD, 5DAY "As Received"</i>												
BOD, 5 DAY	dU	ND	1.00	2.00	mg/L			JW2	03/01/23	0856	2391536	1
Spectrometric Analysis												
<i>SM4500CL_G Total Residual Chlorine "As Received"</i>												
Chlorine, Residual	HU	ND	0.0170	0.0500	mg/L			1 HH2	03/02/23	1010	23922762	
Titration and Ion Analysis												
<i>EPA 150.1 pH "As Received"</i>												
pH at Temp 15.9C	H	7.43	0.0100	0.100	SU			1 JW2	03/01/23	1555	2392032	3
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
1,1,1-Trichloroethane 71-55-6	U	ND	0.333	1.00	ug/L			1 PXY1	03/01/23	1158	2391575	4
1,1,2,2-Tetrachloroethane 79-34-5	U	ND	0.333	1.00	ug/L			1				
1,1,2-Trichloroethane 79-00-5	U	ND	0.333	1.00	ug/L			1				
1,1-Dichloroethane 75-34-3	U	ND	0.333	1.00	ug/L			1				
1,1-Dichloroethylene 75-35-4	U	ND	0.333	1.00	ug/L			1				
1,2-Dichloroethane 107-06-2	U	ND	0.333	1.00	ug/L			1				
1,2-Dichloropropane 78-87-5	U	ND	0.333	1.00	ug/L			1				
1,3-Dichloropropylene 542-75-6	U	ND	0.500	2.00	ug/L			1				
2-Chloroethylvinyl ether 110-75-8	U	ND	1.67	5.00	ug/L			1				
Acrolein 107-02-8	U	ND	1.67	5.00	ug/L			1				
Acrylonitrile 107-13-1	U	ND	1.67	5.00	ug/L			1				

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Torus-Avantech Influent
Sample ID: 612474001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
Benzene	U	ND	0.333	1.00	ug/L		1					
71-43-2												
Bromodichloromethane	U	ND	0.333	1.00	ug/L		1					
75-27-4												
Bromoform	U	ND	0.333	1.00	ug/L		1					
75-25-2												
Bromomethane	U	ND	0.337	1.00	ug/L		1					
74-83-9												
Carbon tetrachloride	U	ND	0.333	1.00	ug/L		1					
56-23-5												
Chlorobenzene	U	ND	0.333	1.00	ug/L		1					
108-90-7												
Chloroethane	U	ND	0.333	1.00	ug/L		1					
75-00-3												
Chloroform	U	ND	0.333	1.00	ug/L		1					
67-66-3												
Chloromethane	U	ND	0.333	1.00	ug/L		1					
74-87-3												
Dibromochloromethane	U	ND	0.333	1.00	ug/L		1					
124-48-1												
Ethylbenzene	U	ND	0.333	1.00	ug/L		1					
100-41-4												
Methylene chloride	BJ	1.88	0.500	2.00	ug/L		1					
75-09-2												
Tetrachloroethylene		3.44	0.333	1.00	ug/L		1					
127-18-4												
Toluene	U	ND	0.333	1.00	ug/L		1					
108-88-3												
Trichloroethylene	U	ND	0.333	1.00	ug/L		1					
79-01-6												
Vinyl chloride	U	ND	0.333	1.00	ug/L		1					
75-01-4												
trans-1,2-Dichloroethylene	U	ND	0.333	1.00	ug/L		1					
156-60-5												

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	SM 5210B		
2	SM 4500-Cl G		

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Torus-Avantech Influent
Sample ID: 612474001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst	Date	Time	Batch Mtd.
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3	EPA 150.1									
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4	EPA 624.1									
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Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	EPA 624.1 Volatiles Method List "As Received"	51.9 ug/L	50.0	104	(72%-125%)
1,2-Dichloroethane-d4	EPA 624.1 Volatiles Method List "As Received"	53.5 ug/L	50.0	107	(73%-129%)
Toluene-d8	EPA 624.1 Volatiles Method List "As Received"	49.9 ug/L	50.0	100	(75%-123%)

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QC Summary

Report Date: March 8, 2023

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HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Laura Hageman

Contact:
Workorder: 612474

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Micro-biology											
Batch	2391536										
QC1205333886	612553001	DUP									
BOD, 5 DAY		12.2		12.8	mg/L	4.78	^	(+/-6.00)	JW2	03/01/23	13:10
QC1205333669	LCS										
BOD, 5 DAY	198			206	mg/L			(85%-115%)		03/01/23	08:56
QC1205333668	MB										
BOD, 5 DAY				0.0400	mg/L					03/01/23	08:56
QC1205333670	SEED										
BOD, 5 DAY				0.639	mg/L					03/01/23	08:56
Spectrometric Analysis											
Batch	2392276										
QC1205334708	612474001	DUP									
Chlorine, Residual	HU	ND	HU	ND	mg/L	N/A			HH2	03/02/23	10:11
QC1205334707	LCS										
Chlorine, Residual	0.500			0.529	mg/L			(74%-112%)		03/02/23	10:09
QC1205334706	MB										
Chlorine, Residual			U	ND	mg/L					03/02/23	10:08
QC1205334709	612474001	PS									
Chlorine, Residual	0.500	HU	ND	H	0.526	mg/L		104	(67%-128%)	03/02/23	10:12
Titration and Ion Analysis											
Batch	2392032										
QC1205334358	612158001	DUP									
pH	H	8.10	H	8.10	SU	0		(0%-5%)	JW2	03/01/23	15:37

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QC Summary

Workorder: 612474

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Titration and Ion Analysis											
Batch	2392032										
QC1205334357	LCS										
pH	7.00			7.00	SU		100	(99%-101%)	JW2	03/01/23	15:36
Volatile-GC/MS											
Batch	2391575										
QC1205333728	LCS										
1,1,1-Trichloroethane	50.0			56.1	ug/L		112	(75%-136%)	PXY1	03/01/23	09:02
1,1,2,2-Tetrachloroethane	50.0			50.3	ug/L		101	(68%-126%)			
1,1,2-Trichloroethane	50.0			50.2	ug/L		100	(73%-120%)			
1,1-Dichloroethane	50.0			53.3	ug/L		107	(76%-123%)			
1,1-Dichloroethylene	50.0			53.7	ug/L		107	(67%-133%)			
1,2-Dichloroethane	50.0			47.8	ug/L		96	(68%-124%)			
1,2-Dichloropropane	50.0			49.3	ug/L		99	(74%-121%)			
1,3-Dichloropropylene	100			105	ug/L		105	(75%-129%)			
2-Chloroethylvinyl ether	250			266	ug/L		106	(62%-126%)			
Benzene	50.0			51.2	ug/L		102	(74%-118%)			
Bromodichloromethane	50.0			55.0	ug/L		110	(73%-133%)			
Bromoform	50.0			52.4	ug/L		105	(69%-130%)			
Bromomethane	50.0			54.6	ug/L		109	(68%-140%)			

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QC Summary

Workorder: 612474

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2391575										
Carbon tetrachloride	50.0			55.5	ug/L		111	(73%-140%)	PXY1	03/01/23	09:02
Chlorobenzene	50.0			47.7	ug/L		95	(76%-120%)			
Chloroethane	50.0			57.8	ug/L		116	(70%-131%)			
Chloroform	50.0			54.1	ug/L		108	(77%-126%)			
Chloromethane	50.0			44.5	ug/L		89	(60%-139%)			
Dibromochloromethane	50.0			54.8	ug/L		110	(75%-133%)			
Ethylbenzene	50.0			43.4	ug/L		87	(75%-121%)			
Methylene chloride	50.0		B	51.1	ug/L		102	(69%-120%)			
Tetrachloroethylene	50.0			47.6	ug/L		95	(74%-124%)			
Toluene	50.0			47.5	ug/L		95	(74%-118%)			
Trichloroethylene	50.0			52.5	ug/L		105	(76%-124%)			
Vinyl chloride	50.0			48.8	ug/L		98	(67%-134%)			
trans-1,2-Dichloroethylene	50.0			49.8	ug/L		100	(71%-127%)			
**1,2-Dichloroethane-d4	50.0			51.8	ug/L		104	(73%-129%)			
**Bromofluorobenzene	50.0			50.3	ug/L		101	(72%-125%)			

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QC Summary

Workorder: 612474

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2391575										
**Toluene-d8	50.0			50.0	ug/L		100	(75%-123%)	PXY1	03/01/23	09:02
QC1205333729 LCS Acrolein	250			280	ug/L		112	(63%-141%)		03/01/23	10:00
Acrylonitrile	250			251	ug/L		100	(67%-128%)			
**1,2-Dichloroethane-d4	50.0			51.5	ug/L		103	(73%-129%)			
**Bromofluorobenzene	50.0			49.3	ug/L		99	(72%-125%)			
**Toluene-d8	50.0			50.9	ug/L		102	(75%-123%)			
QC1205333730 MB 1,1,1-Trichloroethane			U	ND	ug/L					03/01/23	11:29
1,1,2,2-Tetrachloroethane			U	ND	ug/L						
1,1,2-Trichloroethane			U	ND	ug/L						
1,1-Dichloroethane			U	ND	ug/L						
1,1-Dichloroethylene			U	ND	ug/L						
1,2-Dichloroethane			U	ND	ug/L						
1,2-Dichloropropane			U	ND	ug/L						
1,3-Dichloropropylene			U	ND	ug/L						

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QC Summary

Workorder: 612474

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2391575										
2-Chloroethylvinyl ether			U	ND	ug/L				PXY1	03/01/23	11:29
Acrolein			U	ND	ug/L						
Acrylonitrile			U	ND	ug/L						
Benzene			U	ND	ug/L						
Bromodichloromethane			U	ND	ug/L						
Bromoform			U	ND	ug/L						
Bromomethane			U	ND	ug/L						
Carbon tetrachloride			U	ND	ug/L						
Chlorobenzene			U	ND	ug/L						
Chloroethane			U	ND	ug/L						
Chloroform			U	ND	ug/L						
Chloromethane			U	ND	ug/L						
Dibromochloromethane			U	ND	ug/L						
Ethylbenzene			U	ND	ug/L						
Methylene chloride			J	0.580	ug/L						

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QC Summary

Workorder: 612474

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2391575										
Tetrachloroethylene			U	ND	ug/L				PXY1	03/01/23	11:29
Toluene			U	ND	ug/L						
Trichloroethylene			U	ND	ug/L						
Vinyl chloride			U	ND	ug/L						
trans-1,2-Dichloroethylene			U	ND	ug/L						
**1,2-Dichloroethane-d4	50.0			53.1	ug/L		106	(73%-129%)			
**Bromofluorobenzene	50.0			51.5	ug/L		103	(72%-125%)			
**Toluene-d8	50.0			50.9	ug/L		102	(75%-123%)			
QC1205333731 611923001 PS											
1,1,1-Trichloroethane	50.0	U	ND	49.4	ug/L		99	(67%-135%)		03/01/23	14:57
1,1,2,2-Tetrachloroethane	50.0	U	ND	50.5	ug/L		101	(58%-138%)			
1,1,2-Trichloroethane	50.0	U	ND	48.9	ug/L		98	(70%-126%)			
1,1-Dichloroethane	50.0	U	ND	48.5	ug/L		97	(70%-126%)			
1,1-Dichloroethylene	50.0	U	ND	50.4	ug/L		101	(61%-137%)			
1,2-Dichloroethane	50.0	U	ND	44.1	ug/L		88	(64%-129%)			
1,2-Dichloropropane	50.0	U	ND	46.0	ug/L		92	(68%-127%)			

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QC Summary

Workorder: 612474

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Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS												
Batch	2391575											
1,3-Dichloropropylene	100				99.4	ug/L		99	(74%-123%)	PXY1	03/01/23	14:57
2-Chloroethylvinyl ether	250	U	ND	U	ND	ug/L		0 *	(64%-123%)			
Benzene	50.0	U	ND		46.1	ug/L		92	(65%-122%)			
Bromodichloromethane	50.0	U	ND		51.2	ug/L		102	(68%-137%)			
Bromoform	50.0	U	ND		50.8	ug/L		102	(62%-138%)			
Bromomethane	50.0	U	ND		58.3	ug/L		117	(61%-142%)			
Carbon tetrachloride	50.0	U	ND		49.9	ug/L		100	(63%-144%)			
Chlorobenzene	50.0	U	ND		44.8	ug/L		90	(63%-123%)			
Chloroethane	50.0	U	ND		51.9	ug/L		104	(64%-134%)			
Chloroform	50.0	U	ND		49.4	ug/L		99	(69%-133%)			
Chloromethane	50.0	U	ND		35.2	ug/L		70	(45%-142%)			
Dibromochloromethane	50.0	U	ND		51.6	ug/L		103	(68%-142%)			
Ethylbenzene	50.0	U	ND		42.1	ug/L		84	(65%-124%)			
Methylene chloride	50.0	BJ	1.93	B	47.2	ug/L		91	(62%-125%)			
Tetrachloroethylene	50.0	U	ND		45.6	ug/L		91	(64%-129%)			

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612474

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2391575										
Toluene	50.0	U	ND	45.2	ug/L		90	(63%-121%)	PXY1	03/01/23	14:57
Trichloroethylene	50.0	U	ND	48.5	ug/L		97	(66%-126%)			
Vinyl chloride	50.0	U	ND	26.7	ug/L		53 *	(58%-139%)			
trans-1,2-Dichloroethylene	50.0	U	ND	45.7	ug/L		91	(65%-130%)			
**1,2-Dichloroethane-d4	50.0		51.8	51.5	ug/L		103	(73%-129%)			
**Bromofluorobenzene	50.0		51.6	51.8	ug/L		104	(72%-125%)			
**Toluene-d8	50.0		50.8	51.0	ug/L		102	(75%-123%)			
QC1205333733 611923001 PS											
Acrolein	250	U	ND	266	ug/L		106	(51%-142%)		03/01/23	15:56
Acrylonitrile	250	U	ND	245	ug/L		98	(60%-135%)			
**1,2-Dichloroethane-d4	50.0		51.8	51.1	ug/L		102	(73%-129%)			
**Bromofluorobenzene	50.0		51.6	50.1	ug/L		100	(72%-125%)			
**Toluene-d8	50.0		50.8	50.8	ug/L		102	(75%-123%)			
QC1205333732 611923001 PSD											
1,1,1-Trichloroethane	50.0	U	ND	50.5	ug/L	2	101	(0%-20%)		03/01/23	15:26
1,1,2,2-Tetrachloroethane	50.0	U	ND	50.7	ug/L	0	101	(0%-20%)			
1,1,2-Trichloroethane	50.0	U	ND	48.0	ug/L	2	96	(0%-20%)			

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612474

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Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS												
Batch	2391575											
1,1-Dichloroethane	50.0	U	ND		47.7	ug/L	2	95	(0%-20%)	PXY1	03/01/23	15:26
1,1-Dichloroethylene	50.0	U	ND		50.2	ug/L	0	100	(0%-20%)			
1,2-Dichloroethane	50.0	U	ND		44.1	ug/L	0	88	(0%-20%)			
1,2-Dichloropropane	50.0	U	ND		46.0	ug/L	0	92	(0%-20%)			
1,3-Dichloropropylene	100				98.7	ug/L	1	99	(0%-20%)			
2-Chloroethylvinyl ether	250	U	ND	U	ND	ug/L	N/A	0*	(0%-20%)			
Benzene	50.0	U	ND		46.3	ug/L	1	93	(0%-20%)			
Bromodichloromethane	50.0	U	ND		52.1	ug/L	2	104	(0%-20%)			
Bromoform	50.0	U	ND		53.4	ug/L	5	107	(0%-20%)			
Bromomethane	50.0	U	ND		55.7	ug/L	5	111	(0%-20%)			
Carbon tetrachloride	50.0	U	ND		50.9	ug/L	2	102	(0%-20%)			
Chlorobenzene	50.0	U	ND		44.7	ug/L	0	89	(0%-20%)			
Chloroethane	50.0	U	ND		52.2	ug/L	1	104	(0%-20%)			
Chloroform	50.0	U	ND		49.9	ug/L	1	100	(0%-20%)			
Chloromethane	50.0	U	ND		37.1	ug/L	5	74	(0%-20%)			

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612474

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Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS												
Batch	2391575											
Dibromochloromethane	50.0	U	ND		52.4	ug/L	2	105	(0%-20%)	PXY1	03/01/23	15:26
Ethylbenzene	50.0	U	ND		40.8	ug/L	3	82	(0%-20%)			
Methylene chloride	50.0	BJ	1.93	B	47.5	ug/L	0	91	(0%-20%)			
Tetrachloroethylene	50.0	U	ND		44.9	ug/L	2	90	(0%-20%)			
Toluene	50.0	U	ND		44.8	ug/L	1	90	(0%-20%)			
Trichloroethylene	50.0	U	ND		49.5	ug/L	2	99	(0%-20%)			
Vinyl chloride	50.0	U	ND		45.8	ug/L	53*	92	(0%-20%)			
trans-1,2-Dichloroethylene	50.0	U	ND		44.1	ug/L	4	88	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		51.8		51.3	ug/L		103	(73%-129%)			
**Bromofluorobenzene	50.0		51.6		51.6	ug/L		103	(72%-125%)			
**Toluene-d8	50.0		50.8		49.8	ug/L		100	(75%-123%)			
QC1205333734 611923001 PSD												
Acrolein	250	U	ND		270	ug/L	2	108	(0%-20%)		03/01/23	16:26
Acrylonitrile	250	U	ND		255	ug/L	4	102	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		51.8		50.6	ug/L		101	(73%-129%)			
**Bromofluorobenzene	50.0		51.6		50.0	ug/L		100	(72%-125%)			

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612474

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2391575										
**Toluene-d8	50.0	50.8		51.9	ug/L		104	(75%-123%)	PXY1	03/01/23	16:26

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.
- C Analyte has been confirmed by GC/MS analysis
- B The target analyte was detected in the associated blank.
- E Concentration of the target analyte exceeds the instrument calibration range
- A The TIC is a suspected aldol-condensation product
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- H Analytical holding time was exceeded
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- h Preparation or preservation holding time was exceeded
- R Sample results are rejected
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- D Results are reported from a diluted aliquot of the sample
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- JNX Non Calibrated Compound
- UJ Compound cannot be extracted
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- N1 See case narrative
- Y QC Samples were not spiked with this compound

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QC Summary

Workorder: 612474

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
R	Per section 9.3.4.1 of	Method 1664 Revision B,	due to matrix spike recovery issues,	this result may not be reported or used for regulatory compliance purposes.							
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).	Quantitation is based on nearest internal standard response factor									
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
J	See case narrative for an explanation										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 612474

GC/MS Volatile

Product: Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer

Analytical Method: EPA 624.1

Analytical Procedure: GL-OA-E-026 REV# 29

Analytical Batch: 2391575

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612474001	Torus-Avantech Influent
1205333728	Laboratory Control Sample (LCS)
1205333729	Laboratory Control Sample (LCS)
1205333730	Method Blank (MB)
1205333731	611923001(NonSDG) Post Spike (PS)
1205333732	611923001(NonSDG) Post Spike Duplicate (PSD)
1205333733	611923001(NonSDG) Post Spike (PS)
1205333734	611923001(NonSDG) Post Spike Duplicate (PSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Blank (MB) Statement

Target analytes were detected in the blank 1205333730 (MB) below the reporting limit. The data are qualified and reported.

Matrix Spike/Matrix Spike Duplicate Recovery Statement

Preservation by acidification causes 2-Chloroethylvinyl ether to degrade resulting in poor recoveries in samples (See Below).

Sample	Analyte	Value
1205333731 (Non SDG 611923001PS)	2-Chloroethylvinyl ether	0* (64%-123%)
1205333732 (Non SDG 611923001PSD)	2-Chloroethylvinyl ether	0* (64%-123%)

The spike and/or spike duplicate (See Below) recoveries were not all within the acceptance limits. The associated spike and/or spike duplicate passed recoveries near the lower/upper end of the limits.

Sample	Analyte	Value
1205333731 (Non SDG 611923001PS)	Vinyl chloride	53* (58%-139%)

Relative Percent Difference (RPD) Statement

The RPD between the matrix spike pair (See Below) were not all within the acceptance limits. The unacceptable RPD may be attributed to matrix interference and/or sample non-homogeneity.

Sample	Analyte	Value
1205333731PS and 1205333732PSD (Non SDG 611923001)	Vinyl chloride	RPD 53* (0%-20%)

General Chemistry

Product: Biochemical Oxygen Demand

Analytical Method: SM 5210B

Analytical Procedure: GL-GC-E-045 REV# 28

Analytical Batch: 2391536

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612474001	Torus-Avantech Influent
1205333668	Method Blank (MB)
1205333669	Laboratory Control Sample (LCS)
1205333670	BOD Seed (SEED)
1205333886	612553001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information**2:1 Depletion Requirement**

The following samples in this batch did not meet the 2:1 depletion requirement. 612474001 (Torus-Avantech Influent).

Product: Total Residual Chlorine

Analytical Method: SM 4500-Cl G

Analytical Procedure: GL-GC-E-076 REV# 17

Analytical Batch: 2392276

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612474001	Torus-Avantech Influent
1205334706	Method Blank (MB)
1205334707	Laboratory Control Sample (LCS)

1205334708 612474001(Torus-Avantech Influent) Sample Duplicate (DUP)
1205334709 612474001(Torus-Avantech Influent) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1205334708 (Torus-Avantech InfluentDUP)		Received 28-FEB-23, out of holding 27-FEB-23
1205334709 (Torus-Avantech InfluentPS)		Received 28-FEB-23, out of holding 27-FEB-23
612474001 (Torus-Avantech Influent)		Received 28-FEB-23, out of holding 27-FEB-23

Product: pH

Analytical Method: EPA 150.1

Analytical Procedure: GL-GC-E-008 REV# 26

Analytical Batch: 2392032

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612474001	Torus-Avantech Influent
1205334357	Laboratory Control Sample (LCS)
1205334358	612158001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
--------	---------	-------

1205334358 (Non SDG 612158001DUP)		Received 24-FEB-23, out of holding 21-FEB-23
612474001 (Torus-Avantech Influent)		Received 28-FEB-23, out of holding 27-FEB-23

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDEC</u>		SDG/AR/COC/Work Order: <u>612474</u>	
Received By: <u>AA</u>		Date Received: <u>2/28/23</u>	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other	
		<u>7714 1319 0508</u>	
Suspected Hazard Information		Yes	No
A) Shipped as a DOT Hazardous?		☒	☐
B) Did the client designate the samples are to be received as radioactive?		☒	☐
C) Did the RSO classify the samples as radioactive?		☒	☐
D) Did the client designate samples are hazardous?		☒	☐
E) Did the RSO identify possible hazards?		☒	☐
		*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. Hazard Class Shipped: _____ UN#: <u>2910</u> If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☒ No ☐	
		COC notation or radioactive stickers on containers equal client designation.	
		Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>500</u> CPM/mR/Hr Classified as: Rad <u>2</u> Rad 3	
		COC notation or hazard labels on containers equal client designation.	
		If D or E is yes, select Hazards below: PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:	
Sample Receipt Criteria		Yes	No
1	Shipping containers received intact and sealed?	☒	☐
2	Chain of custody documents included with shipment?	☒	☐
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?	☒	☐
4	Daily check performed and passed on IR temperature gun?	☒	☐
5	Sample containers intact and sealed?	☒	☐
6	Samples requiring chemical preservation at proper pH?	☒	☐
7	Do any samples require Volatile Analysis?	☒	☐
8	Samples received within holding time?	☒	☐
9	Sample ID's on COC match ID's on bottles?	☒	☐
10	Date & time on COC match date & time on bottles?	☒	☐
11	Number of containers received match number indicated on COC?	☒	☐
12	Are sample containers identifiable as GEL provided by use of GEL labels?	☒	☐
13	COC form is properly signed in relinquished/received sections?	☒	☐
Comments (Use Continuation Form if needed):			
Circle Applicable: Seals broken Damaged container Leaking container Other (describe) Circle Applicable: Client contacted and provided COC COC created upon receipt Preservation Method: ☒ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None ☐ Other: _____ *all temperatures are recorded in Celsius TEMP: <u>6°</u> Temperature Device Serial #: <u>1872-223</u> Secondary Temperature Device Serial # (If Applicable): _____ Circle Applicable: Seals broken Damaged container Leaking container Other (describe) Sample ID's and Containers Affected: If Preservation added, Lot#: _____ If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☒ NA ☐ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ☐ No ☒ NA ☐ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ☐ No ☒ NA ☐ Sample ID's and containers affected: ID's and tests affected: ID's and containers affected: Circle Applicable: No dates on containers No times on containers COC missing info Other (describe) Circle Applicable: No container count on COC Other (describe) Circle Applicable: Not relinquished Other (describe)			

PM (or PMA) review: Initials

ML

Date

3/1/23

Page

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of

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GL-CHL-SR-001 Rev 7

List of current GEL Certifications as of 08 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

FORM 3510-2C - ATTACHMENT 3.1C

3.1C-2 – Treated Water Tank and Intake Laboratory Reports



March 06, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 611599

Dear Laura Hageman:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 21, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. The following additional comments were noted at receipt: (insert text box).. Sample was preserved upon arrival. Client was notified via email..

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,

Anna Johnson for
Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 611599 GEL Work Order: 611599

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 6, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Intake
Sample ID: 611599001
Matrix: Water
Collect Date: 20-FEB-23 08:00
Receive Date: 21-FEB-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Micro-biology												
<i>SM 5210B BOD, 5DAY "As Received"</i>												
BOD, 5 DAY	dU	ND	10.0	20.0	mg/L			JW2	02/22/23	0756	23877191	
Spectrometric Analysis												
<i>SM4500CL_G Total Residual Chlorine "As Received"</i>												
Chlorine, Residual	HU	ND	0.0170	0.0500	mg/L			1 HH2	02/21/23	1640	23875852	
Titration and Ion Analysis												
<i>EPA 150.1 pH "As Received"</i>												
pH at Temp 17.1C	H	8.07	0.0100	0.100	SU			1 JW2	02/22/23	1658	23881923	
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
1,1,1-Trichloroethane 71-55-6	U	ND	0.333	1.00	ug/L			1 JM6	02/22/23	1539	23878184	
1,1,2,2-Tetrachloroethane 79-34-5	U	ND	0.333	1.00	ug/L			1				
1,1,2-Trichloroethane 79-00-5	U	ND	0.333	1.00	ug/L			1				
1,1-Dichloroethane 75-34-3	U	ND	0.333	1.00	ug/L			1				
1,1-Dichloroethylene 75-35-4	U	ND	0.333	1.00	ug/L			1				
1,2-Dichloroethane 107-06-2	U	ND	0.333	1.00	ug/L			1				
1,2-Dichloropropane 78-87-5	U	ND	0.333	1.00	ug/L			1				
1,3-Dichloropropylene 542-75-6	U	ND	0.500	2.00	ug/L			1				
2-Chloroethylvinyl ether 110-75-8	U	ND	1.67	5.00	ug/L			1				
Acrolein 107-02-8	U	ND	1.67	5.00	ug/L			1				
Acrylonitrile 107-13-1	U	ND	1.67	5.00	ug/L			1				

GEL LABORATORIES LLC

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 6, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Intake
Sample ID: 611599001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
Benzene	U	ND	0.333	1.00	ug/L		1					
71-43-2												
Bromodichloromethane	U	ND	0.333	1.00	ug/L		1					
75-27-4												
Bromoform	U	ND	0.333	1.00	ug/L		1					
75-25-2												
Bromomethane	U	ND	0.337	1.00	ug/L		1					
74-83-9												
Carbon tetrachloride	U	ND	0.333	1.00	ug/L		1					
56-23-5												
Chlorobenzene	U	ND	0.333	1.00	ug/L		1					
108-90-7												
Chloroethane	U	ND	0.333	1.00	ug/L		1					
75-00-3												
Chloroform	U	ND	0.333	1.00	ug/L		1					
67-66-3												
Chloromethane	U	ND	0.333	1.00	ug/L		1					
74-87-3												
Dibromochloromethane	U	ND	0.333	1.00	ug/L		1					
124-48-1												
Ethylbenzene	U	ND	0.333	1.00	ug/L		1					
100-41-4												
Methylene chloride	J	0.880	0.500	2.00	ug/L		1					
75-09-2												
Tetrachloroethylene	U	ND	0.333	1.00	ug/L		1					
127-18-4												
Toluene	U	ND	0.333	1.00	ug/L		1					
108-88-3												
Trichloroethylene	U	ND	0.333	1.00	ug/L		1					
79-01-6												
Vinyl chloride	U	ND	0.333	1.00	ug/L		1					
75-01-4												
trans-1,2-Dichloroethylene	U	ND	0.333	1.00	ug/L		1					
156-60-5												

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	SM 5210B		
2	SM 4500-Cl G		

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 6, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Intake
Sample ID: 611599001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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3	EPA 150.1											
---	-----------	--	--	--	--	--	--	--	--	--	--	--

4	EPA 624.1											
---	-----------	--	--	--	--	--	--	--	--	--	--	--

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	EPA 624.1 Volatiles Method List "As Received"	48.3 ug/L	50.0	97	(72%-125%)
1,2-Dichloroethane-d4	EPA 624.1 Volatiles Method List "As Received"	61.9 ug/L	50.0	124	(73%-129%)
Toluene-d8	EPA 624.1 Volatiles Method List "As Received"	49.5 ug/L	50.0	99	(75%-123%)

GEL LABORATORIES LLC

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QC Summary

Report Date: March 6, 2023

Page 1 of 12

HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Laura Hageman

Contact:
Workorder: 611599

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Micro-biology											
Batch	2387719										
QC1205327579	611557002	DUP									
BOD, 5 DAY		3.58		3.80	mg/L	5.96	^	(+/-2.00)	JW2	02/22/23	07:56
QC1205327577	LCS										
BOD, 5 DAY	198			196	mg/L			(85%-115%)		02/22/23	07:56
QC1205327576	MB										
BOD, 5 DAY				0.160	mg/L					02/22/23	07:56
QC1205327578	SEED										
BOD, 5 DAY				0.709	mg/L					02/22/23	07:56
Spectrometric Analysis											
Batch	2387585										
QC1205327373	611599001	DUP									
Chlorine, Residual	HU	ND	HU	ND	mg/L	N/A			HH2	02/21/23	16:40
QC1205327372	LCS										
Chlorine, Residual	0.500			0.515	mg/L			103 (74%-112%)		02/21/23	16:39
QC1205327371	MB										
Chlorine, Residual			U	ND	mg/L					02/21/23	16:39
QC1205327374	611599001	PS									
Chlorine, Residual	0.500	HU	ND	H	0.509	mg/L		102 (67%-128%)		02/21/23	16:40
Titration and Ion Analysis											
Batch	2388192										
QC1205328295	610500001	DUP									
pH	H	8.27	H	8.27	SU	0		(0%-5%)	JW2	02/22/23	16:24

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Titration and Ion Analysis											
Batch	2388192										
QC1205328294	LCS										
pH	7.00			7.00	SU		100	(99%-101%)	JW2	02/22/23	16:22
Volatile-GC/MS											
Batch	2387818										
QC1205327729	LCS										
1,1,1-Trichloroethane	50.0			40.8	ug/L		82	(75%-136%)	JM6	02/22/23	08:31
1,1,2,2-Tetrachloroethane	50.0			46.1	ug/L		92	(68%-126%)			
1,1,2-Trichloroethane	50.0			44.5	ug/L		89	(73%-120%)			
1,1-Dichloroethane	50.0			41.1	ug/L		82	(76%-123%)			
1,1-Dichloroethylene	50.0			37.9	ug/L		76	(67%-133%)			
1,2-Dichloroethane	50.0			44.7	ug/L		89	(68%-124%)			
1,2-Dichloropropane	50.0			39.7	ug/L		79	(74%-121%)			
1,3-Dichloropropylene	100			89.3	ug/L		89	(75%-129%)			
2-Chloroethylvinyl ether	250			230	ug/L		92	(62%-126%)			
Benzene	50.0			40.6	ug/L		81	(74%-118%)			
Bromodichloromethane	50.0			46.6	ug/L		93	(73%-133%)			
Bromoform	50.0			52.9	ug/L		106	(69%-130%)			
Bromomethane	50.0			51.2	ug/L		102	(68%-140%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2387818										
Carbon tetrachloride	50.0			43.1	ug/L		86	(73%-140%)	JM6	02/22/23	08:31
Chlorobenzene	50.0			43.3	ug/L		87	(76%-120%)			
Chloroethane	50.0			60.4	ug/L		121	(70%-131%)			
Chloroform	50.0			42.5	ug/L		85	(77%-126%)			
Chloromethane	50.0			42.2	ug/L		84	(60%-139%)			
Dibromochloromethane	50.0			51.0	ug/L		102	(75%-133%)			
Ethylbenzene	50.0			40.5	ug/L		81	(75%-121%)			
Methylene chloride	50.0			36.9	ug/L		74	(69%-120%)			
Tetrachloroethylene	50.0			41.1	ug/L		82	(74%-124%)			
Toluene	50.0			41.8	ug/L		84	(74%-118%)			
Trichloroethylene	50.0			40.4	ug/L		81	(76%-124%)			
Vinyl chloride	50.0			45.2	ug/L		90	(67%-134%)			
trans-1,2-Dichloroethylene	50.0			38.7	ug/L		77	(71%-127%)			
**1,2-Dichloroethane-d4	50.0			54.6	ug/L		109	(73%-129%)			
**Bromofluorobenzene	50.0			47.0	ug/L		94	(72%-125%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2387818										
**Toluene-d8	50.0			53.0	ug/L		106	(75%-123%)	JM6	02/22/23	08:31
QC1205327730 LCS Acrolein	250			209	ug/L		84	(63%-141%)		02/22/23	09:26
Acrylonitrile	250			301	ug/L		120	(67%-128%)			
**1,2-Dichloroethane-d4	50.0			55.3	ug/L		111	(73%-129%)			
**Bromofluorobenzene	50.0			49.0	ug/L		98	(72%-125%)			
**Toluene-d8	50.0			51.1	ug/L		102	(75%-123%)			
QC1205327731 MB 1,1,1-Trichloroethane			U	ND	ug/L					02/22/23	10:49
1,1,2,2-Tetrachloroethane			U	ND	ug/L						
1,1,2-Trichloroethane			U	ND	ug/L						
1,1-Dichloroethane			U	ND	ug/L						
1,1-Dichloroethylene			U	ND	ug/L						
1,2-Dichloroethane			U	ND	ug/L						
1,2-Dichloropropane			U	ND	ug/L						
1,3-Dichloropropylene			U	ND	ug/L						

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2387818										
2-Chloroethylvinyl ether			U	ND	ug/L				JM6	02/22/23	10:49
Acrolein			U	ND	ug/L						
Acrylonitrile			U	ND	ug/L						
Benzene			U	ND	ug/L						
Bromodichloromethane			U	ND	ug/L						
Bromoform			U	ND	ug/L						
Bromomethane			U	ND	ug/L						
Carbon tetrachloride			U	ND	ug/L						
Chlorobenzene			U	ND	ug/L						
Chloroethane			U	ND	ug/L						
Chloroform			U	ND	ug/L						
Chloromethane			U	ND	ug/L						
Dibromochloromethane			U	ND	ug/L						
Ethylbenzene			U	ND	ug/L						
Methylene chloride			U	ND	ug/L						

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2387818										
Tetrachloroethylene			U	ND	ug/L				JM6	02/22/23	10:49
Toluene			U	ND	ug/L						
Trichloroethylene			U	ND	ug/L						
Vinyl chloride			U	ND	ug/L						
trans-1,2-Dichloroethylene			U	ND	ug/L						
**1,2-Dichloroethane-d4	50.0			56.8	ug/L		114	(73%-129%)			
**Bromofluorobenzene	50.0			49.1	ug/L		98	(72%-125%)			
**Toluene-d8	50.0			50.4	ug/L		101	(75%-123%)			
QC1205327732 610804001 PS											
1,1,1-Trichloroethane	50.0	U	ND	58.0	ug/L		116	(67%-135%)		02/22/23	17:34
1,1,2,2-Tetrachloroethane	50.0	U	ND	55.3	ug/L		111	(58%-138%)			
1,1,2-Trichloroethane	50.0	U	ND	53.4	ug/L		107	(70%-126%)			
1,1-Dichloroethane	50.0	U	ND	54.4	ug/L		109	(70%-126%)			
1,1-Dichloroethylene	50.0	U	ND	55.4	ug/L		111	(61%-137%)			
1,2-Dichloroethane	50.0	U	ND	60.7	ug/L		121	(64%-129%)			
1,2-Dichloropropane	50.0	U	ND	50.0	ug/L		100	(68%-127%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2387818										
1,3-Dichloropropylene	100			109	ug/L		109	(74%-123%)	JM6	02/22/23	17:34
2-Chloroethylvinyl ether	250	U	ND U	ND	ug/L		0 *	(64%-123%)			
Benzene	50.0	U	ND	53.2	ug/L		106	(65%-122%)			
Bromodichloromethane	50.0	U	ND	59.2	ug/L		118	(68%-137%)			
Bromoform	50.0	U	ND	63.4	ug/L		127	(62%-138%)			
Bromomethane	50.0	U	ND	56.0	ug/L		112	(61%-142%)			
Carbon tetrachloride	50.0	U	ND	61.3	ug/L		123	(63%-144%)			
Chlorobenzene	50.0	U	ND	53.6	ug/L		107	(63%-123%)			
Chloroethane	50.0	U	ND	60.2	ug/L		120	(64%-134%)			
Chloroform	50.0	U	ND	54.7	ug/L		109	(69%-133%)			
Chloromethane	50.0	U	ND	42.0	ug/L		84	(45%-142%)			
Dibromochloromethane	50.0	U	ND	61.8	ug/L		124	(68%-142%)			
Ethylbenzene	50.0	U	ND	50.8	ug/L		102	(65%-124%)			
Methylene chloride	50.0	J	0.800	49.8	ug/L		98	(62%-125%)			
Tetrachloroethylene	50.0	U	ND	51.3	ug/L		103	(64%-129%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2387818										
Toluene	50.0	U	ND	50.6	ug/L		101	(63%-121%)	JM6	02/22/23	17:34
Trichloroethylene	50.0	U	ND	52.3	ug/L		105	(66%-126%)			
Vinyl chloride	50.0	U	ND	45.2	ug/L		90	(58%-139%)			
trans-1,2-Dichloroethylene	50.0	U	ND	54.0	ug/L		108	(65%-130%)			
**1,2-Dichloroethane-d4	50.0		56.6	55.2	ug/L		110	(73%-129%)			
**Bromofluorobenzene	50.0		47.9	48.1	ug/L		96	(72%-125%)			
**Toluene-d8	50.0		51.2	51.0	ug/L		102	(75%-123%)			
QC1205327733 610804001 PS											
Acrolein	250	U	ND	205	ug/L		82	(51%-142%)		02/22/23	18:29
Acrylonitrile	250	U	ND	282	ug/L		113	(60%-135%)			
**1,2-Dichloroethane-d4	50.0		56.6	56.1	ug/L		112	(73%-129%)			
**Bromofluorobenzene	50.0		47.9	49.9	ug/L		100	(72%-125%)			
**Toluene-d8	50.0		51.2	50.4	ug/L		101	(75%-123%)			
QC1205327734 610804001 PSD											
1,1,1-Trichloroethane	50.0	U	ND	59.7	ug/L	3	119	(0%-20%)		02/22/23	18:02
1,1,2,2-Tetrachloroethane	50.0	U	ND	54.1	ug/L	2	108	(0%-20%)			
1,1,2-Trichloroethane	50.0	U	ND	53.4	ug/L	0	107	(0%-20%)			

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Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS												
Batch	2387818											
1,1-Dichloroethane	50.0	U	ND		55.7	ug/L	2	111	(0%-20%)	JM6	02/22/23	18:02
1,1-Dichloroethylene	50.0	U	ND		58.3	ug/L	5	117	(0%-20%)			
1,2-Dichloroethane	50.0	U	ND		61.5	ug/L	1	123	(0%-20%)			
1,2-Dichloropropane	50.0	U	ND		50.1	ug/L	0	100	(0%-20%)			
1,3-Dichloropropylene	100				109	ug/L	1	109	(0%-20%)			
2-Chloroethylvinyl ether	250	U	ND	U	ND	ug/L	N/A	0*	(0%-20%)			
Benzene	50.0	U	ND		53.9	ug/L	1	108	(0%-20%)			
Bromodichloromethane	50.0	U	ND		61.4	ug/L	4	123	(0%-20%)			
Bromoform	50.0	U	ND		65.0	ug/L	2	130	(0%-20%)			
Bromomethane	50.0	U	ND		57.7	ug/L	3	115	(0%-20%)			
Carbon tetrachloride	50.0	U	ND		63.3	ug/L	3	127	(0%-20%)			
Chlorobenzene	50.0	U	ND		53.4	ug/L	0	107	(0%-20%)			
Chloroethane	50.0	U	ND		62.5	ug/L	4	125	(0%-20%)			
Chloroform	50.0	U	ND		56.3	ug/L	3	113	(0%-20%)			
Chloromethane	50.0	U	ND		42.1	ug/L	0	84	(0%-20%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2387818										
Dibromochloromethane	50.0	U	ND	61.8	ug/L	0	124	(0%-20%)	JM6	02/22/23	18:02
Ethylbenzene	50.0	U	ND	50.1	ug/L	1	100	(0%-20%)			
Methylene chloride	50.0	J	0.800	51.0	ug/L	2	100	(0%-20%)			
Tetrachloroethylene	50.0	U	ND	51.6	ug/L	0	103	(0%-20%)			
Toluene	50.0	U	ND	50.5	ug/L	0	101	(0%-20%)			
Trichloroethylene	50.0	U	ND	54.1	ug/L	3	108	(0%-20%)			
Vinyl chloride	50.0	U	ND	46.7	ug/L	3	93	(0%-20%)			
trans-1,2-Dichloroethylene	50.0	U	ND	54.6	ug/L	1	109	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		56.6	56.5	ug/L		113	(73%-129%)			
**Bromofluorobenzene	50.0		47.9	49.1	ug/L		98	(72%-125%)			
**Toluene-d8	50.0		51.2	50.4	ug/L		101	(75%-123%)			
QC1205327735 610804001 PSD											
Acrolein	250	U	ND	198	ug/L	3	79	(0%-20%)		02/22/23	18:57
Acrylonitrile	250	U	ND	293	ug/L	4	117	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		56.6	56.8	ug/L		114	(73%-129%)			
**Bromofluorobenzene	50.0		47.9	50.2	ug/L		100	(72%-125%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2387818										
**Toluene-d8	50.0	51.2		50.3	ug/L		101	(75%-123%)	JM6	02/22/23	18:57

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.
- C Analyte has been confirmed by GC/MS analysis
- B The target analyte was detected in the associated blank.
- E Concentration of the target analyte exceeds the instrument calibration range
- A The TIC is a suspected aldol-condensation product
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- H Analytical holding time was exceeded
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- h Preparation or preservation holding time was exceeded
- R Sample results are rejected
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- D Results are reported from a diluted aliquot of the sample
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- JNX Non Calibrated Compound
- UJ Compound cannot be extracted
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- N1 See case narrative
- Y QC Samples were not spiked with this compound

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
R	Per section 9.3.4.1 of	Method 1664	Revision B,	due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.							
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
J	See case narrative for an explanation										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 611599

GC/MS Volatile

Product: Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer

Analytical Method: EPA 624.1

Analytical Procedure: GL-OA-E-026 REV# 29

Analytical Batch: 2387818

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611599001	Intake
1205327729	Laboratory Control Sample (LCS)
1205327730	Laboratory Control Sample (LCS)
1205327731	Method Blank (MB)
1205327732	610804001(NonSDG) Post Spike (PS)
1205327733	610804001(NonSDG) Post Spike (PS)
1205327734	610804001(NonSDG) Post Spike Duplicate (PSD)
1205327735	610804001(NonSDG) Post Spike Duplicate (PSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike/Matrix Spike Duplicate Recovery Statement

Preservation by acidification causes 2-Chloroethylvinyl ether to degrade resulting in poor recoveries in samples (See Below).

Sample	Analyte	Value
1205327732 (Non SDG 610804001PS)	2-Chloroethylvinyl ether	0* (64%-123%)
1205327734 (Non SDG 610804001PSD)	2-Chloroethylvinyl ether	0* (64%-123%)

General Chemistry

Product: Biochemical Oxygen Demand

Analytical Method: SM 5210B

Analytical Procedure: GL-GC-E-045 REV# 28

Analytical Batch: 2387719

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611599001	Intake
1205327576	Method Blank (MB)
1205327577	Laboratory Control Sample (LCS)
1205327578	BOD Seed (SEED)
1205327579	611557002(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

2:1 Depletion Requirement

The following samples in this batch did not meet the 2:1 depletion requirement. 611599001 (Intake).

Product: Total Residual Chlorine

Analytical Method: SM 4500-Cl G

Analytical Procedure: GL-GC-E-076 REV# 17

Analytical Batch: 2387585

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611599001	Intake
1205327371	Method Blank (MB)
1205327372	Laboratory Control Sample (LCS)
1205327373	611599001(Intake) Sample Duplicate (DUP)
1205327374	611599001(Intake) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1205327373 (Intake DUP)		Received 21-FEB-23, out of holding 20-FEB-23
1205327374 (Intake PS)		Received 21-FEB-23, out of holding 20-FEB-23

611599001 (Intake)	Received 21-FEB-23, out of holding 20-FEB-23
---------------------	--

Product: pH

Analytical Method: EPA 150.1

Analytical Procedure: GL-GC-E-008 REV# 26

Analytical Batch: 2388192

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611599001	Intake
1205328294	Laboratory Control Sample (LCS)
1205328295	610500001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

<u>Sample</u>	<u>Analyte</u>	<u>Value</u>
1205328295 (Non SDG 610500001DUP)		Received 10-FEB-23, out of holding 09-FEB-23
611599001 (Intake)		Received 21-FEB-23, out of holding 20-FEB-23

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Client Name: Comprehensive Decommissioning International (CDI)

Phone # (508)830-8184

Fax #

Project/Site Name: Pilgrim Station

Address: 600 Rocky Hill Road, Plymouth, Ma 02360

Collected By: Site Chemistry

Send Results To: lhageman@CDI-decom.com

Sample ID

* For composites - indicate start and stop date/time

Intake

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Should this sample be considered:

Radioactive (If yes, please supply isotopic info)

7) Known or possible hazards

HCl

pH

BOD

VOC

VOC

Residual Chlorine

Total number of containers

7

Preservative Type (6)

<-- Preservative Type (6)

Comments

Note: extra sample is required for sample specific QC

Short hold time

Chain of Custody Signatures

Relinquished By (Signed) Date Time Received by (signed) Date Time

2

2/21/23 0900

2/21/23 740

3

TAT Requested: Normal: X Rush: Specify:

Fax Results: Yes No

Select Deliverable: C of A QC Summary level 1 Level 2 Level 3 Level 4

Additional Remarks:

For Lab Receiving Use Only: Custody Seal Intact? Yes No Cooler Temp: °C

Sample Collection Time Zone: Eastern Pacific Central Mountain Other:

For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)

1.) Chain of Custody Number = Client Determined

2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite

3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.

4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

7.) KNOWN OR POSSIBLE HAZARDS

RCRA Metals

As = Arsenic

Ba = Barium

Cd = Cadmium

Cr = Chromium

Pb = Lead

Hg = Mercury

Se = Selenium

Ag = Silver

MR = Misc. RCRA metals

TSCA Regulated

PCB = Polychlorinated biphenyls

Characteristic Hazards

FL = Flammable/Ignitable

CO = Corrosive

RE = Reactive

PL = Listed Waste

(F,K,P and U-listed wastes.)

Waste code(s):

Other

OT = Other / Unknown

(i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)

Description:

Please provide any additional details below regarding handling and/or disposal concerns. (i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)

SAMPLE RECEIPT & REVIEW FORM

ET

Client: CDEC			SDG/AR/COC/Work Order: 611599		
Received By: MVH			Date Received: 02.21.2023		
Carrier and Tracking Number			Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other		
			771349089267		
Suspected Hazard Information			*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.		
A) Shipped as a DOT Hazardous?			Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___		
B) Did the client designate the samples are to be received as radioactive?			COC notation or radioactive stickers on containers equal client designation.		
C) Did the RSO classify the samples as radioactive?			Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM/mR/Hr Classified as: Rad 1 Rad 2 Rad 3		
D) Did the client designate samples are hazardous?			COC notation or hazard labels on containers equal client designation.		
E) Did the RSO identify possible hazards?			If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____		
Sample Receipt Criteria			Comments/Qualifiers (Required for Non-Conforming Items)		
1	Shipping containers received intact and sealed?	☒	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)		
2	Chain of custody documents included with shipment?	☒	Circle Applicable: Client contacted and provided COC COC created upon receipt		
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	☒	Preservation Method: Wet Ice Ice Packs Dry ice None Other: _____ *all temperatures are recorded in Celsius TEMP: 1		
4	Daily check performed and passed on IR temperature gun?	☒	Temperature Device Serial #: IR2-21 Secondary Temperature Device Serial # (If Applicable): _____		
5	Sample containers intact and sealed?	☒	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)		
6	Samples requiring chemical preservation at proper pH?	☒	Sample ID's and Containers Affected: If Preservation added, Lot#: _____		
7	Do any samples require Volatile Analysis?	☒	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ☒ NA ___ (If yes, take to VOA Freezer)		
			Do liquid VOA vials contain acid preservation? Yes ☒ No ___ NA ___ (If unknown, select No)		
			Are liquid VOA vials free of headspace? Yes ___ No ☒ NA ___		
8	Samples received within holding time?	☒	Sample ID's and containers affected: Intake (x1) HA preserved		
9	Sample ID's on COC match ID's on bottles?	☒	ID's and tests affected: _____		
10	Date & time on COC match date & time on bottles?	☒	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)		
11	Number of containers received match number indicated on COC?	☒	Circle Applicable: No container count on COC Other (describe)		
12	Are sample containers identifiable as GEL provided by use of GEL labels?	☒	_____		
13	COC form is properly signed in relinquished/received sections?	☒	Circle Applicable: Not relinquished Other (describe)		
Comments (Use Continuation Form if needed):					

PM (or PMA) review: Initials **MVH** Date **2/21/23** Page **1** of **1**

List of current GEL Certifications as of 06 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



March 22, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 612189

Dear Laura Hageman:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 24, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,

Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 612189 GEL Work Order: 612189

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- h Preparation or preservation holding time was exceeded

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by

Erin B. Trent

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 22, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Treated Water Tank A
Sample ID: 612189001
Matrix: Water
Collect Date: 22-FEB-23 08:15
Receive Date: 24-FEB-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Carbon Analysis												
<i>SM 5310 B Total Organic/Inorganic Carbon "As Received"</i>												
Total Organic Carbon Average	U	ND	0.330	1.00	mg/L		1	TSM	03/08/23	1931	2394337	1
Flow Injection Analysis												
<i>EPA 335.4 Cyanide, Total "As Received"</i>												
Cyanide, Total 57-12-5	U	ND	1.67	5.00	ug/L	1.00	1	AXH3	02/28/23	0850	23901592	
Ion Chromatography												
<i>SW846 9056 Anions, Liquid "As Received"</i>												
Bromide 24959-67-9	U	ND	+/-0.0223	0.0670	0.200	mg/L	1	JLD1	03/02/23	0824	23921793	
Chloride 16887-00-6		6.69	+/-0.224	0.0670	0.200	mg/L	1					
Fluoride 16984-48-8	U	ND	+/-0.0110	0.0330	0.100	mg/L	1					
Sulfate 14808-79-8		2.32	+/-0.0891	0.133	0.400	mg/L	1					
Mercury Analysis-CVAA												
<i>EPA 245 Mercury "As Received"</i>												
Mercury 7439-97-6	U	ND	+/-0.0224	0.0670	0.200	ug/L	1.00	1	JP2	03/22/23	0943	24013914
Metals Analysis-ICP-MS												
<i>200.8/200.2 Priority Pollutant "As Received"</i>												
Antimony 7440-36-0	U	ND	+/-0.334	1.00	3.00	ug/L	1.00	1	BAJ	03/01/23	2247	23902285
Arsenic 7440-38-2	U	ND	+/-0.667	2.00	5.00	ug/L	1.00	1				
Beryllium 7440-41-7	U	ND	+/-0.0667	0.200	0.500	ug/L	1.00	1				
Boron 7440-42-8		36.7	+/-2.52	5.20	15.0	ug/L	1.00	1				
Cadmium 7440-43-9	U	ND	+/-0.100	0.300	1.00	ug/L	1.00	1				
Chromium 7440-47-3	U	ND	+/-1.00	3.00	10.0	ug/L	1.00	1				

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 22, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Treated Water Tank A
Sample ID: 612189001
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Copper	J	1.39	+/-0.122	0.300	2.00	ug/L	1.00	1				
7440-50-8												
Lead	J	0.660	+/-0.170	0.500	2.00	ug/L	1.00	1				
7439-92-1												
Nickel		2.02	+/-0.224	0.600	2.00	ug/L	1.00	1				
7440-02-0												
Selenium	U	ND	+/-0.501	1.50	5.00	ug/L	1.00	1				
7782-49-2												
Silver	U	ND	+/-0.100	0.300	1.00	ug/L	1.00	1				
7440-22-4												
Thallium	U	ND	+/-0.200	0.600	2.00	ug/L	1.00	1				
7440-28-0												
Zinc		36.1	+/-2.11	3.30	20.0	ug/L	1.00	1				
7440-66-6												

Nutrient Analysis

EPA 350.1 Nitrogen, Ammonia "As Received"

Nitrogen, Ammonia	U	ND	0.0170	0.0500	mg/L		1 KLP1	03/06/23	1655	23938206		
7664-41-7												

Oil & Grease Analysis

EPA 1664A/B n-Hexane Extractable Material (O&G) "As Received"

Oil and Grease	J	1.47	1.37	4.90	mg/L		DXB7	03/09/23	0544	23952847		
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Semi-Volatile-GC/MS

EPA 625.1 SVOA, Liquid "As Received"

2,4,6-Trichlorophenol	U	ND	2.87	9.56	ug/L	0.000956	1 LL2	02/27/23	2200	23886738		
88-06-2												
2,4-Dichlorophenol	U	ND	2.87	9.56	ug/L	0.000956	1					
120-83-2												
2,4-Dimethylphenol	U	ND	2.87	9.56	ug/L	0.000956	1					
105-67-9												
2,4-Dinitrophenol	U	ND	4.78	19.1	ug/L	0.000956	1					
51-28-5												
2-Chlorophenol	U	ND	2.87	9.56	ug/L	0.000956	1					
95-57-8												
2-Methyl-4,6-dinitrophenol	U	ND	2.87	9.56	ug/L	0.000956	1					
534-52-1												
2-Nitrophenol	U	ND	2.87	9.56	ug/L	0.000956	1					
88-75-5												

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 22, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Treated Water Tank A
Sample ID: 612189001
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Semi-Volatile-GC/MS

EPA 625.1 SVOA, Liquid "As Received"

4-Chloro-3-methylphenol	U	ND	2.87	9.56	ug/L	0.000956	1					
59-50-7												
4-Nitrophenol	U	ND	2.87	9.56	ug/L	0.000956	1					
100-02-7												
Pentachlorophenol	U	ND	2.87	9.56	ug/L	0.000956	1					
87-86-5												
Phenol	U	ND	2.87	9.56	ug/L	0.000956	1					
108-95-2												

Semi-Volatiles-PCB

EPA 608.3 PCB, Liquid (SPE) "As Received"

Aroclor-1016	U	ND	0.0317	0.0952	ug/L	0.000952	1	YS1	03/01/23	1844	23911469	
12674-11-2												
Aroclor-1221	U	ND	0.0317	0.0952	ug/L	0.000952	1					
11104-28-2												
Aroclor-1232	U	ND	0.0317	0.0952	ug/L	0.000952	1					
11141-16-5												
Aroclor-1242	U	ND	0.0317	0.0952	ug/L	0.000952	1					
53469-21-9												
Aroclor-1248	U	ND	0.0317	0.0952	ug/L	0.000952	1					
12672-29-6												
Aroclor-1254	U	ND	0.0317	0.0952	ug/L	0.000952	1					
11097-69-1												
Aroclor-1260	U	ND	0.0317	0.0952	ug/L	0.000952	1					
11096-82-5												
Aroclor-Total	U	ND	0.0317	0.0952	ug/L	0.000952	1					
PCBTOT												

Solids Analysis

SM 2540D Total Suspended Solids (TSS) "As Received"

Total Suspended Solids	J	1.00	0.570	2.50	mg/L		CH6	02/27/23	0947	2389994	10	
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Spectrometric Analysis

EPA 410.4 Chemical Oxygen Demand "As Received"

COD	J	18.1	8.95	20.0	mg/L		1 HH2	02/27/23	1444	2390321	11	
-----	---	------	------	------	------	--	-------	----------	------	---------	----	--

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 245.1/245.2 Prep	EPA 245 Mercury	RM4	03/21/23	1134	2401389

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 22, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Treated Water Tank A
Sample ID: 612189001
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch Mtd.
EPA 200.2	ICP-MS 200.2 PREP			EM2	02/27/23	1550	2390227				
EPA 625.1	BNA Liq. Prep-EPA 625 Analysis			TH1	03/02/23	1149	2391868				
EPA 625.1	BNA Liq. Prep-EPA 625 Analysis			TH1	02/27/23	1228	2388672				
EPA 608.3	EPA 608.3 PCB Prep Liquid (SPE)			JM12	03/01/23	0956	2391145				
EPA 335.4	EPA 335.4 Total Cyanide			ES2	02/27/23	1323	2390158				

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	SM 5310 B		
2	EPA 335.4		
3	SW846 9056		
4	EPA 245.1/245.2		
5	EPA 200.8		
6	EPA 350.1		
7	EPA 1664A/1664B		
8	EPA 625.1		
9	EPA 608.3		
10	SM 2540D		
11	EPA 410.4		

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Nitrobenzene-d5	EPA 625.1 SVOA, Liquid "As Received"	28.0 ug/L	47.8	58	(39%-112%)
2-Fluorobiphenyl	EPA 625.1 SVOA, Liquid "As Received"	26.2 ug/L	47.8	55	(39%-112%)
p-Terphenyl-d14	EPA 625.1 SVOA, Liquid "As Received"	23.5 ug/L	47.8	49	(24%-129%)
2,4,6-Tribromophenol	EPA 625.1 SVOA, Liquid "As Received"	54.6 ug/L	95.6	57	(37%-132%)
Phenol-d5	EPA 625.1 SVOA, Liquid "As Received"	20.6 ug/L	95.6	22	(15%-85%)
2-Fluorophenol	EPA 625.1 SVOA, Liquid "As Received"	27.2 ug/L	95.6	28	(11%-79%)
Decachlorobiphenyl	EPA 608.3 PCB, Liquid (SPE) "As Received"	0.144 ug/L	0.190	75	(38%-133%)
4cmx	EPA 608.3 PCB, Liquid (SPE) "As Received"	0.123 ug/L	0.190	65	(33%-109%)

GEL LABORATORIES LLC

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QC Summary

Report Date: March 22, 2023

Page 1 of 17

HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Contact: Laura Hageman

Workorder: 612189

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Carbon Analysis											
Batch	2394337										
QC1205338214	613027001	DUP									
Total Organic Carbon Average		1.79		1.80	mg/L	0.669	^	(+/-1.00)	TSM	03/08/23	22:41
QC1205338213	LCS										
Total Organic Carbon Average	10.0			10.2	mg/L			102 (80%-120%)		03/08/23	19:21
QC1205338212	MB										
Total Organic Carbon Average			U	ND	mg/L					03/08/23	19:10
QC1205338216	613027001	PS									
Total Organic Carbon Average	10.0	1.79		12.0	mg/L			102 (65%-120%)		03/08/23	23:02
Flow Injection Analysis											
Batch	2390159										
QC1205331266	612085004	DUP									
Cyanide, Total		U	ND	U	ND	ug/L	N/A		AXH3	02/28/23	08:38
QC1205331265	LCS										
Cyanide, Total	50.0			49.9	ug/L			99.8 (90%-110%)		02/28/23	08:32
QC1205331264	MB										
Cyanide, Total			U	ND	ug/L					02/28/23	08:31
QC1205331267	612085004	MS									
Cyanide, Total	100	U	ND	95.3	ug/L			95.3 (90%-110%)		02/28/23	08:39
QC1205331268	612085004	MSD									
Cyanide, Total	100	U	ND	98.6	ug/L	3.4	98.6	(0%-20%)		02/28/23	08:40

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612189

Page 2 of 17

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	2392179										
QC1205334532	612640004	DUP									
Bromide		0.247		0.242	mg/L	2.21	^	(+/-0.200)	JLD1	03/02/23	05:45
Chloride		49.9		49.8	mg/L	0.12		(0%-20%)		03/02/23	13:01
Fluoride		0.457		0.447	mg/L	2.19	^	(+/-0.100)		03/02/23	05:45
Sulfate		216		215	mg/L	0.253		(0%-20%)		03/02/23	13:01
QC1205334531	LCS										
Bromide	1.25			1.35	mg/L			108	(90%-110%)	03/02/23	04:41
Chloride	5.00			5.06	mg/L			101	(90%-110%)		
Fluoride	2.50			2.53	mg/L			101	(90%-110%)		
Sulfate	10.0			10.4	mg/L			104	(90%-110%)		
QC1205334530	MB										
Bromide			U	ND	mg/L					03/02/23	04:09
Chloride			U	ND	mg/L						
Fluoride			U	ND	mg/L						
Sulfate			U	ND	mg/L						
QC1205334533	612640004	PS									
Bromide	1.25	0.247		1.39	mg/L			91.3	(90%-110%)	03/02/23	06:17
Chloride	5.00	1.99		7.26	mg/L			105	(90%-110%)	03/02/23	13:33

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612189

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	2392179										
Fluoride	2.50	0.457		2.69	mg/L		89.5*	(90%-110%)	JLD1	03/02/23	06:17
Sulfate	10.0	8.64		19.5	mg/L		109	(90%-110%)		03/02/23	13:33

Metals Analysis - ICPMS

Batch	2390228										
QC1205331491	612189001	DUP									
Antimony	U	ND	U	ND	ug/L	N/A			BAJ	03/01/23	22:50
Arsenic	U	ND	U	ND	ug/L	N/A					
Beryllium	U	ND	U	ND	ug/L	N/A					
Boron		36.7		36.4	ug/L	0.709 ^		(+/-15.0)			
Cadmium	U	ND	U	ND	ug/L	N/A					
Chromium	U	ND	U	ND	ug/L	N/A					
Copper	J	1.39	J	1.30	ug/L	6.33 ^		(+/-2.00)			
Lead	J	0.660	J	0.649	ug/L	1.68 ^		(+/-2.00)			
Nickel		2.02	J	1.99	ug/L	1.4 ^		(+/-2.00)			
Selenium	U	ND	U	ND	ug/L	N/A					
Silver	U	ND	U	ND	ug/L	N/A					
Thallium	U	ND	U	ND	ug/L	N/A					

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2390228										
Zinc		36.1		36.0	ug/L	0.247 ^		(+/-20.0)	BAJ	03/01/23	22:50
QC1205331490 LCS											
Antimony	50.0			51.6	ug/L		103	(85%-115%)		03/01/23	22:43
Arsenic	50.0			50.6	ug/L		101	(85%-115%)			
Beryllium	50.0			55.3	ug/L		111	(85%-115%)			
Boron	100			107	ug/L		107	(85%-115%)			
Cadmium	50.0			51.4	ug/L		103	(85%-115%)			
Chromium	50.0			51.6	ug/L		103	(85%-115%)			
Copper	50.0			52.3	ug/L		105	(85%-115%)			
Lead	50.0			51.3	ug/L		103	(85%-115%)			
Nickel	50.0			51.5	ug/L		103	(85%-115%)			
Selenium	50.0			51.5	ug/L		103	(85%-115%)			
Silver	50.0			51.8	ug/L		104	(85%-115%)			
Thallium	50.0			50.3	ug/L		101	(85%-115%)			
Zinc	50.0			51.2	ug/L		102	(85%-115%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2390228										
QC1205331489	MB										
Antimony			U	ND	ug/L				BAJ	03/01/23	22:40
Arsenic			U	ND	ug/L						
Beryllium			U	ND	ug/L						
Boron			U	ND	ug/L						
Cadmium			U	ND	ug/L						
Chromium			U	ND	ug/L						
Copper			U	ND	ug/L						
Lead			U	ND	ug/L						
Nickel			U	ND	ug/L						
Selenium			U	ND	ug/L						
Silver			U	ND	ug/L						
Thallium			U	ND	ug/L						
Zinc			U	ND	ug/L						
QC1205331492 612189001 MS											
Antimony	50.0	U	ND	52.4	ug/L		104	(75%-125%)		03/01/23	22:54
Arsenic	50.0	U	ND	50.1	ug/L		100	(75%-125%)			

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Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS												
Batch	2390228											
Beryllium	50.0	U	ND		54.8	ug/L		110	(75%-125%)	BAJ	03/01/23	22:54
Boron	100		36.7		142	ug/L		105	(75%-125%)			
Cadmium	50.0	U	ND		52.7	ug/L		105	(75%-125%)			
Chromium	50.0	U	ND		51.2	ug/L		101	(75%-125%)			
Copper	50.0	J	1.39		53.2	ug/L		104	(75%-125%)			
Lead	50.0	J	0.660		52.4	ug/L		104	(75%-125%)			
Nickel	50.0		2.02		52.8	ug/L		102	(75%-125%)			
Selenium	50.0	U	ND		49.5	ug/L		99	(75%-125%)			
Silver	50.0	U	ND		52.0	ug/L		104	(75%-125%)			
Thallium	50.0	U	ND		50.6	ug/L		101	(75%-125%)			
Zinc	50.0		36.1		86.2	ug/L		100	(75%-125%)			
QC1205331493 612189001 SDILT												
Antimony		U	ND	U	ND	ug/L	N/A		(0%-10%)		03/01/23	22:57
Arsenic		U	ND	U	ND	ug/L	N/A		(0%-10%)			
Beryllium		U	ND	U	ND	ug/L	N/A		(0%-10%)			
Boron			36.7	J	10.4	ug/L	41.7		(0%-10%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2390228										
Cadmium	U	ND	U	ND	ug/L	N/A		(0%-10%)	BAJ	03/01/23	22:57
Chromium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Copper	J	1.39	J	0.310	ug/L	11.9		(0%-10%)			
Lead	J	0.660	U	ND	ug/L	N/A		(0%-10%)			
Nickel		2.02	U	ND	ug/L	N/A		(0%-10%)			
Selenium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Silver	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Thallium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Zinc		36.1	J	6.86	ug/L	4.92		(0%-10%)			
Metals Analysis-Mercury											
Batch	2401391										
QC1205351468	611601001	DUP									
Mercury	UHh	ND	UHh	ND	ug/L	N/A			JP2	03/22/23	09:37
QC1205351467	LCS										
Mercury	2.00			2.02	ug/L		101	(85%-115%)		03/22/23	09:34
QC1205351466	MB										
Mercury			U	ND	ug/L					03/22/23	09:32
QC1205351469	611601001	MS									
Mercury	2.00	UHh	ND	Hh	1.42	ug/L	71.1 *	(75%-125%)		03/22/23	09:39

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-Mercury											
Batch	2401391										
QC1205351471	611601001	PS									
Mercury	2.00	Uhh	ND	H	1.46	ug/L	72.8*	(80%-120%)	JP2	03/22/23	09:42
QC1205351470	611601001	SDILT									
Mercury		Uhh	ND	Uhh	ND	ug/L	N/A	(0%-10%)		03/22/23	09:40
Nutrient Analysis											
Batch	2393820										
QC1205337290	611728001	DUP									
Nitrogen, Ammonia		U	ND	U	ND	mg/L	N/A		KLP1	03/06/23	11:16
QC1205337289	LCS										
Nitrogen, Ammonia	1.00				0.970	mg/L	97	(90%-110%)		03/06/23	11:14
QC1205337288	MB										
Nitrogen, Ammonia			U	ND	mg/L					03/06/23	11:12
QC1205337291	611728001	PS									
Nitrogen, Ammonia	1.00	U	ND		1.09	mg/L	109	(90%-110%)		03/06/23	11:18
Oil & Grease Analysis											
Batch	2395284										
QC1205339845	LCS										
Oil and Grease	40.0				36.5	mg/L	91.3	(78%-114%)	DXB7	03/09/23	05:44
QC1205339844	MB										
Oil and Grease			U	ND	mg/L					03/09/23	05:44
QC1205339847	612928001	MS									
Oil and Grease	76.9	U	ND		74.8	mg/L	94.8	(78%-114%)		03/09/23	05:44
Semi-Volatile-GC/MS											
Batch	2388673										
QC1205329025	LCS										
2,4,6-Trichlorophenol	50.0				26.9	ug/L	54	(50%-127%)	LL2	02/27/23	17:27

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2388673										
2,4-Dichlorophenol	50.0			24.3	ug/L		49 *	(50%-119%)	LL2	02/27/23	17:27
2,4-Dimethylphenol	50.0			15.7	ug/L		31 *	(46%-99%)			
2,4-Dinitrophenol	50.0			33.4	ug/L		67	(28%-151%)			
2-Chlorophenol	50.0			21.6	ug/L		43 *	(46%-107%)			
2-Methyl-4,6-dinitrophenol	50.0			38.5	ug/L		77	(42%-149%)			
2-Nitrophenol	50.0			28.5	ug/L		57	(50%-115%)			
4-Chloro-3-methylphenol	50.0			24.7	ug/L		49 *	(50%-118%)			
4-Nitrophenol	50.0		J	9.68	ug/L		19 *	(21%-110%)			
Pentachlorophenol	50.0			22.7	ug/L		45	(42%-132%)			
Phenol	50.0			10.5	ug/L		21	(12%-90%)			
**2,4,6-Tribromophenol	100			51.2	ug/L		51	(37%-132%)			
**2-Fluorobiphenyl	50.0			24.0	ug/L		48	(39%-112%)			
**2-Fluorophenol	100			24.8	ug/L		25	(11%-79%)			
**Nitrobenzene-d5	50.0			24.1	ug/L		48	(39%-112%)			
**Phenol-d5	100			19.0	ug/L		19	(15%-85%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2388673										
**p-Terphenyl-d14	50.0			22.9	ug/L		46	(24%-129%)	LL2	02/27/23	17:27
QC1205329024 MB											
2,4,6-Trichlorophenol			U	ND	ug/L					02/27/23	16:59
2,4-Dichlorophenol			U	ND	ug/L						
2,4-Dimethylphenol			U	ND	ug/L						
2,4-Dinitrophenol			U	ND	ug/L						
2-Chlorophenol			U	ND	ug/L						
2-Methyl-4,6-dinitrophenol			U	ND	ug/L						
2-Nitrophenol			U	ND	ug/L						
4-Chloro-3-methylphenol			U	ND	ug/L						
4-Nitrophenol			U	ND	ug/L						
Pentachlorophenol			U	ND	ug/L						
Phenol			U	ND	ug/L						
**2,4,6-Tribromophenol	100			84.4	ug/L		84	(37%-132%)			
**2-Fluorobiphenyl	50.0			38.7	ug/L		77	(39%-112%)			
**2-Fluorophenol	100			40.1	ug/L		40	(11%-79%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2388673										
**Nitrobenzene-d5	50.0			38.6	ug/L		77	(39%-112%)	LL2	02/27/23	16:59
**Phenol-d5	100			30.1	ug/L		30	(15%-85%)			
**p-Terphenyl-d14	50.0			41.1	ug/L		82	(24%-129%)			
QC1205329026 611883003 MS											
2,4,6-Trichlorophenol	100	U	ND	41.4	ug/L		41 *	(47%-130%)		02/27/23	19:43
2,4-Dichlorophenol	100	U	ND	39.7	ug/L		40 *	(49%-119%)			
2,4-Dimethylphenol	100	U	ND	27.1	ug/L		27 *	(40%-111%)			
2,4-Dinitrophenol	100	U	ND	J	23.0	ug/L	23 *	(25%-154%)			
2-Chlorophenol	100	U	ND		38.7	ug/L	39 *	(42%-113%)			
2-Methyl-4,6-dinitrophenol	100	U	ND		25.7	ug/L	26 *	(30%-145%)			
2-Nitrophenol	100	U	ND		43.3	ug/L	43	(42%-120%)			
4-Chloro-3-methylphenol	100	U	ND		43.3	ug/L	43	(42%-123%)			
4-Nitrophenol	100	U	ND	J	16.8	ug/L	17 *	(20%-98%)			
Pentachlorophenol	100	U	ND	J	17.6	ug/L	18 *	(36%-139%)			
Phenol	100	U	ND		25.4	ug/L	25	(23%-71%)			
**2,4,6-Tribromophenol	200		37.8	74.4	ug/L		37	(37%-132%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2388673										
**2-Fluorobiphenyl	100	19.4		36.3	ug/L		36*	(39%-112%)	LL2	02/27/23	19:43
**2-Fluorophenol	200	23.3		52.5	ug/L		26	(11%-79%)			
**Nitrobenzene-d5	100	20.3		36.6	ug/L		37*	(39%-112%)			
**Phenol-d5	200	17.2		45.1	ug/L		23	(15%-85%)			
**p-Terphenyl-d14	100	15.9		36.9	ug/L		37	(24%-129%)			
QC1205329027 611883003 MSD											
2,4,6-Trichlorophenol	100	U	ND		55.1	ug/L	28	55	(0%-79%)		02/27/23 20:11
2,4-Dichlorophenol	100	U	ND		48.3	ug/L	20	48*	(0%-42%)		
2,4-Dimethylphenol	100	U	ND		33.2	ug/L	20	33*	(0%-42%)		
2,4-Dinitrophenol	100	U	ND	J	30.8	ug/L	29	31	(0%-106%)		
2-Chlorophenol	100	U	ND		44.8	ug/L	15	45	(0%-78%)		
2-Methyl-4,6-dinitrophenol	100	U	ND		40.9	ug/L	45	41	(0%-86%)		
2-Nitrophenol	100	U	ND		51.7	ug/L	18	52	(0%-69%)		
4-Chloro-3-methylphenol	100	U	ND		55.5	ug/L	25	56	(0%-41%)		
4-Nitrophenol	100	U	ND		28.2	ug/L	51	28	(0%-110%)		
Pentachlorophenol	100	U	ND		32.2	ug/L	58	32*	(0%-82%)		

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2388673										
Phenol	100	U	ND	30.4	ug/L	18	30	(0%-42%)	LL2	02/27/23	20:11
**2,4,6-Tribromophenol	200		37.8	104	ug/L		52	(37%-132%)			
**2-Fluorobiphenyl	100		19.4	44.5	ug/L		44	(39%-112%)			
**2-Fluorophenol	200		23.3	61.3	ug/L		31	(11%-79%)			
**Nitrobenzene-d5	100		20.3	41.3	ug/L		41	(39%-112%)			
**Phenol-d5	200		17.2	53.6	ug/L		27	(15%-85%)			
**p-Terphenyl-d14	100		15.9	48.6	ug/L		49	(24%-129%)			
Semi-Volatiles-PCB											
Batch	2391146										
QC1205333098	LCS										
Aroclor-1016	1.00			0.728	ug/L		73	(50%-101%)	YS1	03/01/23	15:54
Aroclor-1260	1.00			0.718	ug/L		72	(46%-108%)			
**4cmx	0.200			0.125	ug/L		63	(33%-109%)			
**Decachlorobiphenyl	0.200			0.152	ug/L		76	(38%-133%)			
QC1205333097	MB										
Aroclor-1016			U	ND	ug/L					03/01/23	15:43
Aroclor-1221			U	ND	ug/L						
Aroclor-1232			U	ND	ug/L						

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	2391146										
Aroclor-1242			U	ND	ug/L				YS1	03/01/23	15:43
Aroclor-1248			U	ND	ug/L						
Aroclor-1254			U	ND	ug/L						
Aroclor-1260			U	ND	ug/L						
Aroclor-Total			U	ND	ug/L						
**4cmx	0.200			0.114	ug/L		57	(33%-109%)			
**Decachlorobiphenyl	0.200			0.136	ug/L		68	(38%-133%)			
QC1205333099 611557001 MS											
Aroclor-1016	1.00 Uh	ND	h	0.723	ug/L		72	(32%-112%)		03/01/23	16:38
Aroclor-1260	1.00 Uh	ND	h	0.783	ug/L		78	(32%-126%)			
**4cmx	0.200	0.123		0.125	ug/L		63	(33%-109%)			
**Decachlorobiphenyl	0.200	0.152		0.167	ug/L		83	(38%-133%)			
QC1205333100 611557001 MSD											
Aroclor-1016	1.00 Uh	ND	h	0.754	ug/L	4	75	(0%-27%)		03/01/23	16:50
Aroclor-1260	1.00 Uh	ND	h	0.821	ug/L	5	82	(0%-29%)			
**4cmx	0.200	0.123		0.129	ug/L		64	(33%-109%)			
**Decachlorobiphenyl	0.200	0.152		0.171	ug/L		85	(38%-133%)			

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
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Solids Analysis

Batch	2389994										
QC1205330865	612085003	DUP									
Total Suspended Solids		U	ND	U	ND	mg/L	N/A		CH6	02/27/23	09:47
QC1205330861	LCS										
Total Suspended Solids	500				494	mg/L	98.8	(95%-105%)		02/27/23	09:47
QC1205330862	LCSD										
Total Suspended Solids	500				501	mg/L	1.41	100	(0%-5%)	02/27/23	09:47
QC1205330860	MB										
Total Suspended Solids			U		ND	mg/L				02/27/23	09:47

Spectrometric Analysis

Batch	2390321										
QC1205331695	611601001	DUP									
COD			531		492	mg/L	7.74 ^	(+/-100)	HH2	02/27/23	14:44
QC1205331694	LCS										
COD	500				518	mg/L	104	(90%-110%)		02/27/23	14:44
QC1205331693	MB										
COD			J		18.1	mg/L				02/27/23	14:44
QC1205331696	611601001	MS									
COD	500		531		1140	mg/L	24.4*	(90%-110%)		02/27/23	14:44

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.
- C Analyte has been confirmed by GC/MS analysis
- B The target analyte was detected in the associated blank.
- E Concentration of the target analyte exceeds the instrument calibration range

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
A	The TIC is a suspected aldol-condensation product										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
N	Metals--The Matrix spike sample recovery is not within specified control limits										
N	Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
H	Analytical holding time was exceeded										
**	Analyte is a surrogate compound										
<	Result is less than value reported										
>	Result is greater than value reported										
h	Preparation or preservation holding time was exceeded										
R	Sample results are rejected										
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.										
d	5-day BOD--The 2:1 depletion requirement was not met for this sample										
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.										
D	Results are reported from a diluted aliquot of the sample										
N/A	RPD or %Recovery limits do not apply.										
ND	Analyte concentration is not detected above the detection limit										
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria										
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range										
JNX	Non Calibrated Compound										
UJ	Compound cannot be extracted										
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.										
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies										
N1	See case narrative										
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.										
Y	QC Samples were not spiked with this compound										
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.										
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
J	See case narrative for an explanation										

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 612189

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
----------	-----	--------	------	----	-------	--------	------	-------	-------	------	------

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 612189

GC/MS Semivolatile

Product: Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

Analytical Method: EPA 625.1

Analytical Procedure: GL-OA-E-009 REV# 46

Analytical Batch: 2388673

Preparation Method: EPA 625.1

Preparation Procedure: GL-OA-E-013 REV# 35

Preparation Batch: 2388672

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205329024	Method Blank (MB)
1205329025	Laboratory Control Sample (LCS)
1205329026	611883003(NonSDG) Matrix Spike (MS)
1205329027	611883003(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CCV Requirements

Not all Calibration Verification Standards (CCV) met the acceptance criteria as outlined in Table 6 in Method 625.1. The target analyte 2-Methyl-4,6-dinitrophenol was outside the acceptance criteria. As the analyte was not detected in the associated client samples, the biased high response had no adverse impact on the reported data. All other analytes which failed on the included Continuing Calibration Summary report were within the %acceptance criteria for the respective analyte or within 60%-140% for analytes not listed in Table 6. The data were reported.

Quality Control (QC) Information

Surrogate Recoveries

The MS(See Below) did not meet surrogate recovery acceptance criteria. The parent sample and MSD were within surrogate recovery acceptance criteria. The parent sample for MS was re-extracted out of holding. The re-extraction batch LCS was within acceptance criteria for all spikes (with exception of one poor responder). The non-SDG MS and MSD were within surrogate/spike recovery acceptance criteria. There were no target analytes detected in either extraction. The PM was notified. The initial data were reported.

Sample	Value
1205329026 (Non SDG 611883003MS)	36* (39%-112%) and 37* (39%-112%)

Laboratory Control Sample (LCS) Recovery

The LCS(See Below) spike recoveries were not within the acceptance limits. The associated client samples were re-extracted.

Sample	Analyte	Value
1205329025 (LCS)	2, 4-Dichlorophenol	49* (50%-119%)
	2, 4-Dimethylphenol	31* (46%-99%)
	2-Chlorophenol	43* (46%-107%)
	4-Chloro-3-methylphenol	49* (50%-118%)
	4-Nitrophenol	19* (21%-110%)

Sample 612189001 (Treated Water Tank A) was re-extracted out of holding due to multiple spike failures. The initial extraction passed all surrogate recoveries as well as the re-extraction. The re-extraction batch LCS was within acceptance criteria for all spikes (with exception of one poor responder). The non-SDG MS and MSD were within spike recovery acceptance criteria. There were no target analytes detected in either extraction. The PM was notified. The initial data were reported.

Spike Recovery Statement

The MS and MSD(See Below) spike recoveries were not within the acceptance limits. The associated client samples were re-extracted.

Sample	Analyte	Value
1205329026 (Non SDG 611883003MS)	2, 4, 6-Trichlorophenol	41* (47%-130%)
	2, 4-Dichlorophenol	40* (49%-119%)
	2, 4-Dimethylphenol	27* (40%-111%)
	2, 4-Dinitrophenol	23* (25%-154%)
	2-Chlorophenol	39* (42%-113%)
	2-Methyl-4, 6-dinitrophenol	26* (30%-145%)
	4-Nitrophenol	17* (20%-98%)
	Pentachlorophenol	18* (36%-139%)
1205329027 (Non SDG 611883003MSD)	2, 4-Dichlorophenol	48* (49%-119%)
	2, 4-Dimethylphenol	33* (40%-111%)
	Pentachlorophenol	32* (36%-139%)

Miscellaneous Information

Additional Comments

Diphenylamine Statement

Diphenylamine has superseded the reporting of N-Nitroso-diphenylamine. As per the EPA, N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine. Studies of these two compounds at GEL, both independent of each other and together, showed

that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine are therefore reported as Diphenylamine on all reports and forms.

GC Semivolatile PCB

Product: Analysis of The Analysis of Polychlorinated Biphenyls by GC/ECD by ECD

Analytical Method: EPA 608.3

Analytical Procedure: GL-OA-E-040 REV# 25

Analytical Batch: 2391146

Preparation Method: EPA 608.3

Preparation Procedure: GL-OA-E-070 REV# 11

Preparation Batch: 2391145

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205333097	Method Blank (MB)
1205333098	Laboratory Control Sample (LCS)
1205333099	611557001(NonSDG) Matrix Spike (MS)
1205333100	611557001(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Time Specifications

Samples (See Below) were extracted out of holding.

Sample	Analyte	Value
1205333099 (Non SDG 611557001MS)		Received 21-FEB-23, within holding, prepped 01-MAR-23, out of holding 27-FEB-23
1205333100 (Non SDG 611557001MSD)		Received 21-FEB-23, within holding, prepped 01-MAR-23, out of holding 27-FEB-23

Preparation/Analytical Method Verification

All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns.

Miscellaneous Information

Additional Comments

The column 1 has been chosen as the primary column. The data are reported from the column 1 for all samples in

this batch.

Metals

Product: Determination of Metals by ICP-MS

Analytical Method: EPA 200.8

Analytical Procedure: GL-MA-E-014 REV# 35

Analytical Batch: 2390228

Preparation Method: EPA 200.2

Preparation Procedure: GL-MA-E-016 REV# 18

Preparation Batch: 2390227

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205331489	Method Blank (MB) ICP-MS
1205331490	Laboratory Control Sample (LCS)
1205331493	612189001(Treated Water Tank AL) Serial Dilution (SD)
1205331491	612189001(Treated Water Tank AD) Sample Duplicate (DUP)
1205331492	612189001(Treated Water Tank AS) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement

For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Product: Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

Analytical Method: EPA 245.1/245.2

Analytical Procedure: GL-MA-E-010 REV# 39

Analytical Batch: 2401391

Preparation Method: EPA 245.1/245.2 Prep

Preparation Procedure: GL-MA-E-010 REV# 39

Preparation Batch: 2401389

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A

1205351466	Method Blank (MB)CVAA
1205351467	Laboratory Control Sample (LCS)
1205351470	611601001(Intake L) Serial Dilution (SD)
1205351468	611601001(Intake D) Sample Duplicate (DUP)
1205351469	611601001(Intake S) Matrix Spike (MS)
1205351471	611601001(Intake PS) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS/MSD) Recovery Statement

The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike also did not meet the required control limits; thus, confirming matrix interferences and/or sample non-homogeneity.

Sample	Analyte	Value
1205351469 (Intake MS)	Mercury	71.1* (75%-125%)

Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the presence of matrix interferences.

Sample	Analyte	Value
1205351471 (Intake PS)	Mercury	72.8* (80%-120%)

Technical Information

Holding Time Specifications

GEL assigns holding times based on the associated methodology. Holding time is measured by comparison of the date and time of sample collection to the date and time of sample preparation and analysis. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. Samples (See Below) did not meet the specified holding time requirements. Samples were logged in beyond the required holding time.

Sample	Analyte	Value
1205351468 (Intake DUP)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23
		Received 21-FEB-23, within holding, prepped 21-MAR-23, out of holding 20-MAR-23

1205351469 (Intake MS)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23
		Received 21-FEB-23, within holding, prepped 21-MAR-23, out of holding 20-MAR-23
1205351470 (Intake SDILT)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23
		Received 21-FEB-23, within holding, prepped 21-MAR-23, out of holding 20-MAR-23
1205351471 (Intake PS)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23

General Chemistry

Product: Carbon, Total Organic

Analytical Method: SM 5310 B

Analytical Procedure: GL-GC-E-093 REV# 21

Analytical Batch: 2394337

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205338212	Method Blank (MB)
1205338213	Laboratory Control Sample (LCS)
1205338214	613027001(NonSDG) Sample Duplicate (DUP)
1205338216	613027001(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Cyanide, Total

Analytical Method: EPA 335.4

Analytical Procedure: GL-GC-E-095 REV# 23

Analytical Batch: 2390159

Preparation Method: EPA 335.4

Preparation Procedure: GL-GC-E-067 REV# 24

Preparation Batch: 2390158

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205331264	Method Blank (MB)
1205331265	Laboratory Control Sample (LCS)
1205331266	612085004(NonSDG) Sample Duplicate (DUP)
1205331267	612085004(NonSDG) Matrix Spike (MS)
1205331268	612085004(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments

Daughter labels were missed during the scanning process. Samples were in analyst's custody during the time of analysis:

Sample	Analyte	Value
612189001 (Treated Water Tank A)		

Product: Ion Chromatography

Analytical Method: SW846 9056

Analytical Procedure: GL-GC-E-086 REV# 30

Analytical Batch: 2392179

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205334530	Method Blank (MB)
1205334531	Laboratory Control Sample (LCS)
1205334532	612640004(NonSDG) Sample Duplicate (DUP)
1205334533	612640004(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Fluoride	1205334533 (Non SDG 612640004PS)	89.5* (90%-110%)

Technical Information**Sample Dilutions**

The following samples 1205334532 (Non SDG 612640004DUP) and 1205334533 (Non SDG 612640004PS) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Sample Re-analysis

Sample 612189001 (Treated Water Tank A) was re-analyzed due to (its) proximity to an overrange sample. The results from the reanalysis are reported. Sample 612189001 (Treated Water Tank A) was re-analyzed to verify the result.

Product: Ammonia Nitrogen

Preparation Method: EPA 350.1

Preparation Procedure: GL-GC-E-106 REV# 10

Preparation Batch: 2393820

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205337288	Method Blank (MB)
1205337289	Laboratory Control Sample (LCS)
1205337290	611728001(NonSDG) Sample Duplicate (DUP)
1205337291	611728001(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information**Sample Re-analysis**

Sample 612189001 (Treated Water Tank A) was re-analyzed due to (its) proximity to an overrange sample. The results from the reanalysis are reported.

Product: n-Hexane Extractable Material
Analytical Method: EPA 1664A/1664B
Analytical Procedure: GL-GC-E-094 REV# 18
Analytical Batch: 2395284

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205339844	Method Blank (MB)
1205339845	Laboratory Control Sample (LCS)
1205339847	612928001(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Solids, Total Suspended
Analytical Method: SM 2540D
Analytical Procedure: GL-GC-E-012 REV# 18
Analytical Batch: 2389994

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205330860	Method Blank (MB)
1205330861	Laboratory Control Sample (LCS)
1205330862	Laboratory Control Sample Duplicate (LCSD)
1205330865	612085003(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments

A reduced aliquot was used due to limited volume. The client did not provide an entire 1 liter aliquot. 1205330865 (Non SDG 612085003DUP).

Product: COD
Analytical Method: EPA 410.4
Analytical Procedure: GL-GC-E-061 REV# 21

Analytical Batch: 2390321

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612189001	Treated Water Tank A
1205331693	Method Blank (MB)
1205331694	Laboratory Control Sample (LCS)
1205331695	611601001(Intake) Sample Duplicate (DUP)
1205331696	611601001(Intake) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
COD	1205331696 (Intake MS)	24.4* (90%-110%)

Technical Information

Sample Dilutions

The following samples 1205331695 (Intake DUP) and 1205331696 (Intake MS) in this sample group were diluted due to matrix interference. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDF Inc</u>		SDG/AR/COC/Work Order: <u>612189 / 612202</u>	
Received By: <u>Alex Alness</u>		Date Received: <u>2/24/23</u>	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other <u>7713 7511 9640</u> <u>7713 7511 9043</u>	
Suspected Hazard Information	Yes ☐ No ☒	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	Yes ☒ No ☐	Hazard Class Shipped: <u>UN# 2910's</u> If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☒ No ☐	
B) Did the client designate the samples are to be received as radioactive?	Yes ☒ No ☐	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	Yes ☒ No ☐	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>120 CPM</u> mR/Hr Classified as: <u>Rad 1</u> Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	Yes ☐ No ☒	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	Yes ☐ No ☒	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:	
Sample Receipt Criteria		Yes ☐ NA ☒ No ☐	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	Yes ☒ NA ☒ No ☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	Yes ☒ NA ☒ No ☐	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	Yes ☒ NA ☒ No ☐	Preservation Methods: <u>Wet Ice</u> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>2°C</u>
4	Daily check performed and passed on IR temperature gun?	Yes ☒ NA ☒ No ☐	Temperature Device Serial #: <u>112-23</u> Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	Yes ☒ NA ☒ No ☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	Yes ☐ NA ☒ No ☐	Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	Yes ☐ NA ☒ No ☐	If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☒ NA ☒ (If yes, take to VOA Freezer)
			Do liquid VOA vials contain acid preservation? Yes ☒ No ☒ NA ☐ (If unknown, select No)
			Are liquid VOA vials free of headspace? Yes ☒ No ☐ NA ☐
8	Samples received within holding time?	Yes ☐ NA ☒ No ☐	ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	Yes ☐ NA ☒ No ☐	ID's and containers affected:
10	Date & time on COC match date & time on bottles?	Yes ☐ NA ☒ No ☐	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	Yes ☐ NA ☒ No ☐	Circle Applicable: No container count on COC Other (describe) <u>Below</u>
12	Are sample containers identifiable as GEL provided by use of GEL labels?	Yes ☐ NA ☒ No ☐	
13	COC form is properly signed in relinquished/received sections?	Yes ☐ NA ☒ No ☐	Circle Applicable: Not relinquished Other (describe)
Comments (Use Continuation Form if needed): <u>Note: Missing codes 3 of 3 at this time.</u> <u>Case # 2/24/23</u>			

PM (or PMA) review: Initials mg Date 2/27/23 Page 1 of 3



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDI Inc.</u>		SDG/AR/COC/Work Order: <u>612189 612202</u>	
Received By: <u>Alex Almos</u>		Date Received: <u>2/24/23</u>	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other <u>771373838671</u> <u>771373711053</u> (DA 2/24/23)	
Suspected Hazard Information		*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. Hazard Class Shipped: <u>UN# 2910</u> If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☒ No ☐	
A) Shipped as a DOT Hazardous?		☒	
B) Did the client designate the samples are to be received as radioactive?		☒	
C) Did the RSO classify the samples as radioactive?		☒	
D) Did the client designate samples are hazardous?		☒	
E) Did the RSO identify possible hazards?		☒	
Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)	
1	Shipping containers received intact and sealed?	☒	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	☒	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?	☒	Preservation Method: <u>Wet Ice</u> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>5°C</u>
4	Daily check performed and passed on IR temperature gun?	☒	Temperature Device Serial #: <u>IR3-23</u> Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	☒	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	☒	Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	☒	If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☐ NA ☐ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ☐ No ☐ NA ☐ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ☐ No ☐ NA ☐ Sample ID's and containers affected:
8	Samples received within holding time?	☒	ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	☒	ID's and containers affected:
10	Date & time on COC match date & time on bottles?	☒	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	☒	Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	☒	
13	COC form is properly signed in relinquished/received sections?	☒	Circle Applicable: Not relinquished Other (describe)
Comments (Use Continuation Form if needed):			

PM (or PMA) review: Initials

mg

Date

2/27/23

Page

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GL-CHL-SR-001 Rev 7



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDEC</u>		SDG/AR/COC/Work Order: <u>612189 / 612202</u>	
Received By: <u>AA</u>		Date Received: <u>2/25/23</u>	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other	
		<u>7713 7511 9411</u>	
Suspected Hazard Information	Yes ☐ No ☒	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	Yes ☒ No ☐	Hazard Class Shipped: <u>2910</u> If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☒ No ☐	
B) Did the client designate the samples are to be received as radioactive?	Yes ☒ No ☐	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	Yes ☒ No ☐	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> CPM / mR/Hr Classified as: <u>Rad 1</u> Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	Yes ☒ No ☐	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	Yes ☒ No ☐	If D or E is yes, select Hazards below: PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:	
Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)	
1	Shipping containers received intact and sealed?	Yes ☒ No ☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	Yes ☒ No ☐	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	Yes ☒ No ☐	Preservation Method: <u>Wet Ice</u> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>5°</u>
4	Daily check performed and passed on IR temperature gun?	Yes ☒ No ☐	Temperature Device Serial #: <u>7B2-23</u> Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	Yes ☒ No ☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	Yes ☒ No ☐	Sample ID's and Containers Affected: If Preservation added, Lot#: _____ If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☒ NA (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ☐ No ☒ NA (If unknown, select No) Are liquid VOA vials free of headspace? Yes ☐ No ☒ NA Sample ID's and containers affected:
7	Do any samples require Volatile Analysis?	Yes ☒ No ☐	ID's and tests affected:
8	Samples received within holding time?	Yes ☒ No ☐	ID's and containers affected:
9	Sample ID's on COC match ID's on bottles?	Yes ☒ No ☐	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
10	Date & time on COC match date & time on bottles?	Yes ☒ No ☐	Circle Applicable: No container count on COC Other (describe)
11	Number of containers received match number indicated on COC?	Yes ☒ No ☐	
12	Are sample containers identifiable as GEL provided by use of GEL labels?	Yes ☒ No ☐	Circle Applicable: Not relinquished Other (describe)
13	COC form is properly signed in relinquished/received sections?	Yes ☒ No ☐	
Comments (Use Continuation Form if needed): <u>This is the cooler that was missing 2/24.</u>			

PM (or PMA) review: Initials (Signature)Date 2/28/23Page 3 of 3

GL-CHL-SR-001 Rev 7

List of current GEL Certifications as of 22 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

March 08, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 612202

Dear Laura Hageman:

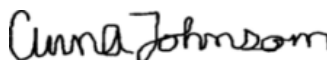
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 24, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

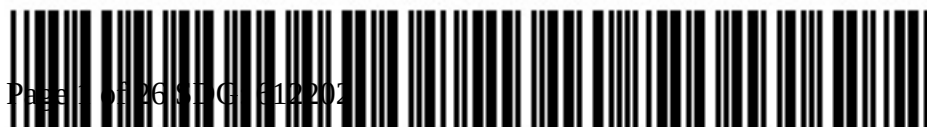
Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,



Anna Johnson for
Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 612202 GEL Work Order: 612202

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Treated Water Tank A
Sample ID: 612202001
Matrix: Water
Collect Date: 22-FEB-23 08:15
Receive Date: 24-FEB-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Micro-biology												
<i>SM 5210B BOD, 5DAY "As Received"</i>												
BOD, 5 DAY	dUH	ND	1.00	2.00	mg/L			JW2	02/24/23	1553	2389221	1
Spectrometric Analysis												
<i>SM4500CL_G Total Residual Chlorine "As Received"</i>												
Chlorine, Residual	HJ	0.0449	0.0170	0.0500	mg/L			1 HH2	02/27/23	1139	23903202	
Titration and Ion Analysis												
<i>EPA 150.1 pH "As Received"</i>												
pH at Temp 14.0C	H	6.87	0.0100	0.100	SU			1 JW2	03/01/23	1546	23920323	
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
1,1,1-Trichloroethane 71-55-6	U	ND	0.333	1.00	ug/L			1 JM6	02/27/23	1121	23903404	
1,1,2,2-Tetrachloroethane 79-34-5	U	ND	0.333	1.00	ug/L			1				
1,1,2-Trichloroethane 79-00-5	U	ND	0.333	1.00	ug/L			1				
1,1-Dichloroethane 75-34-3	U	ND	0.333	1.00	ug/L			1				
1,1-Dichloroethylene 75-35-4	U	ND	0.333	1.00	ug/L			1				
1,2-Dichloroethane 107-06-2	U	ND	0.333	1.00	ug/L			1				
1,2-Dichloropropane 78-87-5	U	ND	0.333	1.00	ug/L			1				
1,3-Dichloropropylene 542-75-6	U	ND	0.500	2.00	ug/L			1				
2-Chloroethylvinyl ether 110-75-8	U	ND	1.67	5.00	ug/L			1				
Acrolein 107-02-8	HU	ND	1.67	5.00	ug/L			1				
Acrylonitrile 107-13-1	HU	ND	1.67	5.00	ug/L			1				

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Treated Water Tank A
Sample ID: 612202001
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Volatile Organics												
<i>EPA 624.1 Volatiles Method List "As Received"</i>												
Benzene	U	ND	0.333	1.00	ug/L		1					
71-43-2												
Bromodichloromethane	U	ND	0.333	1.00	ug/L		1					
75-27-4												
Bromoform	U	ND	0.333	1.00	ug/L		1					
75-25-2												
Bromomethane	U	ND	0.337	1.00	ug/L		1					
74-83-9												
Carbon tetrachloride	U	ND	0.333	1.00	ug/L		1					
56-23-5												
Chlorobenzene	U	ND	0.333	1.00	ug/L		1					
108-90-7												
Chloroethane	U	ND	0.333	1.00	ug/L		1					
75-00-3												
Chloroform	U	ND	0.333	1.00	ug/L		1					
67-66-3												
Chloromethane	U	ND	0.333	1.00	ug/L		1					
74-87-3												
Dibromochloromethane	U	ND	0.333	1.00	ug/L		1					
124-48-1												
Ethylbenzene	U	ND	0.333	1.00	ug/L		1					
100-41-4												
Methylene chloride	J	0.580	0.500	2.00	ug/L		1					
75-09-2												
Tetrachloroethylene	U	ND	0.333	1.00	ug/L		1					
127-18-4												
Toluene	U	ND	0.333	1.00	ug/L		1					
108-88-3												
Trichloroethylene	U	ND	0.333	1.00	ug/L		1					
79-01-6												
Vinyl chloride	U	ND	0.333	1.00	ug/L		1					
75-01-4												
trans-1,2-Dichloroethylene	U	ND	0.333	1.00	ug/L		1					
156-60-5												

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	SM 5210B		
2	SM 4500-Cl G		

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 8, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Treated Water Tank A
Sample ID: 612202001
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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3	EPA 150.1											
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4	EPA 624.1											
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Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	EPA 624.1 Volatiles Method List "As Received"	48.4 ug/L	50.0	97	(72%-125%)
1,2-Dichloroethane-d4	EPA 624.1 Volatiles Method List "As Received"	55.8 ug/L	50.0	112	(73%-129%)
Toluene-d8	EPA 624.1 Volatiles Method List "As Received"	50.9 ug/L	50.0	102	(75%-123%)

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QC Summary

Report Date: March 8, 2023

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HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Contact: Laura Hageman

Workorder: 612202

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Micro-biology											
Batch	2389221										
QC1205330005	612040002	DUP									
BOD, 5 DAY		305		305	mg/L	0 ^		(+/-120)	JW2	02/24/23	13:15
QC1205329971	LCS										
BOD, 5 DAY	198			195	mg/L		98.4	(85%-115%)		02/24/23	13:30
QC1205329970	MB										
BOD, 5 DAY				0.165	mg/L					02/24/23	13:30
QC1205329972	SEED										
BOD, 5 DAY				0.688	mg/L					02/24/23	13:30
Spectrometric Analysis											
Batch	2390320										
QC1205331691	612202001	DUP									
Chlorine, Residual	HJ	0.0449	H	0.0544	mg/L	19 ^		(+/-0.0500)	HH2	02/27/23	11:39
QC1205331690	LCS										
Chlorine, Residual	0.500			0.554	mg/L		111	(74%-112%)		02/27/23	11:39
QC1205331689	MB										
Chlorine, Residual			U	ND	mg/L					02/27/23	11:39
QC1205331692	612202001	PS									
Chlorine, Residual	0.500 HJ	0.0449	H	0.638	mg/L		119	(67%-128%)		02/27/23	11:39
Titration and Ion Analysis											
Batch	2392032										
QC1205334358	612158001	DUP									
pH	H	8.10	H	8.10	SU	0		(0%-5%)	JW2	03/01/23	15:37

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QC Summary

Workorder: 612202

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Titration and Ion Analysis											
Batch	2392032										
QC1205334357	LCS										
pH	7.00			7.00	SU		100	(99%-101%)	JW2	03/01/23	15:36
Volatile-GC/MS											
Batch	2390340										
QC1205331722	LCS										
1,1,1-Trichloroethane	50.0			50.5	ug/L		101	(75%-136%)	JM6	02/27/23	08:38
1,1,2,2-Tetrachloroethane	50.0			44.6	ug/L		89	(68%-126%)			
1,1,2-Trichloroethane	50.0			47.0	ug/L		94	(73%-120%)			
1,1-Dichloroethane	50.0			52.0	ug/L		104	(76%-123%)			
1,1-Dichloroethylene	50.0			51.8	ug/L		104	(67%-133%)			
1,2-Dichloroethane	50.0			50.8	ug/L		102	(68%-124%)			
1,2-Dichloropropane	50.0			50.7	ug/L		101	(74%-121%)			
1,3-Dichloropropylene	100			92.9	ug/L		93	(75%-129%)			
2-Chloroethylvinyl ether	250			206	ug/L		82	(62%-126%)			
Benzene	50.0			54.1	ug/L		108	(74%-118%)			
Bromodichloromethane	50.0			50.7	ug/L		101	(73%-133%)			
Bromoform	50.0			44.7	ug/L		89	(69%-130%)			
Bromomethane	50.0			66.5	ug/L		133	(68%-140%)			

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QC Summary

Workorder: 612202

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2390340										
Carbon tetrachloride	50.0			49.6	ug/L		99	(73%-140%)	JM6	02/27/23	08:38
Chlorobenzene	50.0			47.3	ug/L		95	(76%-120%)			
Chloroethane	50.0			64.9	ug/L		130	(70%-131%)			
Chloroform	50.0			51.3	ug/L		103	(77%-126%)			
Chloromethane	50.0			53.8	ug/L		108	(60%-139%)			
Dibromochloromethane	50.0			46.6	ug/L		93	(75%-133%)			
Ethylbenzene	50.0			45.8	ug/L		92	(75%-121%)			
Methylene chloride	50.0			47.5	ug/L		95	(69%-120%)			
Tetrachloroethylene	50.0			48.3	ug/L		97	(74%-124%)			
Toluene	50.0			47.4	ug/L		95	(74%-118%)			
Trichloroethylene	50.0			50.6	ug/L		101	(76%-124%)			
Vinyl chloride	50.0			60.5	ug/L		121	(67%-134%)			
trans-1,2-Dichloroethylene	50.0			49.4	ug/L		99	(71%-127%)			
**1,2-Dichloroethane-d4	50.0			53.0	ug/L		106	(73%-129%)			
**Bromofluorobenzene	50.0			48.4	ug/L		97	(72%-125%)			

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QC Summary

Workorder: 612202

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2390340										
**Toluene-d8	50.0			49.4	ug/L		99	(75%-123%)	JM6	02/27/23	08:38
QC1205331723 LCS Acrolein	250			184	ug/L		74	(63%-141%)		02/27/23	09:32
Acrylonitrile	250			286	ug/L		114	(67%-128%)			
**1,2-Dichloroethane-d4	50.0			54.3	ug/L		109	(73%-129%)			
**Bromofluorobenzene	50.0			49.6	ug/L		99	(72%-125%)			
**Toluene-d8	50.0			49.0	ug/L		98	(75%-123%)			
QC1205331724 MB 1,1,1-Trichloroethane			U	ND	ug/L					02/27/23	09:59
1,1,2,2-Tetrachloroethane			U	ND	ug/L						
1,1,2-Trichloroethane			U	ND	ug/L						
1,1-Dichloroethane			U	ND	ug/L						
1,1-Dichloroethylene			U	ND	ug/L						
1,2-Dichloroethane			U	ND	ug/L						
1,2-Dichloropropane			U	ND	ug/L						
1,3-Dichloropropylene			U	ND	ug/L						

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QC Summary

Workorder: 612202

Page 5 of 12

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2390340										
2-Chloroethylvinyl ether			U	ND	ug/L				JM6	02/27/23	09:59
Acrolein			U	ND	ug/L						
Acrylonitrile			U	ND	ug/L						
Benzene			U	ND	ug/L						
Bromodichloromethane			U	ND	ug/L						
Bromoform			U	ND	ug/L						
Bromomethane			U	ND	ug/L						
Carbon tetrachloride			U	ND	ug/L						
Chlorobenzene			U	ND	ug/L						
Chloroethane			U	ND	ug/L						
Chloroform			U	ND	ug/L						
Chloromethane			U	ND	ug/L						
Dibromochloromethane			U	ND	ug/L						
Ethylbenzene			U	ND	ug/L						
Methylene chloride			U	ND	ug/L						

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QC Summary

Workorder: 612202

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2390340										
Tetrachloroethylene			U	ND	ug/L				JM6	02/27/23	09:59
Toluene			U	ND	ug/L						
Trichloroethylene			U	ND	ug/L						
Vinyl chloride			U	ND	ug/L						
trans-1,2-Dichloroethylene			U	ND	ug/L						
**1,2-Dichloroethane-d4	50.0			54.6	ug/L		109	(73%-129%)			
**Bromofluorobenzene	50.0			49.5	ug/L		99	(72%-125%)			
**Toluene-d8	50.0			50.2	ug/L		100	(75%-123%)			
QC1205331725 611447003 PS											
1,1,1-Trichloroethane	50.0	U	ND	53.1	ug/L		106	(67%-135%)		02/27/23	16:50
1,1,2,2-Tetrachloroethane	50.0	U	ND	49.3	ug/L		99	(58%-138%)			
1,1,2-Trichloroethane	50.0	U	ND	50.6	ug/L		101	(70%-126%)			
1,1-Dichloroethane	50.0	U	ND	55.0	ug/L		110	(70%-126%)			
1,1-Dichloroethylene	50.0	U	ND	55.9	ug/L		112	(61%-137%)			
1,2-Dichloroethane	50.0	U	ND	54.6	ug/L		109	(64%-129%)			
1,2-Dichloropropane	50.0	U	ND	53.2	ug/L		106	(68%-127%)			

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QC Summary

Workorder: 612202

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2390340										
1,3-Dichloropropylene	100			95.6	ug/L		96	(74%-123%)	JM6	02/27/23	16:50
2-Chloroethylvinyl ether	250	U	ND U	ND	ug/L		0 *	(64%-123%)			
Benzene	50.0	U	ND	55.1	ug/L		110	(65%-122%)			
Bromodichloromethane	50.0	U	ND	53.7	ug/L		107	(68%-137%)			
Bromoform	50.0	U	ND	47.3	ug/L		95	(62%-138%)			
Bromomethane	50.0	U	ND	71.6	ug/L		143 *	(61%-142%)			
Carbon tetrachloride	50.0	U	ND	52.8	ug/L		106	(63%-144%)			
Chlorobenzene	50.0	U	ND	50.5	ug/L		101	(63%-123%)			
Chloroethane	50.0	U	ND	71.4	ug/L		143 *	(64%-134%)			
Chloroform	50.0	U	ND	54.6	ug/L		109	(69%-133%)			
Chloromethane	50.0	U	ND	60.2	ug/L		120	(45%-142%)			
Dibromochloromethane	50.0	U	ND	49.5	ug/L		99	(68%-142%)			
Ethylbenzene	50.0	U	ND	48.5	ug/L		97	(65%-124%)			
Methylene chloride	50.0	J	0.720	50.8	ug/L		100	(62%-125%)			
Tetrachloroethylene	50.0	U	ND	49.9	ug/L		100	(64%-129%)			

GEL LABORATORIES LLC

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QC Summary

Workorder: 612202

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Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS												
Batch	2390340											
Toluene	50.0	U	ND		50.0	ug/L		100	(63%-121%)	JM6	02/27/23	16:50
Trichloroethylene	50.0	U	ND		52.3	ug/L		105	(66%-126%)			
Vinyl chloride	50.0	U	ND		66.7	ug/L		133	(58%-139%)			
trans-1,2-Dichloroethylene	50.0	U	ND		52.3	ug/L		105	(65%-130%)			
**1,2-Dichloroethane-d4	50.0		55.7		54.3	ug/L		109	(73%-129%)			
**Bromofluorobenzene	50.0		50.5		49.8	ug/L		100	(72%-125%)			
**Toluene-d8	50.0		50.6		50.7	ug/L		101	(75%-123%)			
QC1205331726 612202001 PS												
Acrolein	250	HU	ND	H	153	ug/L		61	(51%-142%)		02/27/23	17:44
Acrylonitrile	250	HU	ND	H	273	ug/L		109	(60%-135%)			
**1,2-Dichloroethane-d4	50.0		55.8		55.9	ug/L		112	(73%-129%)			
**Bromofluorobenzene	50.0		48.4		51.7	ug/L		103	(72%-125%)			
**Toluene-d8	50.0		50.9		50.6	ug/L		101	(75%-123%)			
QC1205331727 611447003 PSD												
1,1,1-Trichloroethane	50.0	U	ND		51.6	ug/L	3	103	(0%-20%)		02/27/23	17:17
1,1,2,2-Tetrachloroethane	50.0	U	ND		46.3	ug/L	6	93	(0%-20%)			
1,1,2-Trichloroethane	50.0	U	ND		49.4	ug/L	2	99	(0%-20%)			

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QC Summary

Workorder: 612202

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Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS												
Batch	2390340											
1,1-Dichloroethane	50.0	U	ND		52.6	ug/L	5	105	(0%-20%)	JM6	02/27/23	17:17
1,1-Dichloroethylene	50.0	U	ND		55.4	ug/L	1	111	(0%-20%)			
1,2-Dichloroethane	50.0	U	ND		53.2	ug/L	3	106	(0%-20%)			
1,2-Dichloropropane	50.0	U	ND		51.4	ug/L	3	103	(0%-20%)			
1,3-Dichloropropylene	100				93.8	ug/L	2	94	(0%-20%)			
2-Chloroethylvinyl ether	250	U	ND	U	ND	ug/L	N/A	0*	(0%-20%)			
Benzene	50.0	U	ND		54.4	ug/L	1	109	(0%-20%)			
Bromodichloromethane	50.0	U	ND		51.9	ug/L	3	104	(0%-20%)			
Bromoform	50.0	U	ND		45.5	ug/L	4	91	(0%-20%)			
Bromomethane	50.0	U	ND		68.5	ug/L	4	137	(0%-20%)			
Carbon tetrachloride	50.0	U	ND		50.7	ug/L	4	101	(0%-20%)			
Chlorobenzene	50.0	U	ND		48.7	ug/L	4	97	(0%-20%)			
Chloroethane	50.0	U	ND		68.6	ug/L	4	137*	(0%-20%)			
Chloroform	50.0	U	ND		52.1	ug/L	5	104	(0%-20%)			
Chloromethane	50.0	U	ND		56.7	ug/L	6	113	(0%-20%)			

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QC Summary

Workorder: 612202

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2390340										
Dibromochloromethane	50.0	U	ND	48.1	ug/L	3	96	(0%-20%)	JM6	02/27/23	17:17
Ethylbenzene	50.0	U	ND	46.7	ug/L	4	93	(0%-20%)			
Methylene chloride	50.0	J	0.720	49.7	ug/L	2	98	(0%-20%)			
Tetrachloroethylene	50.0	U	ND	48.7	ug/L	3	97	(0%-20%)			
Toluene	50.0	U	ND	48.7	ug/L	3	97	(0%-20%)			
Trichloroethylene	50.0	U	ND	51.3	ug/L	2	103	(0%-20%)			
Vinyl chloride	50.0	U	ND	63.6	ug/L	5	127	(0%-20%)			
trans-1,2-Dichloroethylene	50.0	U	ND	50.6	ug/L	3	101	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		55.7	54.4	ug/L		109	(73%-129%)			
**Bromofluorobenzene	50.0		50.5	48.5	ug/L		97	(72%-125%)			
**Toluene-d8	50.0		50.6	50.1	ug/L		100	(75%-123%)			
QC1205331728 612202001 PSD											
Acrolein	250	HU	ND	H	137	ug/L	11	55	(0%-20%)	02/27/23	18:11
Acrylonitrile	250	HU	ND	H	257	ug/L	6	103	(0%-20%)		
**1,2-Dichloroethane-d4	50.0		55.8	55.3	ug/L		111	(73%-129%)			
**Bromofluorobenzene	50.0		48.4	50.3	ug/L		101	(72%-125%)			

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QC Summary

Workorder: 612202

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	2390340										
**Toluene-d8	50.0	50.9		49.5	ug/L		99	(75%-123%)	JM6	02/27/23	18:11

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.
- C Analyte has been confirmed by GC/MS analysis
- B The target analyte was detected in the associated blank.
- E Concentration of the target analyte exceeds the instrument calibration range
- A The TIC is a suspected aldol-condensation product
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- H Analytical holding time was exceeded
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- h Preparation or preservation holding time was exceeded
- R Sample results are rejected
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- D Results are reported from a diluted aliquot of the sample
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- JNX Non Calibrated Compound
- UJ Compound cannot be extracted
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- N1 See case narrative
- Y QC Samples were not spiked with this compound

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
R	Per section 9.3.4.1 of	Method 1664 Revision B,	due to matrix spike recovery issues,	this result may not be reported or used for regulatory compliance purposes.							
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).	Quantitation is based on nearest internal standard response factor									
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
J	See case narrative for an explanation										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 612202

GC/MS Volatile

Product: Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer

Analytical Method: EPA 624.1

Analytical Procedure: GL-OA-E-026 REV# 29

Analytical Batch: 2390340

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612202001	Treated Water Tank A
1205331722	Laboratory Control Sample (LCS)
1205331723	Laboratory Control Sample (LCS)
1205331724	Method Blank (MB)
1205331725	611447003(NonSDG) Post Spike (PS)
1205331726	612202001(Treated Water Tank A) Post Spike (PS)
1205331727	611447003(NonSDG) Post Spike Duplicate (PSD)
1205331728	612202001(Treated Water Tank A) Post Spike Duplicate (PSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike/Matrix Spike Duplicate Recovery Statement

Preservation by acidification causes 2-Chloroethylvinyl ether to degrade resulting in poor recoveries in samples (See Below).

Sample	Analyte	Value
1205331725 (Non SDG 611447003PS)	2-Chloroethylvinyl ether	0* (64%-123%)
1205331727 (Non SDG 611447003PSD)	2-Chloroethylvinyl ether	0* (64%-123%)

The spike and/or spike duplicate (See Below) recoveries were not all within the acceptance limits. The recoveries were similar. It is believed possible matrix interference has been demonstrated.

Sample	Analyte	Value
1205331725 (Non SDG 611447003PS)	Chloroethane	143* (64%-134%)
1205331727 (Non SDG 611447003PSD)	Chloroethane	137* (64%-134%)

The spike and/or spike duplicate (See Below) recoveries were not all within the acceptance limits. The

associated spike and/or spike duplicate passed recoveries near the lower/upper end of the limits.

Sample	Analyte	Value
1205331725 (Non SDG 611447003PS)	Bromomethane	143* (61%-142%)

Technical Information

Holding Time Specifications

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the ALPHALIMS system. Those holding times expressed as days expire at midnight on the day of expiration. Samples (See Below) were not analyzed within holding because greater than 50% of the holding time had expired upon receipt of the samples. The results are qualified accordingly.

Sample	Analyte	Value
1205331726 (Treated Water Tank APS)		Received 24-FEB-23, within holding, analyzed 27-FEB-23, out of holding 25-FEB-23
1205331728 (Treated Water Tank APSD)		Received 24-FEB-23, within holding, analyzed 27-FEB-23, out of holding 25-FEB-23
612202001 (Treated Water Tank A)		Received 24-FEB-23, within holding, analyzed 27-FEB-23, out of holding 25-FEB-23

General Chemistry

Product: Biochemical Oxygen Demand

Analytical Method: SM 5210B

Analytical Procedure: GL-GC-E-045 REV# 28

Analytical Batch: 2389221

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612202001	Treated Water Tank A
1205329970	Method Blank (MB)
1205329971	Laboratory Control Sample (LCS)
1205329972	BOD Seed (SEED)
1205330005	612040002(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Sample (See Below) was received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
612202001 (Treated Water Tank A)		Received 24-FEB-23, out of holding 24-FEB-23

2:1 Depletion Requirement

The following samples in this batch did not meet the 2:1 depletion requirement. 612202001 (Treated Water Tank A).

Product: Total Residual Chlorine

Analytical Method: SM 4500-Cl G

Analytical Procedure: GL-GC-E-076 REV# 17

Analytical Batch: 2390320

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#**Client Sample Identification**

612202001	Treated Water Tank A
1205331689	Method Blank (MB)
1205331690	Laboratory Control Sample (LCS)
1205331691	612202001(Treated Water Tank A) Sample Duplicate (DUP)
1205331692	612202001(Treated Water Tank A) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information**Holding Times**

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1205331691 (Treated Water Tank ADUP)		Received 24-FEB-23, out of holding 22-FEB-23
1205331692 (Treated Water Tank APS)		Received 24-FEB-23, out of holding 22-FEB-23
612202001 (Treated Water Tank A)		Received 24-FEB-23, out of holding 22-FEB-23

Product: pH

Analytical Method: EPA 150.1

Analytical Procedure: GL-GC-E-008 REV# 26

Analytical Batch: 2392032

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
612202001	Treated Water Tank A
1205334357	Laboratory Control Sample (LCS)
1205334358	612158001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1205334358 (Non SDG 612158001DUP)		Received 24-FEB-23, out of holding 21-FEB-23
612202001 (Treated Water Tank A)		Received 24-FEB-23, out of holding 22-FEB-23

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDF Inc</u>		SDG/AR/COC/Work Order: <u>612189 / 612202</u>	
Received By: <u>Alex Almoss</u>		Date Received: <u>2/24/23</u>	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other <u>7713 7511 9640</u> <u>7713 7511 9043</u>	
Suspected Hazard Information	Yes ☒ No ☒	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	☒	Hazard Class Shipped: _____ UN#: <u>2910's</u> If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☒ No ☐	
B) Did the client designate the samples are to be received as radioactive?	☒	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	☒	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>120</u> CPM/mR/hr Classified as: <u>Rad 1</u> Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	☒	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	☒	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____	
Sample Receipt Criteria	Yes	NA	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	☒	☒	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Chain of custody documents included with shipment?	☒	☒	Circle Applicable: Client contacted and provided COC COC created upon receipt
3 Samples requiring cold preservation within (0 ≤ deg. C)?*	☒	☒	Preservation Methods: <u>Wet Ice</u> Ice Packs Dry ice None Other: _____ *all temperatures are recorded in Celsius TEMP: <u>2°C</u>
4 Daily check performed and passed on IR temperature gun?	☒	☒	Temperature Device Serial #: <u>142-23</u> Secondary Temperature Device Serial # (If Applicable): _____
5 Sample containers intact and sealed?	☒	☒	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6 Samples requiring chemical preservation at proper pH?	☒	☒	Sample ID's and Containers Affected: If Preservation added, Lot#: _____ If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☒ NA ☒ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ☒ No ☒ NA ☒ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ☒ No ☒ NA ☒ Sample ID's and containers affected: _____
7 Do any samples require Volatile Analysis?	☒	☒	ID's and tests affected: _____
8 Samples received within holding time?	☒	☒	ID's and containers affected: _____
9 Sample ID's on COC match ID's on bottles?	☒	☒	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
10 Date & time on COC match date & time on bottles?	☒	☒	Circle Applicable: No container count on COC Other (describe) <u>Below</u>
11 Number of containers received match number indicated on COC?	☒	☒	
12 Are sample containers identifiable as GEL provided by use of GEL labels?	☒	☒	
13 COC form is properly signed in relinquished/received sections?	☒	☒	Circle Applicable: Not relinquished Other (describe)
Comments (Use Continuation Form if needed): <u>Note: Missing cooler 3 of 3 at this time.</u> <u>Case # 6587 2/24/23</u>			

PM (or PMA) review: Initials mlg Date 2/27/23 Page 1 of 3



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDI Inc.</u>		SDG/AR/COC/Work Order: <u>612189 612202</u>	
Received By: <u>Alex Almos</u>		Date Received: <u>2/24/23</u>	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other <u>771373836671</u> <u>771373719043</u> <u>DA 2/24/23</u>	
Suspected Hazard Information		*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. Hazard Class Shipped: <u>UN# 2910</u> If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☒ No ☐	
A) Shipped as a DOT Hazardous?		☒	
B) Did the client designate the samples are to be received as radioactive?		☒	
C) Did the RSO classify the samples as radioactive?		☒	
D) Did the client designate samples are hazardous?		☒	
E) Did the RSO identify possible hazards?		☒	
Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)	
1	Shipping containers received intact and sealed?	☒	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	☒	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?	☒	Preservation Method: <u>Wet Ice</u> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>5°C</u>
4	Daily check performed and passed on IR temperature gun?	☒	Temperature Device Serial #: <u>IR3-23</u> Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	☒	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	☒	Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	☒	If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☐ NA ☐ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ☐ No ☐ NA ☐ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ☐ No ☐ NA ☐ Sample ID's and containers affected:
8	Samples received within holding time?	☒	ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	☒	ID's and containers affected:
10	Date & time on COC match date & time on bottles?	☒	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	☒	Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	☒	
13	COC form is properly signed in relinquished/received sections?	☒	Circle Applicable: Not relinquished Other (describe)
Comments (Use Continuation Form if needed):			

PM (or PMA) review: Initials mgDate 2/27/23 Page 2 of 3

GL-CHL-SR-001 Rev 7

SAMPLE RECEIPT & REVIEW FORM

Client: CDEC		SDG/AR/COC/Work Order: 012184 / 612202	
Received By: AA		Date Received: 2/25/23	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other	
		7713 7511 9411	
Suspected Hazard Information	Yes ☐ No ☒	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	Yes ☒ No ☐	Hazard Class Shipped: _____ UN#: 2910 If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☒ No ☐	
B) Did the client designate the samples to be received as radioactive?	Yes ☒ No ☐	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	Yes ☒ No ☐	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	Yes ☒ No ☐	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	Yes ☒ No ☐	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____	
Sample Receipt Criteria		Yes	No
1 Shipping containers received intact and sealed?		☒	☐
2 Chain of custody documents included with shipment?		☒	☐
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		☒	☐
4 Daily check performed and passed on IR temperature gun?		☒	☐
5 Sample containers intact and sealed?		☒	☐
6 Samples requiring chemical preservation at proper pH?		☒	☐
7 Do any samples require Volatile Analysis?		☒	☐
8 Samples received within holding time?		☒	☐
9 Sample ID's on COC match ID's on bottles?		☒	☐
10 Date & time on COC match date & time on bottles?		☒	☐
11 Number of containers received match number indicated on COC?		☒	☐
12 Are sample containers identifiable as GEL provided by use of GEL labels?		☒	☐
13 COC form is properly signed in relinquished/received sections?		☒	☐
Comments (Use Continuation Form if needed): <i>This is the cooler that was missing 2/24.</i>			

List of current GEL Certifications as of 08 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

March 22, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 611601

Dear Laura Hageman:

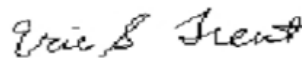
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 21, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. The following additional comments were noted at receipt: (insert text box).. Sample was preserved upon arrival. Client was notified via email..

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,



Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 611601 GEL Work Order: 611601

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- h Preparation or preservation holding time was exceeded

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by

Erin B. Trent

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 22, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Intake
Sample ID: 611601001
Matrix: Water
Collect Date: 20-FEB-23 08:00
Receive Date: 21-FEB-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Carbon Analysis

SM 5310 B Total Organic/Inorganic Carbon "As Received"

Total Organic Carbon Average	J	0.509	0.330	1.00	mg/L		1 TSM	02/23/23	0639	2387728	1
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Flow Injection Analysis

EPA 335.4 Cyanide, Total "As Received"

Cyanide, Total	U	ND	1.67	5.00	ug/L	1.00	1 AXH3	02/28/23	0956	23907532
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EPA 420.4 Total Phenols "As Received"

Total Phenol	J	4.04	1.67	5.00	ug/L	1.00	1 AXH3	02/28/23	0707	23843153
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Ion Chromatography

SW846 9056 Anions, Liquid "As Received"

Bromide		63.9	+/-4.95	13.4	40.0	mg/L		200 LXA2	02/21/23	1959	23875704
24959-67-9											
Sulfate		2470	+/-82.8	26.6	80.0	mg/L		200			
14808-79-8											
Chloride		19100	+/-643	268	800	mg/L		4000 LXA2	02/22/23	0158	23875705
16887-00-6											
Fluoride	U	ND	+/-0.550	1.65	5.00	mg/L		50 LXA2	02/22/23	0128	23875706
16984-48-8											

Mercury Analysis-CVAA

EPA 245 Mercury "As Received"

Mercury	UHH	ND	+/-0.0223	0.0670	0.200	ug/L	1.00	1 JP2	03/22/23	0935	24013917
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7439-97-6

Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Selenium	U	ND	+/-10.0	30.0	100	ug/L	1.00	20 SKJ	02/24/23	2136	23874278
7782-49-2											
Zinc	U	ND	+/-22.0	66.0	400	ug/L	1.00	20			
7440-66-6											
Arsenic	U	ND	+/-13.4	40.0	100	ug/L	1.00	20 SKJ	02/27/23	1338	23874279
7440-38-2											
Boron		4290	+/-231	260	750	ug/L	1.00	50 SKJ	02/27/23	1122	238742710
7440-42-8											

1.00

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 22, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID:
Sample ID: 611601001

Project:
Client ID: CDEC00107
CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Metals Analysis-ICP-MS

200.8/200.2 Priority Pollutant "As Received"

Antimony 7440-36-0	U	ND	+/-1.67	5.00	15.0	ug/L		5 SKJ	02/24/23	2157	2387427	11
Beryllium 7440-41-7	U	ND	+/-0.333	1.00	2.50	ug/L	1.00	5				
Cadmium 7440-43-9	U	ND	+/-0.500	1.50	5.00	ug/L	1.00	5				
Chromium 7440-47-3	U	ND	+/-5.00	15.0	50.0	ug/L	1.00	5				
Copper 7440-50-8	J	1.69	+/-0.507	1.50	10.0	ug/L	1.00	5				
Lead 7439-92-1	U	ND	+/-0.833	2.50	10.0	ug/L	1.00	5				
Nickel 7440-02-0	U	ND	+/-1.00	3.00	10.0	ug/L	1.00	5				
Silver 7440-22-4	U	ND	+/-0.500	1.50	5.00	ug/L	1.00	5				
Thallium 7440-28-0	U	ND	+/-1.00	3.00	10.0	ug/L	1.00	5				

Nutrient Analysis

EPA 350.1 Nitrogen, Ammonia "As Received"

Nitrogen, Ammonia 7664-41-7	0.196	+/-0.00865	0.0170	0.0500	mg/L	1.00	1 KLP1	03/01/23	1527	2390589	12
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Oil & Grease Analysis

EPA 1664A/B n-Hexane Extractable Material (O&G) "As Received"

Oil and Grease	U	ND	1.11	3.97	mg/L		DXB7	03/02/23	0524	2391763	13
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Solids Analysis

SM 2540D Total Suspended Solids (TSS) "As Received"

Total Suspended Solids	4.10	0.570	2.50	mg/L		CH6	02/22/23	0759	2387645	14
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Spectrometric Analysis

EPA 410.4 Chemical Oxygen Demand "As Received"

COD	531	44.8	100	mg/L		5 HH2	02/27/23	1444	2390321	15
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The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.4	EPA 335.4 Total Cyanide	ES2	02/28/23	0733	2390752

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 22, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Intake
Sample ID: 611601001
Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time	Batch Mtd.
EPA 420.4	EPA 420.4 Phenols, Total in liquid PREP			ES2	02/27/23	1205	2384314		
EPA 350.1 Prep	EPA 350.1 Ammonia Nitrogen Prep			ES2	03/01/23	1331	2390587		
EPA 200.2	ICP-MS 200.2 PREP			EM2	02/21/23	1555	2387426		
EPA 245.1/245.2 Prep	EPA 245 Mercury			RM4	03/21/23	1134	2401389		

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SM 5310 B	
2	EPA 335.4	
3	EPA 420.4	
4	SW846 9056	
5	SW846 9056	
6	SW846 9056	
7	EPA 245.1/245.2	
8	EPA 200.8	
9	EPA 200.8	
10	EPA 200.8	
11	EPA 200.8	
12	EPA 350.1	
13	EPA 1664A/1664B	
14	SM 2540D	
15	EPA 410.4	

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QC Summary

Report Date: March 22, 2023

Page 1 of 11

HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Contact: Laura Hageman

Workorder: 611601

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Carbon Analysis											
Batch	2387728										
QC1205327606	611282002	DUP									
Total Organic Carbon Average		3.66		3.60	mg/L	1.57	^	(+/-1.00)	TSM	02/23/23	00:27
QC1205327605	LCS										
Total Organic Carbon Average	10.0			9.89	mg/L			98.9 (80%-120%)		02/22/23	23:56
QC1205327604	MB										
Total Organic Carbon Average			U	ND	mg/L					02/22/23	23:46
QC1205327608	611282002	PS									
Total Organic Carbon Average	10.0	3.66		9.11	mg/L			54.5* (65%-120%)		02/23/23	00:47
Flow Injection Analysis											
Batch	2384315										
QC1205321759	LCS										
Total Phenol	50.0			47.3	ug/L			94.7 (90%-110%)	AXH3	02/28/23	08:19
QC1205321758	MB										
Total Phenol			U	ND	ug/L					02/28/23	06:54
QC1205321760	610757003	MS									
Total Phenol	50.0	U	ND	48.9	ug/L			97.8 (90%-110%)		02/28/23	06:57
QC1205321761	610757003	MSD									
Total Phenol	50.0	U	ND	51.1	ug/L	4.39	102	(0%-20%)		02/28/23	06:58
Batch	2390753										
QC1205332475	612160012	DUP									
Cyanide, Total		U	ND	U	ND	ug/L	N/A		AXH3	02/28/23	09:58

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QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Flow Injection Analysis											
Batch	2390753										
QC1205332474	LCS										
Cyanide, Total	50.0			52.0	ug/L		104	(90%-110%)	AXH3	02/28/23	09:55
QC1205332473	MB										
Cyanide, Total			U	ND	ug/L					02/28/23	10:04
QC1205332476	612160012	MS									
Cyanide, Total	100	U	ND	104	ug/L		104	(90%-110%)		02/28/23	10:05
QC1205332477	612160012	MSD									
Cyanide, Total	100	U	ND	104	ug/L	0	104	(0%-20%)		02/28/23	10:06
Ion Chromatography											
Batch	2387570										
QC1205327353	610979003	DUP									
Bromide		U	ND	U	ND	mg/L	N/A		LXA2	02/21/23	20:29
Chloride			250		252	mg/L	0.446	(0%-20%)			
Fluoride			1.30		1.34	mg/L	2.62 ^	(+/-0.500)		02/21/23	23:28
Sulfate			1870		1840	mg/L	1.39	(0%-20%)		02/21/23	20:29
QC1205327352	LCS										
Bromide	1.25			1.28	mg/L		103	(90%-110%)		02/21/23	16:30
Chloride	5.00			4.91	mg/L		98.1	(90%-110%)			
Fluoride	2.50			2.64	mg/L		106	(90%-110%)			
Sulfate	10.0			10.2	mg/L		102	(90%-110%)			

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QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	2387570										
QC1205327351 MB											
Bromide			U	ND	mg/L				LXA2	02/21/23	16:01
Chloride			U	ND	mg/L						
Fluoride			U	ND	mg/L						
Sulfate			U	ND	mg/L						
QC1205327354 610979003 PS											
Bromide	1.25	U	ND	1.28	mg/L		102	(90%-110%)		02/21/23	22:29
Chloride	5.00		1.25	6.22	mg/L		99.3	(90%-110%)			
Fluoride	2.50		0.260	2.81	mg/L		102	(90%-110%)		02/21/23	23:58
Sulfate	10.0		9.33	19.9	mg/L		105	(90%-110%)		02/21/23	22:29
Metals Analysis - ICPMS											
Batch	2387427										
QC1205327141 611601001 DUP											
Antimony		U	ND	U	ND	ug/L	N/A		SKJ	02/24/23	22:01
Arsenic		U	ND	U	ND	ug/L	N/A			02/27/23	13:41
Beryllium		U	ND	U	ND	ug/L	N/A			02/24/23	22:01
Boron			4290		4260	ug/L	0.733	(0%-20%)		02/27/23	11:25
Cadmium		U	ND	U	ND	ug/L	N/A			02/24/23	22:01
Chromium		U	ND	U	ND	ug/L	N/A				

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2387427										
Copper	J	1.69	U	ND	ug/L	200	^		SKJ	02/24/23	22:01
Lead	U	ND	U	ND	ug/L	N/A					
Nickel	U	ND	U	ND	ug/L	N/A					
Selenium	U	ND	U	ND	ug/L	N/A				02/24/23	21:40
Silver	U	ND	U	ND	ug/L	N/A				02/24/23	22:01
Thallium	U	ND	U	ND	ug/L	N/A					
Zinc	U	ND	U	ND	ug/L	N/A				02/24/23	21:40
QC1205327140 LCS											
Antimony	50.0			51.9	ug/L		104	(85%-115%)		02/24/23	21:33
Arsenic	50.0			52.3	ug/L		105	(85%-115%)		02/27/23	13:35
Beryllium	50.0			53.2	ug/L		106	(85%-115%)		02/24/23	21:33
Boron	100			101	ug/L		101	(85%-115%)		02/27/23	11:20
Cadmium	50.0			53.2	ug/L		106	(85%-115%)		02/24/23	21:33
Chromium	50.0			53.3	ug/L		107	(85%-115%)			
Copper	50.0			55.8	ug/L		112	(85%-115%)			
Lead	50.0			53.9	ug/L		108	(85%-115%)			

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2387427										
Nickel	50.0			54.0	ug/L		108	(85%-115%)	SKJ	02/24/23	21:33
Selenium	50.0			52.6	ug/L		105	(85%-115%)			
Silver	50.0			52.4	ug/L		105	(85%-115%)			
Thallium	50.0			52.2	ug/L		104	(85%-115%)			
Zinc	50.0			52.3	ug/L		105	(85%-115%)			
QC1205327139 MB											
Antimony			U	ND	ug/L					02/24/23	21:29
Arsenic			U	ND	ug/L					02/27/23	13:32
Beryllium			U	ND	ug/L					02/24/23	21:29
Boron			U	ND	ug/L					02/27/23	11:17
Cadmium			U	ND	ug/L					02/24/23	21:29
Chromium			U	ND	ug/L						
Copper			U	ND	ug/L						
Lead			U	ND	ug/L						
Nickel			U	ND	ug/L						
Selenium			U	ND	ug/L						

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 611601

Page 6 of 11

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2387427										
Silver			U	ND	ug/L				SKJ	02/24/23	21:29
Thallium			U	ND	ug/L						
Zinc			U	ND	ug/L						
QC1205327142 611601001 MS											
Antimony	50.0	U	ND	47.2	ug/L		93.3	(75%-125%)		02/24/23	22:04
Arsenic	50.0	U	ND	51.9	ug/L		104	(75%-125%)		02/27/23	13:43
Beryllium	50.0	U	ND	44.7	ug/L		89.4	(75%-125%)		02/24/23	22:04
Boron	100		4290	4500	ug/L		N/A	(75%-125%)		02/27/23	11:27
Cadmium	50.0	U	ND	40.2	ug/L		80.3	(75%-125%)		02/24/23	22:04
Chromium	50.0	U	ND	47.9	ug/L		95.8	(75%-125%)			
Copper	50.0	J	1.69	41.2	ug/L		79.1	(75%-125%)			
Lead	50.0	U	ND	43.3	ug/L		86.2	(75%-125%)			
Nickel	50.0	U	ND	41.4	ug/L		80.2	(75%-125%)			
Selenium	50.0	U	ND	47.3	ug/L		88.8	(75%-125%)		02/24/23	21:43
Silver	50.0	U	ND	39.1	ug/L		78.1	(75%-125%)		02/24/23	22:04
Thallium	50.0	U	ND	44.3	ug/L		88.3	(75%-125%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2387427										
Zinc	50.0	U	ND	U	ND	ug/L	0*	(75%-125%)	SKJ	02/24/23	21:43
QC1205327143 611601001 SDILT											
Antimony	U	ND	U	ND	ug/L	N/A		(0%-10%)		02/24/23	22:08
Arsenic	U	ND	U	ND	ug/L	N/A		(0%-10%)		02/27/23	13:46
Beryllium	U	ND	U	ND	ug/L	N/A		(0%-10%)		02/24/23	22:08
Boron		85.8		19.5	ug/L	13.5		(0%-10%)		02/27/23	11:29
Cadmium	U	ND	U	ND	ug/L	N/A		(0%-10%)		02/24/23	22:08
Chromium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Copper	J	0.338	U	ND	ug/L	N/A		(0%-10%)			
Lead	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Nickel	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Selenium	U	ND	U	ND	ug/L	N/A		(0%-10%)		02/24/23	21:47
Silver	U	ND	U	ND	ug/L	N/A		(0%-10%)		02/24/23	22:08
Thallium	U	ND	U	ND	ug/L	N/A		(0%-10%)			
Zinc	U	ND	U	ND	ug/L	N/A		(0%-10%)		02/24/23	21:47

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-Mercury											
Batch	2401391										
QC1205351468	611601001	DUP									
Mercury		UHh	ND	UHh	ND	ug/L	N/A		JP2	03/22/23	09:37
QC1205351467	LCS										
Mercury		2.00			2.02	ug/L	101	(85%-115%)		03/22/23	09:34
QC1205351466	MB										
Mercury			U	ND	ug/L					03/22/23	09:32
QC1205351469	611601001	MS									
Mercury		2.00 UHh	ND	Hh	1.42	ug/L	71.1*	(75%-125%)		03/22/23	09:39
QC1205351471	611601001	PS									
Mercury		2.00 UHh	ND	H	1.46	ug/L	72.8*	(80%-120%)		03/22/23	09:42
QC1205351470	611601001	SDILT									
Mercury		UHh	ND	UHh	ND	ug/L	N/A	(0%-10%)		03/22/23	09:40
Nutrient Analysis											
Batch	2390589										
QC1205332249	611005022	DUP									
Nitrogen, Ammonia			0.0549		0.128	mg/L	79.9*^	(+/-0.0500)	KLP1	03/01/23	15:15
QC1205332246	LCS										
Nitrogen, Ammonia		1.00			0.962	mg/L	96.2	(90%-110%)		03/01/23	14:45
QC1205332245	MB										
Nitrogen, Ammonia			J	0.0177	mg/L					03/01/23	14:44
QC1205332250	611005022	MS									
Nitrogen, Ammonia		1.00	0.0549		1.05	mg/L	99.5	(90%-110%)		03/01/23	15:16

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QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Oil & Grease Analysis											
Batch	2391763										
QC1205334078	LCS										
Oil and Grease	40.0			37.7	mg/L		94.3	(78%-114%)	DXB7	03/02/23	05:24
QC1205334079	LCSD										
Oil and Grease	40.0			36.4	mg/L	3.51	91	(0%-18%)		03/02/23	05:24
QC1205334077	MB										
Oil and Grease			U	ND	mg/L					03/02/23	05:24
QC1205334080	610507001	MS									
Oil and Grease	38.8	U	ND	30.5	mg/L		76*	(78%-114%)		03/02/23	05:24
Solids Analysis											
Batch	2387645										
QC1205327461	611553001	DUP									
Total Suspended Solids		U	ND	U	ND	mg/L	N/A		CH6	02/22/23	07:59
QC1205327459	LCS										
Total Suspended Solids	500			501	mg/L		100	(95%-105%)		02/22/23	07:59
QC1205327460	LCSD										
Total Suspended Solids	500			504	mg/L	0.597	101	(0%-5%)		02/22/23	07:59
QC1205327458	MB										
Total Suspended Solids			U	ND	mg/L					02/22/23	07:59
Spectrometric Analysis											
Batch	2390321										
QC1205331695	611601001	DUP									
COD			531	492	mg/L	7.74	^	(+/-100)	HH2	02/27/23	14:44
QC1205331694	LCS										
COD	500			518	mg/L		104	(90%-110%)		02/27/23	14:44

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QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Spectrometric Analysis											
Batch	2390321										
QC1205331693	MB										
COD			J	18.1	mg/L				HH2	02/27/23	14:44
QC1205331696	611601001	MS									
COD	500	531		1140	mg/L		24.4*	(90%-110%)		02/27/23	14:44

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- N Metals--The Matrix spike sample recovery is not within specified control limits
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported
- h Preparation or preservation holding time was exceeded
- R Sample results are rejected
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- N1 See case narrative
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- B The target analyte was detected in the associated blank.
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- J See case narrative for an explanation

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QC Summary

Workorder: 611601

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
----------	-----	--------	------	----	-------	--------	------	-------	-------	------	------

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 611601

Metals

Product: Determination of Metals by ICP-MS

Analytical Method: EPA 200.8

Analytical Procedure: GL-MA-E-014 REV# 35

Analytical Batch: 2387427

Preparation Method: EPA 200.2

Preparation Procedure: GL-MA-E-016 REV# 18

Preparation Batch: 2387426

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205327139	Method Blank (MB)ICP-MS
1205327140	Laboratory Control Sample (LCS)
1205327143	611601001(Intake L) Serial Dilution (SD)
1205327141	611601001(Intake D) Sample Duplicate (DUP)
1205327142	611601001(Intake S) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement

For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Quality Control (QC) Information

Matrix Spike (MS/MSD) Recovery Statement

The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte.

Sample	Analyte	Value
1205327142 (Intake MS)	Zinc	0* (75%-125%)

Technical Information

Sample Dilutions

Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range. Sample 611601001 (Intake) was diluted to ensure that the analyte concentration was within the linear calibration range of the instrument. Per the SOP, sample 611601001 (Intake) was diluted due to internal standard recoveries outside the acceptable control limits.

Analyte	611601
	001
Antimony	5X
Arsenic	20X
Beryllium	5X
Boron	50X
Cadmium	5X
Chromium	5X
Copper	5X
Lead	5X
Nickel	5X
Selenium	20X
Silver	5X
Thallium	5X
Zinc	20X

Product: Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

Analytical Method: EPA 245.1/245.2

Analytical Procedure: GL-MA-E-010 REV# 39

Analytical Batch: 2401391

Preparation Method: EPA 245.1/245.2 Prep

Preparation Procedure: GL-MA-E-010 REV# 39

Preparation Batch: 2401389

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205351466	Method Blank (MB)CVAA
1205351467	Laboratory Control Sample (LCS)
1205351470	611601001(Intake L) Serial Dilution (SD)
1205351468	611601001(Intake D) Sample Duplicate (DUP)
1205351469	611601001(Intake S) Matrix Spike (MS)
1205351471	611601001(Intake PS) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS/MSD) Recovery Statement

The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike also did not meet the required control limits; thus, confirming matrix interferences and/or sample non-homogeneity.

Sample	Analyte	Value
1205351469 (Intake MS)	Mercury	71.1* (75%-125%)

Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the presence of matrix interferences.

Sample	Analyte	Value
1205351471 (Intake PS)	Mercury	72.8* (80%-120%)

Technical Information

Holding Time Specifications

GEL assigns holding times based on the associated methodology. Holding time is measured by comparison of the date and time of sample collection to the date and time of sample preparation and analysis. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. Samples (See Below) did not meet the specified holding time requirements. Samples were logged in beyond the required holding time.

Sample	Analyte	Value
1205351468 (Intake DUP)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23
		Received 21-FEB-23, within holding, prepped 21-MAR-23, out of holding 20-MAR-23
1205351469 (Intake MS)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23
		Received 21-FEB-23, within holding, prepped 21-MAR-23, out of holding 20-MAR-23
1205351470 (Intake SDILT)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23
		Received 21-FEB-23, within holding, prepped 21-MAR-23, out of holding 20-MAR-23

1205351471 (Intake PS)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23
611601001 (Intake)		Received 21-FEB-23, within holding, analyzed 22-MAR-23, out of holding 20-MAR-23
		Received 21-FEB-23, within holding, prepped 21-MAR-23, out of holding 20-MAR-23

General Chemistry

Product: Carbon, Total Organic

Analytical Method: SM 5310 B

Analytical Procedure: GL-GC-E-093 REV# 21

Analytical Batch: 2387728

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205327604	Method Blank (MB)
1205327605	Laboratory Control Sample (LCS)
1205327606	611282002(NonSDG) Sample Duplicate (DUP)
1205327608	611282002(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Total Organic Carbon Average	1205327608 (Non SDG 611282002PS)	54.5* (65%-120%)

Technical Information

Sample Re-analysis

Samples 1205327606 (Non SDG 611282002DUP) and 1205327608 (Non SDG 611282002PS) were reanalyzed due to PS failure. The reanalysis data was reported. The following sample with QC's was re-analyzed to verify matrix interference caused Post Spike failure, however one of the check standards failed on the reanalysis and the spike recovery also failed, therefore the first run results are being reported. 1205327606 (Non SDG

611282002DUP) and 1205327608 (Non SDG 611282002PS).

Product: Total Phenols

Analytical Method: EPA 420.4

Analytical Procedure: GL-GC-E-102 REV# 10

Analytical Batches: 2384315 and 2384314

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205321758	Method Blank (MB)
1205321759	Laboratory Control Sample (LCS)
1205321760	610757003(NonSDG) Matrix Spike (MS)
1205321761	610757003(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Re-analysis

Sample 1205321759 (LCS) was re-analyzed to verify the result.

Product: Cyanide, Total

Analytical Method: EPA 335.4

Analytical Procedure: GL-GC-E-095 REV# 23

Analytical Batch: 2390753

Preparation Method: EPA 335.4

Preparation Procedure: GL-GC-E-067 REV# 24

Preparation Batch: 2390752

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205332473	Method Blank (MB)
1205332474	Laboratory Control Sample (LCS)
1205332475	612160012(NonSDG) Sample Duplicate (DUP)
1205332476	612160012(NonSDG) Matrix Spike (MS)
1205332477	612160012(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information**Sample Re-analysis**

Sample 1205332473 (MB) was re-analyzed due to instrument failure. The results from the reanalysis are reported.

Miscellaneous Information**Additional Comments**

Sample was missed during the scanning process. The sample was in the analyst's custody at the time of analysis: 611601001 (Intake).

Product: Ion Chromatography

Analytical Method: SW846 9056

Analytical Procedure: GL-GC-E-086 REV# 30

Analytical Batch: 2387570

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205327351	Method Blank (MB)
1205327352	Laboratory Control Sample (LCS)
1205327353	610979003(NonSDG) Sample Duplicate (DUP)
1205327354	610979003(NonSDG) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information**Sample Dilutions**

The following samples 1205327353 (Non SDG 610979003DUP), 1205327354 (Non SDG 610979003PS) and 611601001 (Intake) were diluted because target analyte concentrations exceeded the calibration range. Samples 1205327353 (Non SDG 610979003DUP), 1205327354 (Non SDG 610979003PS) and 611601001 (Intake) were diluted to minimize matrix effects on instrument performance. Samples 1205327353 (Non SDG 610979003DUP), 1205327354 (Non SDG 610979003PS) and 611601001 (Intake) were diluted based on historical data. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	611601
	001

Bromide	200X
Chloride	4000X
Fluoride	50X
Sulfate	200X

Miscellaneous Information

Manual Integrations

Samples 1205327353 (Non SDG 610979003DUP) and 1205327354 (Non SDG 610979003PS) were manually integrated to correctly position the baseline as set in the calibration standards.

Product: Ammonia Nitrogen

Analytical Method: EPA 350.1

Analytical Procedure: GL-GC-E-106 REV# 10

Analytical Batch: 2390589

Preparation Method: EPA 350.1 Prep

Preparation Procedure: GL-GC-E-072 REV# 18

Preparation Batch: 2390587

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205332245	Method Blank (MB)
1205332246	Laboratory Control Sample (LCS)
1205332249	611005022(NonSDG) Sample Duplicate (DUP)
1205332250	611005022(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplicate Relative Percent Difference (RPD) Statement

The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample:

Analyte	Sample	Value
Nitrogen, Ammonia	1205332249 (Non SDG 611005022DUP)	abs(.128 - .0549)* (+/- .05 mg/L)

Technical Information

Sample Re-analysis

Samples 1205332245 (MB) and 1205332246 (LCS) were re-analyzed due to instrument failure. The results from the reanalysis are reported. Samples 1205332245 (MB), 1205332246 (LCS), 1205332249 (Non SDG 611005022DUP) and 1205332250 (Non SDG 611005022MS) were re-analyzed due to CCV failure. The reanalysis data with passing instrument QC was reported.

Product: n-Hexane Extractable Material

Analytical Method: EPA 1664A/1664B

Analytical Procedure: GL-GC-E-094 REV# 18

Analytical Batch: 2391763

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205334077	Method Blank (MB)
1205334078	Laboratory Control Sample (LCS)
1205334079	Laboratory Control Sample Duplicate (LCSD)
1205334080	610507001(NonSDG) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information**Matrix Spike (MS)/Post Spike (PS) Recovery Statement**

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Oil and Grease	1205334080 (Non SDG 610507001MS)	76* (78%-114%)

As specified in EPA Method 1664A/1664B, this data is considered rejected if it is being used for Regulatory Reporting. Please contact your PM to establish a recollection, if required. 1205334080 (Non SDG 610507001MS).

Technical Information**Sample Re-analysis**

Sample was reanalyzed due to MS failure. The reanalysis data was reported. 1205334080 (Non SDG 610507001MS).

Miscellaneous Information**Additional Comments**

Sample had some sediment in the bottom of the container, therefore two speedisks had to be used in order to

filter the whole amount. 1205334080 (Non SDG 610507001MS).

Product: Solids, Total Suspended

Analytical Method: SM 2540D

Analytical Procedure: GL-GC-E-012 REV# 18

Analytical Batch: 2387645

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205327458	Method Blank (MB)
1205327459	Laboratory Control Sample (LCS)
1205327460	Laboratory Control Sample Duplicate (LCSD)
1205327461	611553001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments

A reduced aliquot was used due to limited volume. The client did not provide an entire 1 liter aliquot. 1205327461 (Non SDG 611553001DUP).

Product: COD

Analytical Method: EPA 410.4

Analytical Procedure: GL-GC-E-061 REV# 21

Analytical Batch: 2390321

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
611601001	Intake
1205331693	Method Blank (MB)
1205331694	Laboratory Control Sample (LCS)
1205331695	611601001(Intake) Sample Duplicate (DUP)
1205331696	611601001(Intake) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
COD	1205331696 (Intake MS)	24.4* (90%-110%)

Technical Information

Sample Dilutions

The following samples 1205331695 (Intake DUP), 1205331696 (Intake MS) and 611601001 (Intake) in this sample group were diluted due to matrix interference. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	611601
	001
COD	5X

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM **ET**

611601

Client: CDEC		SDG/AR/COC/Work Order:	
Received By: MVH		Date Received: 02.21.2023	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other	
		771350256632 - 5°C 771350255978 - 677135025614 - 3°C	
Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?	☒	☐	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___
B) Did the client designate the samples are to be received as radioactive?	☒	☐	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?	☒	☐	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 00 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?	☒	☐	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?	☒	☐	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	☒	☐	☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Chain of custody documents included with shipment?	☒	☐	☐	Circle Applicable: Client contacted and provided COC COC created upon receipt
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	☒	☐	☐	Preservation Method: ☒ Wet Ice ☐ Ice Packs ☐ Dry ice ☐ None Other: _____ *all temperatures recorded in Celsius TEMP: _____
4 Daily check performed and passed on IR temperature gun?	☒	☐	☐	Temperature Device Serial #: IR2-21 Secondary Temperature Device Serial # (If Applicable): _____
5 Sample containers intact and sealed?	☒	☐	☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6 Samples requiring chemical preservation at proper pH?	☒	☐	☐	Sample ID's and Containers Affected: ENTIRE CNAOH If Preservation added, Lot#: E344-13
7 Do any samples require Volatile Analysis?	☒	☐	☐	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer)
				Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No)
				Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected: _____
8 Samples received within holding time?	☒	☐	☐	ID's and tests affected: _____
9 Sample ID's on COC match ID's on bottles?	☒	☐	☐	ID's and containers affected: _____
10 Date & time on COC match date & time on bottles?	☒	☐	☐	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11 Number of containers received match number indicated on COC?	☒	☐	☐	Circle Applicable: No container count on COC Other (describe)
12 Are sample containers identifiable as GEL provided by use of GEL labels?	☒	☐	☐	
13 COC form is properly signed in relinquished/received sections?	☒	☐	☐	Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials

MVH

Date

2/21/23

Page

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of 1

List of current GEL Certifications as of 22 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



March 30, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 615639

Dear Laura Hageman:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 24, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,

Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 615639 GEL Work Order: 615639

The Qualifiers in this report are defined as follows:

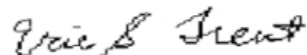
- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 30, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Intake
Sample ID: 615639001
Matrix: Water
Collect Date: 23-MAR-23 12:35
Receive Date: 24-MAR-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Semi-Volatile-GC/MS												
<i>EPA 625.1 SVOA, Liquid "As Received"</i>												
2,4,6-Trichlorophenol 88-06-2	U	ND	2.78	9.26	ug/L	0.000926	1	EG2	03/29/23	2205	2405060	1
2,4-Dichlorophenol 120-83-2	U	ND	2.78	9.26	ug/L	0.000926	1					
2,4-Dimethylphenol 105-67-9	U	ND	2.78	9.26	ug/L	0.000926	1					
2,4-Dinitrophenol 51-28-5	U	ND	4.63	18.5	ug/L	0.000926	1					
2-Chlorophenol 95-57-8	U	ND	2.78	9.26	ug/L	0.000926	1					
2-Methyl-4,6-dinitrophenol 534-52-1	U	ND	2.78	9.26	ug/L	0.000926	1					
2-Nitrophenol 88-75-5	U	ND	2.78	9.26	ug/L	0.000926	1					
4-Chloro-3-methylphenol 59-50-7	U	ND	2.78	9.26	ug/L	0.000926	1					
4-Nitrophenol 100-02-7	U	ND	2.78	9.26	ug/L	0.000926	1					
Pentachlorophenol 87-86-5	U	ND	2.78	9.26	ug/L	0.000926	1					
Phenol 108-95-2	U	ND	2.78	9.26	ug/L	0.000926	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 625.1	BNA Liq. Prep-EPA 625 Analysis	DG3	03/29/23	1143	2405059

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	EPA 625.1		

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Nitrobenzene-d5	EPA 625.1 SVOA, Liquid "As Received"	36.1 ug/L	46.3	78	(39%-112%)
2-Fluorobiphenyl	EPA 625.1 SVOA, Liquid "As Received"	39.0 ug/L	46.3	84	(39%-112%)

GEL LABORATORIES LLC

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Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 30, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Intake
Sample ID: 615639001

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
p-Terphenyl-d14	EPA 625.1 SVOA, Liquid "As Received"				26.1 ug/L	46.3	56					(24%-129%)
2,4,6-Tribromophenol	EPA 625.1 SVOA, Liquid "As Received"				75.9 ug/L	92.6	82					(37%-132%)
Phenol-d5	EPA 625.1 SVOA, Liquid "As Received"				40.3 ug/L	92.6	44					(15%-85%)
2-Fluorophenol	EPA 625.1 SVOA, Liquid "As Received"				45.1 ug/L	92.6	49					(11%-79%)

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 30, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: TWT A
Sample ID: 615639002
Matrix: Water
Collect Date: 23-MAR-23 14:00
Receive Date: 24-MAR-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Flow Injection Analysis												
<i>EPA 420.4 Total Phenols "As Received"</i>												
Total Phenol	U	ND	1.67	5.00	ug/L	1.00	1	AXH3	03/28/23	0737	2403956	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 420.4	EPA 420.4 Phenols, Total in liquid PREP	ES2	03/27/23	1340	2403955

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 420.4	

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: March 30, 2023

Page 1 of 5

HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Contact: Laura Hageman

Workorder: 615639

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Flow Injection Analysis											
Batch	2403956										
QC1205356496	LCS										
Total Phenol	50.0			48.0	ug/L		96	(90%-110%)	AXH3	03/28/23	07:36
QC1205356495	MB										
Total Phenol			U	ND	ug/L					03/28/23	07:35
QC1205356497	615639002	MS									
Total Phenol	50.0	U	ND	46.2	ug/L		92.3	(90%-110%)		03/28/23	07:38
QC1205356498	615639002	MSD									
Total Phenol	50.0	U	ND	63.8	ug/L	32.1*	128*	(0%-20%)		03/28/23	07:39
Semi-Volatile-GC/MS											
Batch	2405060										
QC1205358686	LCS										
2,4,6-Trichlorophenol	50.0			40.3	ug/L		81	(50%-127%)	EG2	03/29/23	21:05
2,4-Dichlorophenol	50.0			35.5	ug/L		71	(50%-119%)			
2,4-Dimethylphenol	50.0			28.9	ug/L		58	(46%-99%)			
2,4-Dinitrophenol	50.0			36.6	ug/L		73	(28%-151%)			
2-Chlorophenol	50.0			31.5	ug/L		63	(46%-107%)			
2-Methyl-4,6-dinitrophenol	50.0			44.4	ug/L		89	(42%-149%)			
2-Nitrophenol	50.0			38.3	ug/L		77	(50%-115%)			
4-Chloro-3-methylphenol	50.0			35.9	ug/L		72	(50%-118%)			

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QC Summary

Workorder: 615639

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2405060										
4-Nitrophenol	50.0			18.1	ug/L		36	(21%-110%)	EG2	03/29/23	21:05
Pentachlorophenol	50.0			37.8	ug/L		76	(42%-132%)			
Phenol	50.0			17.3	ug/L		35	(12%-90%)			
**2,4,6-Tribromophenol	100			78.1	ug/L		78	(37%-132%)			
**2-Fluorobiphenyl	50.0			44.1	ug/L		88	(39%-112%)			
**2-Fluorophenol	100			39.3	ug/L		39	(11%-79%)			
**Nitrobenzene-d5	50.0			40.9	ug/L		82	(39%-112%)			
**Phenol-d5	100			29.8	ug/L		30	(15%-85%)			
**p-Terphenyl-d14	50.0			32.8	ug/L		66	(24%-129%)			
QC1205358687 LCSD											
2,4,6-Trichlorophenol	50.0			48.2	ug/L	18	96	(0%-28%)		03/29/23	21:35
2,4-Dichlorophenol	50.0			43.5	ug/L	20	87	(0%-30%)			
2,4-Dimethylphenol	50.0			33.3	ug/L	14	67	(0%-30%)			
2,4-Dinitrophenol	50.0			44.3	ug/L	19	89	(0%-30%)			
2-Chlorophenol	50.0			40.1	ug/L	24	80	(0%-30%)			
2-Methyl-4,6-dinitrophenol	50.0			49.4	ug/L	11	99	(0%-30%)			

GEL LABORATORIES LLC

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QC Summary

Workorder: 615639

Page 3 of 5

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2405060										
2-Nitrophenol	50.0			43.2	ug/L	12	86	(0%-30%)	EG2	03/29/23	21:35
4-Chloro-3-methylphenol	50.0			44.9	ug/L	22	90	(0%-30%)			
4-Nitrophenol	50.0			20.4	ug/L	12	41	(0%-30%)			
Pentachlorophenol	50.0			41.6	ug/L	9	83	(0%-33%)			
Phenol	50.0			19.3	ug/L	11	39	(0%-30%)			
**2,4,6-Tribromophenol	100			88.0	ug/L		88	(37%-132%)			
**2-Fluorobiphenyl	50.0			46.1	ug/L		92	(39%-112%)			
**2-Fluorophenol	100			47.4	ug/L		47	(11%-79%)			
**Nitrobenzene-d5	50.0			41.5	ug/L		83	(39%-112%)			
**Phenol-d5	100			34.9	ug/L		35	(15%-85%)			
**p-Terphenyl-d14	50.0			42.4	ug/L		85	(24%-129%)			
QC1205358685 MB											
2,4,6-Trichlorophenol			U	ND	ug/L					03/29/23	20:35
2,4-Dichlorophenol			U	ND	ug/L						
2,4-Dimethylphenol			U	ND	ug/L						
2,4-Dinitrophenol			U	ND	ug/L						

GEL LABORATORIES LLC

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QC Summary

Workorder: 615639

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	2405060										
2-Chlorophenol			U	ND	ug/L				EG2	03/29/23	20:35
2-Methyl-4,6-dinitrophenol			U	ND	ug/L						
2-Nitrophenol			U	ND	ug/L						
4-Chloro-3-methylphenol			U	ND	ug/L						
4-Nitrophenol			U	ND	ug/L						
Pentachlorophenol			U	ND	ug/L						
Phenol			U	ND	ug/L						
**2,4,6-Tribromophenol	100			79.7	ug/L		80	(37%-132%)			
**2-Fluorobiphenyl	50.0			42.9	ug/L		86	(39%-112%)			
**2-Fluorophenol	100			47.3	ug/L		47	(11%-79%)			
**Nitrobenzene-d5	50.0			39.4	ug/L		79	(39%-112%)			
**Phenol-d5	100			32.2	ug/L		32	(15%-85%)			
**p-Terphenyl-d14	50.0			37.0	ug/L		74	(24%-129%)			

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 615639

Page 5 of 5

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
C	Analyte has been confirmed by GC/MS analysis										
B	The target analyte was detected in the associated blank.										
E	Concentration of the target analyte exceeds the instrument calibration range										
A	The TIC is a suspected aldol-condensation product										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
N	Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
H	Analytical holding time was exceeded										
**	Analyte is a surrogate compound										
<	Result is less than value reported										
>	Result is greater than value reported										
h	Preparation or preservation holding time was exceeded										
R	Sample results are rejected										
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.										
d	5-day BOD--The 2:1 depletion requirement was not met for this sample										
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.										
D	Results are reported from a diluted aliquot of the sample										
N/A	RPD or %Recovery limits do not apply.										
ND	Analyte concentration is not detected above the detection limit										
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range										
JNX	Non Calibrated Compound										
UJ	Compound cannot be extracted										
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.										
N1	See case narrative										
Y	QC Samples were not spiked with this compound										
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.										
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
J	See case narrative for an explanation										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 615639

GC/MS Semivolatile

Product: Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

Analytical Method: EPA 625.1

Analytical Procedure: GL-OA-E-009 REV# 46

Analytical Batch: 2405060

Preparation Method: EPA 625.1

Preparation Procedure: GL-OA-E-013 REV# 35

Preparation Batch: 2405059

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
615639001	Intake
1205358685	Method Blank (MB)
1205358686	Laboratory Control Sample (LCS)
1205358687	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Laboratory Control Sample Duplicate (LCSD)

An LCSD was used in place of matrix QC due to limited sample volume.

Miscellaneous Information

Additional Comments

Diphenylamine Statement

Diphenylamine has superseded the reporting of N-Nitroso-diphenylamine. As per the EPA, N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine. Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine are therefore reported as Diphenylamine on all reports and forms.

General Chemistry

Product: Total Phenols

Analytical Method: EPA 420.4

Analytical Procedure: GL-GC-E-102 REV# 10

Analytical Batches: 2403956 and 2403955

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
615639002	TWT A
1205356495	Method Blank (MB)
1205356496	Laboratory Control Sample (LCS)
1205356497	615639002(TWT A) Matrix Spike (MS)
1205356498	615639002(TWT A) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Total Phenol	1205356498 (TWT AMSD)	128* (90%-110%)

MS/MSD Relative Percent Difference (RPD) Statement

The Relative Percent Difference (RPD) between the spike and spike duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample:

Sample	Analyte	Value
1205356497MS and 1205356498MSD (TWT A)	Total Phenol	32.1* (0%-20%)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CDEC</u>		SDG/AR/COC/Work Order: <u>615639</u>	
Received By: <u>JA + GA</u>		Date Received: <u>3/24/23</u>	
Carrier and Tracking Number		Circle Applicable: <u>FO</u> <u>FedEx Express</u> FedEx Ground UPS Field Services Courier Other	
		<u>7716 4433 0270</u>	
Suspected Hazard Information		Yes	No
*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.			
A) Shipped as a DOT Hazardous?		☒	
Hazard Class Shipped: UN# <u>2910</u>			
If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☒ No ☐			
B) Did the client designate the samples are to be received as radioactive?		☒	
COC notation or radioactive stickers on containers equal client designation.			
C) Did the RSO classify the samples as radioactive?		☒	
Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>100</u> CPM/mR/Hr			
Classified as: <u>Rad 1</u> Rad 2 Rad 3			
D) Did the client designate samples are hazardous?		☒	
COC notation or hazard labels on containers equal client designation.			
E) Did the RSO identify possible hazards?		☒	
If D or E is yes, select Hazards below.			
FCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:			
Sample Receipt Criteria		Yes	No
1 Shipping containers received intact and sealed?		☒	
2 Chain of custody documents included with shipment?		☒	
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		☒	
4 Daily check performed and passed on IR temperature gun?		☒	
5 Sample containers intact and sealed?		☒	
6 Samples requiring chemical preservation at proper pH?		☒	
7 Do any samples require Volatile Analysis?		☒	
8 Samples received within holding time?		☒	
9 Sample ID's on COC match ID's on bottles?		☒	
10 Date & time on COC match date & time on bottles?		☒	
11 Number of containers received match number indicated on COC?		☒	
12 Are sample containers identifiable as GEL provided by use of GEL labels?		☒	
13 COC form is properly signed in relinquished/received sections?		☒	
Comments/Qualifiers (Required for Non-Conforming Items)			
Circle Applicable: Seals broken Damaged container Leaking container Other (describe)			
Circle Applicable: Client contacted and provided COC COC created upon receipt			
Preservation Method: <u>Wet Ice</u> Dry Ice None Other: TEMP: <u>2°</u>			
*all temperatures are recorded in Celsius			
Temperature Device Serial #: <u>142-23</u>			
Secondary Temperature Device Serial # (If Applicable):			
Circle Applicable: Seals broken Damaged container Leaking container Other (describe)			
Sample ID's and Containers Affected:			
If Preservation added, Lot#:			
If Yes, are Encores or Soil Kits present for solids? Yes ☐ No ☐ NA ☐ (If yes, take to VOA Freezer)			
Do liquid VOA vials contain acid preservation? Yes ☐ No ☐ NA ☐ (If unknown, select No)			
Are liquid VOA vials free of headspace? Yes ☐ No ☐ NA ☐			
Sample ID's and containers affected:			
ID's and tests affected:			
ID's and containers affected:			
Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)			
Circle Applicable: No container count on COC Other (describe)			
Circle Applicable: Not relinquished Other (describe)			
Comments (Use Continuation Form if needed):			
PM (or PMA) review: Initials <u>MG</u> Date <u>3/24/23</u> Page <u>1</u> of <u>1</u>			

List of current GEL Certifications as of 30 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

March 30, 2023

Laura Hageman
HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey 08104

Re: Pilgrim NPDES Permit Modification
Work Order: 615647

Dear Laura Hageman:

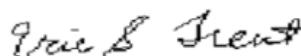
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 21, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4504.

Sincerely,



Erin Trent
Project Manager

Purchase Order: 98000918
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

CDEC001 Holtec Decommissioning International, LLC

Client SDG: 615647 GEL Work Order: 615647

The Qualifiers in this report are defined as follows:

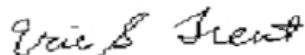
- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- h Preparation or preservation holding time was exceeded

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : HDI, Inc.
Address : 1 Holtec Blvd.
Camden, New Jersey 08104

Report Date: March 30, 2023

Contact: Laura Hageman
Project: **Pilgrim NPDES Permit Modification**

Client Sample ID: Intake
Sample ID: 615647001
Matrix: Water
Collect Date: 20-FEB-23 08:00
Receive Date: 21-FEB-23
Collector: Client

Project: CDEC00107
Client ID: CDEC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	----	-------	----	----	---------	------	------	-------	------

Semi-Volatiles-PCB

<i>EPA 608.3 PCB, Liquid (SPE) "As Received"</i>												
Aroclor-1016	hU	ND	0.0309	0.0928	ug/L	0.000928	1	YS1	03/29/23	1724	2405070	1
12674-11-2												
Aroclor-1221	hU	ND	0.0309	0.0928	ug/L	0.000928	1					
11104-28-2												
Aroclor-1232	hU	ND	0.0309	0.0928	ug/L	0.000928	1					
11141-16-5												
Aroclor-1242	hU	ND	0.0309	0.0928	ug/L	0.000928	1					
53469-21-9												
Aroclor-1248	hJ	0.0455	0.0309	0.0928	ug/L	0.000928	1					
12672-29-6												
Aroclor-1254	hU	ND	0.0309	0.0928	ug/L	0.000928	1					
11097-69-1												
Aroclor-1260	hU	ND	0.0309	0.0928	ug/L	0.000928	1					
11096-82-5												
Aroclor-Total	hJ	0.0455	0.0309	0.0928	ug/L	0.000928	1					
PCBTOT												

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 608.3	EPA 608.3 PCB Prep Liquid (SPE)	JM12	03/29/23	1000	2405069

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 608.3	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decachlorobiphenyl	EPA 608.3 PCB, Liquid (SPE) "As Received"	0.183 ug/L	0.186	99	(38%-133%)
4cmx	EPA 608.3 PCB, Liquid (SPE) "As Received"	0.107 ug/L	0.186	57	(33%-109%)

GEL LABORATORIES LLC

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QC Summary

Report Date: March 30, 2023

Page 1 of 3

HDI, Inc.
1 Holtec Blvd.
Camden, New Jersey
Laura Hageman

Contact:
Workorder: 615647

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	2405070										
QC1205358695	LCS										
Aroclor-1016	1.00			0.696	ug/L		70	(50%-101%)	YS1	03/29/23	17:13
Aroclor-1260	1.00			0.750	ug/L		75	(46%-108%)			
**4cmx	0.200			0.116	ug/L		58	(33%-109%)			
**Decachlorobiphenyl	0.200			0.172	ug/L		86	(38%-133%)			
QC1205358694	MB										
Aroclor-1016			U	ND	ug/L					03/29/23	17:02
Aroclor-1221			U	ND	ug/L						
Aroclor-1232			U	ND	ug/L						
Aroclor-1242			U	ND	ug/L						
Aroclor-1248			U	ND	ug/L						
Aroclor-1254			U	ND	ug/L						
Aroclor-1260			U	ND	ug/L						
Aroclor-Total			U	ND	ug/L						
**4cmx	0.200			0.112	ug/L		56	(33%-109%)			

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QC Summary

Workorder: 615647

Page 2 of 3

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	2405070										
**Decachlorobiphenyl	0.200			0.156	ug/L		78	(38%-133%)	YS1	03/29/23	17:02
QC1205358696 615835001 MS											
Aroclor-1016	1.00	U	ND	0.720	ug/L		72	(32%-112%)		03/29/23	18:10
Aroclor-1260	1.00	U	ND	0.823	ug/L		82	(32%-126%)			
**4cmx	0.200	0.119		0.123	ug/L		62	(33%-109%)			
**Decachlorobiphenyl	0.200	0.193		0.195	ug/L		98	(38%-133%)			
QC1205358697 615835001 MSD											
Aroclor-1016	1.00	U	ND	0.696	ug/L	3	70	(0%-27%)		03/29/23	18:22
Aroclor-1260	1.00	U	ND	0.782	ug/L	5	78	(0%-29%)			
**4cmx	0.200	0.119		0.119	ug/L		59	(33%-109%)			
**Decachlorobiphenyl	0.200	0.193		0.184	ug/L		92	(38%-133%)			

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.
- C Analyte has been confirmed by GC/MS analysis
- B The target analyte was detected in the associated blank.
- E Concentration of the target analyte exceeds the instrument calibration range
- A The TIC is a suspected aldol-condensation product
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 615647

Page 3 of 3

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
H	Analytical holding time was exceeded										
**	Analyte is a surrogate compound										
<	Result is less than value reported										
>	Result is greater than value reported										
h	Preparation or preservation holding time was exceeded										
R	Sample results are rejected										
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.										
D	Results are reported from a diluted aliquot of the sample										
N/A	RPD or %Recovery limits do not apply.										
ND	Analyte concentration is not detected above the detection limit										
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
JNX	Non Calibrated Compound										
UJ	Compound cannot be extracted										
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.										
N1	See case narrative										
Y	QC Samples were not spiked with this compound										
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
J	See case narrative for an explanation										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

**GC Semivolatile PCB
Technical Case Narrative
Holtec Decommissioning International, LLC
SDG #: 615647**

Product: Analysis of The Analysis of Polychlorinated Biphenyls by GC/ECD by ECD

Analytical Method: EPA 608.3

Analytical Procedure: GL-OA-E-040 REV# 25

Analytical Batch: 2405070

Preparation Method: EPA 608.3

Preparation Procedure: GL-OA-E-070 REV# 11

Preparation Batch: 2405069

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
615647001	Intake
1205358694	Method Blank (MB)
1205358695	Laboratory Control Sample (LCS)
1205358696	615835001(NonSDG) Matrix Spike (MS)
1205358697	615835001(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Time Specifications

Sample (See Below) was logged for PCB analysis after holding time expired. The data were reported with proper qualifier.

Sample	Analyte	Value
615647001 (Intake)		Logged 24-MAR-23, out of holding 27-FEB-23

Preparation/Analytical Method Verification

All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns.

Miscellaneous Information

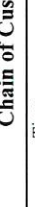
Additional Comments

The column 1 has been chosen as the primary column. The data are reported from the column 1 for all samples in this batch.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

[illegible]

Chain of Custody Signatures				TAT Requested: Normal: ☐ Rush: ☐ Specify: _____	
Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
	2/20/23	1:00		02/21/2023	
2. _____			2. _____		
3. _____			3. _____		
For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)					
Sample Collection Time Zone: ☒ Eastern ☐ Pacific ☐ Central ☐ Mountain ☐ Other: _____					

.) Chain of Custody Number = Client Determined

.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, C = Grab, C = Composite

.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.

.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal

.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).

.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate. If no preservative is added = leave field blank

KNOWN OR POSSIBLE HAZARDS		Characteristic Hazards	Listed Waste	Other	Please provide any additional details below regarding handling and/or disposal concerns. (i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)
RCRA Metals		FL = Flammable/Ignitable	LW = Listed Waste	OT = Other / Unknown	
As = Arsenic		CO = Corrosive	(F, K, P and U-listed wastes.)	(i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)	
Ba = Barium		RE = Reactive	Waste code(s):	Description:	
Cd = Cadmium					
Ag = Silver					
MR = Misc. RCRA metals					
b = Lead					
		TSCA Regulated			
		PCB = Polychlorinated biphenyls			



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

611 601

Client: CDEC		SDG/AR/COC/Work Order:	
Received By: MVH		Date Received: 02.21.2023	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other	
		771350256632 -5°C 771350255978 -6°C 771350258614 -3°C	
Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?	☒	☐	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___
B) Did the client designate the samples are to be received as radioactive?	☒	☐	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?	☒	☐	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?	☒	☐	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?	☒	☐	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	☒	☐	☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Chain of custody documents included with shipment?	☒	☐	☐	Circle Applicable: Client contacted and provided COC COC created upon receipt
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	☒	☐	☐	Preservation Method: ☒ Wet Ice ☐ Ice Packs ☐ Dry ice ☐ None Other: _____ *all temperatures recorded in Celsius TEMP: _____
4 Daily check performed and passed on IR temperature gun?	☒	☐	☐	Temperature Device Serial #: IR2-21 Secondary Temperature Device Serial # (If Applicable): _____
5 Sample containers intact and sealed?	☒	☐	☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6 Samples requiring chemical preservation at proper pH?	☒	☐	☐	Sample ID's and Containers Affected: ENTIRE (NaOH) If Preservation added, Lot#: E344-13
7 Do any samples require Volatile Analysis?	☒	☐	☐	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer)
				Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No)
				Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected: _____
8 Samples received within holding time?	☒	☐	☐	ID's and tests affected: _____
9 Sample ID's on COC match ID's on bottles?	☒	☐	☐	ID's and containers affected: _____
10 Date & time on COC match date & time on bottles?	☒	☐	☐	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11 Number of containers received match number indicated on COC?	☒	☐	☐	Circle Applicable: No container count on COC Other (describe)
12 Are sample containers identifiable as GEL provided by use of GEL labels?	☒	☐	☐	
13 COC form is properly signed in relinquished/received sections?	☒	☐	☐	Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials **MVH** Date **2/21/23** Page **1** of **1**

List of current GEL Certifications as of 30 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780