

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

RCH NEWCO II,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 2024-066
	)	(Permit Appeal - RCRA)
ILLINOIS ENVIRONMENTAL PROTECTION	)	
AGENCY,	)	
	)	
Respondent.	)	

**NOTICE OF ELECTRONIC FILING**

To:     *See Attached Service List*

PLEASE TAKE NOTICE that on August 19, 2024, I caused to be filed with the Office of the Clerk of the Illinois Pollution Control Board by electronic filing the attached (1) Respondent's Index of Record on Appeal and Certificate of Record on Appeal, copies of which are attached hereto and (2) Record on Appeal R 000001-000730, via file transfer link and hereby served upon you.

ILLINOIS ENVIRONMENTAL  
PROTECTION AGENCY

s/ Kevin Garstka  
Kevin Garstka  
Assistant Attorney General  
Office of the Illinois Attorney General  
Environmental Bureau  
69 W. Washington Street, 18<sup>th</sup> Floor  
Chicago, IL 60602  
(773) 590-7029  
[Kevin.Garstka@ilag.gov](mailto:Kevin.Garstka@ilag.gov)

**SERVICE LIST**

Don Brown, Clerk of the Board  
Illinois Pollution Control Board  
60 E. Van Buren St., Suite 630  
Chicago, Illinois 60605  
Don.Brown@illinois.gov  
(by *electronic filing*)

Bradley Halloran  
Illinois Pollution Control Board  
60 E. Van Buren Street, Suite 630  
Chicago, Illinois 60605  
[Brad.Halloran@illinois.gov](mailto:Brad.Halloran@illinois.gov)

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[dn@nijmanfranzetti.com](mailto:dn@nijmanfranzetti.com)



**CERTIFICATE OF SERVICE**

I, Kevin Garstka, an Assistant Attorney General, hereby certify that on the 19th of August 2024, I caused to be served the foregoing Notice of Electronic Filing and Respondent's Index of Record on Appeal and Certificate of Record on Appeal, upon the parties named on the attached Service List via email and Record on Appeal R 000001-000730, via file transfer link.

s/ Kevin Garstka

Kevin Garstka

Assistant Attorney General

Office of the Illinois Attorney General

Environmental Bureau

69 W. Washington Street, 18<sup>th</sup> Floor

Chicago, IL 60602

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 ILLINOIS ENVIRONMENTAL PROTECTION )  
 AGENCY, )  
 )  
 Respondent. )

**INDEX OF RECORD ON APPEAL**

Respondent, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (“Illinois EPA”), in accordance with the procedural rules of the Illinois Pollution Control Board (“Board”) as set forth in 35 Ill. Adm. Code 105.212 and 105.116, files in this cause the Illinois EPA’s Administrative Record of March 13, 2024 Final Determination for Facility No. ILD990785453, Log No. C-68, extending the RCRA Post Closure care period thirty years beyond the January 1, 2023 and to require Newco to maintain post closure financial assurance for the site located at New Avenue and Ceco Road in Lemont, Illinois (“Record on Appeal”), that consists of the following documents as set out in the index below:

I. Agency Review Documents

1. S. Nightingale (IEPA BOL) Letter to K. Shudy (RCH Newco II) June 2, 2009, Approving Modifications to Interim Status Closure/Post Closure Plan (R 000001-000003);
2. V. Slayton (IEPA BOL) Letter to K. Shudy (RCH Newco II), March 27, 2023, re Violation Notice L-2023-00075 attached to November 11, 2022, Inspection Report (R 000004-000017);
3. Kelly Huser (IEPA BOL) Detailed File Review August 21, 2023, on ILD990785453, Log C-68 Extension of RCRA Closure Plan (R 000018-000022);
4. Email K. Rominger (IEPA BOL) to R. Watson (IEPA RCRA) forwarded to K. Huser (IEPA BOL) and T. Halteman (IEPA BOL), November 2, 2022, re RCH Newco (R 000023-000024);

5. J. Cooperider (IEPA BOL) Letter to W. Sawitz (RCH Newco II) dated March 13, 2024, Final Determination to Extend Post-Closure Care for Facility No. ILD990785453, Log C-68 with Attachments (R 000025-000092); and
6. Kelly Huser (IEPA BOL) Review Notes on ILD990785453, Log No. C68 Extension of RCRA Closure Plan (R 000093-000110).

II. Other Documents Reviewed

7. USEPA Memorandum, Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA updated December 15, 2016 (R 000111-000129);
8. T. Halteman (IEPA RCRA) June 17, 2022, email re City of North Chicago Request to Terminate Post Closure Plan For Former Lavin Site ILD091250007, Log No. C-656-M25, Reasons for RCRA Post Closure Permit (R 000130-000132);
9. R. Watson (IEPA RCRA) Memorandum to K. Rominger (IEPA BOL) July 20, 2022, re City of North Chicago Request to Terminate Post Closure Plan For Former Lavin Site ILD091250007, Log No. C-656-M25 (R 000133-000136); and
10. Association of State and Territorial Solid Waste Management Officials, Position Paper, Approved July 20, 2022, Post Closure Care Beyond Thirty Years at RCRA Subtitle C Facilities (R 000137-000138).

III. Public Hearing

11. R. Watson (IEPA RCRA) Letter to W. Sawitz (RCH Newco II) November 15, 2022, Notification of Post Closure Care Period Extension (R 000139-000142);
12. Email chain between C. Metz (IEPA) to K. Huser (IEPA RCRA), December 19, 2022, attaching RCH Newco Public Comment to Notice to Extend Post Closure (R 000143-000149);
13. K. Huser Review Notes for Notification of Public Hearing February 23, 2023, attached to January 24, 2023, email attached to RCH Newco counsel correspondence requesting withdrawal of public hearing request (R 000150-000154); and

14. J. Cooperider (IEPA BOL) Letter to W. Sawitz (RCH Newco II) February 27, 2023, re Notice of Public Hearing on Public Comments submitted December 19, 2022 (R 000155).

IV. Public Hearing Documents

15. RCH Newco II, LLC Public Participation Checklist for Extension of Post Closure Care Period for Interim Status RCRA Site November 18, 2022-June 2023 (R 000156);
16. IEPA Public Notice of Hazardous Waste Post Closure Care Extension at RCH Newco II, LLC Facility between New Avenue and Ceco Road, Lemont, IL (R 000157);
17. Publication of Public Notice in Daily Herald Will County, of Hazardous Waste Post Closure Care at RCH Newco II, LLC Facility on November 18, 2022 (R 000158);
18. Transmittal Memorandum Jeff Guy (Hearing Officer) to K. Huser (IEPA RCRA) May 26, 2023, RCH Newco II, LLC Hearing Record (R 000159-000160);
19. Hearing Record Exhibit 1: Memorandum K. Rominger (IEPA BOL) to J. Kim (Director) re RCH Newco II Request for Public Hearing on Extension of Post Closure Care for Interim Status RCRA Site (R 000161-000162);
20. Hearing Record Exhibit 2: IEPA Public Notice of Public Comment Period and Public Hearing for Proposed Extension of Post-Closure Care for Hazardous Waste Landfill RCH Newco II, LLC in Lemont, IL (R 000163-000164);
21. Hearing Record Exhibit 3: Letter R. Watson (IEPA BOL) to W. Sawitz (RCH Newco II) November 15, 2022 re RCH Newco II LLC New Avenue and Ceco Road Lemont, IL RCRA Closure (R 000165-000168);
22. Hearing Record Exhibit 4: Letter J. Nijman (Newco Counsel) to C. Metz (IEPA) December 19, 2022 re Public Comment on RCH Newco II, LLC RCRA Post Closure Care Period Extension (R 000169-000174);
23. Hearing Record Exhibit 5: IEPA Public Hearing Recording Link (R 000175);
24. Hearing Record Exhibit 6: Public Hearing Transcript April 19, 2023 Proposed Extension of Post Closure Care for Hazardous Waste Landfill RCH Newco II, LLC in Lemont, IL (R 000176-000206);

25. Hearing Exhibit 7: IEPA Final Determination Letter March 13, 2024 with Attachments (R 000207-000274);
26. Hearing Exhibit 8: Email Notification of RCH Newco II Proposed Extension of Post Closure Care Final Determination and Responsive Summary (R 000275);
27. Exhibit A: Carlson Environmental RCRA Facility Investigation Phase I Report Robertson Ceco Corporation May 1996 (R 000276-000590);
28. Exhibit B: P. Ketchem Memorandum to BOL File April 11, 2022, RCRA 2021 Annual Groundwater Monitoring Report RCH Newco II LLC (R 000591-000717); and
29. Exhibit C: Deed Restriction Robertson - Ceco Corporation Property Recorded in Will County on February 17, 2000 (R 000718-000730).

Respectfully Submitted,

ILLINOIS ENVIRONMENTAL  
PROTECTION AGENCY

s/ Kevin Garstka

Kevin Garstka

Assistant Attorney General

Office of the Illinois Attorney General

Environmental Bureau

69 W. Washington Street, 18<sup>th</sup> Floor

Chicago, IL 60602

(773) 590-7029

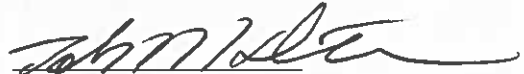
[Kevin.Garstka@ilag.gov](mailto:Kevin.Garstka@ilag.gov)

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	)	(Permit Appeal - RCRA)
ILLINOIS ENVIRONMENTAL PROTECTION	)	
AGENCY,	)	
	)	
Respondent.	)	

**CERTIFICATE OF RECORD ON APPEAL**

I, Takako N. Halteman, of the Illinois Environmental Protection Agency hereby certify that the Record on Appeal filed in the above-referenced matter and summarized in the attached Index of the Record on Appeal Pursuant to 35 Ill. Adm. Code 105.116 and 105.212 (the "Index") is true and complete to the best of my knowledge, information and belief.



Takako N. Halteman, P.E.  
RCRA Unit Manager  
Illinois Environmental Protection Agency

IN THE DISTRICT COURT OF THE STATE OF TEXAS

IN AND AGAINST THE ESTATE OF [Name], DECEASED

Case No. [Number]

COMES NOW [Name], [Title], and files this [Type of Document]

in support of the [Purpose of Filing]

and certifies that the [Type of Document] is true and correct

to the best of [Name]'s knowledge and belief.

Executed on this [Date] day of [Month], 20[Year].

At [Location], Texas.

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[Name]

[Title]

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[Title]

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-2829  
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026

DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

June 2, 2009

Certified Mail  
7007 0220 0000 0040 7476

RCH Newco II LLC  
Attn: Mr. Kevin Shudy  
2626 Warrensville Road, Suite 400  
Downers Grove, Illinois 60515

RE: 1978030005—Will County  
RCH Newco II LLC  
ILD99078554453  
Log No. C-68-M-12  
Permit Closure Final Action  
RCRA Closure

**RELEASABLE**

JUN 17 2009

Dear Mr. Shudy:

**REVIEWER MD**

This is in response to the April 1, 2009 submittal made on your behalf by Bruce A. Shabino, P.G., Carlson Environmental regarding certain aspects of RCRA interim status closure/post-closure activities at the above-referenced facility. This facility consists of a two acre landfill where hazardous waste was disposed as part of closure efforts carried out at the facility. Specifically, Mr. Shabino requested that certain modifications be made to the landfill's approved groundwater monitoring program.

Mr. Shambino's submittal was reviewed as a request to modify the approved interim status closure/post-closure plan for the above-referenced facility and is hereby approved subject to the following conditions and modifications:

1. In a February 7, 1996 letter, Illinois EPA determined that the post-closure care period for the subject landfill began on January 1, 1993. Physical post-closure care of the landfill must include the following:
  - a. Unless necessary to protect human health or the environment, the landfill shall not be used in any manner which will disturb: (1) the integrity of its final cover, liner or any components of its containment system; or (2) the function of the facility's monitoring systems.
  - b. The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained.



Mr. Kevin Shudy  
C-68-M-12  
Page 2

- (1) Repairs must be made to the final cover, as necessary, to correct the effects of settling, subsidence, erosion, cracking, etc.;
  - (2) Corrective action shall be taken if: (a) ponding is observed on the final cover; (b) cracks or erosion channels greater than one inch form for whatever reason; (c) the vegetative cover is distressed; (d) vector problems arise; or (e) vegetation with tap roots are found to be growing on the final cover.
  - (3) Properly managing run-on and run-off so that it does not erode or otherwise damage the final cover.
2. Groundwater monitoring must be carried out as part of the required post-closure activities in accordance with 35 Ill. Adm. Code 725, Subpart F and with the Illinois EPA's letters dated February 7, 1996 (Log No. C-68-M-4) and other previously approved plans.
  3. Groundwater monitoring wells MW-D1, MW-D2, MW-D3, MW-D4, and MW-D5 must be monitored on a semi-annual basis in accordance with the following schedule:

Samples Collected  
During the Quarter  
Of the Calendar Year

Parameters  
To Be Sampled

Second Quarter

Groundwater Quality Parameters  
Groundwater Contamination Parameters

Fourth Quarter

Groundwater Contamination Parameters

4. Each time groundwater is sampled; the elevation of the groundwater in each well must be determined and referenced to mean seal level (MSL) prior to the collection of any groundwater samples. The results of this effort must be documented in tabular form in the report required by 5 below. A piezometric map using this data must also be developed and included in the report.
5. The results of the evaluations required by Conditions 3 and 4 above must be included in the annual reports submitted to the Illinois EPA. The annual report must detail the groundwater monitoring program data for the subject year and include, as necessary, a statistical analysis of the groundwater data.
6. The groundwater monitoring program must be modified, as necessary, to ensure the requirements of 35 Ill. Adm. Code 725, Subpart F are met.

Mr. Kevin Shudy  
C-68-M-12  
Page 3

7. Closure and post-closure care of the landfill at this facility must meet the requirements of: (1) 35 Ill. Admin. Code, Subtitle G: Waste Disposal; and (2) closure/post-closure care plan approval letters issued by Illinois EPA (Log No. C-68) and associated modifications.

This letter shall constitute Illinois EPA's final action on the subject submittals. Within 35 days after the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period. The Illinois EPA's Division of Legal Counsel must be contacted if such an extension request is contemplated.

Work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

If you have any questions regarding the groundwater related aspects of this letter, please contact Terri Blake Myers, P.G. at 217/524-3284. Questions regarding other aspects of this letter should be directed to James K. Moore, P.E. at 217/524-3295.

Sincerely,



Stephen F. Nightingale, P.E.  
Manager, Permit Section  
Bureau of Land

SFN:JKM/mls/092191s.doc  
JKM BM

cc: Bruce Shabino, Carlson Environmental

bcc: Bureau File  
Des Plaines Region  
Jim Moore  
Terri Blake Myers



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

(217)524-3300  
TDD 217/782-9143

CERTIFIED MAIL # 7021 2720 0000 2253 2216  
RETURN RECEIPT REQUESTED

March 27, 2023

RCH Newco II LLC  
Attn: Kevin Shudy  
2626 Warrensville Rd  
Downers Grove, Illinois 60515

Re: Violation Notice L-2023-00075  
BOL #1978030005 - Will County  
Lemont/RCH Newco II LLC  
Compliance File

Dear Kevin Shudy:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act, 415 ILCS 5/31(a)(1), and is based on an inspection completed on November 11, 2022 by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in the attachment to this notice. The attachment includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this notice. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether you wish to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If you wish to enter into a CCA, the written response must also include proposed terms for the CCA, including dates for achieving each commitment, and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

The Illinois EPA will review the proposed terms for a CCA provided by you and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, you must respond in writing either by

2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120  
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

agreeing to and signing the proposed CCA or by notifying the Illinois EPA that you reject the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois Environmental Protection Agency  
Attn: James Jennings, Manager  
Bureau of Land # 24  
1021 North Grand Ave. East  
Springfield, Illinois 62794-9276

Please include the Violation Notice Number L-2023-00075 and the Site Identification Number 1978030005 on all written communications and supporting documents.

The complete requirements of the Illinois Environmental Protection Act and any Illinois Pollution Control Board regulations cited herein or in the inspection report can be viewed at:

<http://www.ipcb.state.il.us/SLR/TheEnvironmentalProtectionAct.asp>

and

<http://www.ipcb.state.il.us/SLR/IPCBandIEPAEnvironmentalRegulations-Title35.asp>

If you have questions regarding this matter, please contact Anthony Guido at the following email address: [Anthony.Guido@Illinois.gov](mailto:Anthony.Guido@Illinois.gov) or at (847) 294-4072.

Sincerely,



Victoria Slayton, MPA  
Deputy Section Manager  
Materials Management and Compliance Section  
Illinois EPA

Enclosure: Violation Notice Attachment

BOL # 1978030005 – Will County  
Lemont / RCH Newco II LLC

## **Violation Notice Attachment**

RCH Newco II LLC (“Respondent”) owns and operates the business located at Cico Road and New Avenue in Lemont, Illinois (“the subject property”). On November 22, 2022, the Illinois EPA inspected the subject property. During the inspection, apparent violations of the Illinois Environmental Protection Act and Illinois Pollution Control Board (“Board”) Regulations were observed. These apparent violations are discussed in further detail below.

### **1. Applicable Authorities**

- i) Illinois law prohibits any person from conducting any hazardous waste-storage, waste-treatment, or waste-disposal operation in violation of Board regulations or standards. *See* 415 ILCS 5/21(f)(2).
- ii) Board Regulations state that:
  - a) The owner or operator of a hazardous waste site must submit a written request to the Agency to authorize a change to an approved post-closure plan. *See* 35 Ill. Adm. Code 725.218(d).
  - b) After final closure, the owner or operator of a hazardous waste site must comply with all post-closure requirements contained in section 725.217 through 725.220 including maintenance and monitoring throughout the post-closure care period. The owner or operator must do the following:
    - 1) It must maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events;
    - 2) It must maintain and monitor the LDS in accordance with 35 Ill. Adm. Code 724.401(c)(3)(D) and (c)(4) and Section 725.404(b), and comply with all other applicable LDS requirements of this Part;
    - 3) It must maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Subpart F;
    - 4) It must prevent run-on and run-off from eroding or otherwise damaging the final cover; and

BOL # 1978030005 – Will County  
Lemont / RCH Newco II LLC

- 5) It must protect and maintain surveyed benchmarks used in complying with Section 725.409. See 35 Ill. Adm. Code 725.410(b).

2. **Alleged Violations**

The Illinois EPA inspector observed ruts, woody shrubs, trees, erosion, and bare spots in the landfill cover at the subject property, which violates Illinois law and Board regulations. See 415 ILCS 5/21(f)(2); 35 Ill. Adm. Code 725.218(d); 35 Ill. Adm. Code 725.410(b).

3. **Suggested Resolutions**

Respondent should take remedial action to address the above-referenced violations, including:

- i) **Within 45 calendar days of receipt of this Violation Notice (“VN”),** remove all taproot-type vegetation from the cap. Repair erosion and subsidence damages to the cap. Reseed the vegetative cover with native fibrous-root grasses, especially in the areas with bare spots. Use herbicides to prevent the growth of undesirable vegetation.
- ii) **Within 45 calendar days of receipt of this VN,** establish procedures to continually inspect the final cover system to identify issues and make repairs when necessary. Maintain an inspection log for the final cover system to document issues and repairs.
- iii) **Recordkeeping. Within 45 calendar days upon receipt of the VN,** the Respondent shall submit copies of records reflecting remedial actions undertaken to address the above-referenced violations, including but not limited to photographs reflecting the completion of the suggested resolutions identified above, to:

*Illinois EPA Des Plaines Regional Office  
Attn: Anthony Guido  
9511 Harrison Street  
Des Plaines, Illinois 60016*

**Illinois Environmental Protection Agency**  
 Bureau of Land – Field Operations Section  
**RCRA Inspection Report**

**General Facility Information**

<b>BOL ID</b>	1978030005	<b>Evaluation Date</b>	11/22/2022
<b>USEPA Id</b>	ILD990785453	<b>Region</b>	Des Plaines
<b>Site Name</b>	RCH Newco II LLC	<b>County</b>	Will
<b>Address</b>	Cico Rd & New Ave	<b>Phone</b>	
<b>City/State/Zip</b>	Lemont, IL 60439	<b>EJ Status</b>	None
<b>Limited English</b>	<input type="checkbox"/>	<b>Primary Language</b>	

**Facility Type**

<u>Most Recent Notification Date</u>	<u>Notified As</u>	<u>Regulated As</u>
8/3/2020	NH	NH

**Observations**

<b>Time</b>	0845 - 1045
<b>Weather Conditions</b>	Sunny
<b>Temperature</b>	30 Fahrenheit
<b>Photos Taken</b>	Yes

**Evaluation Type**

RCRA Program - Operation and Maintenance RCRA

**Owner**

RCH Newco II LLC  
 Attn: Kevin Shudy  
 2626 Warrensville Rd  
 Downers Grove, IL 60515

**Operator**

RCH Newco II LLC  
 2626 Warrensville Rd  
 Downers Grove, IL 60515

**Inspection Participants**

<u>Person</u>	<u>Affiliation</u>	<u>Phone</u>
Anthony Guido	IEPA FOS Primary Inspector	(847) 294-4072
Justin Meyers	IEPA FOS Secondary Inspector	(847) 294-4456

**Persons Interviewed**

<u>Person</u>	<u>Phone</u>	<u>E-Mail</u>
Shabino, Bruce	(312) 899-0646	bruce.shabino@novagroupgbc.com

**RCRA Permit Information**

<u>Application Date</u>	<u>Log #</u>	<u>Issue Date</u>	<u>Expiration Date</u>	<u>Mod/Sp #</u>	<u>Mod/Sp Date</u>
NONE					

**Active Enforcement Orders**

<u>CACO</u>	<u>Consent Decree</u>	<u>CAFO</u>	<u>IPCB</u>	<u>Federal Court</u>	<u>State Court</u>
NONE					

**TSD Activity Summary**

<u>Activity Process</u>	<u>On Part B</u>	<u>Ever Done</u>	<u>Closed</u>	<u>Done During Inspection</u>
D80 - Landfill	No	Yes	Yes	No

**Executive Summary**

On November 22<sup>nd</sup>, 2022, I (Anthony Guido) conducted an Operation and Maintenance (OAM) inspection at the RCH Newco site located off Cico Rd and New Ave in Lemont. This inspection was conducted as part of the Illinois EPA RCRA workplan. This site is a closed hazardous waste landfill subject to RCRA interim post-closure care. I was accompanied by Justin Meyers of the Illinois EPA. We met with Bruce Shabino of Nova Group, GBC who was conducting groundwater sampling during this inspection.

Multiple violations are cited as a result of this inspection.

**Evaluation Narrative****Background**

Through the 1960s-1980's, this site had served as the management and disposal location for RCRA hazardous waste electric arc furnace dust (K061) and waste slag from the nearby steel mill. The construction of the hazardous waste disposal unit was completed in accordance with the Agency approved design in 1988 and is currently subject to interim post-closure care which began in 1993. The landfill contains approximately 2,500 cubic yards of emission control dust from off-site electric furnaces (K061) and approximately 29,500 cubic yards of miscellaneous non-hazardous steel plant wastes (primarily slag). The area of landfill footprint is roughly 2.5 acres. The requirements of post-closure care for this site include, but are not limited to, semi-annual groundwater monitoring and the maintenance of final cover over the landfill.

The groundwater monitoring network at this site includes 2 upgradient wells (MWD-1 and MWD-5) as well as 3 downgradient wells (MWD-2, MWD-3, and MWD-4). Groundwater is monitored for the following contaminant parameters at this site: pH, specific conductance, non-purgeable organic carbon (TOC), total organic Halogens (TOX). Additionally, the groundwater quality parameters analyzed are as follows: chloride, iron, manganese, phenols, sodium, and sulfate.

I reviewed the 2021 Annual Groundwater monitoring Report as part of this inspection. For indicator parameter concentrations, arithmetic mean and variances were calculated and compared to background values determined in the first year of post closure care using the Student's T-Test at 99% confidence. Statistically significant decreases in pH were observed in multiple downgradient wells, but also in both upgradient wells. Specific conductance had a statistically significant increase in one upgradient well. No significant increases/decreases were observed in downgradient wells that weren't observed in the background wells.



### November 22<sup>nd</sup>, 2022, Inspection

On this date, Justin Meyers and I met with the consultant, Bruce Shabino, at the facility to observe the 4<sup>th</sup> quarter 2022 groundwater sampling event and inspect the final cover over the landfill. It appeared that the site is properly fenced and gated to prevent unauthorized access. Upon our arrival, it was immediately apparent that the final cover over the landfill has been neglected. Photos 1 and 3 exhibit a general lack of maintenance for vegetative cover where there are multiple bare spots and growth of woody shrubs. Photo 4 demonstrates one of many large ruts present in the cover. Seen in Photo 5, it appears a couple yards of soil had been dumped on top of the bank of the landfill. Additionally, trees can be seen directly adjacent to the landfill. The root systems of these trees are likely encroaching into the cover material. Photo 6 shows a woody stump approximately 8 inches in diameter which was located in the middle of the final cover. With all these issues considered, it is apparent that the final cover has been neglected. This is an apparent violation of 35 IAC 725.410(b)(1) and RCRA Closure Log No. C-68 where integrity and effectiveness of the final cover must be maintained. Additionally, this constitutes a violation of 35 IAC 725.218(d) where the operator deviated from the approved closure plan without approval by failing to adhere to the requirements of Closure Log No. C-68.

The groundwater monitoring wells appeared to be in good condition across the site as demonstrated in photo 2. Bruce Shabino was conducting groundwater sampling during this inspection. Based on the approved Sampling and Analysis Plan, I did not observe any deviations that would cause concern. Static water levels were measured before sampling the wells. Each well has dedicated tubing for use with a peristaltic pump. Wells were purged while the groundwater quality was monitored with a flow-through probe chamber until parameters had stabilized. Samples were then collected for the above-mentioned parameters. We left the site before all samples were collected and placed in the insulated container and maintained under a chain of custody.

### Conclusions

I did not observe any apparent issues with the groundwater monitoring wells or sampling procedures during this inspection. However, multiple issues were identified for the landfill final cover. Ruts, woody shrubs, trees, erosion, and bare spots were all present in the landfill cover. The operator has failed to maintain the integrity and effectiveness of the final cover. This constitutes a violation of 35 IAC 725.410(b)(1) and 725.218(d). By default, the facility is additionally in violation of Section 21(f)(2) of the Illinois Environmental Protection Act.

**Waste Disposition Form**

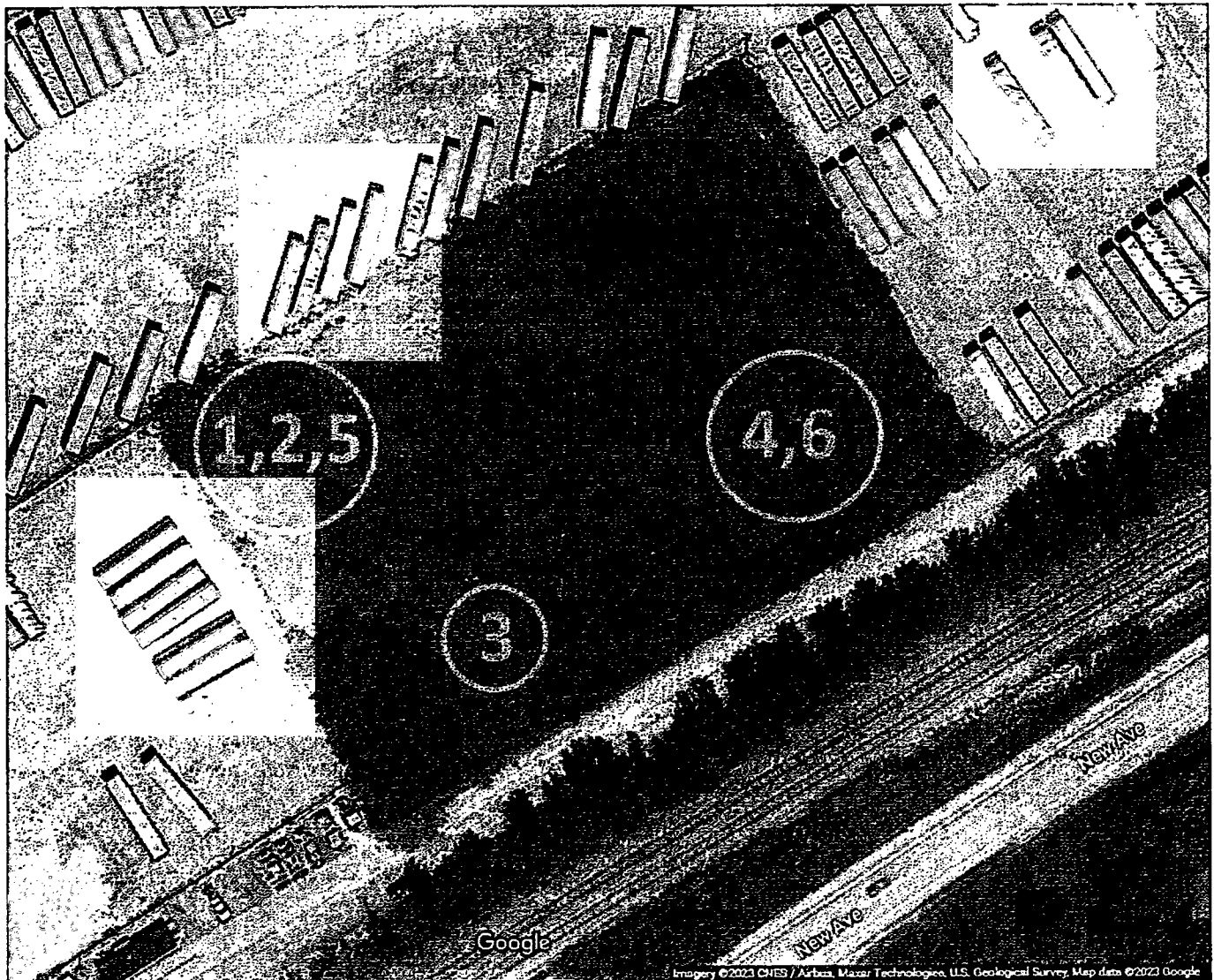
<b>Facility Name:</b>	RCH Newco II LLC				<b>USEPA Id:</b>	ILD990785453		
<b>Inspection Date:</b>	11/22/2022				<b>IEPA Id:</b>	1978030005		
<b>Waste Name</b>	<b>Generating Process</b>	<b>Waste Determination</b>	<b>Waste Type</b>	<b>HW Annual Report</b>	<b>Amount On-Site</b>	<b>Generation Rate</b>	<b>Last Ship Date</b>	<b>Destination</b>
NONE								

**Summary of Apparent Violation(s)**

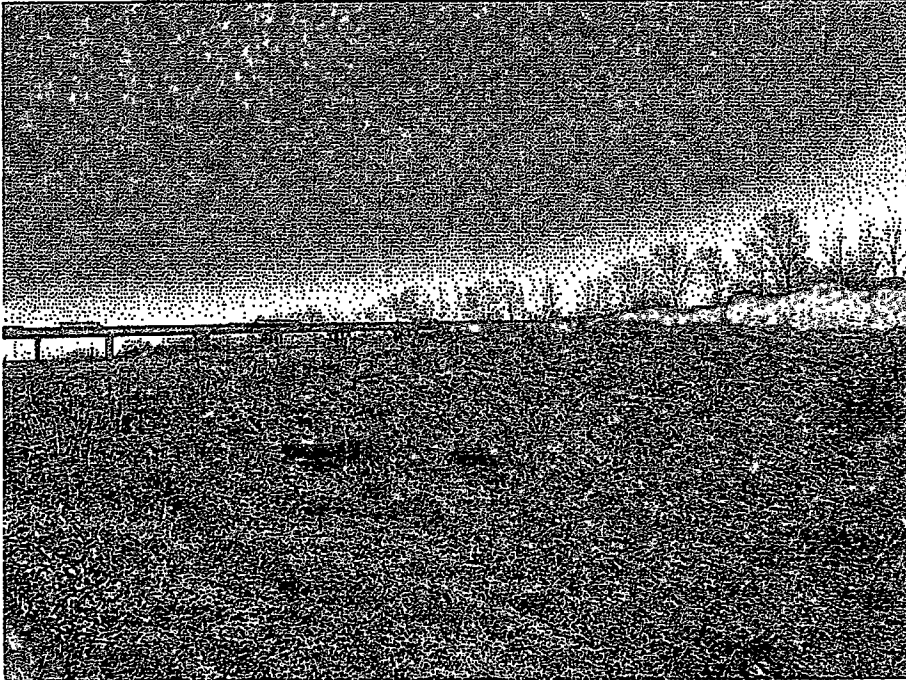
Status	Date	Violation	Narrative
New	11/22/2022	21(f)(2)	Conduct any hazardous waste storage, treatment, or disposal operation in violation of IPCB regulations or standards
New	11/22/2022	725.218(d)	Amendment of plan
New	11/22/2022	725.410(b)	Post-closure requirements

**Attachment Listing**

Type	Description
NONE	

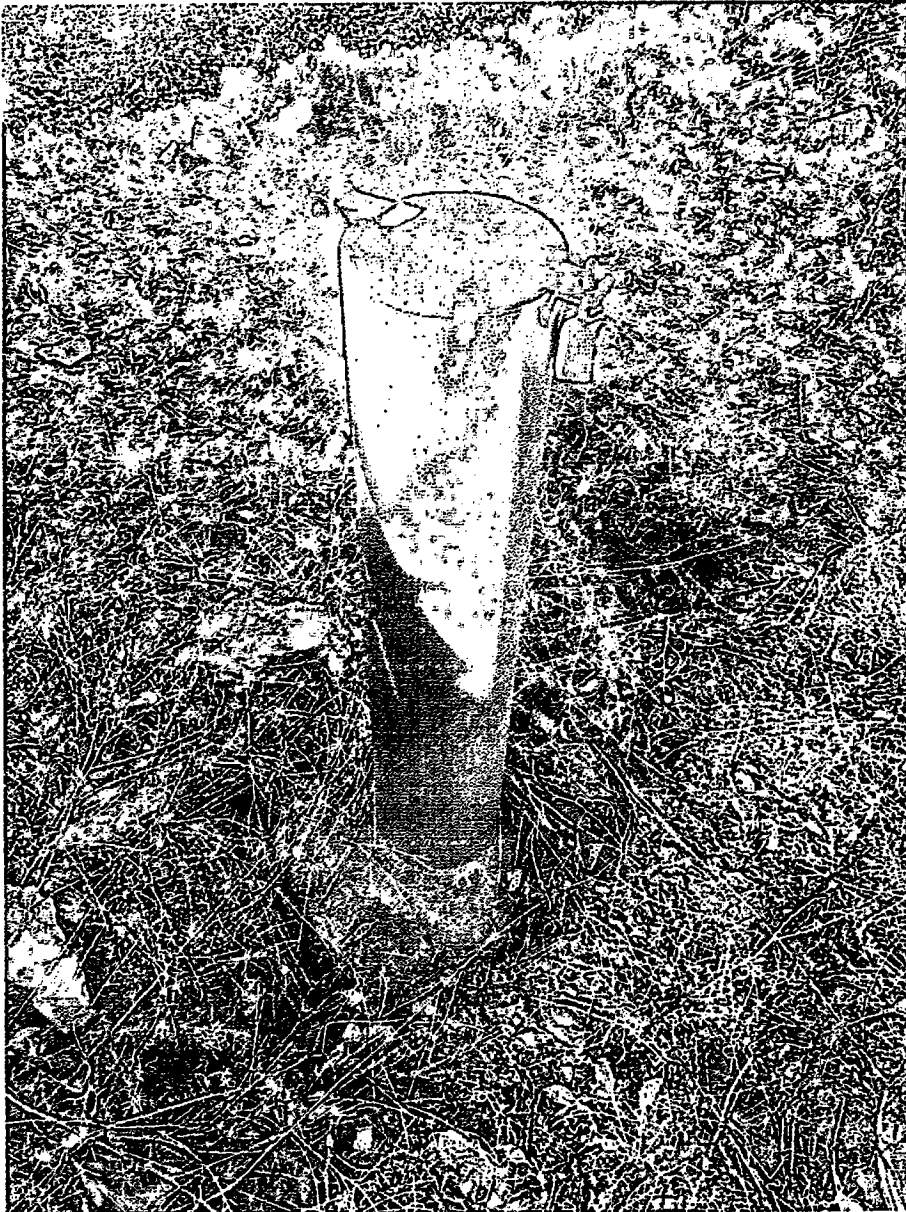
**Site Diagram**

**Digital Photographs**



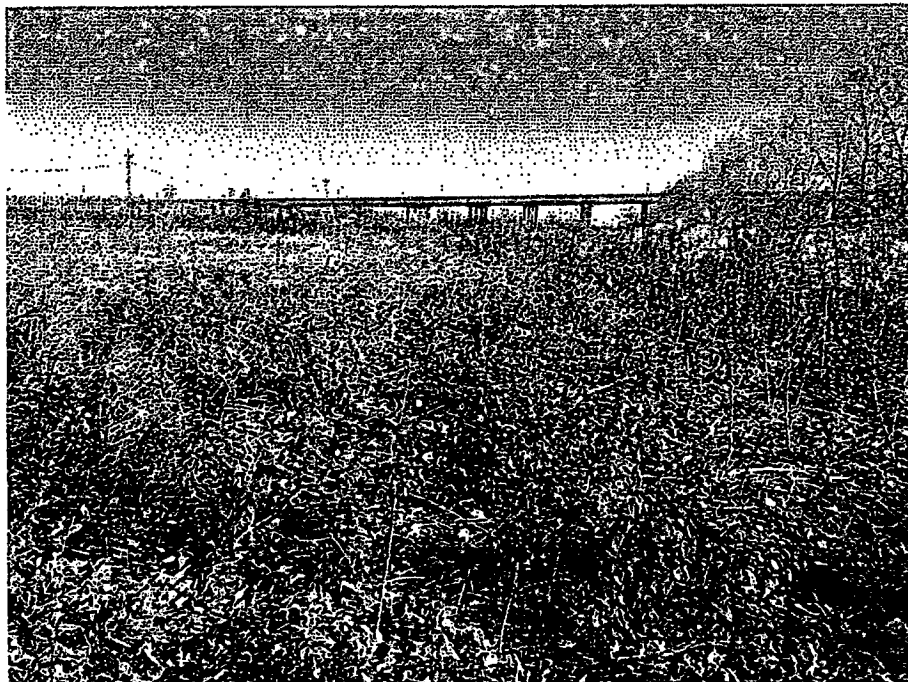
Bureau Id: 1978030005  
Photo No.: 1  
Photo Date: 11/22/2022  
Photo Time: 9:29:21 AM  
Direction: East  
Taken By: Anthony Guido

Unkempt vegetative cover and multiple shrubs growing on landfill



Bureau Id: 1978030005  
Photo No.: 2  
Photo Date: 11/22/2022  
Photo Time: 9:29:38 AM  
Direction: Down  
Taken By: Anthony Guido

Monitoring well MWD-2 appears to be  
in good condition



Bureau Id: 1978030005  
Photo No.: 3  
Photo Date: 11/22/2022  
Photo Time: 9:35:14 AM  
Direction: East  
Taken By: Anthony Guido

Multiple shrubs growing on landfill and bare spots in vegetative cover



Bureau Id: 1978030005  
Photo No.: 4  
Photo Date: 11/22/2022  
Photo Time: 9:39:18 AM  
Direction: Down  
Taken By: Anthony Guido

Large rut in the cover over the landfill



Bureau Id: 1978030005  
Photo No.: 5  
Photo Date: 11/22/2022  
Photo Time: 9:56:53 AM  
Direction: Southeast  
Taken By: Anthony Guido

Pile of soil placed on landfill with some vegetation. Multiple trees adjacent to landfill with potential roots growing into cap.



Bureau Id: 1978030005  
Photo No.: 6  
Photo Date: 11/22/2022  
Photo Time: 10:40:51 AM  
Direction: Down  
Taken By: Anthony Guido

Stump of a very large bush or tree in the middle of the landfill likely with roots extending into the clay cap.



**Detailed File review 8-21-23****Kelly Huser**

1978030005 -- Will County

RCH Newco II, LLC - New Ave. &amp; Ceco Rd., Lemont IL.

ILD990785453

Log No.: C-68

RCRA Closure

1. A Final Closure Plan for Waste Storage Area dated January 31, 1985 marked Attachment 3 and received by Illinois EPA on 2/9/94 is in the RCRA permit file. This is probably a copy of the original that was requested to be submitted. This closure plan was proposing clean closure of the site in accordance with 35 Ill. Adm. Code 725.358.
2. On March 29, 1985, Illinois EPA sent a letter (Log No. C-68) to CECO Corporation listing deficiencies for the January 1985 Closure Plan. Illinois EPA stated the plan was not approved. There were 16 deficiencies listed in the letter. CECO was given 30 days to submit a revised plan or a new plan. If not received in the 30 days, Illinois EPA considered the closure plan withdrawn.
3. In a letter dated 6/13/85 (Log No. C-68), Illinois EPA referenced additional information to the January 1985 Closure Plan, dated April 30, 1985. A hard copy of this submittal is not in the RCRA permit file. Illinois EPA approved the January 1985 and April 1985 Closure Plan with 2 conditions. (I could find no review notes for this determination)
  - a. CECO needed to expand the excavation area; and
  - b. A permit for the wastewater treatment system along with a NPDES discharge permit must be obtained.
4. On September 18, 1985, Illinois EPA did an inspection of the site and issued a Compliance Inquiry Letter, dated September 27, 1985, which set forth several concerns on aspects of CECO's implementation of the approved closure plan.
5. On November 20, 1985, a meeting was held at Illinois EPA headquarters in Springfield, IL. At the meeting, Illinois EPA advised CECO that USEPA's "mixture rule" requires the mechanical waste separation process operate to ensure that all traces of K061 material be removed from non-hazardous components before it could be returned as fill. On January 20, 1986, CECO advised Illinois EPA by letter that it was impossible to remove all K061 material and it would submit an amended closure plan by March 20, 1986.
6. During excavation, furnace dust (K061) became mixed with substantial amounts of non-hazardous waste, principally slag. Illinois EPA wanted physical separation of the two and CECO determined it was physically impossible. Off-site disposal was economically unreasonable for approximately 32,000 cubic yards of material. The 3/19/86 amended closure plan proposed construction of a two-acre on-site closure unit to contain the

32,000 cubic yards of K061 material.

7. In a letter dated 6/12/86 (Log No. C-68-M-1) Illinois EPA disapproved the modified partial closure plan dated 3/19/86 and listed 18 deficiencies and requested CECO submit a revised plan within 30 days.
8. In a 9/11/86 letter (Log No. C-68-M-1), Illinois EPA approved the modified partial closure and post-closure care plan for waste pile (S03) dated 3/19/86 and 7/15/86 (I could not find a copy of this submittal) with modification and conditions. The letter had 20 conditions.
9. To preserve its objections to certain conditions of Illinois EPA's 9/11/86 closure approval letter, CECO filed a Petition with the Board on October 15, 1986. That Petition was docketed as PCB 86-180. Following unsuccessful negotiations with Illinois EPA to resolve issues, a hearing was held on CECO's Petition for Review on May 25, 1989. On December 20, 1990, the Board substantially affirmed the contested conditions.
10. 3/30/89 Consent Agreement and Final Order from USEPA for CECO, Docket No. V-W-86-R-56 and V-W-87-R-53. This required CECO to 1) close the facility in accordance with the Illinois Environmental Protection Act and RCRA and 2) pay a civil penalty.
11. On 6/15/92 CECO filed a Petition for Variance from certain provisions of the Board's December 20, 1990 Order, PCB-86-180, specifically Conditions 1, 3, 11, 14, 15 and 16. CECO proposed an alternative Compliance Plan to demonstrate that all furnace dust was removed outside the 2-acre closure unit.
12. On 3/3/93 the Illinois EPA filed a Variance Response to CECO's 6/15/92 Petition. The Illinois EPA recommended the RCRA variance be denied.
13. In a letter dated 5/10/94 (Log No. C-68-M-2), Illinois EPA approved CECO document dated 2/7/94 about RCRA-closure activities (contained info on design of landfill) for S03 waste pile with conditions and modifications. Illinois EPA required CECO to meet the requirements of the 9/11/86 closure plan approval letter and perform corrective action activities at the same time. This included conduct an RFI for the entire 25-acre site. Their first step was to develop a Phase I workplan. **Condition 6 of this letter states the facility will eventually need to obtain a PCC permit, in accordance with 703.159 (Closure by Removal).**
14. In a letter dated 1/30/95 (C-68) Illinois EPA provided 17 comments/deficiencies on CECO's September 1994 draft workplan for a Phase I RFI. CECO had to submit a final Phase I Workplan by March 1, 1995. It should be noted that in comment #7, Illinois EPA makes a statement that it appears no certification of closure was submitted for the 2-acre hazardous waste landfill.

15. In a letter dated 2/22/95 from McBride Baker & Coles on behalf of CECO, the facility proposed to submit a response to Illinois EPA comments by 3/31/95 (30-day extension) and then proposed to set up a meeting in April 1995 with Illinois EPA to resolve issues. Then, Halliburton-NUS will prepare a final Phase I RFI Workplan for CECO and submit to Illinois EPA.
16. In CECO's response to Illinois EPA's comments (1/30/95), dated March 30, 1995, they state in their response to Comment #7 that **no Certification of Closure was prepared because the closure was incomplete. They could not certify closure in accordance with all the conditions in Illinois EPA's 9/11/86 approval letter.** However, NUS did certify to CECO that the interim status waste pile closure unit was closed in accordance with the approved plan and transmitted as-built drawings to Illinois EPA with a Mr. Lake's letter dated 4/7/89.
17. In a 9/12/95 (C-68-M-3) letter, Illinois EPA approved the Phase I RFI based on March 30, 1995, and October 3, 1994, documents. CECO was allowed to work on corrective action and closure of the 2-acre hazardous waste unit at the same time. Attached to this letter was Closure Certification Statement for the hazardous waste management unit at the facility.
18. In a 2/7/96 (C-68-M-4) letter, Illinois EPA approved a reduction in financial assurance and GW sampling events. The review notes for this application mentioned the groundwater monitoring wells were installed in 1993.
19. In a 8/29/96 (C-68-M-5) letter, Illinois EPA approved, RFI Phase I report (dated 5/31/96) with conditions and modifications. The Phase I report was reviewed as a request to modify the closure plan for the waste pile. **A closure certification statement (5/29/96) for the HWMU or waste pile was provided in this submittal.** It was determined that the facility does not need to provide PCC for the entire 25-acre site. **Condition 1.b states the facility must provide PCC for the closed HW landfill and must obtain a RCRA PCC permit.**
20. In a 8/7/97 (C-68-M-6) letter, Illinois EPA approved a supplemental RFI Workplan dated December 13, 1996 with conditions. Illinois EPA wanted the facility to address the concern of high levels of metals detected at various locations within the site. Illinois EPA listed the procedures to be used to characterize samples of slag material. Illinois EPA required additional groundwater quality sampling at 4 GW well locations. Illinois EPA gave CECO until 11/1/97 to complete the proposed activities. Condition #11 states the site is not eligible to enter Site Remediation Program thus a No Further Remediation letter will not be issued for this site.
21. In a 6/24/98 (C-68-M-7) letter, Illinois EPA did not approve a supplemental RFI Report dated 11/3/97 or the conclusions submitted by CECO. The beginning of this letter has a

detailed history of CECO and **Condition #3 states, "As a result of creating this landfill, the facility must eventually obtain a RCRA permit for post-closure care of this unit."** **Condition 6.b of this letter states again CECO must eventually obtain a post-closure permit.** Illinois EPA gave a deadline of 8/14/98 for CECO's next submittal.

22. In a 12/20/99 (C-68-M-8) letter, Illinois EPA approved three documents submitted as a request to modify the RCRA closure plan with conditions and modifications. Approved no further action for the slag fill area. Required deed restrictions and institutional control be established for the site. Part of the site had a new owner so Illinois EPA required the submittal of a revised Part A. **Condition #11 stated in accordance with 703.121, the facility must obtain a RCRA post-closure permit.**
23. In a 8/11/00 (C-68-M-10) letter, Illinois EPA approved proposed cost estimates for the 2-acre landfill and regrading efforts where slag material is present with conditions and modifications. I could not find a hard copy of this submittal or review notes in the file.
24. In a 2/24/09 (C-68-M-11) letter, Illinois EPA approved a draft version of institutional controls for the site which does not including the 2-acre hazardous waste landfill.
25. In a 6/2/09 (C-68-M-12) letter, Illinois EPA approved a groundwater monitoring modification as a modification to the interim status closure/post-closure plan with conditions and modifications. In this letter, Illinois EPA states, **"in a February 7, 1996 letter, Illinois EPA, determined that the post-closure care period for the subject landfill began on January 1, 1993."** The letter continues to list the physical requirements for pos-closure care of the landfill as follows:
  - a. Landfill shall not be used in any manner that will disturb: (1) the integrity of the final cover, liner, or any component of the containment system; or (2) the function of the facility's monitoring systems.
  - b. The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained.
    - i. Repairs must be made to the final cover, as necessary, to correct the effects of settling, subsidence, erosion, cracking, etc.
    - ii. Corrective action shall be taken if: (a) ponding is observed on the final cover; (b) cracks or erosion channels greater than on inch form for whatever reason; (c) the vegetative cover is distressed; (d) vector problems arise; or (e) **vegetation with tap roots are found to be growing on the final cover.**
    - iii. Properly managing run-on and run-off so that it does not erode or otherwise damage the final cover.
  - c. The rest of the conditions are regarding groundwater monitoring. However, Condition 7 states the following: **"Closure and post-closure care of the landfill at this facility must meet the requirements of (1) 35 Ill. Adm. Code, Subtitle**

**G: Waste Disposal; and (2) closure/post-closure care plan approval letters issued by Illinois EPA (Log No. C-68) and associated modifications.”**

26. In a 9/2/09 (C-68-Cert.) letter, Illinois EPA approved a RCRA Closure Documentation Report (CDR). The CDR provided a summary on how the landfill was constructed, how the waste was placed and how the final cover was installed. The report never gave a date for closure certification and just referenced Illinois EPA's 2/7/96 letter stating PCC started January 1, 1993. It appears the landfill was completed in 1988. Section 5.0 Closure Certification, of the CDR, states the **final certification of closure is for the 2-acre landfill** and the completion of the RFI and ELUCs established for the site. A copy of the 11/6/98 certification was provided. The original certification was also provided with modification C-68-M-6. **Illinois EPA's approval letter acknowledges a final certification of closure for the 2-acre landfill submitted in the 1/9/09 submittal.** The site was inspected by FOS on 6/24/09. FOS stated RCRA closure activities were completed in accordance with the approved Illinois EPA plans. ELUCS were filed on the Fiala property (excludes 2-acre landfill still owned by RCH Newco II). Condition 8 of Illinois EPA's letter again stated the physical post-closure care requirements for the landfill as summarized in #25 above.
27. In a 9/21/22 (C-68-M-13) letter, Illinois EPA asked for additional information pertaining to cost estimate submitted by Carlson Environmental on behalf of RCH Newco.
28. In a 11/15/22 (C-68) letter, Illinois EPA notified RCH Newco that Illinois EPA was extending their post-closure care period.

**Huser, Kelly**

---

**From:** Watson, Rob  
**Sent:** Wednesday, November 2, 2022 4:08 PM  
**To:** Huser, Kelly  
**Cc:** Halteman, Takako  
**Subject:** FW: RCH Newco  
**Attachments:** RE: RCH Newco; RE: RCH Newco; RE: RCH Newco

Kelly,

FYI- please include a copy of this email and the attached email strings with the review notes package for the RCH Newco site.

Finally, I don't think our revisions of a couple site specific criteria would result in the need to resend the letter up the chain of command.

Thanks,

**Rob Watson, P.E.**  
**RCRA Unit Manager**  
**Bureau of Land / Permit Section**  
**217-524-3265**  
[Rob.Watson@Illinois.gov](mailto:Rob.Watson@Illinois.gov)



 **Please consider the environment before printing this e-mail**

**From:** Rominger, Kyle <Kyle.Rominger@Illinois.gov>  
**Sent:** Wednesday, November 2, 2022 10:27 AM  
**To:** Watson, Rob <Rob.Watson@Illinois.gov>  
**Subject:** RCH Newco

Fyi – I gave a heads up to the front office, and DLC has no comments.

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Agency ID: 170000174683

Media File Type: LAND

Bureau ID: 1978030005

Site Name: RCH Newco II LLC

Site Address1: Stephen St

Site Address2:

Site City: Lemont

State: IL

Zip: 60439-

**This record has been determined to  
be partially or wholly exempt from  
public disclosure**

**Exemption Type:**

**Portion Removed**

**Exempt Doc #: 100**

**Document Date: 3 /13/2024**

**Staff: SAB**

**Document Description: FINAL DTERMINATION FILE: INTERNAL E-MAILS**

**Category ID: 24B**

**Category Description: RCRA/CLOSURE - RESOURCE CONSERVATION  
RECOVERY ACT**

**Exempt Type: Portion Removed**

**Permit ID: LOG C-68**

**Date of Determination:**

**4 /10/2024**



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

R 000025

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3301

MAR 13 2024

Mr. William J. Sawitz  
RCH Newco II, LLC  
27501 Bella Vista Parkway  
Warrenville, IL 60555

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

9589 0710 5270 0477 0564 15

EPA DIVISION OF RECORDS MANAGEMENT  
RELEASABLE

APR 10 2024

REVIEWER: SAB

Re: 1978030005 – Will County  
RCH Newco II, LLC – New Ave. & Ceco Rd.  
ILD990785453  
Log No. C-68 (Notification)  
RCRA Closure  
Permit Correspondence

Dear Mr. Sawitz:

The purpose of this letter is to inform RCH Newco II, LLC (RCH Newco), located at New Avenue and Ceco Road in Lemont, Illinois, that the Illinois EPA has conducted a review of the post-closure status of the subject hazardous waste management unit and has determined that the post-closure care period for the two-acre hazardous waste landfill must be extended to address current and future environmental concerns identified in this letter in accordance with 35 Ill. Adm. Code 725.218(g)(2) and the USEPA's "Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA", dated December 15, 2016 (2016 USEPA Guidance).

This letter constitutes the Illinois EPA's final determination to extend the RCRA post-closure care period at the above-referenced site for at least an additional thirty (30) years beyond January 1, 2023, pursuant to 35 Ill. Adm. Code 725.217(a)(1) and 725.218(g)(2), and to require RCH Newco to maintain its post-closure care financial assurance for the above-referenced site, based on the Illinois EPA's determination and basis for decision included herein.

## 1. SITE AND PROCEDURAL HISTORY

- a. On February 7, 1996, the Illinois EPA determined that post-closure care for the two-acre hazardous waste landfill began on January 1, 1993, under the facility's approved Interim Status Post-Closure Plan (Log No. C-68), requiring that post-closure care be maintained for a minimum of thirty (30) years or until at least January 1, 2023. Post-closure care included requirements for monitoring, maintaining, and repairing the cover system of the hazardous waste landfill as well as monitoring of the groundwater.
- b. On August 29, 1996, the Illinois EPA issued a decision approving a modification to the closure/post-closure plan (Log No. C-68-M-5). Included in that modification, Condition 1(b) stated that, pursuant to 35 Ill. Adm. Code 703.121(b), the facility must also eventually obtain a RCRA post-closure permit.
- c. The Illinois EPA stated again, "the facility must also eventually obtain a RCRA post-closure permit," in the following correspondence:

2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120  
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760



1978030005/RCH Newco  
Log No. C-68 (Notification)  
Page 2

June 24, 1998, (C-68-M-7), Condition 3 and Condition 6.b;  
December 20, 1999, (C-68-M-8), Condition 11.

- d. On June 2, 2009, Illinois EPA issued a letter to RCH Newco (Log No. C-68-M-12) approving modifications to the approved interim status closure/post-closure plan, subject to various conditions including the following:
- Condition 1(b): The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained.
  - Condition 1(b)(2): Corrective action shall be taken if: (a) ponding is observed on the final cover; (b) cracks or erosion channels greater than one inch form for whatever reason; (c) the vegetative cover is distressed; (d) vector problems arise; or (e) vegetation with tap roots are found to be growing on the final cover.
- e. On July 12, 2022, RCH Newco submitted a request to modify its post-closure care plan and cost estimate.
- f. On September 21, 2022, the Illinois EPA responded to RCH Newco's request, determining the need for additional information, but also noting that certain post-closure care plan conditions, notably Condition 1(b) and its subsections, were not being met.
- g. On November 15, 2022, the Illinois EPA notified RCH Newco of its tentative decision to extend the post-closure care period for the two-acre hazardous waste landfill at the above-referenced facility.
- h. On November 18, 2022, the Illinois EPA's tentative decision was publicly noticed through The Herald News and made available for public comment, as required by 35 Ill. Adm. Code 725.218(g)(2)(A).
- i. During the 30-day public comment period, the Illinois EPA received comments from Nijman Franzetti LLP, on behalf of RCH Newco, dated December 19, 2022. These comments were the only comments received and were reviewed and considered before the Illinois EPA made its final determination.
- j. At the request of RCH Newco, a public hearing to discuss the extension of the post-closure care period at the site was held on April 19, 2023, via the WebEx online platform. No one representing RCH Newco attended the public hearing. No comments were received during the public hearing.

1978030005/RCH Newco  
Log No. C-68 (Notification)  
Page 3

## 2. ILLINOIS EPA DETERMINATION AND BASIS FOR DECISION

The Illinois EPA has reviewed RCH Newco's December 19, 2022, comments, and provides its responses in Attachment 1 to this document. Having considered all comments submitted, the Illinois EPA's final decision to extend the post-closure care period for the two-acre landfill at the above-referenced facility is based on the following determinations:

- a. Nature of waste in the landfill: The waste in the landfill includes approximately 2,500 cubic yards of electric arc furnace dust (EAF Dust) which is a listed hazardous waste (K061), and approximately 29,500 cubic yards of non-hazardous slag. The EAF Dust is also characteristically hazardous for lead (D008) and cadmium (D006). Pursuant to 35 Ill. Adm. Code 721.103(a)(2)(D), when a listed hazardous waste (EAF Dust) is mixed with a nonhazardous waste (the slag), the entire mixture becomes a listed hazardous waste.

The Illinois EPA therefore has determined that, by definition, the entire 32,000 cubic yard of waste in the landfill is considered a listed hazardous waste. The waste was not pre-treated to meet the Land Disposal Restrictions (LDRs) for hazardous waste prior to disposal in the hazardous waste landfill.

- b. Unit Type/Design: The bottom liner consists of compacted clay. The final cover consists of 2-feet of compacted clay, 18 inches of select fill and 6 inches of topsoil with vegetation. A viable cover is one of the most important mechanisms in preventing leachate generation and, ultimately, a release of contaminants from a landfill. The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained. Vegetation with well-established tap roots was found to have been growing on the landfill cover and is growing adjacent to the landfill.

This lack of cover maintenance is in violation of RCRA post-closure care requirements as well as Condition 1(b), and specifically, 1(b)(2), of Illinois EPA's June 2, 2009 letter (Log No. C-68-M-12). The Illinois EPA issued Violation Notice (VN) L-2023-00075 on March 27, 2023 to RCH Newco due to lack of cover maintenance at the site. On August 17, 2023, a Notice of Compliance commitment Agreement Non-Issuance was issued to the facility by Illinois EPA regarding the violations. This letter indicated that the resolution would involve the Office of the Attorney General or other appropriate prosecutorial authority.

- c. Leachate: According to the 2016 US EPA Guidance, monitoring for leachate generation serves as the most effective way of examining the integrity of the waste management unit (e.g., it can suggest a cover or liner failure when leachate is detected late in the post-closure care period). The hazardous waste landfill does not have a leachate collection or monitoring system.

The Illinois EPA therefore determines that it cannot be known if leachate is present within the landfill. Without a working leachate collection/monitoring system, the extent of liquids that may have penetrated the compromised cover system during the post-closure period cannot be determined as required by 35 Ill. Adm. Code 725.410(a)(1) & (5), 725.410(b), and 725.217(a)(1).

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- d. **Long Term Care:** The establishment and maintenance of physical and legal controls at the site are necessary to prevent unacceptable exposure to the hazardous waste and hazardous constituents abandoned within the landfill. The Illinois EPA has determined that long-term monitoring including maintenance of the cover systems and groundwater monitoring systems, control of any liquids (leachate) in landfills, and restrictions of future land uses must be placed on hazardous waste landfills to minimize future exposures and potential hazardous waste release.

Pursuant to 35 Ill. Adm. Code 703.121, the site must obtain a RCRA post-closure permit to achieve the required long-term care of the landfill. The permit will be the mechanism the Illinois EPA uses to verify the facility is maintaining the landfill.

The landfill is currently regulated under the RCRA Interim Status Standards at 35 Ill. Adm. Code Part 725; however, this site is required to obtain a RCRA post-closure permit pursuant to 35 Ill. Adm. Code 703.121, as specified in several previous decision documents from the Illinois EPA. Therefore, Section 39(g) of the Environmental Protection Act (Act) is applicable and states: "*The Agency shall include as conditions upon all permits issued for hazardous waste disposal sites such restrictions upon the future use of such sites as are reasonably necessary to protect public health and the environment, including permanent prohibition of the use of such sites for purposes which may create an unreasonable risk of injury to human health or to the environment.*"

This final determination to extend the post-closure care period for the hazardous waste landfill at this facility is based upon the requirements at 35 Ill. Adm. Code 703.121, 725.218, 725.131, Sections 12(a), 21(n), and 39(g) of the Act, Illinois EPA's November 15, 2022 letter, and the responses to comments attached to this letter.

The facility must provide an application for a RCRA post-closure permit to the Illinois EPA Bureau of Land Permit Section within 180 days of the date of this letter. 35 Ill. Adm. Code 703.214 describes the information that must be submitted by an owner/operator for a RCRA Post-Closure Care Permit. Attached to this letter are two (2) documents to assist in preparing your application, *Information Which Must be Provided in an Application for a RCRA Post-Closure Permit (May 2021)* and *RCRA Post-Closure Permit Application Completeness and Technical Review Checklist (May 2021)*.

This final determination action shall constitute the Illinois EPA's final action on the subject identified in this letter. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within thirty-five (35) days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed ninety (90) days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

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Illinois Environmental Protection Agency  
Division of Legal Counsel  
Attn: Land Enforcement Unit Manager  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, IL 62794-9276  
217/782 5544

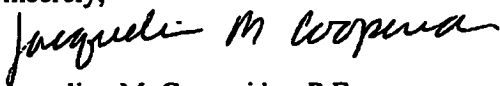
For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk  
State of Illinois Center  
100 West Randolph Street, Suite 11 500  
Chicago, IL 60601  
312/814 3620

Work required by this letter, the associated submittal, or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Any questions regarding the groundwater related aspects of this project, please contact Amy Butler at 217/558-4716. Questions regarding other aspects of this project should be directed to Kelly Huser at 217/524-3867.

Sincerely,



Jacqueline M. Cooperider, P.E.  
Permit Section Manager  
Bureau of Land

JMC: KDH:1978030005-RCRA-C68-Corr(3).docx

*KDH TNH AMB slr*

Attachments:

1. Illinois EPA's Responses to RCH Newco's December 19, 2022, Comments
2. Information Which Must be Provided in an Application for a RCRA Post-Closure Permit (May 2021)
3. RCRA Post-Closure Permit Application Completeness and Technical Review Checklist (May 2021)

CC: Kristin Pelizza, RCH Newco  
Bruce Shabino, P.G., Carlson Environmental, Inc.  
Emily Keener, Norberto Gonzalez, USEPA Region V

## ATTACHMENT 1

### ILLINOIS EPA'S RESPONSE TO COMMENTS RCH Newco II, LLC 1978030005 – Will County

The responses below address comments received from Jennifer Nijman, counsel for RCH Newco II, LLC (RCH Newco), dated December 19, 2022, and received by the Illinois EPA on December 19, 2022 (via email) pertaining to the Illinois EPA's Intent to Extend the Post-Closure Care for RCH Newco's interim status landfill issued November 18, 2022.

Section A of this attachment includes the Illinois EPA's general response to RCH Newco's Comments regarding extending post-closure care, followed by more detailed responses to the specific comments provided in their letter in Section B.

#### A. Illinois EPA General Response to Comments

Landfills are man-made structures and need to be consistently monitored and maintained to ensure they continue to function as designed and to prevent failure of the structure and negative effects on human health and the environment. Unaddressed small problems can result in bigger, potentially catastrophic, and expensive problems.

Current hazardous waste landfills are designed to contain hazardous wastes and prevent hazardous constituents from entering the environment. The design standard for RCH Newco's landfill do not meet these current standards. Buried hazardous constituents continue to pose a threat to human health and the environment as long as they remain in place. Therefore, permits and post-closure care plans for landfills must restrict the types of activities that can occur on a closed landfill. Additionally, they must include, monitoring of any leachate in the landfill, monitoring and maintenance of the cover system, and monitoring of the groundwater. The permits and plans must also provide remediation strategies and contingency plans for an accidental release of hazardous constituents.

Federal and state RCRA regulations allow for the Illinois EPA to extend the post-closure care period at these facilities because removing all regulatory control over a hazardous waste landfill would be a significant threat to human health and the environment.

Termination of permits and/or post-closure plans would eliminate requirements to monitor and maintain the hazardous waste disposal units and undermine any enforceable land use restrictions on the property. Future property owners, unaware of the environmental hazard, could constructing a building, bury utility lines, or conduct other activities on the landfill that could compromise the integrity of the cover or base liner system. These activities would allow water to enter the landfill and create pathways for hazardous constituents to enter the surrounding environment. The USEPA's December 15, 2016, guidance memo on post-closure care states; "*An overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit.*" (2016 USEPA Guidance p. 4.)

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There are unpredictable concerns regarding future population, land use, groundwater, surface water, drinking water, or flood conditions in the area around the hazardous waste landfill. Hence, the risks posed by an uncontrolled hazardous waste landfill could be considerably higher in the future.

Removing regulatory oversight from a hazardous waste landfill (i.e., terminating a closure plan or permitting requirements), is not protective of human health and the environment. If neglected, the soil cover system on a landfill will erode and eventually no longer keep water out of the landfill and hazardous constituents will be released from the landfill. This is an unacceptable risk to the public and the environment.

## **B. Illinois EPA's Detailed Response to RCH Newco's Comments**

### **COMMENT 1**

#### ***I. Post Closure care should cease because the fill area poses no threat to human health or the environment.***

***IEPA alleges because the Fill Area contains [Electric Arc Furnace Dust (K061)], a listed hazardous substance, and because the EAF was not treated, post-closure care should be extended. However, IEPA's conclusion does not address the lack of any risk for migration and does not account for the unique characteristics of waste and the Fill Area itself. USEPA Guidance clarifies that the purpose of knowing whether waste was treated is because treatment reduces the "mobility or leachability of hazardous constituents" and is another "means of achieving LDR's groundwater protection goal." USEPA Guidance, p. 4. Here, no such mobility concern exists.***

***The only reason for the Fill Area was to contain a small amount of EAF dust that could not be separated from non-hazardous steel waste. Only 8.5% of the Fill Area consists of the EAF dust – the remainder being non-hazardous materials. The Fill Area contents have not changed since the Fill Area was finished almost three decades ago. The Fill Area is covered with two feet of compacted clay, 18 inches of select fill and six inches of topsoil with vegetation to prevent infiltration. The Fill Area is lined with compacted clay to protect from migration. IEPA approved of the Fill Area design as appropriate for the waste at issue.***

***Without referencing the fact that thirty years of monitoring has shown no risk of harm, IEPA seems to be arguing that simply because a small amount of a listed hazardous waste exists, it must be assumed to be a threat to human health or the environment. That is not the standard set out by Illinois regulations or USEPA Guidance. (RCH Newco Comment p. 2-3).***

#### **Illinois EPA Response to Comment 1:**

Electric Arc Furnace Dust (K061) is a listed hazardous waste due to toxicity from hexavalent chromium, lead, and cadmium (35 Ill. Adm. Code 721.132, Part 721, Appendix G). In addition, EP Toxicity testing indicated that the EAF dust at this site is a characteristically hazardous waste due to lead and cadmium (See Section 2.2.1 of Carlson

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RFI Phase I Report: May 1996). Approximately 2,500 cubic yards of EAF dust was disposed of in the on-site landfill.

The RCRA regulations at 35 Ill. Adm. Code 721.103(a)(2)(D) are clear that a mixture of a solid waste and a listed hazardous waste (in this case electric arc furnace dust – K061) is a hazardous waste. Hence, the entire contents of the landfill (32,000 cubic yards) are considered a listed hazardous waste.

As noted on page 3 of the December 19, 2022 letter, the contents of the landfill (Fill Area) have not changed since the landfill was closed almost three decades ago. The contents continue to be hazardous waste (32,000 cy) and as such, there is continued concern about the mobility of hazardous constituents and potential for contamination of the soil and groundwater if the appropriate monitoring, maintenance, and land use restrictions are not continued at the landfill in the future. As stated in 2016 USEPA Guidance, “an overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit.”

## COMMENT 2

### I.A. Thirty Years of Groundwater Monitoring at the Fill Area Demonstrates No Risk to Human Health and the Environment

*IEPA does not appear to evaluate almost three decades of groundwater sampling that shows there is no risk to human health and the environment. According to USEPA Guidance, “[g]roundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. “Groundwater should not exceed risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based levels and scenarios.” Id. The objective of the groundwater sampling is to collect data that would determine whether the Fill Area is impacting the groundwater. (RCH Newco Comment p. 3).*

#### Illinois EPA Response to Comment 2:

Illinois EPA acknowledges that hazardous constituents have not currently been detected in the groundwater. However, this does not indicate that there will be no risk to human health and the environment in the future. As stated in 2016 USEPA Guidance, “there are often uncertainties in whether controls will continue to function as planned or whether future activities will lead to unplanned exposures to human and environmental receptors. Even if there is not current evidence of actual releases from the facility, significant factors can change over time.” As long as hazardous waste remains in the landfill, there is an inherent risk that hazardous waste and hazardous constituents could find potential pathways into the groundwater and soil. Without continued monitoring, the public would be at risk of being unaware if hazardous constituents were released from the landfill.

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### COMMENT 3

*Sample results from 2021 continue to show no impact to groundwater from the Fill Area. Based on the analytical data for both sampling events in 2021, groundwater did not exceed the drinking water standards as referenced in 35 IAC 725, Appendix C, USEPA Interim Primary Drinking Water Standards. RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022, p. 6. In fact, the groundwater sampling every year since monitoring started revealed similar results. See e.g., Groundwater and Hazardous Waste Reports 1993 to 2021. Further, inspection of the wells in 2021 shows the wells were in good condition and locked securely -- as they have been every year since 1993. Id. p. 2. In other words, the wells have been maintained to provide valid data. Consequently, the extensive history of groundwater monitoring indicates there is no threat to human health or the environment. (RCH Newco Comment p. 4).*

#### **Illinois EPA Response to Comment 3:**

See Illinois EPA's General Response to Comments and Illinois EPA's Response to Comment 2.

### COMMENT 4

#### **I.B Groundwater Monitoring is Equally Relevant to Leachate in Assessing Impact**

*IEPA alleges because there is no leachate collection or monitoring system, it cannot be determined if leachate is present or if the integrity of the cover has been maintained. IEPA ignores USEPA guidance that states that groundwater monitoring is "the primary means of detecting leachate releases and groundwater contamination." USEPA Guidance, p. 6. In fact, Illinois regulations allow for IEPA to consider either leachate OR groundwater monitoring results in determining whether there is the potential for migration of hazardous wastes at levels that may be harmful to human health and the environment (725.218 (g)(1)(A)(i)). Here, IEPA fails to consider the thirty years of groundwater monitoring that shows no potential for harm to human health or the environment. (RCH Newco Comment p. 4).*

#### **Illinois EPA Response to Comment 4:**

In addition to below, see Illinois EPA's General Response to Comments as well as Illinois EPA's Response to Comment 6.

The Illinois EPA acknowledges that hazardous constituents have not currently been detected in the groundwater. However, this does not indicate that there is no potential risk to human health and the environment in the future. If hazardous waste remains in place, there is and always will be a risk that hazardous waste and hazardous constituents could migrate given many different factors including, but not limited to, unknown future environment and climate factors resulting in erosion or flooding and potential for human error.



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#### COMMENT 5

***As to integrity of the Fill Area cover, inspections conducted for the last twenty years indicate the landfill cover is in good condition. The Company is currently in the process of general cover maintenance and is removing some vegetation that has grown in the area. As described in Section II below, ongoing maintenance of the cover can be established in a land use restriction if necessary. (RCH Newco Comment p. 4).***

#### **Illinois EPA Response to Comment 5:**

On November 22, 2022, an inspection by the Illinois EPA documented that there has been a lack of maintenance of the vegetative cover. The inspection found that there were multiple bare spots, erosion issues, growth of woody shrubs, and multiple ruts present in the cover. An 8-inch tree stump was found in the middle of the final cover. The root system from a tree this size likely penetrated the final cover of the landfill and as a result created a conduit for water (precipitation & run-off) to enter the landfill. The Illinois EPA also observed trees growing adjacent to the landfill. Therefore, it is likely that tree root systems are encroaching and could potentially penetrate the final cover or liner of the landfill. The approved closure plan required the facility to monitor and maintain the effectiveness of the landfill's cover. The results of the November 22, 2022, Illinois EPA inspection indicate that the final cover of the landfill has been neglected. The facility's maintenance records and compliance history of the post-closure plan must also be taken into consideration as relevant information when considering extending or shortening the post-closure care period in accordance with 2016 USEPA's guidance. The historic negligence demonstrates that it is appropriate to regulate the facility under a RCRA permit for future post-closure care of the landfill at this facility.

#### COMMENT 6

##### **I.C. The Fill Area Poses No Risk Because it is located in a Secured Industrial Area**

***USEPA Guidance looks to "relevant facility location characteristics" such as "proximity to vulnerable areas" like residential areas and surface and drinking water sources, surrounding land use, areas prone to flooding and whether facility conditions minimize the potential for adverse impacts on local populations if there is a release from the unit. USEPA Guidance, p. 7 IEPA's notice letter does not evaluate the Fill Area's location characteristics.***

***The Fill Area occupies two-acres surrounded by a ten-foot-high, locked chain link fence that is located in the center of 25 acres of industrial property formerly used by Ceco, and now owned by RCH Newco. Access to the Property is by an unnamed paved road from New Avenue. The entire Property, including the Fill Area, is surrounded by a heavily industrialized area.***

***The Fill Area is almost entirely in Zone C, which is characterized by minimal flooding. Phase I, p. 3. "There are no significant surface water bodies, streams or wetland areas located at the Property". Id. at p. 11. No drinking water sources exist downstream of the Fill Area that take water from the I & M Canal. Id. at 12. Similarly, no drinking water sources using ground water are located hydraulically down-gradient from the Property. Id. The location***

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*characteristics of the Fill Area support a finding of no risk to human health or the environment. (RCH Newco Comment p. 4-5).*

#### **Illinois EPA Response to Comment 6:**

As noted in 2016 USEPA guidance, there are considerable unknowns, and no guarantees, regarding future population, land use, groundwater, surface water, drinking water, flood conditions, or any other factors associated with potential climate change around the hazardous waste landfill. The hazardous waste in the landfill should not change over time, but the factors surrounding the landfill will continue to fluctuate, therefore the waste presents a continued threat to human health and the environment.

#### **COMMENT 7**

##### **II. Reasonable Alternatives Should be Utilized in Lieu of Indefinite Post-Closure Care**

*In its November 15<sup>th</sup> letter, IEPA states the “establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste left in place. Long-term restrictions of future land use must be placed on the Site to minimize future exposure.” However, IEPA fails to consider the fact that the Fill Area is surrounded by a locked fence, and a deed restriction already exists on the Property to preclude access. The deed restriction, already recorded against the title of the Property, limits the Property to industrial use unless permission is granted by IEPA, restricts worker contact with the co-disposed material, and requires that any of the co-disposed material removed must be managed in accordance with the provisions of 35 Ill. Adm. Code, Subtitle G. Ex. C., Deed Restriction. In the event IEPA determines that additional property restrictions are necessary, they can be easily added without extending post closure care. The Deed Restriction could be converted to an environmental land use control (ELUC) to permanently restrict property use (at least until IEPA agrees to remove the restriction). ELUCS are enforceable documents (35 Ill. Admin. Code 742.1010(c)(3)). Examples of land use limitations or requirements that IEPA generally imposes include a prohibition of use of groundwater for potable purposes, an industrial/commercial property use restriction, and maintenance of an engineered barrier. “Environmental Land Use Control,” IEPA Website; 35 Ill. Adm. Code 742 subpart J. In this case, the Deed Restriction already in place could include maintenance of the landfill cover if necessary. This would eliminate any potential argument IEPA has that there could be a risk to human health and the environment without ongoing maintenance.*

*Assuming IEPA can establish a threat of harm that is not addressed by the existing (or amended) Deed Restriction, Illinois regulations allow for more reasonable methods of including long term controls – rather than an indefinite RCRA permit. Specifically, 35 Ill. Adm. Code 703.121(b) (citing to 703.161) provides for an alternative Agency plan or other enforceable document (such as an administrative order on consent, or ELUC) to establish any long-term controls that might be necessary. (RCH Newco Comment p. 4-5).*

#### **Illinois EPA Response to Comment 7:**

In addition to below, see Illinois EPA's Response to Comment 5.

An environmental land use control (ELUC) is not applicable in this case because the Tiered Approach to Corrective Action Objectives (TACO) regulations at 35 Ill. Adm. Code Part 742 are only applicable when waste is removed from a site. Landfills by design leave waste in place and are therefore excluded per 35 Ill. Adm. Code 742.105(h). RCH Newco is leaving waste in place and therefore, the remediation standards of 35 Ill. Adm. Code Part 742 do not apply.

A Deed Restriction is not considered an enforceable document. Therefore, it cannot be relied upon to ensure a hazardous waste landfill is properly monitored and maintained, or that future land use of the landfill is adequately limited and protective of human health and the environment. Also, refer to Illinois EPA's Response to Comment 5.

An environmental covenant (EC) under the Uniform Environmental Covenant Act could potentially be an enforceable document that could be applied to the landfill. However, this legal document could take several years to establish. Therefore, to ensure that long term controls are maintained at the facility, the site needs to continue post-closure care and obtain a RCRA Post-Closure permit subject to 35 IAC Part 724.

#### **COMMENT 8**

*Before a post-closure care period can be extended, IEPA must show cause – and must be able to show that there is a need to prevent threats to human health and the environment. 725.218(g). IEPA cannot make such a showing in this case as there is no such threat. The Fill Area on the Property contains only 8.5% of EAF dust mixed with non-hazardous materials, is in the center of 25-acres of land used for industrial purposes, has almost three decades of groundwater samples that are within acceptable limits, and can be adequately maintained with appropriate environmental land use controls. For these reasons, IEPA should withdraw its notice for the extension of post-closure care.*

#### **Illinois EPA Response to Comment 8:**

Hazardous waste remains in place at the landfill which presents an inherent uncertainty and potential threat to human health and the environment. A landfill is a man-made structure built to contain hazardous waste and keep hazardous constituents from entering the environment. Regulations requiring that a landfill be properly designed, constructed, operated, closed, and maintained, are in place to provide protection of human health and the environment. Unless the hazardous waste is completely remediated from the subject property, continued maintenance and oversight is required.

**ATTACHMENT 2**

**Information Which Must be Provided in an Application for a  
RCRA Post-Closure Permit (May 2021)**



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

## Information Which Must be Provided in an Application for a RCRA Post-Closure Permit May 2021

### Introduction/Purpose

35 Ill. Admin. Code 702.121 requires facilities that have closed a hazardous waste management unit as a landfill to obtain a RCRA post-closure permit. This permit will set forth the requirements which must be met in providing the closed unit at least thirty years of post-closure care: it will also contain requirements regarding corrective action efforts for the solid waste management units of concern at the facility. This document sets forth in an organized and logical form, the information which must be provided in an application for a RCRA post-closure permit; it was developed in general accordance with 35 Ill. Admin. Code 703.214

Hazardous waste management units closed as landfills (and thus must be covered by a RCRA post-closure permit) typically fall into one of four categories:

- Hazardous waste surface impoundments that could not achieve "clean closure" and thus were closed as landfills;
- Hazardous waste surface impoundments that were operated as disposal units and closed as a landfill;
- Landfills which co-disposed of hazardous waste with municipal and non-hazardous special waste; and
- Landfills which received hazardous waste as well as non-hazardous special waste.

The key components of post-closure care of a unit closed as a landfill includes: maintenance of the final cover; operation of any leachate/gas collection system(s); and implementation of a groundwater monitoring and, as necessary, remediation system. In addition, as noted above, another other key item that must be addressed under a RCRA post-closure permit is the implementation of an appropriate corrective action program on the solid waste manage units of concern at the facility.

This document is comprised of the following six sections which identify in outline form the information which should be contained in an application for a RCRA post-closure permit:

- A. Forms, Certifications, Confidentiality, and Public Involvement
- B. Facility Description
- C. Groundwater Monitoring
- D. Procedures to Prevent Hazards
- E. Post-Closure Requirements
- F. Corrective Action

The forms mentioned in this document can be found on Illinois EPA's internet site (<https://www2.illinois.gov/epa/Pages/default.aspx>). Illinois EPA will follow the procedures set forth in 35 Ill. Admin. Code 702, 703, and 705, as well as the Illinois Environmental Protection Act, in reviewing and processing this application.

The Illinois EPA's Bureau of Land Permit Section is responsible for reviewing RCRA post-closure permit applications; these applications should be submitted to Illinois EPA at the address above. Questions regarding the development of the groundwater-related aspects of an application should be directed to the Groundwater Unit of the Permit Section while questions related to other aspects of the application should be directed to the RCRA Unit of the Permit Section. The general telephone number for both the Groundwater Unit and the RCRA Unit is 217/524-3300.

4302 N. Main Street, Rockford, IL 61103 (815) 987-7760  
595 S. State Street, Elgin, IL 60123 (847) 608-3131  
2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
2009 Mall Street Collinsville, IL 62234 (618) 346-5120

9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
100 W. Randolph Street, Suite 4-500, Chicago, IL 60601

## **Table of Contents**

In addition to identifying the sections, tables, figures and attachments, the Table of Contents for the application should include a list of acronyms used in the application. This information will aid both the Illinois EPA and anyone from the general public who reads the permit application.

## **SECTION A--FORMS, CERTIFICATIONS, CONFIDENTIALITY, and PUBLIC INVOLVEMENT**

### **A.1 RCRA Part A Application Form: 702.121, 702.123, 702.126(a) and (d), 703.181**

The Part A application must be complete and consistent with the Part B application. 703.181 specifies the contents of a Part A application. Signatures must be provided for both the owner and operator of the facility as described in Item A.2.1 below (of special concern is when the landowner(s) of a site are different from the company operating the hazardous waste facility).

### **A.2 Certification Using the LPC-PA23 Form: (703.182)**

A completed LPC-PA23 form must be included in the application (this form is available on Illinois EPA's internet site). Completion of this form should ensure the requirements of A.2.1 and A.2.2 below are met.

#### **A.2.1. Facility Certification: 702.121, 703.182, 702.126**

Applications must be accompanied by a certification as specified in 702.126(d) signed by authorized representatives of both the owner and operator of the facility (of special concern is when the landowner(s) of a site are different from the company operating the hazardous waste facility). Authorized representatives of an owner or operator which must complete and sign this certification are as follows: (1) for a corporation, a principal executive officer (at least at the level of vice-president); (2) for a partnership or sole proprietorship, a general partner or the proprietor, respectively; (3) for a municipal, state, Federal, or other public Agency, either a principal executive officer or ranking elected official. If the application is not signed by representatives other than those just described, information must be provided indicating that the person is authorized to sign RCRA permit applications for the owner or operator.

#### **A.2.2. Technical Information Certification: 703.182, Illinois Professional Engineering Act**

Technical data, such as design drawings, specifications and engineering studies, must be certified (sealed) by a qualified Professional Engineer licensed to practice in the State of Illinois in accordance with Ill. Rev. Stat., par. 5101, Sec. 1 and par. 5119, Sec. 13.1. Work required to be conducted in developing an application or work required to be conducted for compliance with the RCRA regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

#### **A.2.3. 39i Certification: Section 39 (i) of Environmental Protection Act**

Section 39, Paragraph (i) of the Illinois Environmental Protection Act requires that Illinois EPA conduct an evaluation of prospective owner's or operator's prior experience in waste management operations

before it issues a RCRA permit. This paragraph goes on to state that the Illinois EPA may deny such a permit if the prospective owner or operator or any employee or officer of the prospective owner or operator has a history of:

1. Repeated violations of federal, State, local laws, regulations, standards, or ordinances in the operation of waste management facilities; or
2. Conviction in this or another State of any crime which is a felony under the laws of this State, or conviction of a felony in a federal court, or conviction in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition; or
3. Proof of gross carelessness or incompetence in handling, storing, processing, transporting, or disposing of waste.

Illinois EPA has created a form (available on its internet site) which applicants (the owner and the operator) must use to provide it with the information necessary to make the evaluation described above.

**A.3 Public Disclosure Exemption Claims and Trade Secret Claims:**  
**Section 7 of the Act; 2 Ill. Adm. Code Part 1828; 35 Ill. Adm. Code Part 130**

Note: A.3.2 thru A.3.5 below are only applicable if an applicant desires to request a public disclosure exemption claim or trade secret claim. Any documents submitted that are not properly marked and justified will not be regarded as exempt and will be released to the public upon request.

**A.3.1. No Information Claimed Exempt from Public Disclosure**

If no information in the application is claimed exempt from public disclosure, the applicant should clearly state this in the cover letter and this subsection of the application. This will release any disclaimers on drawings, plans etc. that are included in the application.

**A.3.2. Trade Secrets Claims**

This claim should be asserted if any portion of the application is regarded as trade secret pursuant to 35 Ill. Adm. Code 130. To assert this claim

1. Provide a claim and justification letter;
2. Stamp each page in red ink "TRADE SECRET" that is to be exempt.
3. Provide a version for public review which does not include the trade secret information.

**A.3.3. Exempt or Exempt In-Part Data Claims: 2 Ill. Adm. Code 1828.401**

This claim should be asserted if any portion of the application is regarded as exempt or exempt in part pursuant to 2 Ill. Adm. Code 1828.401. To assert this claim:

1. Provide a claim and justification letter;
2. Appropriately mark those portions of the application for which the exemption is requested.
3. Provide a version of the application for public review which does not contain the information for which the exemption is requested.

**A.3.4. Privileged Information: 2 Ill. Adm. Code 1828.401**

This claim should be asserted if any portion of the submittal is regarded as privileged and meets the definition of privileged information pursuant to 1828.401. To assert this claim:

1. Provide a claim and justification letter;
2. Appropriately mark those portions of the application for which the claim is requested.
3. Provide a version of the application for public review which does not contain the information for which the exemption is requested.

**A.4 Public Participation: Facility Mailing List & Information Repositories:**  
Environmental Protection Act, Section 39(d), 35 Ill. Adm. Code 703.193, 703.248, 705.163

**A.4.1. Facility Mailing List:**

The Facility Mailing List required to be established and maintained in 35 Ill. Adm. Code 705.163(a) is a list of all entities who must be notified of any permit-related activities at a RCRA permitted facility. The application must include the most-recent list the facility has; this list must identify its last revision date and be provided as an attachment to the application. A printed copy and an electronic copy in MS Word format must be provided.

The list must be updated and resubmitted to the IEPA as needed to include individuals who have interacted with the facility such as: those attending the pre-application meeting, respondents to mailings, and those attending the public meeting when a permit modification is requested. IEPA will review and approve all updates prior to using the mailing list. Mailing lists originally developed by IEPA are available from IEPA's RCRA community involvement coordinator.

**A.4.2. Identification of Repositories:**

It is important that information regarding a RCRA permitted hazardous waste management facility be available to the local citizens for review. Thus, all information submitted to IEPA in furtherance of a RCRA permit application, (with the exception of trade secrets), must be made available to the public at the office of the County Board or governing body of the municipality and also in another location in the host community (or nearest community to the facility) no later than the date the permit application is submitted to IEPA. Provide the name, address, contact person, phone number, and business hours for each repository.

*Note: The community repository may not be located at the facility and must be available to the community for review and copying of application documents after regular office hours. Public libraries are recommended repository locations.*

**A.4.3. Contents of Repository:**

The repository contents must include all information submitted to IEPA in furtherance of a RCRA permit application (with the exception of trade secrets). The applicant is required to maintain, verify and update the contents of the repositories throughout the application process. Each time information is submitted to Illinois EPA, a copy must also be placed in the repository. Placement of a given submittal in the repository should be documented in the cover letter transmitting the submittal to Illinois EPA.

Repositories must be well-organized and kept up to date. A comprehensive inventory of all documents in the repository should be maintained, as well as a brief description of each document listed in the inventory. The applicant should visit each repository on a regular basis to ensure its organization is maintained.

**A.4.4. Public Notice of Repository Availability:**

The applicant must provide written notice of the repositories' availability for public review to everyone on the facility mailing list; this notice must include all of the following information:



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1. Identification and address or map of the facility and the hazardous waste management operations that the permit application addresses;
2. A statement that permit application materials have been prepared and are available for community members to review and copy at the repository.
3. The location and business hours of the repository.
4. A statement that the applicant will update the repository materials periodically during the Illinois EPA's review of the permit application.
5. The name, address and telephone number of the applicant's contact person to address questions regarding the application or to be added to the facility's mailing list for future permit activities.
6. The following statement "For general information on the hazardous waste management permit program in Illinois, please contact" then provide the address of the Illinois EPA RCRA Community Involvement Coordinator.

This notice must be made no later than the date the permit application is submitted to the Illinois EPA. Documentation that the public notices were made must be included in the application. Specifically provide a copy of the letter sent to individuals on the approved facility mailing list. Indicate the date the letter was sent, and the revision date of the mailing list used for the mailings.

## SECTION B--FACILITY DESCRIPTION

### **B.1 General Facility Description: 702.123, 703.183(a), 703.183(n), 703.183(s)**

#### **B.1.1. Operation of Facility:**

Provide the following information about the facility:

1. Identify the owner and operator of the facility as well as the address and size of the facility;
2. Describe the facility in general, its operations, and the specific activities conducted by the applicant that require a permit under RCRA, including the nature of the business.
  - a. Commercial facilities should identify the types of industry served;
  - b. On-site facilities should briefly describe the process(es) involved in the generation of hazardous waste.
3. A legal description of the facility developed and certified by a professional land surveyor licensed to practice in Illinois.
4. The Tax Property Identification Number(s) of the land which comprises the facility. If more than one Property Identification Numbers are associated with the facility, a scaled drawing showing the boundaries of each parcel within the facility must be provided.

#### **B.1.2. Hazardous Waste Management Units at the Facility**

Identify and briefly describe the hazardous waste management units at the facility.

Note: More information about these units will be provided in Section E of the application.

#### **B.1.3. Solid Waste Management Units at the Facility**

Identify and briefly describe the solid waste management units at the facility which are the focus of the RCRA corrective action program at the facility.

Note: More information about these units will be provided in Section F of the application.

### **B.2 Topographic Map: 702.123(g), 703.183(s), 703.184, 703.185(c), 703.185(d), 724.195, 724.197**

#### **B.2.1. Facility + 1 mile:**

Provide a topographic map (or Quadrangle map) that extends at least 1 mile beyond the property boundaries. This map must depict the legal boundaries of the facility and surrounding land uses.

#### **B.2.2. Facility + 1000 feet:**

Provide a topographic map that shows the layout of the facility and the surrounding area a distance of 1,000 feet outside the facility's property line. This map must be at a scale of 1 inch equal to not more than 200 feet. Ground surface contours must be shown on the map; the contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each hazardous waste management unit at the facility (a two foot interval should be used if the ground surface relief at the facility is less than 20' and a five foot interval should be used if the relief is greater than 20').

Multiple maps may be submitted to meet this requirement if necessary. The map(s) should contain/identify the following:

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<b>Map Requirements: Facility + 1,000 ft</b>	
Map Orientation (north arrow)	Areas in the 100-year flood plain
Map Date	Flood control or drainage barriers
Scale	Run-on/run-off control systems
Legal boundaries of the facility	Fire control facilities
Surrounding land uses	A wind rose
Access controls	Hazardous waste management units
Buildings and Structures	Solid waste management units
Storm drains	Equipment required by Item D.2 below
Sewers: storm, sanitary and process	Surface waters including intermittent streams
Any waste injection or groundwater withdrawal wells (both on-site and off-site)	

If multiple maps are used, a discussion of how the various maps meet the above requirements must be provided. In addition, if an applicant feels that some of these requirements cannot be met for some reason or are not applicable, then sufficient information must be provided in the application to support this position. Finally, with appropriate supporting justification/discussion in the application, the applicant may vary from the above requirements if what is provided meets the general intent of these requirements.

**B.3 Location Standards: 703.184, 724.118**

**B.3.1 Seismic Standard:**

Identify any hazardous waste management units within 200 feet (61 meters) of a fault which has had displacement during Holocene time.

**B.3.2. Floodplain Standard:**

Document whether or not the facility is located within a 100-year floodplain. Provide the source of this data as well as a copy of the relevant flood map produced by the National Flood Insurance Program (NFIP). Appropriate calculations/maps must be provided when NFIP maps are not available.

**B.3.3. Facilities in the 100-year Floodplain**

Facilities within the 100-year floodplain must provide the following information regarding procedures in place to prevent its flooding:

**B.3.3.1. Engineering Analysis and Structural/Engineering Study.**

Provide the following regarding information to demonstrate that flooding of the hazardous waste management units will not occur:

1. An engineering analysis that identifies and evaluates the various hydrodynamic and hydrostatic forces expected to result at the site as a consequence of a 100-year flood;
2. A structural or other engineering study that shows how the design of the hazardous waste management units and flood protection devices at the facility will prevent flooding of the units.

**B.3.3.2. Procedures to Remove Waste**

In lieu of B.3.3.1, provide a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded. This information must include:

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1. Timing of movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility.
2. The location(s) to which the waste will be moved, and a demonstration that those facilities are eligible to receive hazardous waste in accordance with 35 Ill. Admin. Code 702, 703, 724 and 725;
3. The planned procedures, equipment, and personnel to be used, and the means to ensure that such resources will be available in time for such use;
4. The potential for accidental discharge of waste during movement.

**B.3.4. Existing Facilities Not in Compliance with 35 Ill. Admin. Code 724.118(b)**

Provide a plan showing how the facility will be brought in compliance and a schedule for compliance with 35 Ill. Admin. Code 724.118(b). A variance petition regarding this plan/schedule to come into compliance with 35 Ill. Admin. Code 724.118(b) must be filed concurrently with the Illinois Pollution Control Board.

**B.4 Operating Record: 724.173**

The Permittee must keep and maintain a written operating record that includes all the records, reports, notifications, and data required by 35 Ill. Admin. Code 724.173 and the conditions in this permit for the entirety of the post-closure care period. Identify the location where the Operating Record is maintained at the facility. Describe the procedures used to record the following information described in 724.173 in the facility's operating record (as such information becomes available) during the post-closure period:

1. Records of inspections, and repairs
2. Monitoring, testing, analytical data, and corrective action data when required,
3. All closure and post-closure cost estimates,
4. Annual certification that a program is in place to reduce the volume/toxicity of hazardous waste generated at the facility.

Separate documents may be used to compile this information, provided the requirements of 724.173 are met. A description of where the operating record will be maintained must also be provided.

## SECTION C—GROUNDWATER MONITORING

### **C.1 Exemption from Groundwater Protection Requirements: 703.185, 724.190(b)**

If a waiver from the 35 Ill. Admin. Code 724, Subpart F groundwater monitoring requirements is requested, the applicant must demonstrate one of the following conditions applies to the facility or exempted under 724.101.

#### **C.1.1. Waste Piles: 724.190(b)(2) and (5)**

The waste pile has been designed and operated to meet conditions specified in 724.350(c).

#### **C.1.2. Landfill: 724.190(b)(2)**

The landfill has been designed and operated to meet conditions specified herein.

#### **C.1.3. No Migration: 724.190(b)(4)**

No potential for migration of liquid from a regulated unit to the uppermost aquifer exists during the active life of the regulated unit (including the closure period) and the post closure period. Predictions must be based on assumptions maximizing the rate of liquid migration.

### **C.2 Interim Status Groundwater Monitoring Data: 703.185(a)**

The applicant must provide, by reference, the location of a summary of the groundwater monitoring data obtained during the interim status period.

### **C.3 Historical Hydrogeological Summary: 703.185(b), 620.210**

The applicant must provide an identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property. Include groundwater classification, flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area). A table of hydraulic properties must be submitted which includes at a minimum permeability, sieve analysis, porosity, hydraulic conductivities, etc.

### **C.4 Topographic Map Requirements: 703.183(s), 703.185(c)**

The applicant must provide on the map required in 703.183(s) a complete legal description of the property boundary along with the following additional information:

The waste management area, the property boundary, the proposed point of compliance, the proposed groundwater monitoring zone (if applicable), the proposed location of groundwater monitoring wells and the information required in 703.185(b)

### **C.5 Contaminant Plume Description: 703.185(d), 721-Appendix I**

The applicant must provide a description of any plume of contamination detected in the groundwater originating from a regulated unit. Identify the concentrations of Part 721, Appendix I constituents (throughout the plume or the maximum concentration of each Appendix I constituent) for the plume of contamination delineated on the topographic map.

*Note: The monitoring program for a given unit must be established based on the monitoring data from the facility and be appropriate for the groundwater conditions beneath the regulated unit.*

*Only complete the monitoring program section which is currently appropriate for the facility.*

**C.6: Detection, C.7: Compliance, C.8: Corrective action**

**C.6 Detection Monitoring Program: 703.185(f), 724.198**

If the presence of hazardous constituents has not been detected in the groundwater at the time of permit application, the applicant must provide sufficient information, supporting data and analyses to establish a detection monitoring program which meets the requirements of 724.198.

A detection monitoring program must include at a minimum the ability to monitor for specific indicator parameters based upon the type and characteristics of waste(s) managed at the facility and to maintain a complete and accurate record and statistical evaluation of all groundwater monitoring data.

**C.6.1. Indicator Parameters, Waste Constituents, Reaction Products to be Monitored: 703.185(f)(1), 724.198(a)**

The applicant must provide a list of indicator parameters, waste constituents or reaction products to be used in providing a reliable indication of the presence of hazardous constituents in the groundwater.

**C.6.2. General Monitoring Program Requirements: 703.185(e), 724.197**

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197.

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

**C.6.3. Groundwater Monitoring System: 703.185(f)(2), 724.197(a) & (b), 724.198(b)**

The detection monitoring system must be installed at the established compliance point and comply with 724.197(a) & (b). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft. bgs): well depth, screen interval, ground surface, and stick-up.

**C.6.4. Description of Sampling and Analysis Procedures: 703.185(f)(4), 724.197(d) & (e)**

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

**C.6.5. Evaluation of Groundwater Surface: 724.197(f), 724.198(e)**

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation each time the groundwater is sampled. The applicant must determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

**C.6.6. Background Quality: 703.185(f)(3), 724.197(g), 724.198(c)**

The applicant must provide an evaluation of background groundwater quality and if necessary, reestablish background based on the historical data gathered over the active life of the permit using a trend analysis.

**C.6.7. Statistical Evaluations: 703.185(f)(4), 724.197(h), 724.198(d)**

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

**C.6.8. Statistically Significant Increases: 724.198(f) & (g)**

Using methods required in item C.6.7, the applicant must evaluate the existence of statistically significant evidence of contamination in the groundwater. If such evidence exists, specific measures of retesting and Illinois EPA notification must be provided.

**C.7 Compliance Monitoring Program: 703.185(g), 724.199**

If the presence of hazardous constituents has been detected in the groundwater at the point of compliance at the time of permit application, The applicant must submit sufficient information, supporting data and analyses to establish a compliance monitoring program which meets the requirements of 724.199.

**C.7.1. Description of the Monitoring Program: 724.199(a)**

The program will be used to determine if compliance standards have been achieved by a regulated unit.

**C.7.1.1. Waste Description: 703.185(g)(1), 724.193(a), 724.199(a)(1)**

The applicant must provide a list of hazardous constituents for groundwater that are reasonably expected to be in or derived from waste(s) in the regulated unit.

**C.7.1.2. Concentration Limits: 703.185(g)(4), 724.194(a), 724.199(a)(2)**

The applicant must provide a discussion addressing the appropriate concentration limits for the hazardous constituents in groundwater.

**C.7.1.3. Compliance Point: 724.195, 724.199(a)(3)**

The applicant must provide a discussion addressing the compliance point including rationale for location of groundwater monitoring wells utilized to delineate the compliance point.

**C.7.1.4. Compliance Period: 724.196, 724.199(a)(4)**

The applicant must provide a discussion addressing the compliance period.

**C.7.2. Alternate Concentration Limits: 703.185(g)(4), 724.194(b)**

In situations where the Illinois EPA determines, based on information and supporting data provided by the applicant, a constituent will not pose a substantial hazard an alternate concentration limit can be established.

**C.7.2.1. Adverse Effects on Groundwater Quality: 724.193(b)(1), 724.194(b)(1)**

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on groundwater quality.

**C.7.2.2. Potential Adverse Effects on Hydraulically Connected Surface Water Quality: 724.193(b)(2), 724.194(b)(2)**

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and potential adverse effects on hydraulically connected surface water quality.

**C.7.3. General Monitoring Program Requirements: 703.185(g)(5), 724.197**

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197. Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

**C.7.4. Groundwater Monitoring System: 724.197(a), (b) & (c), 724.199(b)**

The compliance monitoring system must be installed at the established compliance point as specified by 724.197(a)(2), 724.197(b) and 724.197(c). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft bgs): well depth, screen interval, ground surface, and stick-up.

**C.7.5. Description of Sampling and Analysis Procedures: 703.185(g)(6), 724.197(d) & (e), 724.199(c)**

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

**C.7.6. Background Quality: 724.197(g)**

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

**C.7.7. Statistical Evaluations: 703.185(g)(6), 724.197(h), 724.199(d)**

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.



**C.7.8 Evaluation of Groundwater Surface: 724.197(f), 724.199(e)**

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation must take place each time the groundwater is sampled. The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

**C.7.9. Annual Appendix I: 724.199(g)**

The applicant must provide procedures for the Annual Appendix I sampling event. Samples from all monitoring wells at the compliance point must be analyzed for all constituents listed in Appendix I at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer.

**C.7.10. Statistically Significant Increases: 724.199(h) & (i)**

Using methods required in C.7.7, The applicant must evaluate the existence of statistically significant evidence of contamination in the groundwater of the point of compliance. If such evidence exists, specific measures of retesting and IEPA notification must be met.

**C.8 Corrective Action Program: 703.185(h), 724.191(a)(2) & (3), 724.200**

If hazardous constituents have been measured in the groundwater which exceed the concentration limits established under 724.194, Table 1, or if groundwater monitoring conducted at the waste boundary indicates the presence of hazardous constituents from the facility in groundwater over background concentrations, The applicant must submit sufficient information supporting data and analyses to establish a corrective action program which meets the requirements of 724.200.

**C.8.1. Description of Corrective Action Program: 703.185(h), 724.200**

The program will be used to demonstrate the effectiveness of a corrective action measure.

**C.8.1.1. Characterization of Contaminated Groundwater: 703.185(h)(1), 724.200(a)(1)**

The applicant must include a characterization of the contaminated groundwater, including concentrations.

**C.8.1.2. Concentration Limits: 703.185(h)(2), 724.194(a), 724.200(a)(2)**

The applicant must provide a discussion addressing the appropriate concentration limits for groundwater for each of the hazardous constituents.

**C.8.1.3. Compliance Point: 724.195, 724.200(a)(3)**

The applicant must provide a discussion addressing the compliance point.

**C.8.1.4. Compliance Period: 724.196, 724.200(a)(4)**

The applicant must provide a discussion addressing the compliance period.

**C.8.1.5. Construction Detail: 703.185(h)(3)**

The applicant must provide detailed plans and an engineering report describing the corrective action to be taken, including all aspects of any groundwater and/or product removal/treatment system.

**C.8.1.6 Effectiveness of Corrective Action: 703.185(h)(4), 724.200(d) & (g)**

The applicant must describe how the groundwater monitoring program will assess the adequacy of the corrective action.

**C.8.2. Alternate Concentration Limits: 724.194(b)**

In situations where the Illinois EPA determines, based on information and supporting data provided by the applicant, a constituent will not pose a substantial hazard an alternate concentration limit can be established.

**C.8.2.1. Adverse Effects on Groundwater Quality: 724.193(b)(1), 724.194(b)(1)**

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on groundwater.

**C.8.2.2. Potential Adverse Effects on Hydraulically-Connected Surface Water Quality: 724.193(b)(2), 724.194(b)(2)**

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on hydraulically connected surface water quality.

**C.8.3. Corrective Action Plan: 703.185(h), 724.200(b), 724.200(c), 724.200(e)**

In addition to the other requirements of 724.200, The applicant must provide and describe a corrective action program to remove or treat in place hazardous waste constituents in groundwater between the point of compliance and the downgradient facility boundary, or beyond the facility boundary where necessary to protect human health and the environment.

The corrective action program must begin corrective action within a reasonable time period after the groundwater protection standard is exceeded considering the extent of contamination.

**C.8.4. Groundwater Monitoring Program: 703.185(h), 724.192, 724.200(d)**

The groundwater monitoring program must be as effective as the program required under C.7 above in determining compliance with groundwater protection standards and in determining the success of a corrective action program.

**C.8.4.1. General Monitoring Program Requirements: 703.185(e), 724.197**

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197.

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

**C.8.4.2. Groundwater Monitoring System: 724.197(a) & (b), 724.200(d)**

The corrective action monitoring system must be installed at the established compliance point as specified by 724.197(a)(2), 724.197(b), and 724.197(c). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft. bgs): well depth, screen interval, ground surface, and stick-up.

**C.8.4.3. Description of Sampling and Analysis Procedures: 724.197(d) & (e)**

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

**C.8.4.4. Background Quality: 724.197(g), 724.199(c)**

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

**C.8.4.5. Statistical Evaluations: 703.185(f), 724.197(h), 724.199(d)**

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

**C.8.4.6. Evaluation of Groundwater Surface: 724.197(f), 724.199(e)**

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation each time the groundwater is sampled. The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

**C.8.4.7. Extension of Compliance Period: 724.200(f)**

The applicant must provide a discussion addressing the extension of the compliance period. The compliance period during which the groundwater protection standard applies shall be extended until the applicant demonstrates that the groundwater protection standard of 724.192 has not been exceeded for three consecutive years.

**C.8.4.8. Effectiveness of Corrective Action: 724.200(g)**

The applicant must provide a discussion addressing the evaluation and reporting of the effectiveness of the corrective action program to the Illinois EPA. The written reports must be submitted semi-annually.

**C.8.4.9. Evaluation of the Corrective Action Program: 724.200(h)**

The applicant must provide a discussion addressing any determination that the corrective action program no longer satisfies the requirements of 724.200.

**C.9. Reporting Requirements: 724.197(j)**

The applicant must provide a discussion addressing groundwater monitoring data collected and the maintenance of the data in the facility operating record.

## SECTION D--PROCEDURES TO PREVENT HAZARDS

### D.1 Security: 703.183(d), 724.114

The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the unit(s) closed as landfills. Unless a waiver is granted, the facility must have either a 24-hour surveillance systems, or a barrier and a means to control entry as set forth in Item D.1.2 below.

#### D.1.1. Waiver from the Security Requirements:

Facilities seeking a waiver from the security requirements must provide information demonstrating that:

1. Physical contact with the waste, structures or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and
2. Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of 724.

#### D.1.2. Restricting Entry to the Facility

Describe the means used to restrict entry the facility

1. 24-Hour Surveillance System. Describe the 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) at the facility that continuously monitors and controls entry onto the active portion of the facility; or
2. Barrier and Controlled Entry: Describe the artificial or natural barrier system (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and the means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance or controlled roadway access to the facility).

#### D.1.3. Warning Signs

Identify the locations of all warning signs on a scale drawing of the facility. A sign with the legend, "Danger - Unauthorized Personnel Keep Out", must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The sign must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

### D.2. Equipment Requirements: 703.183, 724.132, 724.133, 724.134, 724.135

All facilities must have the equipment and procedures listed in D.2.2 thru D.2.8 below in place unless the applicant submits a waiver request as identified in D.2.1 below. The location within the facility of the equipment described in this section must be shown on the drawings required in Section B.2.2 above.

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**D.2.1. Waiver**

Facilities may seek a waiver from any or all of the equipment/procedure requirements below. To obtain a waiver, the applicant must demonstrate that none of the hazards posed at the facility would require the particular type of equipment/procedure at issue.

**D.2.2. Internal Communications**

Describe the internal communications or alarm system for providing immediate emergency instruction (voice or signal) to facility personnel.

**D.2.3. External Communications**

Describe the device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, state or local emergency response teams.

**D.2.4. Emergency Response Equipment**

Describe the following emergency response equipment present at the facility: portable fire extinguishers; fire control equipment, spill control equipment; and decontamination equipment.

**D.2.5. Water for Fire Control**

Provide a statement signed by an independent fire control professional, or the responsible fire department, certifying that the facility has water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems. The document must include an original signature from the fire control professional or responsible fire department.

**D.2.6. Personnel Protection Equipment**

Describe the procedures, structures, and clothing equipment used to protect personnel from undue exposure to hazardous waste.

**D.2.7. Testing & Maintenance of Emergency Equipment**

Demonstrate that all facility communications or alarm systems, fire protection equipment, spill control equipment and decontamination equipment, where required, is tested, maintained, and calibrated, as necessary to assure its proper operation in time of emergency.

**D.2.7.1. Equipment Testing:**

Identify all emergency equipment and describe how the equipment is tested, maintained, and calibrated.

**D.2.7.2. Schedule**

Provide a testing and maintenance/calibration schedule for all communications, monitoring, safety, spill control, decontamination, and emergency equipment.

**D.2.8. Equipment and Power Failure**

Describe the procedures, structures, and equipment used to mitigate the effects of equipment failure and power outage.

### **D.3 Inspection Requirements: 703.183(e), 724.115**

Describe the procedures followed to inspect/ensure the functionality of everything needed to provide adequate post-closure care of the unit closed as a landfill at the facility in accordance with the RCRA requirements.

Copies of the inspection log and repair log that are used to document inspections and repairs at the facility in accordance with the RCRA requirements must be provided as part of the permit application.

Indicate that copies of the inspection log and repair log are maintained at the facility as part of the operating record.

#### **D.3.1. Inspection Log**

An inspection log must be maintained which includes all of the items listed below. The log must also include the date and time of each inspection, the name of the inspector, notation of the observations made, and the date of any repairs or remedial actions.

##### **D.3.1.1. Items Inspected**

Identify each item to be inspected at the facility in order to comply with the RCRA requirements. these items include, all RCRA regulated units, monitoring equipment, safety and emergency equipment, security and communication devices, and operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards.

##### **D.3.1.2. Types of Problems**

Identify the types of problems (e.g. malfunctions or deterioration) the inspector must look for during an inspection (e.g. inoperable sump pump, leaking fitting, eroding dike).

##### **D.3.1.3. Inspection Frequency:**

Identify the inspection frequency for each item in the log. In addition, provide justification for the inspection frequency proposed for each item. (This justification should be separate from the actual inspection log.) The frequency of inspection needs to be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections.

#### **D.3.2. Repair Log**

The repair log must be used to schedule and record repairs (deterioration, or malfunction of equipment or structures) revealed by an inspection of the items listed in the inspection log. The repair log must include the following items:

1. The item needing repair;
2. The problem identified during the inspection that needs repair;
3. The date the inspection took place;
4. The name of the person who conducted the inspection;
5. The name of the person who makes the corrected repair;
6. The date the repair was made;
7. The efforts carried out in making the repair;
8. Any other appropriate comments.

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Most repairs should be made at the time it is determined to be necessary and all repairs should be made within 24 hours. The timeliness of the repair is dependent on the potential impact the problem needing repair may have on protecting human health, the environment, and the safe operation of the facility.

**D.3.3. 24 Hour Reporting (702.152(f), 703.245(b))**

Describe the procedures to be followed if an inspection reveals any noncompliance with the permit which may endanger health or the environment: 1) report the required information about the incident orally within 24 hours from the time the Permittee becomes aware of the circumstances, and 2) provide a written description of the incident within 5 days of the time the Permittee becomes aware of the circumstances.

## SECTION E--POST-CLOSURE REQUIREMENTS

See 703.183(m), 703.203(f), 703.204(h), 703.207(e), 724.218, 724.297(b) and (c), 724.328(b), 724.328(c)(1)(B), 724.380(c), 724.410(b)

### E.1 Information Regarding the Unit(s) Closed as a Landfill

The foundation for developing an appropriate post-closure care program for a unit closed as a landfill is a thorough understanding of the unit, focusing on its surroundings, construction, operation and closure.

#### E.1.1. General Information Regarding of the Unit to Receive Post-Closure Care

Identify the unit(s) at the facility which were closed as landfills to which the post-closure requirements of 35 Ill. Admin. 724, Subpart G apply. Among other things, provide:

1. A scaled drawing showing the location and boundaries of the unit within the facility;
2. A copy of Illinois EPA's letter accepting certification of closure of the unit as a landfill;
3. The date that the post-closure care period for the unit began; and
4. A certified copy of the survey plat and post-closure notices filed in accordance with 35 Ill. Admin. Code 724, Subpart G or 725, Subpart G with the county in which the facility is located.

#### E.1.2. Geology and Hydrogeology Around/Beneath the Unit

Provide a detailed description of the geology and hydrogeology around/beneath the unit. Of special concern is the presence of silt, sand or other permeable zones around and beneath the unit which, if not properly addressed, could be a conduit for the migration of leachate or landfill gas away from the landfill. This description should be supplemented with boring logs, drawings and cross-sections.

#### E.1.3. Characterization of Waste/Contaminated Soil Present in the Landfill Unit

Provide a description of the type, quantity and characteristics of the waste and/or contaminated soil remaining in the unit.

#### E.1.4. Initial Closure Activities

Provide a detailed description, as appropriate, of the following initial activities carried out in closing the unit as a landfill:

1. Removal of waste and contaminated soil;
2. Stabilization of material remaining in the unit; and
3. Use of structural fill material to establish final contours.

#### E.1.5. Details Associated with the Closed Unit

Provide a detailed description, as-built drawings, cross-sections, and scaled drawings of the overall unit that includes/shows the following. Of special concern is the vertical elevations associated with each component of the unit. Note: the specific information regarding any leachate collection system, leak detection system and/or gas management system present in the landfill that must be described/shown is identified in Sections E.3 thru E.5 below.

1. The soils underlying the unit;



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2. The bottom liner system of the unit (if any is present);
3. A description of the base of the unit if it has no constructed liner system;
4. Any permeable zones around or beneath the landfill and a description of the procedures used to seal off these zones;
5. Any cut-off walls or slurry walls constructed outside the landfill boundaries to address migration of leachate or landfill gas from the landfill;
6. The final cover system over the unit;
7. The final contours established for the unit; and
8. The run-on and run-off control systems of the unit.

### **E.2 Contact Person**

Provide the name, address and phone number of the person or office to contact about the unit during the post-closure care period. A copy of the post-closure permit and associated approved permit modifications must be maintained by this person/office; a copy of these documents must also be maintained at the facility subject to the permit.

### **E.3 Operation of the Leachate Collection System**

Note: This section need only be addressed if a leachate collection system is present in the landfill unit.

#### **E.3.1. Quality of Leachate in the Leachate Collection System**

1. The leachate needs to be analyzed for the parameters listed below, and the results of annual analyses conducted on representative samples of leachate must be provided in the permit application. This will give an indication of the potential contaminants in a subsurface release from the unit to the groundwater. The leachates need to be analyzed for:
  - a. Those constituents for which a public or food processing water supply standard has been established in 35 Ill. Admin. Code 302;
  - b. Those constituents for which a groundwater quality standard has been established in 35 IAC 620;
  - c. The 51 organic chemicals in drinking water described in 40 CFR 141.40.
  - d. Any other contaminants expected to be present in the leachate, based on the characteristics of the waste and materials present in the unit.

A list of all the above contaminants is provided as Attachment 1 to this document. This list may be reduced if information is provided indicating that certain listed contaminants are not expected to be present in the leachate.

2. If the list of analytes has been reduced, provide an analysis for all constituents listed in E.3.1.1 each time the post-closure permit is renewed. Compare the reduced list, to the full list. If no new parameters are detected, the application can propose to resume analyzing leachate for the previously approved reduced list. If any new parameters are detected, they must be added to the reduced list and the list of groundwater monitoring parameters.
3. If there is more than one leachate sump but the application does not propose to analyze the leachate from each sump, provide justification for how the leachate sample(s) are considered "representative" for a given landfill.

4. Describe the procedures used to collect, handle, and analyze the leachate samples discussed above. All such efforts must be carried out in accordance with procedures approved/established by Illinois EPA or USEPA.

#### E.3.2. Leachate Collection System Within the Landfill

1. Identify the general components of the leachate collection system within the landfill (includes the filter layer, leachate collection layer, leachate collection trenches, the leachate collection pipes, leachate level monitoring locations, leachate collection sumps, leachate collection wells, leachate removal pumps or other equipment used to remove leachate, manholes, clean-outs, etc.).
2. Provide a detailed description of the procedures used to construct the leachate collection system within the landfill. Provide specifications and as-built drawings (plan view, detail and cross-sectional) of the installed system. Identify the contours of the top of the liner system including any leachate collection trenches; the elevation of the lateral leachate collection pipes; the screened interval of any leachate collection wells or monitoring points; and the elevation of the bottom of the leachate collection sumps, wells, manholes and clean-outs.
3. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system within the landfill. Specifically:
  - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
  - b. Identify each piece of equipment on a piping and instrumentation diagram; and
  - c. Describe the operational function and capabilities of each piece of equipment.
4. If the landfill was designed to meet the requirements of 35 Ill. Admin. Code 724.401, then an engineering report must be provided demonstrating that the system was constructed and will be operated in such a manner to prevent the leachate depth over the top liner from exceeding one foot. Appropriate calculations must be provided as part of this demonstration along with justification of all assumed parameters and of the numerical techniques used in making the demonstration.
5. If it was not necessary for the landfill to meet the requirements of 35 Ill. Admin. Code 724.401, then information must be provided regarding the maximum leachate levels which will be present at the leachate removal points and throughout the landfill. An engineering report/analysis of the leachate levels which will be present in the landfill must be provided as well as information from past operations of the leachate collection system which will verify the projected levels.

#### E.3.3. Leachate Collection System Outside the Landfill

1. Identify the general components of the leachate collection system which allow for the removal and of the leachate and its storage on-site (includes the piping from each leachate pump to the top of each leachate sump/well, the piping and associated appurtenances which transfer the leachate to a final storage tank, any pump stations needed in this transfer, and the tank where the leachate is eventually stored). In addition:
  - a. Provide a detailed description of the procedures used to install the components of leachate collection system mentioned above;
  - b. Provide specifications, piping and instrumentation diagram, and as-built drawings (plan view, detail, elevations and cross-sectional) of these components.
  - c. Identify the sample point(s) used to collect leachate samples on the piping and instrumentation diagram.

- d. Indicate the locations of the leachate collection system sampling points on a scale drawing of each landfill. Identify the sample points by both the facility and Illinois EPA identification numbers for each sample point.
2. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system outside the landfill. Specifically:
  - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
  - b. Identify each piece of equipment on a piping and instrumentation diagram; and
  - c. Describe the operational function and capabilities of each piece of equipment.

#### **E.3.4. Management of Leachate Collection System (LCS)**

Describe how the LCS is managed. Discuss how all parts of the leachate collection system are operated.

1. Provide piping and instrumentation diagrams and other schematics which depicts the overall leachate collection system, from the pump within each leachate collection sump/well to the leachate accumulation tank. For each leachate collection sump/well, identify:
  - a. The approximate elevation of the bottom of the sump or landfill at that location,
  - b. The leachate elevation which activates the pump in each sump or extraction well,
  - c. The leachate level which activates the pump within the sump/well,
  - d. The leachate elevation when the pump shuts off, and
  - e. A description of the instrumentation in place so that the amount of leachate removed from a given sump/well over a given time period can be determined.
2. Describe the procedures which will be followed to document/record all aspects of the management of the leachate collection system(s). At a minimum, the results of leachate quality analyses and the amount of leachate removed from a given sump/well each month must be documented in the operating record.
3. Describe how the collected leachate will ultimately be managed and provide copies of the permits in place to take the leachate to an off-site facility for treatment or disposal.

#### **E.3.5. Summary of Leachate Management Program Conducted to Date**

Provide information addressing the items in Section E.3.4 regarding the leachate management program implemented during the past ten years. This information should discuss the efficiency of the existing leachate management program or identify deficiencies which must be addressed to ensure leachate is adequately managed in the landfill.

#### **E.4 Operation of the Leak Detection System: 724.402, 724.403 and 724.404**

This subsection must be addressed if a Leak Detection System (LDS) is present in the landfill. The LDS must be capable of detecting, collecting and removing leaks through the upper liner system at the earliest practicable time throughout all areas of the landfill. The LDS must be constructed of a drainage layer along with sumps and pumps of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer.

1. Each landfill unit must have its own set of LDS sumps.

2. Each LDS sump and associated removal system must be designed so that volume of liquid in the LDS sump can be measured and as well as the volume of leachate removed from the sump.

**E.4.1. Description of the Leak Detection System Within the Landfill**

Provide an engineering report describing how the leak detection system was constructed and will be operated to ensure the requirements of 35 Ill. Admin. Code 724.401 are met. Among other things, this report must:

1. Identify the general components of the leak detection system within the landfill (includes the drainage layer, the leachate collection trenches, the leachate collection pipes, leachate level monitoring locations, leachate collection sumps; manholes, clean-outs, etc.).
2. Provide a detailed description of the procedures used to construct the leak detection system. Provide specifications and as-built drawings (plan view, detail and cross-sectional) of the installed system. Information of special importance includes: the contours of the top of the liner system; the elevation of the leachate collection pipes; and the elevation of the bottom of the leachate collection sumps, manholes and clean-outs.
3. Provide detailed information regarding all equipment associated with the leak detection system (pumps, monitoring equipment, etc.) within the landfill. Specifically:
  - a. Provide information regarding the make, model and specifications of each piece of equipment;
  - b. Identify each piece of equipment on a piping and instrumentation diagram;
  - c. Describe the operational functions and capabilities of each piece of equipment.
4. Provide the pump operating level for each LDS sump within each landfill unit. This is the maximum level of leachate which can accumulate in each LDS sump before the pump within the sump is activated and leachate is removed from the sump.
  - a. This level can be no more than the depth of leachate that can accumulate within the LDS sump without allowing any leachate to back-up into the drainage layer.
  - b. This level must also minimize the hydraulic head on the liner of the LDS sump.
  - c. Development of the pump operating level for each LDS sump should also take into account the pump activation level and the sump dimensions.
5. Provide the action leakage rate (ALR) (in gallons per acre per day) for each LDS sump. The action leakage rate is the maximum design flow, modified by a factor of safety, that the LDS can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate factor of safety to allow for uncertainties in the:
  - a. Design; construction; layout and operation of the system;
  - b. Characteristics of the waste and leachate in the landfill;
  - c. Likelihood and amounts of other sources of liquids in the LDS and
  - d. Proposed response actions

Examples of uncertainties/concerns with the LDS include decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, and overburden pressure.

#### **E.4.2. Description of the Leak Detection System Outside the Landfill**

1. Identify the general components of the leak detection system which allow for the removal of the leachate from the landfill and its storage on-site (includes the piping from each leachate pump to the top of each leachate sump/well, the piping and associated appurtenances which transfer the leachate to a final storage tank, any pump stations needed in this transfer, and the tank where the leachate is eventually stored). In addition:
  - a. Provide a detailed description of the procedures used to install the components of leak detection system mentioned above.
  - b. Provide specifications and as-built drawings (plan view, detail, elevations and cross-sectional) of these components.
2. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system outside the landfill. Specifically:
  - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
  - b. Identify each piece of equipment on a piping and instrumentation diagram;
  - c. Describe the operational function and capabilities of each piece of equipment.

#### **E.4.3. Management of Leachate Accumulating in the Leak Detection System**

Describe how the LDS is managed. Discuss how all parts of the leak detection system are operated.

1. Provide piping and instrumentation diagrams and other schematics which depict the overall leak detection system, from the pump within each leachate collection sump to the leachate accumulation tank. For each leak detection sump/well, identify:
  - a. The approximate elevation of the bottom of the landfill at that location,
  - b. The pump operating level,
  - c. The leachate level which activates the pump within the sump/well, and
  - d. The leachate elevation when the pump shuts off.
2. Describe the procedures which will be followed to document/record all aspects of the management of the LDS. At a minimum, the permittee needs to provide documentation of the amount of leachate removed from a given LDS sump over a set time period, and any exceedances of the action leakage rate in the operating record.
3. Describe how the leachate collected in the LDS will ultimately be managed and provide copies of the permits in place to take the leachate to an off-site facility for treatment or disposal.

#### **E.4.4. Recent Operation of the Leak Detection System**

Provide information addressing the items discussed in Section E.4.3 regarding the operation of the LDS during the past ten years. This information should discuss the efficiency of the existing LDS or identify deficiencies which must be addressed to ensure system is operating properly.

#### **E.5 Operation of the Gas Monitoring/Collection System**

This subsection must be addressed if the closed unit has a landfill gas monitoring/collection system.

#### E.5.1. Detailed Description of the Landfill Gas Collection System

The following information needs to be provided regarding any landfill gas collection system at the facility (in addition to drawings, it is also important to include text describing the various aspects of this system and the chronological history of the installation of this system).

1. A map and detailed drawings showing the location of the collection points and the layout and construction details of the collection system.
2. A description and specifications for all machinery, compressors, flares, piping and appurtenances in the system.
3. A piping and instrumentation diagram as well as other schematics to depict the system's operation.
4. A description of how the landfill gas collection system operates. Describe the information which will be monitored, evaluated and recorded regarding the operation of the system. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.
5. Documentation or assurance that the gas collection system meets the following standards:
  - a. The system is designed and will be operated such that the limits described in 35 IAC 811.311(a)(1), (a)(2) and (a)(3) will not be exceeded;
  - b. The gas collection system will transport gas to a central point or points for processing for beneficial uses or disposal in accordance with the requirements of 35 IAC 811.312;
  - c. The gas collection system has been designed to function for the entire design period;
  - d. All materials and equipment used in construction of the system have been rated by the manufacturer as safe for use in hazardous or explosive environments and shall be resistant to corrosion by constituents of the landfill gas;
  - e. The gas collection system has been designed to withstand all landfill operating conditions, including settlement;
  - f. Provisions have been made for collecting and draining gas condensate to a management system meeting the requirements of 35 IAC 811.309;
  - g. The gas collection system will not compromise the integrity of the liner, leachate collection or cover systems; and
  - h. The gas collection system shall be equipped with a mechanical device, such as a compressor, capable of withdrawing gas, or has been designed so that a mechanical device can be easily installed.
6. A description of the criteria that will be used to determine when operation of the gas collection system may be discontinued.
7. A description of the testing procedures that will be used to assure that the lines from the collection points to the gas processing or disposal facility are air tight.
8. Identify where condensate in the system will be collected and then stored prior to shipment off-site for treatment or disposal. Include a description of all equipment associated with collection and storage of the condensate.

#### E.5.2. Landfill Gas Monitoring Plan

Provide the following information regarding the landfill gas monitoring system's ability to monitor the buildup and composition of landfill gas.

1. A narrative and plan sheets describing the most likely paths of migration for gas generated by the unit and demonstrating that the proposed gas monitoring program will detect any gas buildup and/or migration.
2. Detailed drawings and material specifications of the four types of gas monitoring devices required (i.e., devices within the waste unit, below ground devices around the unit, air ambient monitoring devices and continuous air monitoring devices within buildings) on site or near the facility if there is an indication of gas.
3. A map showing the locations of the below ground monitoring devices and the continuous air monitoring devices.
4. Documentation that the various types of below ground gas monitoring devices:
  - a. Are placed at intervals and elevations within the waste to provide a representative sampling of the composition and buildup of gases within the unit.
  - b. Are placed around the unit at locations and elevations capable of detecting migrating gas from the ground surface to the lowest elevation of the liner system or the top elevation of the groundwater, whichever is higher.
  - c. Are constructed from materials that will not react with or be corroded by the landfill gas.
  - d. Have been designed and constructed to measure pressure and allow collection of a representative sample of gas.
  - e. Are constructed and maintained to minimize gas leakage.
  - f. Do not interfere with the operation of the liner, leachate collection system or delay the construction of the final cover system.
5. A description of the procedures and prerequisite weather conditions for performing ambient air monitoring including the location standards for placement of the monitoring devices and maximum wind speed.
6. A description (narrative or graphic) of the location of the continuous air monitoring devices inside the buildings within the facility (and nearby buildings if applicable).
7. A schedule specifying the frequency and minimum duration of gas monitoring.
8. Identification of the parameters that samples from each type of monitoring device will be analyzed.
9. A description of the procedures which will be used to collect and analyze the various air samples to be obtained as part of the landfill gas monitoring program.

#### E.5.3. Landfill Gas Disposal/Processing System

The following information must be provided regarding the gas disposal system or gas processing system at this facility. These systems can be either an on-site or an off-site facility.

1. For on-site facilities (either flare systems or facilities which process the gas for beneficial use) the following information must be provided:
  - a. A map showing the location of the facility;

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- b. Engineered drawings showing the layout and details of landfill gas processing and disposal system, including compressors, blowers, raw gas monitoring systems, devices used to control the flow of gas from the unit, flares, gas treatment devices, air pollution control devices and monitoring equipment;
  - c. A copy of the approved air discharge permit or, if the permit is pending, a copy of the air discharge permit application required by 35 Ill. Admin. Code 200 through 245; and
  - d. A list of the parameters and constituents for which the gas shall be monitored.
2. For off-site processing facilities the following information must be provided:
    - a. A list of the parameters and constituents for which the gas shall be monitored;
    - b. A description of the means by which the gas shall be conveyed from the landfill to the off-site processing facility; and
    - c. Documentation that the off-site processing facility meets the following requirements:
      - (1) The solid waste disposal facility will contribute less than 50 percent of the total volume of gas accepted by the gas processing facility. (Otherwise, the processing facility must be considered a part of the solid waste management facility); and
      - (2) The gas processing facility is sized to handle the expected volume of gas.

**E.5.4. Summary of the Landfill Gas Collection / Monitoring / Processing Systems**

1. Describe the procedures followed to document/record information associated with the operation of the landfill gas collection, monitoring, and processing systems in the operating record.
2. Summarize the operation of the landfill gas collection, monitoring, and processing systems during the past ten years. Describe any adjustments to the design or operation of the systems since the unit was closed.

**E.6 Post-Closure Inspection Plan**

Describe the procedures followed to inspect/ensure the functionality of everything needed to provide adequate post-closure care of the unit closed as a landfill at the facility in accordance with the RCRA requirements.

Copies of the inspection log and repair log that are used to document inspections and repairs at the facility in accordance with the RCRA requirements must be provided as part of the permit application.

Indicate that copies of the inspection log and repair log are maintained at the facility as part of the operating record and where they are located.

**E.6.1. Inspection Log**

An inspection log must be maintained which includes all of the items listed below. The log must include the date and time of each inspection, the name of the inspector, notation of the observations made, and the date of any repairs or remedial actions.

**E.6.1.1. Items Inspected**

The plan must identify each item to be inspected in order to comply with the RCRA requirements. These include, but not necessarily limited to:

1. All RCRA regulated units;
2. Monitoring equipment;



3. Safety and emergency equipment;
4. Security control devices;
5. Erosion damage;
6. Cover settlement, subsidence and displacement;
7. Vegetative cover condition;
8. Integrity of run-on and run-off control measures;
9. Cover drainage system functioning;
10. Leachate collection and removal system;
11. Leak detection system;
12. Gas monitoring/extraction system;
13. Condition of the groundwater monitoring wells;
14. Benchmark integrity; and
15. All operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards.

#### E.6.1.2. Types of Problems

For each item to be inspected as identified above, describe the types of problems (e.g. malfunctions or deterioration) the inspector must look for during an inspection (e.g. inoperable sump pump, leaking fitting, cracks, eroding berm, etc.).

#### E.6.1.3. Inspection Frequency

Identify the inspection frequency for each item in the log. In addition, provide justification for the inspection frequency proposed for each item. (This justification should be separate from the actual inspection log.) The frequency of inspection needs to be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections.

Indicate the facility will be inspected within 24 hours of any rain fall event of 2 or more inches in 24 hours to detect evidence of any of deterioration, malfunctions, or improper operation of run-on and run off systems. Indicate that appropriate corrective action shall be taken if problems, including erosion, blockage of the channels, slope failure, etc. are observed.

#### E.6.2. Repair Log:

The repair log must be used to schedule and record repairs (deterioration, or malfunction of equipment or structures) revealed by an inspection of the items listed in the inspection log. The repair log must include the following items:

1. The item needing repair;
2. The problem identified during the inspection that needs repair;
3. The date the inspection took place;
4. The name of the person who conducted the inspection;
5. The name of the person who made the corrected repair;
6. The date the repair was made;

7. The efforts carried out in making the repair;
8. Any other appropriate comments.

Most repairs should be made at the time it is determined to be necessary and all repairs should be made within 24 hours. The timeliness of the repair is dependent on the potential impact the problem needing repair may have on protecting human health, the environment, and the safe operation of the facility.

**E.6.3. 24 Hour Reporting (702.152(f), 703.245(b))**

Describe how the Permittee will take the following actions if an inspection reveals any noncompliance with the permit which may endanger health or the environment: 1) report the required information about the incident orally within 24 hours from the time the Permittee becomes aware of the circumstances, and 2) provide a written description of the incident within 5 days of the time the Permittee becomes aware of the circumstances.

**E.7 Post-Closure Monitoring Plan**

Describe the monitoring to be conducted during the post-closure care period, including, as applicable, the procedures for conducting and evaluating the data gathered in accordance with the RCRA requirements.

Indicate that copies of the monitoring reports and data are maintained at the facility as part of the operating record.

**E.7.1. Facility Controls**

Indicate that the benchmarks used to identify the location of disposal units, solid waste management units, and units/areas covered by an Environmental Land Use Controls (ELUCs) or the Uniform Environmental Covenants Act (UECA) are surveyed at least once every five (5) years.

**E.7.2. Surveys and Corrective Action**

Identify the units at the facility that will be surveyed every five years. The following units need to be surveyed at least once every five years:

- Units subject to post-closure requirements per 35 Ill. Admin. Code 724.210(b)
- Solid Waste Management Units (SWMUs) with cover systems and/or engineered barriers
- Units/Areas subject to an Environmental Land Use Controls (ELUCs) or the Uniform Environmental Covenants Act (UECA).

**E.7.2.1. Provide the following for the units identified in Item E.7.2:**

1. A copy of the survey provided to the Illinois EPA when the unit was certified closed.
2. A copy of the survey for each unit generated every five years since the unit was closed that shows the horizontal and vertical extent of the unit, drainage control structures, leachate collection wells, and groundwater monitoring wells.
3. Scale drawing(s) (1 inch = 200ft) and cross sections that identify those areas of the cover system or engineered barrier that have changed 1 foot or more in elevation since the unit was closed.
4. If corrective action was required in response to a release, damage to the cover system, settlement, erosion, stressed vegetation, or damage to a leachate well, groundwater monitoring well, or benchmark since post-closure care began, identify the date and location of the corrective action on the scale drawings required above. Also, provide copies of the inspection

and repair logs that includes the date each incident was discovered, a description of the incident & corrective action taken, and the date corrective action was completed.

5. If corrective action occurred in the same general area 2 or more times since post-closure began, discuss the actions the permittee has implemented to prevent this from happening again.

#### E.7.3. Leachate Collection System

Describe how the information about the leachate collection system for each unit identified in E.7.2 is monitored, evaluated, and recorded. Frequent evaluation of this information is essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

##### E.7.3.1. Leachate Quality

Describe the procedures which are followed to monitor the quality of the leachate in the unit on a regular basis during the post-closure care period (including sample collection, sample handling and sample analysis). Discuss if the concentrations of the constituents in the leachate have changed during the post closure period and any actions taken in response.

These samples should be collected quarterly for the first two years at which time the frequency can be decreased to semi-annually. The samples must be analyzed for the constituents described in Item E.3.1 above

1. Summary of Sample Results: Provide a summary table of the leachate sampling results for each unit since post closure began for that unit. Identify the concentration for each parameter detected in each sampling event.
2. Parameter Comparison: Indicate if any of the leachate analyses detected a parameter for which the groundwater is/was not being analyzed and the actions taken if this occurred.

##### E.7.3.2. Leachate Quantity

1. Provide a record of the amount of liquid removed from each leachate collection sump (in gallons) at least monthly after closure of the unit identified in E.7.2 above. The following information regarding leachate generation rates needs to be provided both in table form and graphically:
  - a. Monthly for each year for each sump since the unit was closed
  - b. Annually for each sump since the unit was closed
  - c. Annually for each unit since the unit was closed
2. If the leachate generation rates are not trending downward during the post closure period, discuss why this is not happening. Provide information regarding precipitation rates during the post-closure period, as well as groundwater elevations relative to the invert of the LCS sumps.

##### E.7.3.3. Leachate Reporting

Describe the procedures followed to electronically report the quality and quantity of leachate generated at the facility to the Illinois EPA.

#### E.7.4. Leak Detection System (LDS) 724.402, 724.403, 724.404

Describe how the information from the leak detection system for each unit identified in E.7.2 will be monitored, evaluated, and recorded. Frequent evaluation of this information will be essential in ensuring

the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

#### E.7.4.1. LDS Leachate Quantity

1. Describe the procedures used to determine the volume of leachate removed from each LDS sump over a given time period. This determination must initially be made monthly. If the liquid level in a LDS sump stays below the pump operating level (and thus no leachate is removed during that time period) for two consecutive months, then the amount of liquids in the LDS sump need only be recorded quarterly. Similarly, if the liquid level in a LDS sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps need only be recorded semi-annually. Finally, if the pump operating level for an LDS sump is exceeded during the quarterly or semi-annual monitoring, then monitoring of the amount of leachate removed from that LDS sump must revert back to monthly.
2. Provide a record of the amount of liquid removed from each LDS sump (in gallons) at least monthly after closure of the unit identified in E.7.2 above. The following information regarding leachate generation rates needs to be provided both in table form and graphically:
  - a. Monthly for each year for each sump since the unit was closed
  - b. Annually for each sump since the unit was closed
  - c. Annually for each unit since the unit was closed
3. If the leachate generation rates are not trending downward during the post closure period, discuss why this is not happening. Provide information regarding precipitation rates during the post-closure period, as well as groundwater elevations relative to the invert of the LDS sumps.

#### E.7.4.2. Action Leakage Rate (ALR)

1. Identify the Action Leakage Rate (ALR) from Section E.4 for each LDS sump, and indicate if the action leakage rate has been exceeded during the post-closure period.
2. To determine if the ALR has been exceeded, the owner or operator must convert the monthly flow rate from the monitoring data to an average daily flow rate (gallons per acre per day) for each sump. The average daily flow rate for each LDS sump must be calculated monthly during the post-closure care period, unless Illinois EPA approves a different frequency pursuant to Section 724.403(c)(2).
3. Describe the response action(s) meeting the requirements of 35 Ill. Admin. Code 724.404 that will be implemented if the leachate removal rate exceeds the action leakage rate.

#### E.7.5. Groundwater Monitoring System

#### E.7.6. Gas Collection System

For units required to have a gas collection / monitoring system, describe how the information about the gas collection system for each unit identified in E.7.2 is monitored, evaluated, and recorded. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

#### E.7.6.1. Gas Quality

Describe the procedures followed to monitor the quality of the gas in the unit on a regular basis during the post-closure care period (including sample collection, sample handling and sample

analysis). Discuss how the parameters (Methane, Pressure, Oxygen; and Carbon Dioxide) in the gas system have changed during the post closure period and any actions taken in response to those changes.

1. Summary of Sample Results: Provide a summary table of the gas sampling results for each unit since post closure began for that unit. Identify the concentration for each parameter detected in each sampling event.
2. Parameter Comparison: Describe the parameter thresholds used to adjust the gas collection system to improve overall efficiency of the system. Describe any major gas system upgrades/ overhauls since post closure began.

#### E.7.6.2. Gas Quantity

1. Provide a record of the amount of gas removed from each unit at least monthly after closure of the unit identified in E.7.2 above. The following information regarding gas generation rates needs to be provided both in table form and graphically:
  - a. Monthly for each year for each unit since the unit was closed
  - b. Annually for each unit since the unit was closed
2. If the gas generation rates are not trending downward during the post closure period, discuss why this is not happening.

#### E.7.6.3. Summary of Results from the Gas Collection / Monitoring System

1. Describe the procedures followed to document/record information associated with the operation of the landfill gas collection, monitoring, and processing systems in the operating record.
2. Summarize the operation of the landfill gas collection, monitoring, and processing systems since the unit was closed. Describe any adjustments to the design or operation of the systems since the unit was closed.

### E.8 Post-Closure Maintenance Plan

#### E.8.1. Procedures, Equipment & Materials:

Describe the preventive and corrective maintenance procedures, equipment and materials that will be required to properly maintain everything needed to provide adequate post-closure care of the unit closed as a landfill. Include the following items in the maintenance plan, as applicable:

1. Repair of security control devices;
2. Erosion damage repair;
3. Correction of settlement, subsidence and displacement;
4. Mowing, fertilization and other vegetative cover maintenance;
5. Repair of run-on and run-off control structures;
6. Maintenance of any leachate removal system(s) including the flushing of the LCS and LDS;
7. Maintenance of any gas monitoring/extraction system;
8. Replacement of groundwater monitoring wells; and
9. Surveyed benchmarks

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**E.8.2. Rationale**

Provide the rationale which will be used to determine the need for corrective maintenance activities for each of the items mentioned above.

**E.8.3. Frequency**

Provide the frequency for maintaining each of the items mentioned above if it is known. This needs to include, but not be limited to:

1. The frequency for mowing, fertilization and other vegetative cover maintenance, and
2. Annual maintenance / cleaning of pumps used in the LCS, LDS, and gas collection systems.
3. The manufacturer's recommended replacement rate for the pumps used in the LCS, LDS or gas collection systems.
4. High pressure jet flushing of the LCS & LDS collection pipes and sump every 5 years.
5. Procedures and scheduling of non-routine maintenance and change-out of equipment.

**E.9 Survey Plat: 724.216**

The application must include documentation that a survey plat was prepared/submitted no later than the submission of the certification of closure for each disposal unit or areas where hazardous waste is left in place. The application must also describe the wording placed on the survey plat.

- The survey plat must indicate the location and dimensions of landfill cells or other disposal units/areas with respect to permanently surveyed benchmarks and the legal boundary of the facility.
- The plat must contain a note, prominently displayed that states: (1) the land has been used to manage hazardous wastes; and (2) the owner's and operator's obligations to restrict disturbance of the units containing hazardous waste in accordance with the applicable Subpart G regulations.
- The plat must be prepared and certified using the wording at 702.126(d)(1) by a professional land surveyor.
- The survey plat must be filed with any local zoning authority or authority with jurisdiction over local land use, the IEPA, and recorded with the land titles.
- If the facility includes a RCRA disposal unit that is already certified closed, provide a copy of the survey plat for that unit.

**E.10 Notice in Deed and Certification: 703.183(n), 724.216, 724.217(c), 724.219**

The application must include copies, as appropriate, of the notation recorded on the deed to the facility property, or on some other instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:

- The land has been used to manage hazardous waste.
- Use of these areas is restricted.
- A survey plat and record of the type, location, and quantity of material in the disposal units or areas have been filed with the Illinois EPA, the County Recorder, and any local zoning authority or authority with jurisdiction over local land use.

- For hazardous wastes disposed prior to January 12, 1981, identify the type, location and quantity of the hazardous waste to the best of the owner or operator's knowledge and in accordance with any records the owner or operator has kept.

A certification signed by the owner or operator, that the owner or operator has properly recorded the notification must be developed after this notice has been recorded and submitted to Illinois EPA. This submittal must include a copy of the document in which the notification has been placed.

For facilities which have already filed: Provide a copy of the notice for the unit and the document in which it was placed, the required notice of or the deed, the application should contain: a certified copy of the filed notice; the document that the notice was placed in, and certification by the owner or operator that it was properly filed.

**E.11 Post Closure Cost Estimate: 703.183(p), 724.244**

Provide an estimate of the cost of completing the required post-closure care activities, based on current year costs, including all calculations and supporting information used in developing the estimate. The following must be used in preparing this estimate:

1. Cost estimates must be based on third party costs and cannot include the salvage value from the sales of hazardous wastes, structures or equipment present at the facility.
2. The number of years for which post-closure care must still be provided must be identified.
3. Due to the fact that inflation affects the actual value of a given amount of money over time, the year in which this cost estimate is developed must be clearly identified. It must be noted that inflation will always need to be taken into account to bring estimates from previous year up to the current year.
4. The various tasks need to carry out the required post-closure care activities must be identified as well as the cost associated with each task;
5. The amount of time/materials/efforts needed to complete each task must be provided as well as their unit costs. Justification must be provided for all values used in making these calculations;
6. An estimate of the annual cost of providing all required post-closure care activities should be developed;
7. Some post-closure care activities are not carried out on an annual basis, but at some other frequency. These activities, their frequency, and their cost must be presented.
8. The estimate for providing all required post-closure care activities must be developed using the information in Items 4 and 5 above.

A copy of the most recent post-closure care cost estimate provided to the Illinois EPA must also be provided. In general, these estimates are provided in annual reports and financial assurance documents.

**E.12 Financial Assurance Mechanism for Post-Closure Care: 703.183(p), 724.245**

Provide a copy of the established financial assurance mechanism for post-closure care of the facility. The mechanism must be one of those described in 724.245. Contact the Illinois EPA Bureau of Land Permit Section to obtain the proper forms and instructions.

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**E.13 State Mechanisms: 40 CFR 264.149, 40 CFR 264.150, 40 CFR 264.151, 40 CFR 220.14(b)(18)**

If the State of Illinois assumes legal responsibility for compliance with closure, post closure, or liability requirements, or the state assures that state funds are available to cover those requirements, submit a copy of a letter from the state describing the state assumption of responsibility and including the facility EPA ID number, name, address, and amounts of liability coverage or funds for closure or post-closure care that are assured by the state, together with a letter requesting that the state's assumption of responsibility be considered acceptable.



## SECTION F—CORRECTIVE ACTION

35 Ill. Adm. Code 724.201 requires that facilities seeking a RCRA permit institute corrective action, as necessary, to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit. The information identified in Items F.1 through F.3 below must be contained in the original RCRA permit application submitted by a facility to allow Illinois EPA to develop permit conditions for ensuring this requirement is met; only the information in Item F.4 below needs to be submitted by facilities seeking a renewed RCRA permit.

### **F.1 Identification of Solid Waste Management Units (703.187(a))**

Identify the solid waste management units (SWMUs) present at the facility. A SWMU includes any unit where solid waste has been managed in the past and which is not a hazardous waste management unit. Units that are SWMUs include, but are not limited to, the following:

- Landfills
- Surface impoundments
- Waste piles
- Land treatment units
- Injection wells
- Incinerators
- Tanks (including wastewater treatment units)
- Container storage areas
- Waste transfer areas
- Waste recycling operations

### **F.2 Characterization of the SWMUs (703.187(a))**

For each solid waste management unit identified above, submit the following information:

1. Type of unit
2. Location on the topographic map required by Item B.2 of the decision guide/checklist
3. Engineering drawings and construction details as available
4. General dimensions
5. Dates when the unit was in operation
6. Description (including physical/chemical characteristics) of the materials/wastes managed in the unit
7. Quantity or volume of waste managed in the unit, if known
8. A description of: (1) the soil types present at the unit; and (2) the geology of the area where the unit is located.
9. An indication of whether the wastes managed in the unit have been removed or still remain in it.

### **F.3 Characterization of Releases from SWMUs (703.187(b))**

Provide all available information on whether or not any releases have occurred from each of the SWMUs identified above. Reasonable efforts to identify releases must be made, even if releases have not been verified. A release may include: spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. If a determination is made that there has not been a release from a given SWMU, then a description of the efforts and information used to reach this conclusion must be provided.

The information to be provided regarding any releases from a SWMU, as available, includes:

1. Date of the release
2. Type of waste or constituent released
3. Physical and chemical characteristics of the released material
4. Quantity or volume released
5. Nature of the release (such as spill, overflow, ruptured pipe or tank, etc.).
6. Groundwater monitoring or other analytical data describing the nature/extent of the release.
7. Physical evidence of distressed vegetation or soil contamination
8. Historical evidence of releases, such as tanker truck accidents
9. Any state, local or federal enforcement actions which may address releases
10. Any public citizen complaints about the facility which could indicate a release
11. Any information showing the migration of the release.
12. A detailed description of any remedial activities taken in response to the release.

#### **F.4 Information Required for Renewal Applications (703.187(c))**

Facilities seeking a renewed RCRA permit have likely completed a substantial amount of corrective action under the original permit. Illinois EPA has only been authorized to implement the corrective action program in RCRA permits since April 1990; the USEPA portion of permits issued before this date contained corrective action requirements. For permits issued before April 1990, Illinois EPA likely does not have a complete file of corrective action efforts carried out at the facility, as such efforts were overseen by USEPA. However, for permits issued after April 1990, Illinois EPA already has a complete file of all corrective action efforts carried out to date at the facility.

A summary/description of the corrective action efforts completed to date at the facility must be provided in the application. The level of detail of this summary/description will be dependent on whether Illinois EPA oversaw these corrective action efforts and thus has a complete file of these efforts already. This summary/description will create an administrative record adequate to support the corrective action requirements eventually placed in the renewed permit and will form the foundation for determining future corrective action efforts to ensure the requirements of 35 Ill. Admin. Code 724.201 are met.

##### **F.4.1. Required Information if USEPA Oversaw Initial Corrective Action Program**

Facilities applying for a renewed RCRA permit which conducted corrective action efforts in accordance with requirements of the USEPA portion of the original RCRA permit issued to the facility must provide the following information:

1. A detailed chronology of all corrective action correspondence between USEPA and the facility, starting from the issuance of the original permit;
2. Copies of all letters received from USEPA regarding corrective action efforts, starting with the issuance of the original RCRA permit;
3. Copies of all letters and documents sent to the USEPA regarding corrective action efforts conducted in accordance with the original RCRA permit;
4. A detailed discussion of each of the SWMU identified and addressed in accordance with the provision of the facility's original RCRA permit, including:
  - a. A detailed description of each unit as outlined in Item F. 2 above, including layout drawings;

- b. A summary of the investigation/remediation efforts completed to date; and
  - c. A discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.
5. The information in the appropriate portions of Section C (Groundwater Monitoring) of this document regarding any on-going groundwater monitoring/remediation program being carried out at the facility.

#### **F.4.2 Required Information if IEPA Oversaw the Initial Corrective Action Program**

Facilities which carried out corrective action under the requirements of the Illinois EPA portion of the original permit must provide the following information regarding corrective action efforts at the facility:

1. A chronological list of all documents submitted to Illinois EPA regarding the corrective action efforts required by the original RCRA permit and Illinois EPA's response to each submittal. For each document, provide:
  - a. The name of the document;
  - b. A brief discussion of the contents/purpose of the document;
  - c. The date the document was submitted to Illinois EPA;
  - d. The person who submitted the document
  - e. A discussion of Illinois EPA's response to the document (include the date of the response and the general conclusions/requirements in the response).
2. Copies of all Illinois EPA letters, in chronological order, regarding corrective action efforts at the facility (these letters serve as important decision documents and will help to verify corrective action efforts completed to date and what must still be done to complete corrective action responsibilities at the facility).
3. A detailed discussion of each of the SWMUs identified and addressed in accordance with the facility's permit. This should include:
  - a. A detailed description of each unit as outlined in Item F.2 above;
  - b. A summary of the investigation/remediation efforts completed to date; and
  - c. A discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.
4. The information in the appropriate portions of Section C (Groundwater Monitoring) of this document regarding any on-going groundwater monitoring/remediation program being carried out at the facility.

#### **F.5 Proposed Interim Measures to be Conducted: (703.187)**

An applicant may propose to begin/continue interim measures for the purpose of preventing/mitigating releases from a SWMU before completing a formal RCRA Facility Investigation or Corrective Measures Program. Requests to begin/continue interim measures should contain detailed information about the proposed effort, including:

1. Background information about the unit and surrounding area (including, but not limited to, construction/operation of the unit, wastes managed in the unit; geology/hydrogeology of the area; and discussion/presentation of all sampling/analysis efforts conducted in/around the unit);
2. The objectives of the interim measure. Of special concern is how the measure will prevent/mitigate the release of concern and how it will be integrated into any necessary long-term corrective measures at the facility;

3. Information regarding the design, construction, operation and maintenance of the measure;
4. Schedules for design, construction and operation of the measure.

It must be noted that it may be necessary to complete a RCRA Facility Investigation and a Corrective Measures Study for the SWMU of concern while the interim measure is being carried out. Such efforts will be necessary if the extent of contamination at the SWMU has not been completely determined or if additional remedial efforts are needed to properly address the contamination resulting from the release in the long term.

**F.6 Cost Estimate for Required Corrective Action (724.201)**

35 Ill. Admin. Code 724.201 requires that permitted facilities provide financial assurance for any required corrective action. As such, the application must contain an estimate of the cost of the required corrective action efforts to be carried out at the facility.

1. If a facility proposes to conduct an interim measure as set forth in Item F.5 above, then an estimate of the cost of these measures must be provided in the application.
2. Development/presentation of a cost estimate must be carried out in accordance with Item E.5 above. This cost estimate will then form the foundation for the establishment of financial assurance for corrective action in the permit. This estimate will need to be updated, as appropriate, to reflect the cost of carrying out all approved corrective action activities at this facility.
3. As each workplan/report associated with corrective action is developed, they must contain cost estimates for carrying out the activities proposed in the workplans and then financial assurance must be established for these activities once they are approved.

**F.7 Financial Assurance for Corrective Action (724.201)**

Adequate financial assurance must be provided in the amount developed in Item F.6 above. Establishment of this financial assurance must meet the requirements of 35 Ill. Admin. Code 724, Subpart H and Item E.6 above. Financial assurance for corrective action must be updated, as appropriate, to reflect the current corrective action cost estimate.

## Instructions for RCRA Post-Closure Permit Applications

### Attachment 1

<b>Baseline List of Constituents Expected to be Present in Landfill Leachate</b>							
<b>Parameter</b>	<b>Predicted Values for SW Landfill (ug/l) <sup>1,2</sup></b>	<b>Basis for Inclusion on List</b>					
		<b>40 CFR 258 App. II</b>	<b>Expected In Leachate</b>	<b>35 IAC Part 620</b>	<b>35 IAC Part 302</b>	<b>40 CFR Part 141.40</b>	<b>40 CFR 258 App. I <sup>3</sup></b>
Butanol	15,000	X	X				
N-butylbenzene						X	
Sec-butylbenzene						X	
Butyl benzyl phthalate	150	X	X				
Cadmium (total)	100	X	X	X	X		5
Calcium	1,200,000		X				
Carbofuran				X			
Carbon disulfide	6	X	X				22
Carbon tetrachloride	400	X	X	X			23
Chemical oxygen demand (COD)	10,000,000		X				
Chlordane		X		X	X		
Chloride	3,000,000		X	X	X		
Chlorobenzene	400	X	X	X		X	24
Chloroethane	400	X	X			X	25
Bis (2-chloroethoxy) methane	25	X	X				
Chloroform	400	X	X			X	26
Chloromethane	400	X	X			X	44
Bis (chloromethyl) ether	400	X	X			X	
O-chlorotoluene						X	
P-chlorotoluene						X	
Chromium (total)	50	X	X	X	X		6
Chlorodibromomethane		X				X	27
Cobalt	130	X	X	X			7
Copper	1,000	X	X	X	X		8
P-cresol		X					
Cyanide	300	X	X	X	X		
Dalapon							
DDT		X		X	X		
Dibromomethane	10	X	X			X	45
M-dichlorobenzene		X				X	
O-dichlorobenzene		X				X	30
P-dichlorobenzene		X		X			31
Dichlorodifluoromethane	450	X	X			X	
Dichloromethane		X		X		X	46

Baseline List of Constituents Expected to be Present in Landfill Leachate							
Parameter	Predicted Values for SW Landfill (ug/l) <sup>1,2</sup>	Basis for Inclusion on List					
		40 CFR 258 App. II	Expected In Leachate	35 IAC Part 620	35 IAC Part 302	40 CFR Part 141.40	40 CFR 258 App. I <sup>3</sup>
Dieldrin		X			X		
Diethyl phthalate	200	X	X				
Dimethyl phthalate	60	X	X				
Di-n-butyl phthalate	150		X				
Dinoseb		X		X			
1,4-dioxane			X				
Endothall		X		X			
Endrin		X	X				
Ethyl acetate	130		X				
Bis (2-ethylhexyl) phthalate	400		X				
Ethyl methacrylate		X					
Ethylbenzene	500	X	X	X		X	41
Ethylene dibromide (EDB)		X		X		X	29
Fluoride				X			
Fluorotrichloromethane						X	
gross alpha (pCi/l)				X			
Heptachlor		X		X	X		
Heptachlor epoxide		X		X	X		
Hexachlorobutadiene		X				X	
Hexachlorocyclopentadiene		X		X			
Iodomethane		X		X	X		48
Iron	500,000		X	X	X		
Isophorone	2,500	X	X				
Isopropylbenzene						X	
p-isopropyltoluene						X	
Lead	500	X	X	X	X		9
Lindane	25		X	X	X		
Magnesium	500,000		X				
Manganese	20,000		X	X	X		
Mercury	10	X	X	X			
Methoxychlor				X	X		
methylene chloride (Chloromethene)	46	X	X				
Naphthalene	75	X	X			X	
Nickel	1,000	X	X	X			10
Nitrate				X	X		
Nitrobenzene	120	X	X				
Oil (hexane-soluble or equivalent)					X		
Parathion		X			X		

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Baseline List of Constituents Expected to be Present in Landfill Leachate							
Parameter	Predicted Values for SW Landfill (ug/l) <sup>1,2</sup>	Basis for Inclusion on List					
		40 CFR 258 App. II	Expected In Leachate	35 IAC Part 620	35 IAC Part 302	40 CFR Part 141.40	40 CFR 258 App. I <sup>3</sup>
Pentachlorophenol	400	X	X	X			
pH	9-May		X	X			
Phenanthrene	3	X	X				
Phenols	5,000	X	X	X	X		
Picloram				X			
Polychlorinated biphenyls (PCBs)		X		X			
Potassium	500,000		X				
N-propylbenzene						X	
Radium				X			
Selenium	50	X	X	X	X		11
Silver	50	X	X	X			12
Simazene							
Sodium	1,500,000		X	X			
strontium - 90				X			
Styrene		X		X		X	50
Sulfate	1,000,000		X	X	X		
TDS	10,000,000		X	X	X		
TOC	6,000,000		X				
tert-butylbenzene						X	
Tetrachloroethylene	300	X	X	X		X	53
Tetrahydrofuran	1,000		X				
Thallium	500	X	X	X			13
Tin	2,000	X	X				
Toluene	2,000	X	X	X		X	54
Toxaphene	2	X	X	X	X		
Trichloroethylene (or ethene)	400	X	X	X			57
Trichlorofluoromethane	150	X	X				58
Tritium				X			
Vanadium	30	X	X				14
Vinyl chloride	60	X	X	X			61
Vinyl acetate							60
Xylenes (total)	300	X	X	X			62
m-xylene	200	X	X			X	
o-xylene						X	
p-xylene						X	
Zinc	20,000	X	X	X			15

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References

- <sup>1</sup> Gasper, James A. and Jeff M. Harris, Management of Leachate from Sanitary Landfills (for Browning Ferris Industries).
- <sup>2</sup> Dolan, David, Helen Keough, R.E. O'Hara and Kevin O'Leary, 1991, A Comparison of Chemical Constituents in Industrial Hazardous Waste Municipal Waste Landfill Leachates (for Waste Management of North America, Inc.).
- <sup>3</sup> From 40 CFR Part 258 Appendix I & II numbered as presented in Federal Register, Vol. 56, No. 196, October 9, 1991 pages 51032-51038



**ATTACHMENT 3**

**RCRA Post-Closure Permit Application Completeness and  
Technical Review Checklist (May 2021)**

**RCRA POST-CLOSURE PERMIT APPLICATION  
COMPLETENESS AND TECHNICAL REVIEW CHECKLIST  
May 2021**

Facility Name : \_\_\_\_\_  
 Log No. : \_\_\_\_\_  
 State ID No. : \_\_\_\_\_  
 USEPA No. : \_\_\_\_\_

Date Application Received : \_\_\_\_\_  
 Revision No. : \_\_\_\_\_  
 Reviewer : \_\_\_\_\_  
 Review Dates : \_\_\_\_\_

	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
<b>A</b>	<b>Forms, Certifications, Confidentiality, and Public Involvement</b>	<b>XX</b>	<b>XX</b>		
<b>A.1</b>	<b>RCRA Part A Application Form</b>				
<b>A.2</b>	<b>Certification Using the LPC-PA23 Form</b>				
<b>A.2.1</b>	Facility Certification				
<b>A.2.2</b>	Technical Information Certification				
<b>A.2.3</b>	39i Certification				
<b>A.3</b>	<b>Public Disclosure Exemption Claims and Trade Secret Claims</b>				
<b>A.3.1</b>	No information Claimed Exempt from Public Disclosure				
<b>A.3.2</b>	Trade Secrets Claims				
<b>A.3.3</b>	Exempt or Exempt In-Part Data Claims				
<b>A.3.4</b>	Privileged Information				
<b>A.4</b>	<b>Public Participation: Facility Mailing List &amp; Information Repositories</b>				
<b>A.4.1</b>	Facility Mailing				
<b>A.4.2</b>	Identification of Repositories				
<b>A.4.3</b>	Contents of Repository				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
A.4.4	Public Notice of Repository Availability				
<b>B</b>	<b>Facility Description</b>	<b>XX</b>	<b>XX</b>		
<b>B.1</b>	<b>General Facility Description</b>				
B.1.1	Operation of Facility				
B.1.2	Hazardous Waste Management Units at the Facility				
B.1.3	Solid Waste Management Units at the Facility				
<b>B.2</b>	<b>Topographic Map</b>				
B.2.1	Facility + 1 mile				
B.2.2	Facility + 1000 feet				
<b>B.3</b>	<b>Location Standards</b>				
B.3.1	Seismic Standard				
B.3.2	Floodplain Standard				
B.3.3	Facilities in the 100-year Floodplain				
B.3.3.1	Engineering Analysis and Structural/Engineering Study				
B.3.3.2	Procedures to Remove Waste				
B.3.4	Existing Facilities not in Compliance with 35 Ill. Admin Code 724.118(b)				
<b>B.4</b>	<b>Operating Record</b>				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
<b>C</b>	<b>Groundwater Monitoring</b>	<b>XX</b>	<b>XX</b>		
<b>C.1</b>	<b>Exemption from Groundwater Protection Requirements</b>				
C.1.1	Waste Piles				
C.1.2	Landfills				
C.1.3	No Migration				
<b>C.2</b>	<b>Interim Status Groundwater Monitoring Data</b>				
<b>C.3</b>	<b>Historical Hydrogeological Summary</b>				
<b>C.4</b>	<b>Topographic Map Requirements</b>				
<b>C.5</b>	<b>Contaminant Plume Description</b>				
<b>C.6</b>	<b>Detection Monitoring Program</b>				
C.6.1	Indicator Parameters, Waste Constituents, Reaction Productions to be Monitored				
C.6.2	General Monitoring Program Requirements				
C.6.3	Groundwater Monitoring System				
C.6.4	Description of Sampling and Analysis Procedures				
C.6.5	Evaluation of Groundwater Surface				
C.6.6	Background Quality				
C.6.7	Statistical Evaluations				
C.6.8	Statistically Significant Increases				
<b>C.7</b>	<b>Compliance Monitoring Program</b>				
C.7.1	Description of the Monitoring Program				
C.7.1.1	Waste Description				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
C.7.1.2	Concentration Limits				
C.7.1.3	Compliance Point				
C.7.1.4	Compliance Period				
C.7.2	Alternate Concentration Limits				
C.7.2.1	Adverse Effects on Groundwater Quality				
C.7.2.2	Potential Adverse Effects on Hydraulically Connected Surface Water Quality				
C.7.3	General Monitoring Program Requirements				
C.7.4	Groundwater Monitoring System				
C.7.5	Description of Sampling and Analysis Procedures				
C.7.6	Background Quality				
C.7.7	Statistical Evaluations				
C.7.8	Evaluation of Groundwater Surface				
C.7.9	Annual Appendix I				
C.7.10	Statistically Significant Increases				
<b>C.8</b>	<b>Corrective Action Program</b>				
C.8.1	Description of Corrective Action Program				
C.8.1.1	Characterization of Contaminated Groundwater				
C.8.1.2	Concentration Limits				
C.8.1.3	Compliance Point				
C.8.1.4	Compliance Period				
C.8.1.5	Construction Detail				
C.8.1.6	Effectiveness of Corrective Action				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
C.8.2	Alternate Concentration Limits				
C.8.2.1	Adverse Effects on Groundwater Quality				
C.8.2.2	Potential Adverse Effects on Hydraulically- Connected Surface Water Quality				
C.8.3	Corrective Action Plan				
C.8.4	Groundwater Monitoring Program				
C.8.4.1	General Monitoring Program Requirements				
C.8.4.2	Groundwater Monitoring System				
C.8.4.3	Description of Sampling and Analysis Procedures				
C.8.4.4	Background Quality				
C.8.4.5	Statistical Evaluations				
C.8.4.6	Evaluation of Groundwater Surface				
C.8.4.7	Extension of Compliance Period				
C.8.4.8	Effectiveness of Corrective Action				
C.8.4.9	Evaluation of the Corrective Action Program				
C.9	<b>Reporting Requirements</b>				
<b>D</b>	<b>Procedures to Prevent Hazards</b>	<b>XX</b>	<b>XX</b>		
<b>D.1</b>	<b>Security</b>				
D.1.1	Waiver from the Security Requirements				
D.1.2	Restricting Entry to the Facility				
D.1.3	Warning Signs				
<b>D.2</b>	<b>Equipment Requirements</b>				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
D.2.1	Waiver				
D.2.2	Internal Communications				
D.2.3	External Communications				
D.2.4	Emergency Response Equipment				
D.2.5	Water for Fire Control				
D.2.6	Personnel Protection Equipment				
D.2.7	Testing & Maintenance of Emergency Equipment				
D.2.7.1	Equipment Testing				
D.2.7.2	Schedule				
D.2.8	Equipment and Power Failure				
<b>D.3</b>	<b>Inspection Requirements</b>				
D.3.1	Inspection Log				
D.3.1.1	Items Inspected				
D.3.1.2	Types of Problems				
D.3.1.3	Inspection Frequency				
D.3.2	Repair Log				
D.3.3	24 Hour Reporting				
<b>E</b>	<b>Post-Closure Requirements</b>	<b>XX</b>	<b>XX</b>		
<b>E.1</b>	<b>Information Regarding the Unit(s) Closed as a Landfill</b>				
E.1.1	General Information Regarding the Unit to Receive Post-Closure Care				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
E.1.2	Geology and Hydrogeology Around/ Beneath the Unit				
E.1.3	Characterization of Waste/ Contaminated Soil Present in the Landfill Unit				
E.1.4	Initial Closure Activities				
E.1.5	Details Associated with the Closed Unit				
<b>E.2</b>	<b>Contact Person</b>				
<b>E.3</b>	<b>Operation of the Leachate Collection System</b>				
E.3.1	Quality of Leachate in the Leachate Collection System				
E.3.2	Leachate Collection System Within the Landfill				
E.3.3	Leachate Collection System Outside the Landfill				
E.3.4	Management of Leachate Collection System				
E.3.5	Summary of Leachate Management Program Conducted to Date				
<b>E.4</b>	<b>Operation of the Leak Detection System</b>				
E.4.1	Description of the Leak Detection System Within the Landfill				
E.4.2	Description of the Leak Detection System Outside the Landfill				
E.4.3	Management of Leachate Accumulating in the Leak Detection System				
E.4.4	Recent Operation of the Leak Detection System				
<b>E.5</b>	<b>Operation of the Gas Monitoring/ Collection System</b>				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
E.5.1	Detailed Description of the Landfill Gas Collection System				
E.5.2	Landfill Gas Monitoring Plan				
E.5.3	Landfill Gas Disposal/ Processing System				
E.5.4	Summary of the Landfill Gas Collection/ Monitoring/ Processing Systems				
<b>E.6</b>	<b>Post-Closure Inspection Plan</b>				
E.6.1	Inspection Log				
E.6.1.1	Items Inspected				
E.6.1.2	Types of Problems				
E.6.1.3	Inspection Frequency				
E.6.2	Repair Log				
E.6.3	24-Hour Reporting				
<b>E.7</b>	<b>Post-Closure Monitoring Plan</b>				
E.7.1	Facility Controls				
E.7.2	Surveys and Corrective Action				
E.7.2.1	Provide the Following				
E.7.3	Leachate Collection System (LCS)				
E.7.3.1	Leachate Quality				
E.7.3.2	Leachate Quantity				
E.7.3.3	Leachate Reporting				
E.7.4	Leak Detection System (LDS)				
E.7.4.1	LDS Leachate Quantity				
E.7.4.2	Action Leakage Rate (ALR)				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
E.7.5	Groundwater Monitoring System				
E.7.6	Gas Collection System				
E.7.6.1	Gas Quality				
E.7.6.2	Gas Quantity				
E.7.6.3	Summary of Results from the Gas Collection/ Monitoring System				
<b>E.8</b>	<b>Post-Closure Maintenance Plan</b>				
E.8.1	Procedures, Equipment & Materials				
E.8.2	Rationale				
E.8.3	Frequency				
<b>E.9</b>	<b>Survey Plat</b>				
<b>E.10</b>	<b>Notice in Deed and Certification</b>				
<b>E.11</b>	<b>Post Closure Cost Estimate</b>				
<b>E.12</b>	<b>Financial Assurance Mechanism for Post-Closure Care</b>				
<b>E.13</b>	<b>State Mechanisms</b>				
<b>F</b>	<b>Corrective Action (CA)</b>				
<b>F.1</b>	<b>Identification of Solid Waste Management Units (SWMUs)</b>				
<b>F.2</b>	<b>Characterization of the SWMUs</b>				
<b>F.3</b>	<b>Characterization of Releases from SWMUs</b>				
<b>F.4</b>	<b>Information Required for Renewal Applications</b>				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
<b>F.4.1</b>	<b>Required Information if USEPA Oversaw Initial Corrective Action Program</b>				
	(1) Chronology of all CA related correspondence between USEPA & facility				
	(2) Copies of all letters received from USEPA regarding CA				
	(3) Copies of all letters regarding CA sent to USEPA				
	(4) Detailed discussion of each SWMU				
	(5) Information in Section C regarding any on-going groundwater monitoring/remediation				
<b>F.4.2</b>	<b>Required Information if IEPA Oversaw Initial Corrective Action Program</b>				
	(1) Chronology of all corrective action efforts completed to date				
	(2) Discussion of all CA related correspondence between IEPA and facility & copies of all correspondence				
	(3) Detailed discussion of each SWMU				
	(4) Information in Section C regarding any on-going groundwater monitoring/remediation effort				
<b>F.5</b>	<b>Proposed Interim Measures to be Conducted</b>				
<b>F.6</b>	<b>Cost Estimate for Required Corrective Action</b>				
<b>F.7</b>	<b>Financial Assurance for Corrective Action</b>				

R 000092

**REVIEW NOTES – KELLY HUSER****Groundwater Unit Reviewer – Adam Shade****1978030005 – Will County****RCH Newco II, LLC (f.k.a. Lemont/CECO Corporation)****ILD990785453****Log No. C-68****Notification of Extension of Post-Closure Care****RCRA Closure File**

Facility Contact -- William J. Sawitz  
Officer  
27501 Bella Vista Parkway  
Warrensville, IL. 60555  
630-353-5000

Consultant -- Bruce Shabino, P.G.  
Carlson Environmental, Inc.  
65 E. Wacker Place, Suite 1500  
Chicago, IL. 60601  
312-346-2140  
312-952-2552 (mobile)

**Conference Call (10-25-22)**

A conference call was held with Illinois EPA (myself, Rob Watson, John McDonough and Adam Shade) and RCH Newco (Bruce Shabino (consultant), Mr. Sawitz (owner), Kristin Pelizza (EHS) and lawyer, Jennifer Nijman). In this meeting we discussed the NOD that was sent to the facility regarding a cost estimate the facility submitted as a modification to their post-closure care plan (C-68-M-13). Mr. Shabino commented that all the trees in the aerial picture of the submittal are not on the landfill cap/cover. He also asked for an extension of the deadline to respond. I said they could send in an extension request, and we would approve it.

I also stated that FOS would be inspecting the property in November, and I would ask them to coordinate it with Mr. Shabino and Kristin Pelizza of RCH Newco.

Rob also told them we would be sending out a letter to them stating we will be extending their post-closure care. The facility was not happy to hear this and the lawyer said they will wait for the letter and decide how to move forward.

**Background/ Site History (11-3-22)**

Prior to 2000, this facility was owned by Ceco Corporation (and its successor Robertson-Ceco) and were both covered by the Illinois EPA Identification Number 1978030005. The Fiala Property facility was purchased from Robertson-Ceco by Mr. James Fiala in 2000; it is approximately fifty acres in size and its address is 12300 New Avenue, Lemont Illinois. The RCH Newco II LLC facility consists of the remainder of the original facility; is approximately 2 acres in size, is adjacent to the Fiala property, and is located near the intersection of New Avenue and Ceco Road, Lemont, Illinois. A USGS topographic map showing the location of these two facilities is provided as Attachment 1 in this review package.

In the 1960s, 1970s and 1980s, these facilities were used by Ceco for the management of waste from a nearby steel mill; electric arc furnace dust (a listed hazardous waste under the Resource

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Conservation and Recovery Act) from this steel mill was at one time managed in a portion of the Fiala property facility. However, a plan to remove this waste was approved by Illinois EPA as a RCRA closure plan (Illinois EPA Log No. C-68 and associated modifications) which was then implemented by Ceco during the 1980s and 1990s. As part of this approved removal plan, some of the removed waste was placed in a two-acre on-site landfill which now comprises the RCH Newco II LLC facility.

During the RCRA closure efforts conducted by Ceco in accordance with the Illinois EPA approved plans, an investigation was conducted of approximately 26.6 acres within what is now the Fiala property. Slag material was found during this investigation within portions of the 26.6 acres; on December 20, 1999, Illinois EPA determined that this slag would not cause a threat to human health of the environment, provided an institutional control was established which would restrict exposure to the slag. On February 24, 2009, Illinois EPA approved draft versions of these institutional controls which would be filed with Will County and Cook County. RCRA closure efforts at these facilities also included construction of a final cover over the two-acre landfill at the RCH Newco II LLC facility.

On September 2, 2009, Illinois EPA certified closure of the two-acre hazardous waste landfill and the RCRA closure/corrective action activities for the Fiala Property. The following is a summary of the post-closure requirements for the site based on a September 2, 2009 Illinois EPA letter (C-68-Certification) (copy of this letter is in this review package).

1. Illinois EPA determined that post-closure care for the landfill began on January 1, 1993. Physical post-closure care of the landfill included the following:
  - a. Unless necessary to protect human health or the environment, the landfill shall not be used in any manner which will disturb: (1) the integrity of its final cover, liner or any components of its containment system; or (2) the function of the facility's monitoring systems.
  - b. The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained.
    - (1) Repairs must be made to the final cover, as necessary, to correct the effects of settling, subsidence, erosion, cracking, etc.;
    - (2) Corrective action shall be taken if: (a) ponding is observed on the final cover; (b) cracks or erosion channels greater than one inch form for whatever reason; (c) the vegetative cover is distressed; (d) vector problems arise; or (e) vegetation with tap roots are found to be growing on the final cover.
    - (3) Properly managing run-on and run-off so that it does not erode or otherwise damage the final cover.

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2. Groundwater monitoring for the two-acre landfill must be carried out as part of the required post-closure activities in accordance with 35 Ill. Adm. Code 725, Subpart F and with the Illinois EPA's letter dated February 7, 1996 (Log No. C-68-M-4) and other previously approved plans.
3. Groundwater monitoring wells MW-D1, MW-D2, MW-D3, MW-D4, and MW-D5 must be monitored on a semi-annual basis in accordance with the following schedule:

<u>Samples Collected During the Quarter Of the Calendar Year</u>	<u>Parameters To Be Sampled</u>
Second Quarter	Groundwater Quality Parameters Groundwater Contamination Parameters
Fourth Quarter	Groundwater Contamination Parameters

4. Each time groundwater is sampled; the elevation of the groundwater in each well must be determined and referenced to mean seal level (MSL) prior to the collection of any groundwater samples. The results of this effort must be documented in tabular form in the report required by condition 5 below. A piezometric map using this data must also be developed and included in the report.
5. The results of the evaluations the two-acre landfill required by Conditions 3 and 4 above must be included in the annual reports submitted to the Illinois EPA. The annual report must detail the groundwater monitoring program data for the subject year and include, as necessary, a statistical analysis of the groundwater data.
6. The groundwater monitoring program for the two-acre landfill must be modified, as necessary, to ensure the requirements of 35 Ill. Adm. Code 725, Subpart F are met.
7. Post-closure care of the landfill at this facility must meet the requirements of: (1) 35 Ill. Admin. Code, Subtitle G: Waste Disposal; and (2) closure/post-closure care plan approval letters issued by Illinois EPA (Log No. C-68) and associated modifications.

#### **File Review**

A copy of the detailed file review that I completed is attached to these review notes.

#### **Site Review and Reasoning for Post-Closure Care Period Extension**

This site is not in an EJ area. This was also confirmed by Adam Shade, GU reviewer. This site has never been issued a RCRA permit even though several Illinois EPA letters to this site state they will need to eventually obtain a RCRA Post-Closure permit. A Consent Agreement and Final Order (CAFO) was issued to the Ceco Corporation on March 30, 1989, requiring the facility to close in accordance with the Illinois Environmental Protection Act (Act) and RCRA

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(copy provided in this review package).

The waste in the landfill includes a listed hazardous waste, electric arc furnace dust (EAF) (K061). This waste is also characteristically hazardous for hexavalent chromium (D007), lead (D008) and cadmium (D006). The waste was not pre-treated to meet the Land Disposal Restrictions (LDRs) for hazardous waste prior to disposal in the landfill.

The facility is approaching the end of their initial 30-year post-closure care period. Illinois EPA is concerned that if the facility is allowed to exit post-closure care there will be no environmental controls on the property to protect human health and the environment. They are in no position to certify post-closure because they have not determined if any leachate exists or have not monitored for leachate in the landfill and they have not properly maintained the cover on the landfill. They have allowed vegetation with tap roots to grow on the cover. If sites are allowed to stop taking care of the cover system, they will deteriorate over time and could potentially harm human health and the environment.

It is the recommendation of USEPA (see 12/15/16 USEPA Guidance for Evaluating the PCC Period in this review package) and the Association of State and Territory Solid Waste Management Officials (ASTSWMO) (7/20/22 position paper included in this review package) that facilities with buried hazardous waste not be allowed to exit PCC without restrictions on the property. Illinois EPA's position after reviewing the Act, is we are required to place restrictions on the property, which means to extend the post-closure care period for this interim status facility in accordance with 35 Ill. Adm. Code 725.245(h) and 725.218 (g)(2)(A). Illinois EPA feels this is the most protective action.

The sections of the Act that apply are 12(a), 21(f), 21(n) and 39(g) and are quoted as follows:

**Section 12. Actions prohibited. No person shall:**

- (a) "Cause or threaten or allow the discharge of any contaminants into the environment in any State so as to cause or tend to cause water pollution in Illinois, either alone or in combination with matter from other sources, or so as to violate regulations or standards adopted by the Pollution Control Board under this Act."

**Section 21. Prohibited acts. No person shall:**

(f) "Conduct any hazardous waste-storage, hazardous waste-treatment or hazardous waste-disposal operation:

- (1) without a RCRA permit for the site issued by the Agency under subsection (d) of Section 39 of this Act, or in violation of any condition imposed by such permit, including periodic reports and full access to adequate records and the inspection of facilities, as may be necessary to assure compliance with this Act and with regulations and standards adopted thereunder; or
- (2) in violation of any regulations or standards adopted by the Board under this Act; or
- (3) in violation of any RCRA permit filing requirement established under standards adopted by the Board under this Act; or
- (4) in violation of any order adopted by the Board

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under this Act.

Notwithstanding the above, no RCRA permit shall be required under this subsection or subsection (d) of Section 39 of this Act for any person engaged in agricultural activity who is disposing of a substance which has been identified as a hazardous waste, and which has been designated by Board regulations as being subject to this exception, if the substance was acquired for use by that person on his own property and the substance is disposed of on his own property in accordance with regulations or standards adopted by the Board.”

(n) Use any land which has been used as a hazardous waste disposal site except in compliance with conditions imposed by the Agency under subsection (g) of Section 39.

**Section 39. Issuance of permits; procedures.**

“(g) The Agency shall include as conditions upon all permits issued for hazardous waste disposal sites such restrictions upon the future use of such sites as are reasonably necessary to protect public health and the environment, including permanent prohibition of the use of such sites for purposes which may create an unreasonable risk of injury to human health or to the environment. After administrative and judicial challenges to such restrictions have been exhausted, the Agency shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste disposal site is located.”

The position of extending the post-closure care period is consistent with USEPA Guidance and ASTSWMO and the purpose is to make sure the landfill is always monitored and never leaks. Simple neglect of the cover system of time will eventually lead to a release of hazardous waste. The facility is received this letter because they are approaching 30 years PC care, we are not singling them out and other facilities that are nearing the 30 years will also be receiving a notice that we will be extending their post-closure care period, and we will be asking them to obtain a PCC RCRA permit.

The Bureau Chief’s Office, DLC and the Director’s Office (see emails in this review package) are all aware of and in agreement with this position. Illinois EPA has sent out another letter to a similar site, City of North Chicago (0971250007) (see copies of emails and memos from Takako Halteman’s North Chicago site in this review package).

**ACTION**

Prepare notification letter for RCH Newco stating PCC care will be extend and submit a permit application for a RCRA PCC permit. Rob and Takako have developed a standardized letter that I will be using.

**11-15-22**

Issued the notification letter to RCH Newco stating we will be extending their PCC period and there will be a public notice.



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**12-13-22**

An internal meeting was held today with Des Plaines, FOS and Illinois EPA headquarters. Rob, I, and Takako participated as well as Tom Rivera, Charlene Thigpen, Anthony Guido (site inspector) and Justin Meyers (all from FOS). We discussed the site inspection Anthony performed as well as the pictures he took of the site. We discussed history of the site and interim status and our intent to extend their post-closure care period. FOS is going to send out a violation notice to the site based on Anthony's inspection for not properly maintaining the landfill cap/cover. They stated it would not go out before the end of the year.

**12-19-22**

We received comments on the post-closure care extension from the facility via email and mail. The comments were submitted by the facility's attorney, Jennifer Nijman and were dated 12-19-22. Attached to the letter were three Exhibits: (1) Exhibit A, RCRA Facility Investigation Phase I Report dated May 1996; (2) Exhibit B, RCRA-2021 Annual Groundwater Monitoring Report; (3) Exhibit C, Deed Restriction.

**1-5-23**

I have reviewed the comments from the facility, and it should be noted they requested a public meeting. I have reached out to DLC to see if we are required to have this meeting since they were the commenters. I asked if I could reach out to the facility/attorney and see if a meeting with Illinois EPA would be acceptable instead of public meeting. An internal conference call is scheduled for 1/10/23.

**Comments on 12-19-22 letter from RCH Newco Attorney**

They note that in our letter we cite 725.245(h) which applies to releasing someone from financial assurance. They are correct and this should not have been in this letter. I was using a template from the North Chicago letter and missed removing this citation.

Site Background they discuss there is only a small percentage of the listed HW K061 EAF Dust mixed with the non-hazardous slag material. In accordance with 35 Ill. Adm. Code 721.103(b)(2), a solid waste mixed with a listed hazardous waste (HW) becomes a HW.

They state the company is currently in the process of general cover maintenance and is removing some vegetation. This is because this was called to their attention by Illinois EPA. If the facility had been maintaining the cover for the past 30 years no vegetation with tap roots would be growing on the cover. During a site visit by FOS (11-22-22) the cover was not in good shape. There were deep ruts, vegetation with tap roots, very tall grass which made it hard to evaluate the entire cover. The facility stated ongoing maintenance of the cover can be established with land use restrictions if necessary. It is not allowed to file an ELUC on a landfill (742.105(h)). The deed restriction filed does not appear to even mention maintaining cover integrity. I am not sure this deed restriction meets the requirements of closure under 725 and not sure if they filed a survey plan in accordance with 725.216.

They mention the landfill is surrounded by a 10-foot-high locked chain link fence. If PCC ends

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the facility will not be required to maintain this fencing.

The facility discussed alternative enforceable documents instead of a post-closure care permit. An administrative order and/or consent order are used for enforcement actions. They would require the same things a PCC permit would require, and it would take some time to establish these.

#### **1-10-23**

An internal meeting was held with DLC, Permits and Community Relations to discuss the comments received from the facility (submitted by their lawyer) and the path forward for this site. It was determined that we still feel the best path to maintain control of this site is extend PCC and require the site to obtain a RCRA permit. It was also decided I would reach out to the facility to get some clarification on their request for a public meeting or did they mean a public hearing. I am also to explain the difference between the two. Another point that was discussed was to ask the facility if they have thought about removing the waste from the site and therefore it would no longer be a landfill. I told everyone I would reach out to the facility and discuss these points.

#### **1-11-23**

I talked with Kristin Pelizza (facility contact) at 9am today. I asked her if the facility had thought about removing the waste and cleaning up the site. She said she did not know, and she would ask her supervisor. She is also going to reach out to the lawyer and get clarification on public meeting or public hearing. I explained the difference. I also offered to have a conference call with our lawyers if we needed to discuss it. She said she would let me know what the lawyer said.

#### **1-18-23**

I sent an email to Kristin Pelizza today as a follow-up from our discussion on 1/11/23 to see if she had heard anything from the lawyer. She responded by email stating she had not heard from them and that she needed to follow-up with them.

I received another email from Kristin stating they would like to have an in-person meeting in Springfield with Illinois EPA instead of the public meeting. They asked me to check with our team and propose some dates for this meeting. I asked Kristin to ask the lawyer to mail an official letter requesting to withdrawal their request for a public meeting. I told Kristin I would check with my supervisor and propose some dates. I also asked her to provide an agenda for our meeting.

#### **1-19-23**

I discussed Kristin's email with Rob (my supervisor). We agreed that we will set this meeting up after they withdraw the request for a public meeting. I emailed Kristin and told her this.

#### **1-30-23**

I received a letter from RCH Newco's lawyer via email, dated 1/24/23, stating they will withdraw the public hearing request only if we refrain from making a final decision after the

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meeting between Illinois EPA and RCH Newco.

### 2-9-23

I received an email from Nick San Diego, DLC, explaining his recommendation on proceeding with the public hearing instead of a meeting with Newco and their attorney.

I had been working on a reply letter to the 1/24/23 letter from Newco's lawyer. John McDonough, DLC had been assisting me on this letter. However, after further discussion with the other lawyers at the Illinois EPA, they are recommending we hold the public hearing and only interact with Newco's lawyer during public hearing and appeal process. I have notified Community Relations to prepare for a public hearing.

### 2-16-23

I sent out an email summarizing the path forward as recommended by DLC to everyone including DLC and Community Relations. It listed the following items:

1. Write a letter thanking RCH Newco for the withdrawal letter, but we have decided to hold a hearing.
2. We need to look for a place to hold the hearing and write up a notice to be published in a local newspaper.
3. I think there is a 30-day notice before we can hold the hearing.
4. Do we put hearing date in letter back to Newco? Or do we send second letter notifying them of hearing date, time location?
5. John is going to start preparing the draft letter.

Brad Frost from Community Relations responded with the following comments:

1. Write a letter thanking RCH Newco for the withdrawal letter, but we have decided to hold a hearing.
2. We need to look for a place to hold the hearing and write up a notice to be published in a local newspaper. Cassie will identify a location and newspaper and will draft a notice.
3. I think there is a 30-day notice before we can hold the hearing. Jeff and Cassie, verify that this is a 164 hearing and not a 166 hearing.
4. Do we put hearing date in letter back to Newco? Or do we send second letter notifying them of hearing date, time location?  
 In the letter, just say as in #1 above that we have decided to hold a hearing. They will receive a copy of the notice when it is published and distributed.
5. John is going to start preparing the draft letter.

Jacki forwarded my email to Kyle and Greg for comments.

### 2-21-23

John McDonough sent me an email with some draft language to use in the response to Newco's 1/24/23 letter. I prepared the draft letter and sent it back to John for his review. He emailed me back some minor revisions that he and Nick San Diego suggested in the letter. I modified the letter and then printed it to be sent around for initials.

### 2-27-23

A letter was sent to RCH Newco stating Illinois EPA was moving forward with a public hearing and they will be notified of date and time.

### 2-28-23

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Kristin from RCH Newco emailed me and said they received our letter and wanted to know if we are still going to have a meeting in Springfield. I told her no we are not having the meeting in Springfield, just the public hearing.

**3-6-23**

I received an email from Cassie today stating the public notice with go into the newspaper on March 8, 2023. She also provided a copy of the final public notice. The public hearing will be on April 19, 2023.

**3-27-23**

A violation notice was sent to RCH Newco from a field inspection completed on 11/22/22 (Copy in this review package). The FOS inspector sited many issues with the final cover/cap for the landfill that clearly states this facility has not been maintaining this site properly.

**4-20-23**

A virtual public hearing was held at Illinois EPA headquarters. No members of the public attended nor did RCH Newco participate.

**5-22-23**

No additional comments were received during the comment period after the public hearing. Rob and I will work on the response to RCH Newco's 12/19/22 comments that were received. This response to comments will be an attachment to our final determination letter to RCH Newco.

**9-18-23**

I completed a more detailed file review as requested by Jacki Cooperider, Permit Section Manager, before we issue our final determination letter. Takako, Jacki and I had a meeting to discuss my review and the path forward with RCH Newco. We decided to move forward with the information we had on the closure and timeframe of closure of the 2-acre landfill at RCH Newco. Rob had already done a lot of work on the final letter and response to comments. I will use Rob's draft of this letter and make updates as necessary.

The following is our final response to comments prepared by me, Jacki Cooperider, Takako Halteman and Illinois EPA Division of Legal Counsel.

**ILLINOIS EPA'S RESPONSE TO COMMENTS  
RCH Newco II, LLC  
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The responses below address comments received from Jennifer Nijman, counsel for RCH Newco II, LLC (RCH Newco), dated December 19, 2022, and received by the Illinois EPA on December 19, 2022 (via email) pertaining to the Illinois EPA's Intent to Extend the Post-Closure Care for RCH Newco's interim status landfill issued November 18, 2022.

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Section A of this attachment includes the Illinois EPA's general response to RCH Newco's Comments regarding extending post-closure care, followed by more detailed responses to the specific comments provided in their letter in Section B.

#### **A. Illinois EPA General Response to Comments**

Landfills are man-made structures and need to be consistently monitored and maintained to ensure they continue to function as designed and to prevent failure of the structure and negative effects on human health and the environment. Unaddressed small problems can result in bigger, potentially catastrophic, and expensive problems.

Current hazardous waste landfills are designed to contain hazardous wastes and prevent hazardous constituents from entering the environment. The design standard for RCH Newco's landfill do not meet these current standards. Buried hazardous constituents continue to pose a threat to human health and the environment as long as they remain in place. Therefore, permits and post-closure care plans for landfills must restrict the types of activities that can occur on a closed landfill. Additionally, they must include, monitoring of any leachate in the landfill, monitoring and maintenance of the cover system, and monitoring of the groundwater. The permits and plans must also provide remediation strategies and contingency plans for an accidental release of hazardous constituents.

Federal and state RCRA regulations allow for the Illinois EPA to extend the post-closure care period at these facilities because removing all regulatory control over a hazardous waste landfill would be a significant threat to human health and the environment.

Termination of permits and/or post-closure plans would eliminate requirements to monitor and maintain the hazardous waste disposal units and undermine any enforceable land use restrictions on the property. Future property owners, unaware of the environmental hazard, could constructing a building, bury utility lines, or conduct other activities on the landfill that could compromise the integrity of the cover or base liner system. These activities would allow water to enter the landfill and create pathways for hazardous constituents to enter the surrounding environment. The USEPA's December 15, 2016, guidance memo on post-closure care states; "*An overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit.*" (2016 USEPA Guidance p. 4.)

There are unpredictable concerns regarding future population, land use, groundwater, surface water, drinking water, or flood conditions in the area around the hazardous waste landfill. Hence, the risks posed by an uncontrolled hazardous waste landfill could be considerably higher in the future.

Removing regulatory oversight from a hazardous waste landfill (i.e., terminating a closure plan or permitting requirements), is not protective of human health and the environment. If neglected, the soil cover system on a landfill will erode and eventually no longer keep water out of the landfill and hazardous constituents will be released from the landfill. This is an unacceptable risk to the public and the environment.

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## **B. Illinois EPA's Detailed Response to RCH Newco's Comments**

### **COMMENT 1**

#### ***I. Post Closure care should cease because the fill area poses no threat to human health or the environment.***

***IEPA alleges because the Fill Area contains [Electric Arc Furnace Dust (K061)], a listed hazardous substance, and because the EAF was not treated, post-closure care should be extended. However, IEPA's conclusion does not address the lack of any risk for migration and does not account for the unique characteristics of waste and the Fill Area itself. USEPA Guidance clarifies that the purpose of knowing whether waste was treated is because treatment reduces the "mobility or leachability of hazardous constituents" and is another "means of achieving LDR's groundwater protection goal." USEPA Guidance, p. 4. Here, no such mobility concern exists.***

***The only reason for the Fill Area was to contain a small amount of EAF dust that could not be separated from non-hazardous steel waste. Only 8.5% of the Fill Area consists of the EAF dust – the remainder being non-hazardous materials. The Fill Area contents have not changed since the Fill Area was finished almost three decades ago. The Fill Area is covered with two feet of compacted clay, 18 inches of select fill and six inches of topsoil with vegetation to prevent infiltration. The Fill Area is lined with compacted clay to protect from migration. IEPA approved of the Fill Area design as appropriate for the waste at issue.***

***Without referencing the fact that thirty years of monitoring has shown no risk of harm, IEPA seems to be arguing that simply because a small amount of a listed hazardous waste exists, it must be assumed to be a threat to human health or the environment. That is not the standard set out by Illinois regulations or USEPA Guidance. (RCH Newco Comment p. 2-3).***

#### **Illinois EPA Response to Comment 1:**

Electric Arc Furnace Dust (K061) is a listed hazardous waste due to toxicity from hexavalent chromium, lead, and cadmium (35 Ill. Adm. Code 721.132, Part 721, Appendix G). In addition, EP Toxicity testing indicated that the EAF dust at this site is a characteristically hazardous waste due to lead and cadmium (See Section 2.2.1 of Carlson RFI Phase I Report: May 1996). Approximately 2,500 cubic yards of EAF dust was disposed of in the on-site landfill.

The RCRA regulations at 35 Ill. Adm. Code 721.103(a)(2)(D) are clear that a mixture of a solid waste and a listed hazardous waste (in this case electric arc furnace dust – K061) is a hazardous waste. Hence, the entire contents of the landfill (32,000 cubic yards) are considered a listed hazardous waste.

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As noted on page 3 of the December 19, 2022 letter, the contents of the landfill (Fill Area) have not changed since the landfill was closed almost three decades ago. The contents continue to be hazardous waste (32,000 cy) and as such, there is continued concern about the mobility of hazardous constituents and potential for contamination of the soil and groundwater if the appropriate monitoring, maintenance, and land use restrictions are not continued at the landfill in the future. As stated in 2016 USEPA Guidance, “an overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit.”

## COMMENT 2

### I.A. **Thirty Years of Groundwater Monitoring at the Fill Area Demonstrates No Risk to Human Health and the Environment**

*IEPA does not appear to evaluate almost three decades of groundwater sampling that shows there is no risk to human health and the environment. According to USEPA Guidance, “[g]roundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. “Groundwater should not exceed risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based levels and scenarios.” Id. The objective of the groundwater sampling is to collect data that would determine whether the Fill Area is impacting the groundwater. (RCH Newco Comment p. 3).*

#### **Illinois EPA Response to Comment 2:**

Illinois EPA acknowledges that hazardous constituents have not currently been detected in the groundwater. However, this does not indicate that there will be no risk to human health and the environment in the future. As stated in 2016 USEPA Guidance, “there are often uncertainties in whether controls will continue to function as planned or whether future activities will lead to unplanned exposures to human and environmental receptors. Even if there is not current evidence of actual releases from the facility, significant factors can change over time.” As long as hazardous waste remains in the landfill, there is an inherent risk that hazardous waste and hazardous constituents could find potential pathways into the groundwater and soil. Without continued monitoring, the public would be at risk of being unaware if hazardous constituents were released from the landfill.

## COMMENT 3

*Sample results from 2021 continue to show no impact to groundwater from the Fill Area. Based on the analytical data for both sampling events in 2021, groundwater did not exceed the drinking water standards as referenced in 35 IAC 725, Appendix C, USEPA Interim Primary Drinking Water Standards. RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022, p. 6. In fact, the groundwater sampling every year since monitoring started revealed*

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*similar results. See e.g., Groundwater and Hazardous Waste Reports 1993 to 2021. Further, inspection of the wells in 2021 shows the wells were in good condition and locked securely – as they have been every year since 1993. Id. p. 2. In other words, the wells have been maintained to provide valid data. Consequently, the extensive history of groundwater monitoring indicates there is no threat to human health or the environment. (RCH Newco Comment p. 4).*

**Illinois EPA Response to Comment 3:**

See Illinois EPA’s General Response to Comments and Illinois EPA’s Response to Comment 2.

**COMMENT 4**

**I.B Groundwater Monitoring is Equally Relevant to Leachate in Assessing Impact**

*IEPA alleges because there is no leachate collection or monitoring system, it cannot be determined if leachate is present or if the integrity of the cover has been maintained. IEPA ignores USEPA guidance that states that groundwater monitoring is “the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. In fact, Illinois regulations allow for IEPA to consider either leachate OR groundwater monitoring results in determining whether there is the potential for migration of hazardous wastes at levels that may be harmful to human health and the environment (725.218 (g)(1)(A)(i)). Here, IEPA fails to consider the thirty years of groundwater monitoring that shows no potential for harm to human health or the environment. (RCH Newco Comment p. 4).*

**Illinois EPA Response to Comment 4:**

In addition to below, see Illinois EPA’s General Response to Comments as well as Illinois EPA’s Response to Comment 6.

The Illinois EPA acknowledges that hazardous constituents have not currently been detected in the groundwater. However, this does not indicate that there is no potential risk to human health and the environment in the future. If hazardous waste remains in place, there is and always will be a risk that hazardous waste and hazardous constituents could migrate given many different factors including, but not limited to, unknown future environment and climate factors resulting in erosion or flooding and potential for human error.

**COMMENT 5**

*As to integrity of the Fill Area cover, inspections conducted for the last twenty years indicate the landfill cover is in good condition. The Company is currently in the process of general cover maintenance and is removing some vegetation that has grown in the area. As described in Section II below, ongoing maintenance of the cover can be established in a land use restriction if necessary. (RCH Newco Comment p. 4).*



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**Illinois EPA Response to Comment 5:**

On November 22, 2022, an inspection by the Illinois EPA documented that there has been a lack of maintenance of the vegetative cover. The inspection found that there were multiple bare spots, erosion issues, growth of woody shrubs, and multiple ruts present in the cover. An 8-inch tree stump was found in the middle of the final cover. The root system from a tree this size likely penetrated the final cover of the landfill and as a result created a conduit for water (precipitation & run-off) to enter the landfill. The Illinois EPA also observed trees growing adjacent to the landfill. Therefore, it is likely that tree root systems are encroaching and could potentially penetrate the final cover or liner of the landfill. The approved closure plan required the facility to monitor and maintain the effectiveness of the landfill's cover. The results of the November 22, 2022, Illinois EPA inspection indicate that the final cover of the landfill has been neglected. The facility's maintenance records and compliance history of the post-closure plan must also be taken into consideration as relevant information when considering extending or shortening the post-closure care period in accordance with 2016 USEPA's guidance. The historic negligence demonstrates that it is appropriate to regulate the facility under a RCRA permit for future post-closure care of the landfill at this facility.

**COMMENT 6**

**I.C. The Fill Area Poses No Risk Because it is located in a Secured Industrial Area**

*USEPA Guidance looks to "relevant facility location characteristics" such as "proximity to vulnerable areas" like residential areas and surface and drinking water sources, surrounding land use, areas prone to flooding and whether facility conditions minimize the potential for adverse impacts on local populations if there is a release from the unit. USEPA Guidance, p. 7 IEPA's notice letter does not evaluate the Fill Area's location characteristics.*

*The Fill Area occupies two-acres surrounded by a ten-foot-high, locked chain link fence that is located in the center of 25 acres of industrial property formerly used by Ceco, and now owned by RCH Newco. Access to the Property is by an unnamed paved road from New Avenue. The entire Property, including the Fill Area, is surrounded by a heavily industrialized area.*

*The Fill Area is almost entirely in Zone C, which is characterized by minimal flooding. Phase I, p. 3. "There are no significant surface water bodies, streams or wetland areas located at the Property". Id. at p. 11. No drinking water sources exist downstream of the Fill Area that take water from the I & M Canal. Id. at 12. Similarly, no drinking water sources using ground water are located hydraulically down-gradient from the Property. Id. The location characteristics of the Fill Area support a finding of no risk to human health or the environment. (RCH Newco Comment p. 4-5).*

**Illinois EPA Response to Comment 6:**

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As noted in 2016 USEPA guidance, there are considerable unknowns, and no guarantees, regarding future population, land use, groundwater, surface water, drinking water, flood conditions, or any other factors associated with potential climate change around the hazardous waste landfill. The hazardous waste in the landfill should not change over time, but the factors surrounding the landfill will continue to fluctuate, therefore the waste presents a continued threat to human health and the environment.

## COMMENT 7

### II. Reasonable Alternatives Should be Utilized in Lieu of Indefinite Post-Closure Care

*In its November 15<sup>th</sup> letter, IEPA states the “establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste left in place. Long-term restrictions of future land use must be placed on the Site to minimize future exposure.” However, IEPA fails to consider the fact that the Fill Area is surrounded by a locked fence, and a deed restriction already exists on the Property to preclude access. The deed restriction, already recorded against the title of the Property, limits the Property to industrial use unless permission is granted by IEPA, restricts worker contact with the co-disposed material, and requires that any of the co-disposed material removed must be managed in accordance with the provisions of 35 Ill. Adm. Code, Subtitle G. Ex. C., Deed Restriction. In the event IEPA determines that additional property restrictions are necessary, they can be easily added without extending post closure care. The Deed Restriction could be converted to an environmental land use control (ELUC) to permanently restrict property use (at least until IEPA agrees to remove the restriction). ELUCS are enforceable documents (35 Ill. Admin. Code 742.1010(c)(3)). Examples of land use limitations or requirements that IEPA generally imposes include a prohibition of use of groundwater for potable purposes, an industrial/commercial property use restriction, and maintenance of an engineered barrier. “Environmental Land Use Control,” IEPA Website; 35 Ill. Adm. Code 742 subpart J. In this case, the Deed Restriction already in place could include maintenance of the landfill cover if necessary. This would eliminate any potential argument IEPA has that there could be a risk to human health and the environment without ongoing maintenance.*

*Assuming IEPA can establish a threat of harm that is not addressed by the existing (or amended) Deed Restriction, Illinois regulations allow for more reasonable methods of including long term controls – rather than an indefinite RCRA permit. Specifically, 35 Ill. Adm. Code 703.121(b) (citing to 703.161) provides for an alternative Agency plan or other enforceable document (such as an administrative order on consent, or ELUC) to establish any long-term controls that might be necessary. (RCH Newco Comment p. 4-5).*

### Illinois EPA Response to Comment 7:

In addition to below, see Illinois EPA’s Response to Comment 5.

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An environmental land use control (ELUC) is not applicable in this case because the Tiered Approach to Corrective Action Objectives (TACO) regulations at 35 Ill. Adm. Code Part 742 are only applicable when waste is removed from a site. Landfills by design leave waste in place and are therefore excluded per 35 Ill. Adm. Code 742.105(h). RCH Newco is leaving waste in place and therefore, the remediation standards of 35 Ill. Adm. Code Part 742 do not apply.

A Deed Restriction is not considered an enforceable document. Therefore, it cannot be relied upon to ensure a hazardous waste landfill is properly monitored and maintained, or that future land use of the landfill is adequately limited and protective of human health and the environment. Also, refer to Illinois EPA's Response to Comment 5.

An environmental covenant (EC) under the Uniform Environmental Covenant Act could potentially be an enforceable document that could be applied to the landfill. However, this legal document could take several years to establish. Therefore, to ensure that long term controls are maintained at the facility, the site needs to continue post-closure care and obtain a RCRA Post-Closure permit subject to 35 IAC Part 724.

#### **COMMENT 8**

*Before a post-closure care period can be extended, IEPA must show cause – and must be able to show that there is a need to prevent threats to human health and the environment.*

*725.218(g). IEPA cannot make such a showing in this case as there is no such threat. The Fill Area on the Property contains only 8.5% of EAF dust mixed with non-hazardous materials, is in the center of 25-acres of land used for industrial purposes, has almost three decades of groundwater samples that are within acceptable limits, and can be adequately maintained with appropriate environmental land use controls. For these reasons, IEPA should withdraw its notice for the extension of post-closure care.*

#### **Illinois EPA Response to Comment 8:**

Hazardous waste remains in place at the landfill which presents an inherent uncertainty and potential threat to human health and the environment. A landfill is a man-made structure built to contain hazardous waste and keep hazardous constituents from entering the environment. Regulations requiring that a landfill be properly designed, constructed, operated, closed, and maintained, are in place to provide protection of human health and the environment. Unless the hazardous waste is completely remediated from the subject property, continued maintenance and oversight is required.

#### **ACTION**

We are going to issue the final determination letter stating the post-closure care period for the 2-acre landfill will be extended. Also, we will require RCH Newco to obtain a RCRA Post-Closure Permit.

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RCH Newco II LLC (f.k.a. Lemont/CECO Corporation)  
ILD990785453  
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RCRA Closure File 24B

### CLOSURE HISTORY

3-29-85; C-68; disapproved approved closure plan several deficiencies listed in the letter.

6-13-85; C-68; approved closure plan dated 1/31/85 and additional information dated 4/30/85 with modifications.

6-12-86; C-68-M-1; disapproved a modified partial closure plan (3/19/86) and listed deficiencies in the letter.

9-11-86; C-68-M-1; approved modified partial closure and post-closure plan with conditions and modifications.

5-10-94; C-68-M-2; approved information pertaining to RCRA-closure activities with conditions and modifications.

1-30-95; C-68; Illinois EPA provided comments on the draft workplan (received 10/3/94) for a Phase I RFI.

9-12-95; C-68-M-3; approved Phase I RCRA RFI for entire facility with conditions and modifications.

2-7-96; C-68-M-4; approved a reduction in groundwater monitoring to twice per year and approved a reduction in financial assurance.

8-29-96; C-68-M-5; partial approval of Phase I Report and modified post-closure plan for waste pile with conditions and modifications.

8-7-97; C-68-M-6; approved a modification to the approved RCRA closure plan with conditions and modifications.

6-24-98; C-68-M-7; disapproved the supplemental RFI Report based on several conclusions listed in the letter.

12-20-99; C-68-M-8; approved modification to RCRA closure plan with conditions and modifications.

C-68-M-9 – Withdrawn

8-11-00; C-68-M-10; approved a modification to the approved closure/post-closure plan with conditions and modifications.

2-24-09; C-68-M-11; approved a request to modify the approved closure plan with conditions and modifications: (1) post-closure care must continue for landfill; and (2) approved draft ELUC for Fiala property.

6-2-09; C-68-M-12; approved modification to the approved interim status closure/post-closure plan with conditions and modifications. This established PCC began on 1/1/93 and listed physical PCC of the landfill. Listed out new GW monitoring requirements.

9-2-09; C-68 (Certification); approved closure certification of landfill and RCRA closure activities at the facility. Approved filed ELUC and reiterated post-closure care requirements and GW monitoring requirements.

9-21-22; C-68-M-13; requested additional information before Illinois EPA could approve the subject modification request.

11-15-22; C-68; notification of extension of post-closure care and public notice of this decision.

3-13-24; C-68 (Notification); final determination to extend post-closure care for the landfill and require submittal of RCRA permit application.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

DEC 15 2016

OFFICE OF  
SOLID WASTE AND  
EMERGENCY RESPONSE

NOW THE  
OFFICE OF LAND AND  
EMERGENCY MANAGEMENT

**MEMORANDUM**

**SUBJECT:** Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA

**FROM:** Barnes Johnson, Director  
Office of Resource Conservation and Recovery

**TO:** RCRA Division Directors, Regions 1-10  
RCRA Enforcement Managers, Regions 1-10  
Regional Counsels, Regions 1-10

**Purpose**

The purpose of this memorandum is to provide guidance to assist regulators in evaluating conditions at hazardous waste disposal facilities subject to Subtitle C of the Resource Conservation and Recovery Act (RCRA) that are approaching the end of the original 30-year post-closure care period, and in determining whether the post-closure care period should be adjusted or allowed to end. Any such determinations must ensure ongoing protection of human health and the environment. This guidance also provides information to assist facility owners and operators in preparing documentation to inform the regulators' evaluations.

This guidance has the additional benefit of helping regulated entities understand what may be necessary to ensure protection of human health and the environment at units subject to post-closure care requirements. This enables waste generators and handlers to have a better understanding of the costs associated with land disposal so they can better evaluate long-term waste management strategies, including waste minimization.

**Introduction and Need for Guidance**

The RCRA Subtitle C hazardous waste management regulations establish a post-closure care<sup>1</sup> period for certain hazardous waste treatment, storage and disposal facilities, and specify post-closure care activities. The post-closure care requirements apply to land disposal units (landfills, land treatment units,

<sup>1</sup> Post-closure care can be generally described as the period of time after closure during which owners and operators conduct specified monitoring and maintenance activities to preserve the integrity of the containment system and to continue to prevent or control releases of contaminants.

and surface impoundments) that leave hazardous waste in place after closure. Post-closure care also applies to some non-land-based units (e.g., certain tanks or containment buildings) that cannot fully decontaminate or "clean close"<sup>1</sup> all equipment, structures, and soils. Post-closure care activities consist of two primary responsibilities: monitoring and reporting, and maintaining the integrity of the waste containment systems (see 40 CFR 264/265.117). Post-closure care for each hazardous waste management unit must begin after completion of closure of the unit and normally continue for 30 years after that date; the regulations also provide discretion to the permitting authority to adjust the length of the post-closure care period.

Many facilities around the country are approaching the end of the initial post-closure care period established in their RCRA permits or post-closure plans. Accordingly, questions have arisen about how to evaluate conditions at these facilities to determine whether the post-closure care period needs to be adjusted – that is, extended, or whether a 30-year post-closure care period is protective for a specific unit. In response, the Office of Resource Conservation and Recovery has developed this guidance recommending criteria to consider when evaluating facilities nearing the end of the post-closure care period<sup>2</sup> and thus ensure that human health and the environment will continue to be protected by the resulting determination. It also sets forth a recommended process for evaluating the post-closure care period in a timely fashion. Finally, this guidance discusses additional considerations that may be important for decision-makers when evaluating the adequacy of the post-closure care period.

This guidance supplements existing guidance on the post-closure care period, including the Technical Evaluation Criteria and Site-Specific Factors to Consider in Determining the Length of the Post-Closure Care Period, presented in the Appendix B of the *RCRA Guidance Manual for Subpart G Closure and Post-Closure Care Standards and Subpart H Cost Estimating Requirements* of January 1987.<sup>3</sup>

## Regulatory Overview of the Post-Closure Care Period

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<sup>1</sup> The RCRA Subtitle C regulations generally provide for two types of closure: closure by removal or decontamination (referred to as "clean closure") and closure with waste in place. The premise of clean closure is that all hazardous wastes have been removed from a given RCRA unit and any releases at or from the unit have been remediated. More information on clean closure is available in *Memorandum: Risk-Based Clean Closure* from Elizabeth Cotsworth, Acting Director Office of Solid Waste, March 16, 1998.

<sup>2</sup> This document is solely intended to provide guidance to federal and state regulators on implementing the RCRA Subtitle C regulations and to provide policy advice and recommendations. As such, this document does not impose any legally binding requirements, and the use of such phrases as "guidance," "recommend," "may," "should," and "can," are not intended to impose or connote any legal obligations. Accordingly, this document does not change or substitute for any law, regulation, or any other legally binding requirement and is not legally enforceable. The policies described in this document may not apply to a particular situation based upon the circumstances, and EPA may deviate from or revise any of the policies described in this document without prior notice to the public. While EPA has made every effort to ensure the accuracy of the discussion in this document, the obligations of the regulated community are determined by statutes, regulations or other legally binding requirements. In the event of a conflict between the discussion in this document and any statute or regulation, this document would not be controlling.

<sup>3</sup> OSWER Policy Directive #9476.00-5, EPA/530-SW-87-10.

EPA regulations<sup>4</sup> require that the post-closure care period for each hazardous waste management unit subject to the requirements of 40 CFR 264/265.117 through 264/265.120 must begin after completion of closure of the unit and continue for 30 years after that date. Still, the regulations' identification of a default 30-year post-closure care period does **not** reflect a determination by EPA that 30 years of post-closure care is necessarily sufficient to eliminate potential threats to human health and the environment in all cases. Nor is the full 30-year period always necessary. In fact, the regulations provide for a permit authority to conduct a case-by-case review of the post-closure care period and establish arrangements to adjust the length of the post-closure care period on a facility or unit-specific basis, where the record supports a determination that the revised post-closure care period will remain protective of human health and the environment.<sup>5</sup>

The regulations provide that the decision to alter the length of the post-closure care period can be made at any time preceding *partial closure*<sup>6</sup> of a hazardous waste management unit subject to post-closure care; at any time preceding *final closure*<sup>7</sup> of a facility; or at any time during the post-closure care period for a particular unit. For permitted facilities, such a decision must be made through the permit renewal or modification procedures in parts 124 and 270 of the regulations. For interim status facilities, adjustment to the post-closure care period must be made in accordance with § 265.118(g).

According to § 264.117 the post-closure care period may be modified under certain circumstances provided the modifications are protective of human health and the environment:

- The post-closure care period may be shortened where “the reduced period is sufficient to protect human health and the environment (e.g., leachate or ground-water monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure).”
- The post-closure care period may be extended where “the extended period is necessary to protect human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health or the environment).”

The provisions for interim status facilities are similar [ §§ 265.117 and 265.118(g)].

For more details on particularly relevant portions of the federal RCRA hazardous waste regulations, see Appendix A.

### Criteria to Consider for Evaluating the Post-Closure Care Period

<sup>4</sup> 40 CFR 264.117 (for permitted facilities) and 265.117 (for interim status facilities)

<sup>5</sup> EPA explained this approach early in the RCRA program. See 45 Fed. Reg. 33197 (May 19, 1980); see also 47 Fed. Reg. 32287-88 (July 26, 1982); 46 Fed. Reg. 2819 (Jan. 12, 1981).

<sup>6</sup> *Partial closure* is defined in 40 CFR 260.10 as “the closure of a hazardous waste management unit in accordance with the applicable closure requirements of parts 264 and 265 of this chapter at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank (including its associated piping and underlying containment systems), landfill cell, surface impoundment, waste pile or other hazardous waste management unit, while other units of the same facility continue to operate.”

<sup>7</sup> *Final closure* is defined in 40 CFR 260.10 as “the closure of all hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under parts 264 and 265 of this chapter are no longer conducted at the facility unless subject to the provisions in § 262.34.”



An overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit. Because many hazardous wastes degrade slowly or do not degrade under containment in these units, the continued presence of hazardous waste in the unit (*i.e.*, any case other than clean closure) indicates the potential for unacceptable impacts on human health and the environment in the future if post-closure care is not maintained. For instance, there are often uncertainties in whether controls will continue to function as planned and whether future activities will lead to unplanned exposures to human and environmental receptors. Even if there is no current evidence of actual releases from the facility, significant factors can change over time. For example, groundwater flow can change direction due to the sequencing of dry and wet years, pumping at municipal water supply or other well fields, or shifting gradients resulting from seasonal variations or tidal influences. Landfill components, such as caps and liners (which have a finite design life), can degrade over time, especially if maintenance is discontinued. Exposure pathways that have been eliminated by means of an engineered control may be reopened (*e.g.*, if animals burrow through the cap). Thus, continued monitoring and maintenance activities may be appropriate unless or until it can be demonstrated that site-specific conditions adequately minimize the risk that contaminants will migrate from the unit (*e.g.*, site geology/hydrogeology) or that, in the event the engineering controls fail, a release would not pose an unacceptable risk to human health and the environment. This section provides recommended criteria that can be used to evaluate site-specific conditions and associated risks or remaining uncertainties in determining whether to adjust the post-closure care period.

These criteria can also be periodically used to evaluate whether activities in the post-closure plan should be amended. For instance, if the regulator determines it is necessary to extend the post-closure care period, these criteria can be used to determine if the frequency of one or more post-closure care monitoring requirements could be reduced during that extended timeframe. Each criterion is not necessarily applicable for every unit in post-closure care, for example, the “Gas Collection System Integrity” criterion would not apply to units without a gas collection system. The questions provided under each criterion are intended to help identify potential threats to human health and the environment. However, they do not all need to be answered in order to make a decision concerning the appropriate post-closure care period and the monitoring/maintenance activities.

***Waste Treatment:*** Knowing whether the hazardous waste was disposed prior to the effective date of the Land Disposal Restrictions (LDR) program is an important piece of information when evaluating site-specific conditions. Hazardous waste treatment that destroys harmful contaminants or reduces toxicity of the waste before placement in a land disposal unit provides a more lasting form of groundwater protection than waste containment alone. Similarly, through a process called stabilization or immobilization, metal contaminants – that cannot be treated – can be chemically and physically solidified or bound into the wastes that contain them (*e.g.*, through chemical fixation). Thus, reducing the mobility or leachability of hazardous constituents in a waste is another means of achieving LDR's groundwater protection goal. Relevant questions for this criterion include:

- Were all the wastes pre-treated in accordance with the treatment standards of the LDR program or does the unit contain wastes that were placed on the land prior to the effective dates of the LDR rules?

EPA recommends reviewing the waste analysis data for treated wastes in the land disposal unit.

**Nature of Hazardous Wastes Remaining in the Unit:** The current properties of the hazardous waste (e.g., degradation, solubility, liquid-to-solid ratio) provide an important indication of the waste's ability to migrate or disperse in the environment.

- What is the degree of risk (e.g., exposure pathways, probability of exposure) presently associated with the wastes in the unit?
  - Are the wastes highly toxic?
  - Do they degrade into substances that are more or less toxic, or non-toxic?
  - Are there indications that the waste might become incompatible with the liner?
- What is the potential for adverse impacts from releases based on the current understanding of contaminant fate and transport considerations (e.g., presence of persistent, bioaccumulative contaminants, as compared to biodegradable contaminants; constituent speciation(s); and leaching profiles)?
- Is the waste in a stable state? Are there indications that the waste may become unstable?

EPA recommends that current data from regulatory standards be used for comparison to facility-specific performance goals articulated in the post-closure plan, and that, as necessary, the plan be updated to account for any new information on toxicity and carcinogenicity. EPA also recommends reviewing and possibly updating the list of constituents to analyze, since scientific understanding of constituents of concern may change over time. In addition, the data gathered should include an analysis of potential degradation products as well as of the types of wastes known to have been placed in the unit(s).

**Unit Type/Design:** The main objective of the disposal units is the containment of the hazardous waste. Thus, emphasis should be placed on the unit's ability to contain hazardous wastes over the long term.

- Is the unit, for example, a landfill, a surface impoundment, or a closed tank with residual contamination?
- Does the unit meet the minimum technology requirements (e.g., double liners, leachate collection system)? Or was the unit already in existence at the time these requirements were promulgated and closed before retrofitting?
- To what extent does the overall design and construction of the unit minimize the need for long-term maintenance, resist the generation of leachate and emissions, and contain any remaining waste in perpetuity?

It is recommended that the permitting authority consider any unit-specific design, in concert with applicable closure and post-closure care requirements, when evaluating whether adjustment of the post-closure care period is warranted to protect against any potential impact on human health and the environment. There can be circumstances in which continuing to maintain unit-specific controls may be necessary to protect human health and the environment, particularly if the unit pre-dated the minimum technology requirements; this could support a decision to extend the post-closure care period. Conversely, there might be circumstances where the overall design and construction of the unit minimize the need for long-term maintenance and could support a decision to shorten or end the post-closure care period.

**Leachate:** The leachate collection and removal system controls leachate build-up on the liner, working in conjunction with the liner's barrier system to minimize the potential for groundwater contamination.

Monitoring for leachate generation serves as the most effective way of examining the integrity of the waste management unit (e.g., it can suggest a cover or liner failure when leachate is detected late in the post-closure care period).<sup>8</sup>

- Will the integrity and functionality of the leachate collection system, leachate generation rate, and leachate quality remain adequate to prevent harm to human health or the environment in the absence of post-closure care?
- Can the facility owner or operator show through monitoring/modeling and/or statistical analysis that the leachate would not pose a threat to human health and the environment because it would not exceed applicable standards at compliance or exposure points?
- Is it likely those standards will be exceeded in the future, for example, through formation and release of degradation products? Do the data demonstrate that there are no increasing trends in the concentration of leachate constituents?
- Can the facility owner or operator demonstrate that maintenance and operation of the leachate collection system can be ceased without posing a threat to human health and the environment?

EPA recommends that potential impacts from changes in leachate characteristics and generation rate that could result from discontinued maintenance be considered.

***Groundwater:*** Groundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination. It is important that groundwater analytical results, adequacy and reliability of the groundwater-monitoring network, and groundwater-monitoring well integrity be evaluated before the post-closure care period nears its end.

Groundwater should not exceed risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based levels and scenarios. If the evaluation determines that unacceptable risk exists, these risks should be addressed. The risk evaluation should consider reasonable current or future groundwater use in the general area of the site (e.g., if a drinking water source is located nearby).

Review of the groundwater monitoring system should have been done as part of operation and maintenance inspections over time. Evaluation of the groundwater monitoring network should refer to the most recent operation and maintenance inspection. The well network evaluation should look at groundwater flow direction, well construction, and placement relative to groundwater flow direction.

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<sup>8</sup> "If leachate is generated late in the post-closure care period, this could suggest a cover or liner failure warranting an extension of the post-closure care period." See page B-13 of the RCRA Guidance Manual for Subpart G Closure & Post-Closure Care Standards and Subpart H Cost Estimating Requirements, EPA/530-SW-87-010 (January, 1987).

- Is groundwater quality in compliance with current standards?
- Have there been changes or are changes anticipated in land use/groundwater use that could change the applicable standards (e.g., introduction of agricultural irrigation to an area) or the directional flow (e.g., sequencing of dry and wet years, pumping at municipal water supply or other well fields, or shifting gradients resulting from seasonal variations or tidal influences)?
- Do the data indicate any trend in the concentration of analytes in groundwater?
- Has an expanded list of analytes (e.g., selected from Appendix VIII of 40 CFR part 261) been considered for analysis within a reasonable time frame?
- Have the monitoring wells been maintained to provide valid data, for example, no well screen occlusion?

**Siting and Site Geology/Hydrogeology:** Relevant facility location characteristics (which might have changed since the post-closure plan was approved) may include proximity to vulnerable areas such as residential areas and surface and drinking water sources. The current and reasonably anticipated future land use of the facility and surrounding properties may also be relevant. Location in potentially vulnerable areas increases the likelihood and potential severity of releases. For example, if units are located in areas prone to flooding or with a high water table, it may be appropriate for reviewers to consider the potential for continuing risks to surface water in evaluating whether to modify the post-closure care period. Conversely, units located in areas not prone to flooding, or at great distance from the water table, might have less need for long-term maintenance. Additional hydrologic and geologic conditions such as wetlands and earthquake zones, unstable soils, and areas at risk for subsurface movement could have changed since a unit first entered post-closure care and might also need to be taken into account. Proximity to residential areas can also present unique considerations. It is also appropriate to consider whether facility conditions minimize the potential for adverse impacts on local populations if there is a release from the unit.<sup>9</sup>

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<sup>9</sup> If a unit managing vapor-forming chemicals has releases to the environment, it creates the potential for vapor intrusion issues to neighboring communities due to migrating plumes of contaminated groundwater or migrating soil gases, even when the community is some distance away. Consider evaluating risks from subsurface intrusion of toxic constituents (e.g., vinyl chloride from aerobic degradation of perchloroethylene/trichloroethylene), or landfill gases such as methane and hydrogen sulfide, into buildings or structures located near the unit in post-closure care. See the *Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air*, June 2015.

- Does the site geology include subsurface strata that might contain or retard migration?
- What is the distance to the groundwater table, bearing in mind seasonal fluctuations, and the proximity of any useable aquifers?
- Is the unit located in a dry climate that provides minimal precipitation?
- Is the pattern of land use changing or likely to change in the future in a way that would bring people closer to or farther away from the facility?
- Have zoning laws changed?
- Is there a sizable buffer zone around the facility that could limit human activity near the site into the future?
- What is the distance to sensitive receptors for groundwater flow and emissions?
- Could the distance to sensitive receptors change under reasonably foreseeable future conditions, as reflected, for example, in land use development plans for the area?
- Is there the potential for impact on surface water quality?
- Have new potential exposure pathways been identified and evaluated? For example, vapor intrusion had not been identified as a potential exposure pathway at the time many permits were issued.<sup>11</sup>

In addition, EPA recommends that the potential effects of climate change be taken into account in making these assessments.<sup>10</sup> For example, flooding from more intense and frequent storms and sea-level rise may lead to contaminant releases from units subject to post-closure care requirements by transport of contaminants through surface soils, groundwater, surface waters and/or coastal waters. Saltwater intrusion and increased groundwater salinity in coastal aquifers may increase the permeability of clay liners installed at waste sites, such as landfills. Changes in precipitation patterns and temperature may also adversely affect the performance and efficacy of engineering controls.

***Facility History:*** All waste management units (during active life or in post-closure care) must be adequately managed to prevent releases of contaminants to the environment. A well-managed facility is more likely to maintain its structural integrity. Good compliance records, routine maintenance and inspections, emergency procedures to handle natural disasters, and prompt and efficient response to spills and other incidents, are some of the management practices that help demonstrate whether the unit has been adequately managed.

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<sup>10</sup> For more information on climate change adaptation consult the "Climate Change Adaptation Technical Fact Sheet: Landfills and Containment as an Element of Site Remediation," EPA 542-F-14-001 (May 2014).

- From the facility records (including frequency of all maintenance activities), to what extent did the unit closure design and activities described in the closure plan and closure certification minimize the need for ongoing monitoring and maintenance?
- Has past noncompliance with regulatory requirements contributed to present environmental conditions that warrant an extension of the post-closure care period (e.g., non-compliance with current LDR standards)?
- Is there a history of any releases and what are current contaminant levels?
- If a release did occur, have corrective measures been successfully implemented and has subsequent monitoring shown no evidence of a recurrence?
- Are analyses being conducted for the correct parameters?
- How complete and accurate is the facility operating record?
- Is there confidence that the record accurately reflects spills, releases, lapses in maintenance or other events that may have a bearing on potential facility impacts?
- To what extent have closure activities minimized or eliminated escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, surface waters or the atmosphere during the post-closure care period?

In order to fully understand the facility history, EPA recommends that the permit authority also review the closure plan and certification of closure.<sup>11</sup>

*Gas Collection System Integrity:* For units that have a landfill gas collection system, it is important to analyze the extent to which it is capable of being modified or shut down at the end of the post-closure care period without exceeding emission levels that are consistent with applicable regulatory standards and with public safety at the facility. In addition, because gas emissions can increase or decrease over time, it is recommended that statistical or graphical analysis of the data be used to identify any significant changes in gas emissions.

- To what extent is the gas collection system capable of being modified or shut down at the end of the post-closure care period without exceeding emission levels that are consistent with applicable regulatory standards and with public safety at the facility?

*Integrity of Cover System:* A viable cover is the most important mechanism in preventing leachate generation and, ultimately, releases of contaminants. Cracks, burrows from animals, and other problems are likely to occur after termination of post-closure care. If testing and inspection end, problems can go undetected and releases could occur. Thus, it is vital to evaluate the performance of the cover system during the post-closure care period.

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<sup>11</sup> For further information on closure performance standards, see 40 CFR 264.111 and 265.111.

- Has the cover system been designed and maintained to minimize migration of water into the management unit and to prevent contaminants from escaping into the environment?
- Has periodic testing or inspection been conducted to identify and assure any necessary repairs? Potential concerns include differential settlement, problems with cover integrity (cracks, burrows, etc.), cover drainage, and the adequacy of the diversion or drainage system. Even where such problems have not occurred, are they likely to arise without long-term care, *e.g.*, will the cover system remain intact without mowing to prevent growth of trees?
- Is the remaining waste likely to be so benign that even with a compromised cover system release of hazardous constituents is unlikely?
- To what extent will the integrity of the cover system be preserved in the absence of long-term care or with reduced maintenance requirements?

For alternative covers, it is recommended that the potential effects of climate change (*e.g.*, increasing frequency and intensity of weather events) be taken into account to the extent practical. For example, will the vegetation remain viable under altered precipitation patterns?

***Long-Term Care:*** The concept of long-term care (also known as long-term stewardship) generally includes the establishment and maintenance of physical and legal controls that are necessary to prevent unacceptable exposure to hazardous waste or contaminated environmental media left in place at a site or closed facility. As a general matter, the RCRA post-closure care requirements (for example, monitoring and cap maintenance) fall under the umbrella of long-term care. When considering whether to adjust the post-closure care period, permitting authorities should evaluate any continuing need to maintain engineering controls (ECs),<sup>12</sup> particularly those specified in the RCRA post-closure care regulations.

- How will the potential for human exposure to contamination be minimized in the absence of RCRA post-closure care?
- How is the integrity of the entire containment system going to be preserved over time?
- Can maintenance and monitoring activities cease or be reduced without causing an adverse impact to human health and the environment?

A further need to maintain ECs could justify an extension of the post-closure care period. This may be the case even if the frequency of some activities could be adjusted (*e.g.*, some activities may be needed more frequently in the early years of the post-closure care period and less frequently later).

The RCRA post-closure care regulations provide for the imposition of institutional controls (ICs)<sup>13</sup> as well. For example, §§ 264/265.117(c) provides that post-closure uses of a property where hazardous wastes remain after final or partial closure must never be allowed to disturb the integrity of the containment system or the functioning of the monitoring system, with limited exceptions. In addition, §§ 264/265.119(b)(1)(ii) provide that the owner or operator must record a notation, in accordance with state law, on the deed to the facility property – or on some other instrument which is normally examined during title search – that will in perpetuity notify any potential purchaser of the property that, among other things, the property's use is restricted under the RCRA closure/post-closure regulations. States can

<sup>12</sup> Engineering controls are the engineered physical barriers or structures (*e.g.*, caps, impermeable liners, mitigation barriers, or fencing) designed to monitor and prevent exposure to the contamination.

<sup>13</sup> Institutional controls are administrative or legal instruments (*e.g.*, deed restrictions/notices, easements, restrictive covenants, zoning) intended to minimize the potential for human exposure to contamination by limiting land or resource use.

choose to supplement or support such deed restrictions under state law, *e.g.*, by setting up a deed restriction tracking system, ensuring that deed restrictions remain in place, or ensuring that information on existing ICs is available to interested parties.

Even in cases where the post-closure care period need not be extended to protect human health and the environment, the permitting authority may want to ensure that some long-term ICs, such as an easement that provides access to the property, are continued. EPA recommends that any ICs (under state or local authority) needed beyond the post-closure care period be in place before the post-closure care period ends. EPA expects that the permit authority would typically need to assess the availability and adequacy of other potential mechanisms for overseeing ICs as part of evaluating whether any modification to the post-closure care period was warranted.

EPA also recommends that consideration be given as to whether a funding source is available to support any necessary ECs and ICs in the future (see Appendix B for a list of ICs resources.) This could be done, for example, as part of an anticipated future use (or end-use strategy) that generates revenue, so that protective controls at the unit can be continued while supporting beneficial reuse of the land into the future.

### **Recommended Approach for Reviewing Hazardous Waste Management Units Approaching the End of the Post-Closure Care Period**

EPA believes that, at a minimum, it is important to make a decision about the length of the post-closure care period, and to document such decision, well before that period nears its end. Therefore, EPA recommends that regulators assess the overall status of all the units under post-closure care, and plan to evaluate the adequacy of their post-closure care periods well in advance of their anticipated conclusions. EPA also recommends that the results from the evaluation of the post-closure care period be included in the regulator's administrative record for the facility.

As stated before, the federal RCRA hazardous waste regulations provide discretionary authority to the permitting authority to extend or shorten the length of the post-closure care period. However, the facility owner or operator is responsible for providing the information necessary to support this decision (see, for example, 40 CFR 270.30(h), Duty to provide information). A lack of relevant and complete information may justify a conclusion by the regulatory authority that extension of the post-closure care period is necessary to protect human health and the environment until such information is provided.

EPA's recommendations for evaluating units approaching the end of the post-closure care period are discussed in more detail below.

***Timing:*** Regulators should track permit terms and dates of all post-closure permits and have a strategy for when they will begin looking at whether to adjust the post-closure care period, allowing enough time for the necessary steps to take place prior to the 30-year expiration:

- Identify and gather necessary information
- Evaluate information
- Decide whether to adjust the post-closure care period
- Incorporate tentative decision into permit renewal (or modification) process.



For units with operating permits, EPA recommends starting the process at least 18 months before the expiration of the post-closure permit or post-closure care period, whichever comes first. It is important to keep in mind that in accordance with § 270.1(c) units subject to post-closure care must have post-closure permits or an enforceable document in lieu of a post-closure permit and, under § 270.50, permits can be issued for no longer than ten years. Consequently, over the course of a 30-year post-closure care period, the permit would normally need to be renewed at least twice (unless the post-closure care period has been modified). In addition, for a permitted land disposal facility, the length of the post-closure care period is an important component of the five-year review required under § 270.50(d). The facility owner or operator may also initiate the post-closure care evaluation and/or modification process by submitting a permit modification. Similarly, regulators should evaluate petitions to end or shorten the post-closure care period in a timely manner.

For facilities conducting post-closure care under interim status, regulators might want to adopt time frames for review similar to those of permits (*e.g.*, every ten years) to initiate the process of identifying and gathering relevant information. At a minimum, they should evaluate the adequacy of the post-closure care period well in advance of its end date. The facility owner or operator may also initiate the process by submitting a revision to their post-closure plan, including a petition in accordance with § 265.118(g)(1).

***Post-Closure Plan:*** When considering adjusting or ending the post-closure care period, regulators should request a copy of the most current version of the approved post-closure plan, along with any proposed revisions provided by the owner or operator. Under §§ 264.118(b) and 265.118(c), the post-closure plan identifies certain activities (and their frequency) that must be conducted during the post-closure care period (*e.g.*, monitoring and maintenance). The post-closure plan may also identify performance standards or performance goals, which should be updated to account for any new information on toxicity and carcinogenicity. The post-closure plan thus provides an important starting point for the review. The project file should have a history of permit modifications including those made to the post-closure plan. It is also important that the results of the post-closure period assessment be incorporated into a revised post-closure plan (and the permit), as appropriate.

***Relevant Information:*** As part of the review of the post-closure plan and any relevant historical information, regulators should determine whether they possess the information necessary to adequately evaluate the conditions at the unit so that a decision about the post-closure care period can be made. Relevant information may include monitoring reports, results from testing or inspections of the cover system, information concerning land use and institutional controls, and any other information that would be helpful in determining whether post-closure care continues to be needed for the unit. The absence of adequate information (*e.g.*, to address unresolved risk issues), including failure of the permittee to provide necessary information, will make it difficult for the permitting authority to conclude that allowing the post-closure period to end or shortening the post-closure care period meets the regulatory standard. The permitting authority can conclude that an extension of the post-closure care period is necessary to protect human health and the environment until the information necessary to make a final determination is available. Any proposal to adjust the post-closure care period should be supported by adequate data and analysis to demonstrate the anticipated long-term performance of the unit. To account for cyclical fluctuations in weather and hydrology, EPA recommends that multiple-year performance data be considered (*e.g.*, ten years).

The recommended criteria outlined in the previous section are also relevant to inform deliberations on whether and what additional information about the facility is necessary.

If information becomes available indicating changing circumstances that might necessitate the need to revisit the post-closure care (e.g., monitoring results show leaching) it is recommended that the regulator immediately request any additional information needed from the facility owner or operator to inform a decision about adjusting the post-closure care period. This can be accomplished through various means, including under the facility's permit terms (e.g., under § 270.30(h), the permit holder has a duty to provide relevant information and records; under § 270.30(k)(4), monitoring results must be reported at intervals specified in the permit); through enforcement of the relevant interim status regulations; or through inspections or studies required pursuant to RCRA sections 3007 or 3013.

***Expiration/Renewal of Post-Closure Permits:*** Permits are issued for a fixed term not to exceed ten years, which means post-closure permits will need to be renewed periodically throughout the post-closure care period (e.g., a 30 year period could span three permit terms). Renewal applications must be submitted 180 days before the expiration date of an effective permit (see § 270.10(h)). Frequently, facility owners or operators do not submit a renewal application as they approach the permit's expiration date because they believe they will submit an acceptable certification that they have completed post-closure care for the unit(s). If, towards the end of the permit term, the permitting authority has not received a permit renewal application from the facility or if the permitting authority anticipates that there may be any issues regarding the acceptability of the certification of completion of post-closure care, EPA recommends that the regulatory authority remind the owner or operator that the regulations require the facility to provide the required certification or reapply for a permit, and request submission of the permit renewal application (see §§ 270.10(h) and 270.30(b)). Timely submission of an application for permit renewal will ensure that a valid permit is in effect (pursuant to § 270.51) pending a resolution. If a facility owner or operator does not submit a timely renewal application, and the permit is not administratively continued, the regulator may consider initiating an enforcement action or issuing a new permit (see § 270.51(c)).

***Public Participation:*** Any potential adjustments to the length of the post-closure care period are subject to requirements for involving the public. For permitted facilities, extensions to the post-closure care period would be processed as a Class 2 modification, and reductions would be Class 3. In both cases, the regulator must provide public notice, hold a public meeting, and allow an opportunity for written comments to be submitted. Similarly, for adjustments in the length of the post-closure care period at interim status facilities, the regulator must provide public notice and an opportunity for written comments. Although there is no specific provision in the regulations to notify the public when a post-closure care period ends, we recommend that the regulatory authority consider providing notice to the local community when they release a facility owner or operator from their post-closure care obligation.

***Financial Assurance Requirements:*** Finally, permitting authorities should keep in mind that an adjusted post-closure care period may also necessitate revisions to the associated post-closure cost estimate and financial assurance.

### **Additional Considerations**

***Benefits of Post-Closure Permits:*** Permits are site-specific legal documents that establish the technical and administrative conditions to which a facility must adhere, in order to ensure that monitoring and maintenance activities are performed to prevent and address releases that could potentially threaten

public health and the environment and lead to cleanup obligations.<sup>14</sup> Thus, it is critical that any modifications to the permit are made, as necessary, to ensure they are complete and current. Permits are issued in, at most, ten-year increments to ensure they are periodically reviewed and requirements are updated as necessary. Additionally, facility owners and operators may request modifications to a permit. Although there are resources associated with permit maintenance, permits provide numerous benefits and protections such as:

- **Basic Permitting Requirements** – Permits are subject to the regulations governing facility permitting as set forth in 40 CFR part 270, which covers basic EPA permitting requirements, such as application requirements, standard permit conditions (*e.g.*, duty to comply, duty to reapply, duty to provide information), and monitoring and reporting requirements (*e.g.*, annual monitoring reports, compliance schedules).
- **Unit-Specific Informational Requirements** – Where applicable, owners or operators of a permit must submit information including detailed plans and engineering reports under § 270.14(b)(13).
- **Financial Assurance** – The owner or operator of a permitted unit must establish and maintain financial assurance. At facilities with units in post-closure, requirements include financial assurance for post-closure care in accordance with the approved post-closure plan for the facility, for as long as the unit remains subject to RCRA post-closure care requirements, including the post-closure permit requirement (§ 264.145).
- **Corrective Action** – Section 264.101 requires that all permits include requirements for facility-wide corrective action as necessary to protect human health and the environment.
- **Enforceability** – The permitting authority can enforce RCRA permit requirements including through facility inspections, record reviews, and other means. Section 270.28 provides that the permittee shall allow the regulatory authority to perform inspections at the facility.
- **Public Participation** – The permitting process of 40 CFR parts 270 and 124, and the permit modifications procedures in § 270.42 provide for public involvement. The public has the opportunity to comment on a facility's closure and post-closure plans as part of the initial permitting process and any amendments made to the plans as part of the permit modification procedures.
- **Additional Conditions** – Section 3005(c)(3) of RCRA (codified at 40 CFR 270.32(b)(2) and commonly referred to as the "omnibus authority"), allows for additional site-specific permit conditions to be incorporated into RCRA permits, should such conditions be necessary to protect human health and the environment.
- When permits incorporate the technical requirements contained in parts 264, 266, and 267 of the regulations, those permit conditions are not subject to challenge (*i.e.*, a number of permit conditions are required by the regulations themselves).
- Permit requirements cannot be terminated merely by sale of the property or bankruptcy of the owner or operator.

***Relationship of Subpart F Corrective Action and Post-Closure Care:*** Corrective action and post-closure care requirements for a regulated unit may be linked, for example, in the case of groundwater

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<sup>14</sup> Owners and operators of units subject to post-closure care, must have post-closure permits, "unless they demonstrate closure by removal or decontamination as provided under § 270.1(c)(5) and (6), or obtain an enforceable document in lieu of a post-closure permit, as provided under paragraph (c)(7) of this section" (see §270.1(c)).

monitoring and/or corrective action for releases from closed regulated units being handled pursuant to 40 CFR 264.90–264.100. In many cases, it may be desirable (either by the facility owner/operator, the regulatory agency, or both) to coordinate the post-closure care and monitoring/corrective action requirements. EPA recommends that the regulatory agency consider extending the post-closure care period (and associated permits or other enforceable documents) when corrective action continues beyond the original post-closure care period (see §§ 264.90(c)(3) and 264.96(c)).

***Post-Closure Rule:***<sup>15</sup> This rule amended the regulations applicable to facilities with land disposal units in two areas. First, it modified the requirement for a post-closure permit to provide EPA and the authorized states discretion to use a variety of authorities to address the post-closure period at non-permitted facilities. In addition, it amended the regulations governing closure of land-based units to allow EPA and the authorized states to address those units through the corrective action program in certain situations where regulated units and other solid waste management units have contributed to a release.

***Scope of Guidance and Relationship to Existing Guidance:*** This document is not intended to provide guidance on decisions to extend or shorten the post-closure care period for *non-hazardous* waste units (*i.e.*, units regulated under RCRA Subtitle D), nor is it intended to replace existing guidance concerning establishment and attainment of remedial goals at contaminated facilities addressed under RCRA Subtitle C authority. This guidance is meant to supplement any existing guidance on the post-closure care period, and should be used in concert with the Technical Evaluation Criteria and Site-Specific Factors to Consider in Determining the Length of the Post-Closure Care Period, presented in the Appendix B of the *RCRA Guidance Manual for Subpart G Closure and Post-Closure Care Standards and Subpart H Cost Estimating Requirements* of January 1987.<sup>16</sup> This document provides additional considerations and factors that are not included in the 1987 guidance, such as vapor intrusion, updated toxicity values, and climate change considerations – although the updates presented in this guidance are not intended to be comprehensive.

***Relationship to State Authorities:*** Under RCRA, states may apply to, and receive from EPA, authorization of a state program to operate in lieu of the federal RCRA hazardous waste program. *These state programs may be broader in scope or more stringent than EPA's RCRA hazardous waste regulations, and requirements can vary from state to state.* Members of the regulated community are encouraged to contact their state agencies for the particular post-closure care requirements that apply to them in any particular state.

For additional information, feel free to contact me, or your staff may contact Lilybeth Colon (colon.lilybeth@epa.gov, 703-308-2392) or Tricia Buzzell (buzzell.tricia@epa.gov, 703-308-8622).

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<sup>15</sup> See *Standards Applicable to Owners and Operators of Closed and Closing Hazardous Waste Management Facilities: Post-Closure Permit Requirement and Closure Process*; Final Rule, October 22, 1998 (63 FR 56710).

<sup>16</sup> OSWER Policy Directive #9476.00-5, EPA/530-SW-87-10. Appendix B of this guidance presents technical factors to consider in determining the length of the post-closure care period as well as a number of hypothetical scenarios illustrating how site-specific information might be used to support an extension or reduction in the length of the period.

## Appendix A: Overview of Federal Regulatory Provisions

Regulations governing RCRA post-closure care are set forth in 40 CFR part 264 subpart G for permitted facilities and part 265 subpart G for interim status facilities. Additional requirements for post-closure care of specific types of units are included in the regulations for those units. See §§ 264/265.197 (Tank Systems); §§ 264/265.228 (Surface Impoundments); §§ 264/265.258 (Waste Piles); §§ 264/265.280 (Land Treatment Units); §§ 264/265.310 (Landfills); § 264.603 (Miscellaneous Units); §§ 264/265.1102 (Containment Buildings); and §§ 264/265.1202 (Hazardous Waste Munitions and Explosives Storage).

Regulations governing financial assurance for post-closure care are set forth in 40 CFR part 264 subpart H for permitted facilities and part 265 subpart H for interim status facilities.

Regulations governing facility permitting are set forth in 40 CFR part 270.

*Post-Closure Care* – Sections 264.117(a) and 265.117(a) establish general requirements for post-closure care and a 30-year post-closure care period. However, the regulations also allow the permitting authority to shorten the 30-year post-closure care period if the reduced period is sufficient to protect human health and the environment, or to extend it, if necessary (see the *Post-Closure Plan Amendment* section for more details). Sections 264.117(a)(2)(i) and 265.117(a)(2)(i) provide the following examples for shortening the post-closure care period: “...(e.g., leachate or groundwater monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure).”

Sections 264.117(a)(2)(ii) and 265.117(a)(2)(ii) provide the following example for extending the post-closure care period: “...(e.g., leachate or groundwater monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).”

*Post-Closure Plan* – Under §§ 264.118 and 265.118, the owner or operator of specified units must have a written post-closure plan. The plan must identify monitoring and maintenance activities that will be carried out after closure, and their frequency, to assure compliance with the requirements of specific subparts, including subparts F, K, L, M, N and X, where applicable. For permitted facilities (§ 264.118(a)), the post-closure plan must be submitted with the permit application and approved by the permitting authority as part of permit issuance procedures. The approved post-closure plan becomes a condition of any RCRA permit issued (see the *Post-Closure Plan Amendment* section for more details). For interim status facilities (§ 265.118), the owner or operator must submit the post-closure plan to the permitting authority within specified time frames, and the regulations provide for making the post-closure plan available to the regulatory authority.

*Procedures for Post-Closure Plan Amendment* – For permitted facilities, the process for making changes to the post-closure plan is through permit modification (permit modification procedures are set forth in § 270.42). Under § 264.118(d)(1), the owner or operator may submit a written notification or request for a permit modification to amend the post-closure plan. Under § 264.118(d)(2), the owner or operator must submit a written notification of the permit modification or request for a permit modification to authorize a change in the approved post-closure plan under certain circumstances. Specific reasons set forth in the regulations include changes in operating plans or facility design that affect the approved post-closure plan, and

events occurring during the active life of the facility that affect the approved post-closure plan. For interim status facilities, § 265.118(d) prescribes procedures for amending the post-closure plan. The permitting authority may also request modifications to the post-closure plan under §§ 264.118(d)(4) and 265.118(d)(4).

*Procedures for Post-Closure Care Period Adjustment* – Adjustments to the post-closure care period may be initiated at any time preceding partial or final closure or at any time during the post-closure care period of a particular unit. For interim status facilities, § 265.118(g) prescribes a process for extending or shortening the post-closure care period that includes provisions for public involvement. For permitted facilities, § 264.117(a)(2) provides for shortening or extending the post-closure care period in accordance with the permit modification provisions in parts 124 and 270.

Section 270.41 provides for Agency-initiated permit modifications. EPA may modify a permit for the following reasons: if there have been material and substantial alterations or additions to the facility; there is new information that was not available at the time of permit issuance; new statutory or regulatory requirements were promulgated; EPA has cause to initiate a compliance schedule under § 270.33; or as necessary to assure that the facility continues to comply with the currently applicable requirements in parts 124, 260 through 266, and 270, when a permit for a land disposal facility is reviewed by the Director under § 270.50(d).

Section 270.42 contains the regulations that apply to the modification of a permit at the request of the permittee. For all modifications, the permittee submits information to EPA that describes the exact change to be made to the permit conditions, identifies whether the modification is Class 1, 2, or 3, and provides the applicable permit application information.

The process for extending the post-closure care period is a Class 2 modification, while the process for shortening the post-closure care period is a Class 3 modification (§ 270.42, Appendix I, E2 and E3). These procedures include provisions for public involvement. The post-closure care period can also be modified through permit renewal under § 270.32(d).

*Financial Assurance for Post-Closure Care* – EPA's regulations under parts 264/265 subpart H establish requirements for financial assurance, including financial assurance requirements for post-closure care (see §§ 264.140 and 265.140). Under §§ 264.144 and 265.144, the owner or operator is required to have detailed written cost estimates for post-closure monitoring and maintenance in accordance with the applicable post-closure care requirements. Under §§ 264.145 and 265.145 generally, the owner or operator is required to establish financial assurance for post-closure care in an amount equal to the current post-closure cost estimate.

*Certification of Completion of Post-Closure Care and Release of Owner and Operator from Financial Assurance Requirements* – Under §§ 264.120 and 265.120, the owner or operator must submit certification that the post-closure care for the unit(s) was performed in accordance with the approved post-closure plan; the certification must be sent by registered mail to the permitting authority. This certification must be submitted no later than 60 days after the completion of the post-closure care period for each hazardous waste disposal unit. The certification must be signed by the owner or operator and a qualified professional engineer. Documentation supporting the professional engineer's certification must be furnished to the permitting authority upon request until the permitting authority releases the owner or operator from the financial assurance requirements for post-closure care under §§ 264.145(i) and 265.145(h).

Under §§ 264.145(i) and 265.145(h), within 60 days of receipt of certification from the owner or operator and a qualified professional engineer that the post-closure care has been completed for a hazardous waste disposal unit in accordance with the approved plan, the permitting authority will notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care for that unit. If the permitting authority has reason to believe that post-closure care has not been in accordance with the approved post-closure plan, the permitting authority must provide the owner or operator a detailed written statement of any such reason.

Scope of the Post-Closure Permit Requirements – Under § 270.1(c), owners and operators of surface impoundments, landfills, land treatment units, and waste pile units that received waste after July 26, 1982, or that certified closure (according to § 265.115) must have post-closure permits, unless they demonstrate closure by removal or decontamination, or obtain an enforceable document in lieu of a post-closure permit as provided under § 270.1(c)(7). Under § 270.10(h), if a permittee has an effective permit and they want to renew it, they must submit a new application at least 180 days before the expiration date of the effective permit.

Monitoring and Records – Under § 270.30(j)(2), the permittee must retain records of all monitoring information for a period of at least three years from the date of sample, measurement, report, or certification, unless extended by request of the permitting authority at any time. Records from all groundwater monitoring wells and associated groundwater surface elevations must be maintained for the active life of the facility, and for disposal facilities for the entire post-closure care period.

Compliance with an Expiring Permit – Under § 270.51(c), if the permittee is not in compliance with the conditions of the expiring or expired permit, the permitting authority may issue a new permit under part 124, initiate enforcement action, or take other actions authorized by the RCRA regulations.

## Appendix B: Institutional Controls (ICs) Resources

The following resources may be helpful in implementing and maintaining ICs throughout the post-closure care period and beyond.

- EPA guidance on *Ensuring Effective and Reliable Institutional Controls at RCRA Facilities* (Matt Hale, Director, Office of Solid Waste, and Susan Bromm, Director Office of Site Remediation and Enforcement, June 14, 2007) sets forth guiding principles and recommendations that can help EPA and state decision makers on the use of ICs at RCRA facilities, and EPA resources for additional information and assistance.
- *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups* guidance provides some discussion about how ICs can be used at post-closure care facilities. (p.3 text box) EPA 540-F-00-005, OSWER 9355.0-74FS-P, September 2000, <https://www.epa.gov/fedfac/institutional-controls-site-managers-guide-identifying-evaluating-and-selecting-institutional>
- *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites* provides information and recommendations that should be useful for planning, implementing, maintaining and enforcing ICs, and offers an overview of EPA's policy regarding the roles and responsibilities of the parties involved in the various life-cycle stages of ICs. Final, December 2012. OSWER 9200.0-77, EPA-540-R-09-002, <https://www.epa.gov/fedfac/institutional-controls-guide-preparing-institutional-control-implementation-and-assurance>
- *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites* guidance also discusses how ICs could be used at RCRA post-closure care facilities. (Section 2.3) Final, December 2012. OSWER 9355.0-89, EPA-540-R-09-001, <https://www.epa.gov/fedfac/institutional-controls-guide-planning-implementing-maintaining-and-enforcing-institutional>
- *Long-Term Stewardship: Ensuring Environmental Site Cleanups Remain Protective over Time* report identifies long-term stewardship challenges and opportunities for improvement, and makes recommendations for how EPA and its state, tribal, and local partners should proceed in addressing them. This report also includes a definition of long-term stewardship, why long-term stewardship is important, and what EPA and others are currently doing to address long-term stewardship issues. Final, September 2005, EPA 500-R-05-001, <https://nepis.epa.gov/Exe/ZyNET.exe/P100119V.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000015%5CP100119V.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>



**From:** Halteman, Takako

**Sent:** Friday, June 17, 2022 9:29 AM

**To:** San Diego, Nick M <Nick.M.SanDiego@Illinois.gov>; Smith, Kenn <Kenn.Smith@Illinois.gov>; Rominger, Kyle <Kyle.Rominger@Illinois.gov>; Dunn, Greg <Greg.Dunn@Illinois.gov>; McDonough, John <John.McDonough@Illinois.gov>; Jarvis, Melanie <Melanie.Jarvis@Illinois.gov>; Ryan, Michelle <Michelle.Ryan@Illinois.gov>; Rivera, Thomas <Thomas.Rivera@Illinois.gov>; Guido, Anthony <Anthony.Guido@Illinois.gov>

**Cc:** Watson, Rob <Rob.Watson@Illinois.gov>; Stine, Paula <Paula.Stine@Illinois.gov>; Rawe, Kimberly <Kimberly.Rawe@Illinois.gov>; Gunnarson, Charles W. <Charles.Gunnarson@Illinois.gov>

**Subject:** RE: City of North Chicago: IEPA's response to The City's Request to terminate Post-Closure Care at the Former Lavin Site (0971250007) Log No. C-656-M-25

Good morning-  
Thank you Nick.

Below are a few reasons we should require a RCRA Post Closure Permit for this site:

1. As stated in Condition 16 of Illinois EPA's July 3, 2012 letter (our last post-closure plan mod), 35 Ill. Adm. Code 703.121, a facilities under post-closure care requirement of a hazardous waste landfill must obtain a RCRA permit or an enforceable document. RCRA Closure of this site was initially required through a Consent Order (90-CH-668, signed 10/12/1990, which was revised in 1997). However, the CO was terminated on September 28, 2000 shortly after the post-closure care plan was approved in 1999. Thus, since then the facility has been conducting post-closure of the HW unit without a permit or an enforceable document. (– If anyone needs any of the documents for reference, please contact me.)
2. According to Sections 703.161 and 725.221 (a), an alternative enforceable document mentioned in (1) for post-closure care can be a closure/post-closure plan. However, in accordance with Section 725.3221(a)(2), the closure/post-closure plan must have a facility-wide corrective action requirement. The current closure/post-closure plan does not contain such requirement. In addition, I believe the requirements of public notice in Section 725.221(b) have not been met. As noted in our draft letter, this is an EJ site with a residential area and a surface water pathway that feeds to the Lake Michigan,
3. As demonstrated in our draft letter in response to the termination request and the March 30, 2022 FOS Inspection, the post-closure care requirements at this site have not been met and the current conditions at this site have potential current and future environmental concerns. Thus, the future post-closure care should be addressed through a RCRA permit, which would provide more structured post-closure care requirements and public participation requirements for any changes to the facility occurs. A RCRA Permit will also requires corrective action (as indicated in (2) above) which will address any environmental concerns associated with this site as necessary.

Also, I need to add an urgency of the timeline for this response as Sections 725.220 and 725.245(h) require 60-day written response time from the Agency to the City. With holidays and vacation time considered and necessary public notice involved, we would like to issue this response letter as soon as possible.

Thank you so much,  
Takako

**From:** San Diego, Nick M <[Nick.M.SanDiego@Illinois.gov](mailto:Nick.M.SanDiego@Illinois.gov)>

**Sent:** Thursday, June 16, 2022 5:01 PM

**To:** Halteman, Takako <[Takako.Halteman@Illinois.gov](mailto:Takako.Halteman@Illinois.gov)>; Smith, Kenn <[Kenn.Smith@Illinois.gov](mailto:Kenn.Smith@Illinois.gov)>; Rominger, Kyle <[Kyle.Rominger@Illinois.gov](mailto:Kyle.Rominger@Illinois.gov)>; Dunn, Greg <[Greg.Dunn@Illinois.gov](mailto:Greg.Dunn@Illinois.gov)>; McDonough, John <[John.McDonough@Illinois.gov](mailto:John.McDonough@Illinois.gov)>; Jarvis, Melanie <[Melanie.Jarvis@Illinois.gov](mailto:Melanie.Jarvis@Illinois.gov)>; Ryan, Michelle <[Michelle.Ryan@Illinois.gov](mailto:Michelle.Ryan@Illinois.gov)>; Rivera, Thomas <[Thomas.Rivera@Illinois.gov](mailto:Thomas.Rivera@Illinois.gov)>; Guido, Anthony <[Anthony.Guido@Illinois.gov](mailto:Anthony.Guido@Illinois.gov)>

**Cc:** Watson, Rob <[Rob.Watson@Illinois.gov](mailto:Rob.Watson@Illinois.gov)>; Stine, Paula <[Paula.Stine@Illinois.gov](mailto:Paula.Stine@Illinois.gov)>; Rawe, Kimberly <[Kimberly.Rawe@Illinois.gov](mailto:Kimberly.Rawe@Illinois.gov)>; Gunnarson, Charles W. <[Charles.Gunnarson@Illinois.gov](mailto:Charles.Gunnarson@Illinois.gov)>

**Subject:** RE: City of North Chicago: IEPA's response to The City's Request to terminate Post-Closure Care at the Former Lavin Site (0971250007) Log No. C-656-M-25

Hi Takako,

Melanie and I briefly discussed this afternoon and I also had a brief discussion with Chuck about the issues. Per those discussions (and per emails exchanged the last week), what's become of the strategy to require a RCRA permit? Just curious.

As to the draft letter, I do have some edits/comments to make but will be out of the office tomorrow (day off). I will complete that task next Tuesday after the holiday.

Thanks and have a great extended weekend.  
Nick

**From:** Halteman, Takako <[Takako.Halteman@Illinois.gov](mailto:Takako.Halteman@Illinois.gov)>

**Sent:** Thursday, June 16, 2022 4:40 PM

**To:** Smith, Kenn <[Kenn.Smith@Illinois.gov](mailto:Kenn.Smith@Illinois.gov)>; Rominger, Kyle <[Kyle.Rominger@Illinois.gov](mailto:Kyle.Rominger@Illinois.gov)>; Dunn, Greg <[Greg.Dunn@Illinois.gov](mailto:Greg.Dunn@Illinois.gov)>; San Diego, Nick M <[Nick.M.SanDiego@Illinois.gov](mailto:Nick.M.SanDiego@Illinois.gov)>; McDonough, John <[John.McDonough@Illinois.gov](mailto:John.McDonough@Illinois.gov)>; Jarvis, Melanie <[Melanie.Jarvis@Illinois.gov](mailto:Melanie.Jarvis@Illinois.gov)>; Ryan, Michelle <[Michelle.Ryan@Illinois.gov](mailto:Michelle.Ryan@Illinois.gov)>; Rivera, Thomas <[Thomas.Rivera@Illinois.gov](mailto:Thomas.Rivera@Illinois.gov)>; Guido, Anthony <[Anthony.Guido@Illinois.gov](mailto:Anthony.Guido@Illinois.gov)>

**Cc:** Watson, Rob <[Rob.Watson@Illinois.gov](mailto:Rob.Watson@Illinois.gov)>; Stine, Paula <[Paula.Stine@Illinois.gov](mailto:Paula.Stine@Illinois.gov)>; Rawe, Kimberly <[Kimberly.Rawe@Illinois.gov](mailto:Kimberly.Rawe@Illinois.gov)>

**Subject:** City of North Chicago: IEPA's response to The City's Request to terminate Post-Closure Care at the Former Lavin Site (0971250007) Log No. C-656-M-25

Hi everyone-

Attached is our response to the City of North Chicago's request to terminate the post-closure care at the Former Lavin Smelter site, received on May 9, 2022.

This is a denial letter with 16 deficiencies as reasons for the denial and additional future action items required at the end of this letter.

Please note that Condition 16 on Page 6 will be revised to include a date (highlighted) of the FOS letter to be sent to the City regarding March 30, 2022 Inspection.

As stated in Condition A on Page 6, in accordance with 35 IAC 725.218(g)(2)(A), the Illinois EPA's decision to extend the post-closure care period will be public noticed.

We are working with Casandra Metz and Brad Frost on this public notice requirement for this site. Also, as this is an EJ area, an EJ Notice letter for this submittal was issued on 6/8/2022 to the EJ distribution List for this site.

If you have any questions or comments, please let me know.

Thank you,  
Takako

Takako Halteman, P.E.  
Lead Worker, RCRA Unit  
Bureau of Land, Permit Section  
217/524-3274  
[takako.halteman@illinois.gov](mailto:takako.halteman@illinois.gov)



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*State of Illinois*  
**ENVIRONMENTAL PROTECTION AGENCY**  
**MEMORANDUM**

---

**DATE:** July 20, 2022

**TO:** Kyle Rominger

**FROM:** Rob Watson, RCRA Unit Manager

**SUBJECT:** City of North Chicago – Request to terminate Post-Closure Care

0971250007 – Lake County  
City of North Chicago. (fka R. Lavin & Sons; North Chicago Refiners & Smelters)  
ILD097271563  
Log No. C-656-M-25  
RCRA Closure File

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**Bullet Points for Meeting with Director's Office to discuss denial of City of North Chicago's request to terminate post-closure care**

**Current Conditions**

- Entire 17.6-acre site was closed as a hazardous waste landfill because 3 hazardous waste piles and 1 hazardous waste surface impoundment were not clean closed.
- The slag & fill material is characteristically hazardous waste for lead. High levels of cadmium and PCBs have also been detected in the fill.
- The site was covered with 3 feet of compacted clayey soil. There is no engineered bottom or side wall liner system. There is no leachate collection system.
- Post-closure care required until at least March 31, 2022.
- March 30, 2022: FOS inspection documented a number of issues indicating that the cover system and monitoring wells have not been properly maintained.
- June 27, 2022: FOS sent a letter to the City identifying the issues found during 3/30/2022 inspection.
- Site is located in an EJ Area.

**C-656-M-25**

- May 5, 2022, Letter: The City of North Chicago requested the post-closure care of the hazardous waste landfill be terminated.
- July 1, 2022, Letter: IEPA responded to the City's request.
  - The City's request was denied
  - IEPA formally notified the City of the need to extend post-closure care
  - As part of extending post-closure care, IEPA required the City to provide a RCRA post-closure permit application

**Basis for Denial of request and decision to extend Post-Closure Care**

**1. The City of North Chicago has not complied with the approved closure / post-closure plan:**

- There have been confirmed exceedances for lead within the last 3 years of groundwater monitoring. To end post-closure care the groundwater protection standards cannot be exceeded for a period of 3 consecutive years
- The 4<sup>th</sup> quarter 2021 Groundwater Monitoring Report was not submitted to the Agency.
- Final protective layer over the final cover (3 ft soil cover) was not installed.
- A PE did not certify that a landfill has been closed in accordance with the specifications in the approved closure and post-closure plan.
- No supporting documentation was provided to ensure that post-closure care was conducted in accordance with the approved plan:
  - No documentation that a PE conducted annual inspections and submitted annual inspection reports for the site since 2001.
  - No documentation that monthly inspections, and inspections after 1 inch of rain within 24 hours, were conducted.
  - No demonstration that stormwater is managed in accordance with the NPDES permit.
- The documentation for terminating post-closure care was incomplete
  - The LPC-PA-18 Form did not properly identify the unit undergoing closure
  - Wording certifying that post-closure care was performed in accordance with the specifications in the approved post-closure plan was not provided.
- Facility has not complied with the Financial Assurance (FA) requirements since 2015.

**2. Site conditions that prevent termination of post-closure care:**

- Leachate is present in the landfill
  - Extent of leachate (horizontal & vertical) and concentrations of hazardous constituents are unknown.
- Concern that leachate may be migrating out of landfill and off-site or vertically downward towards uppermost aquifer, and a lack of information regarding potential for migration.
  - No bottom or side liners are present in the landfill
  - Stormwater retention basin on top of landfill may be contributing to leachate in landfill
  - Storm sewers located in the landfill may be a conduit for liquids into the waste and a preferential pathway for contamination to migrate off-site
- Failure to properly maintain cover system (3/30/2022 FOS Inspection Report)
  - Evidence of settling
  - Pondered water around 2 monitoring wells

City of North Chicago  
Bullet Points for Meeting with Director's Office

- Signs of erosion of the cover
- Failure to properly maintain the groundwater monitoring wells
  - Cracked seals around several wells
  - 1 well leaning
  - Wells not properly identified, and several could not be opened for inspection.

**3. Consideration of the Criteria in USEPA's Guidance for Evaluating Post-Closure Care points towards extending post-closure care:**

- Nature of Waste in the Unit: The unit continues to contain characteristically hazardous waste due to lead, as well as high levels of cadmium and PCBs. The waste has not been treated to meet the Land Disposal Restrictions (LDRs).
- Design of the Unit: There is no engineered bottom liner or side liner to prevent waste or contaminated leachate from migrating off-site. The location of storm drains and sewers within the landfill provide both a pathway for water to get into the waste, and a pathway for contaminated leachate to migrate out of the landfill and off-site.
- Leachate: There is evidence of leachate in the fill material (shallow zone), which is not actively monitored. The extent of the leachate and hydrogeologic conditions governing the movement of leachate at the site need to be determined (e.g., is the water in this zone from lateral migration or infiltration?). A plan to properly manage the leachate needs to be developed.
- Groundwater: Groundwater exceeded groundwater quality standards, samples were not properly evaluated, the 4<sup>th</sup> Quarter 2021 monitoring report was not provided, and monitoring wells have not been properly maintained. Overall, the hydrogeologic conditions at the site are not fully understood.
- Site Location & Site hydrogeology: Site is in an EJ area. Residential areas are located adjacent to the site. Access to the site is unrestricted; there are no fences or signs identifying site as a hazardous waste landfill. Additional investigation is needed to determine the risk the site poses to local residences.
- Facility History: Observations made during the March 30, 2022, inspection, and comments raised in the June 27, 2022, and July 1, 2022, IEPA letters, raise concerns that the site has not been properly maintained during the post-closure period.
- Integrity of Cover System: There is evidence of settlement and erosion of the cover as well as ponding of water around monitoring wells within the waste boundary. The design of a stormwater retention pond located on top of the landfill is unknown. The existence of a stormwater sewer system (of undocumented design) through the cover and within the waste raises questions about the cover system and its integrity.
- Long Term Care: Establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste or contaminated environmental media left in place. No long-term restrictions of future land use nor maintenance requirements to minimize future exposure to hazardous materials beneath the cover are proposed for the site. In addition, it is unclear if solvent contamination from the adjacent Fansteel CERCLA site has migrated onto this site.

City of North Chicago  
Bullet Points for Meeting with Director's Office

**Process for Extending Post-Closure Care Period**

Pursuant to 35 IAC 725.218(g)(2)(A) the IEPA's decision to extend the post-closure care period must be public noticed.

Pursuant to 35 IAC 725.245(h), the July 1, 2022, letter constituted notification to the City of North Chicago that the IEPA is proposing to extend the post-closure care period. The notice to the public was placed in the Chicago Sun-Times on July 8, 2022.

**Basis for Requiring RCRA Post-Closure Permit**

Pursuant to 35 IAC 703.121, 703.161, & 725.221, a site that certifies closure after January 26, 1983, must have a post-closure care permit, or obtain an enforceable document containing alternate requirements.

- The site does not have a post-closure care permit or an enforceable document containing alternate requirements. It continues to operate under interim status.
- The approved closure / post-closure plan for the site does not meet the criteria for an alternate enforceable document because it does not include corrective action as required by 35 IAC 725.221(a)(2)&(3).



ASTSWMO, Providing Pathways to Our  
Nation's Environmental Stewardship Since 1974

## **ASTSWMO POSITION PAPER POST-CLOSURE CARE BEYOND 30 YEARS AT RCRA SUBTITLE C FACILITIES**

### **BACKGROUND**

Regulations promulgated under the authority of Subtitle C of the Resource Conservation and Recovery Act (RCRA), include provisions regarding the post-closure care of hazardous waste land disposal units. The Subtitle C regulations establish a 30-year post-closure care period as the default requirement (See 40 CFR § 264.117).

These regulations include provisions allowing the 30-year period to be extended or shortened. The 30-year period may be extended if the Environmental Protection Agency (EPA) Regional Administrator (RA) or Director of an authorized State program "finds that the extended period is necessary to protect human health and the environment" and may be shortened if the RA or State Director finds that a reduced period is sufficient to protect human health and the environment. After completion of the established post-closure care period, the owner or operator is required to certify that the post-closure period was performed in accordance with the approved post-closure plan. Similar provisions are found in regulations for nonhazardous waste disposal units promulgated under the authority of Subtitle D of RCRA.

Facilities around the country are approaching or have already arrived at the end of the initial 30-year post-closure period, and many States are grappling with the issue of how to address this situation. ASTSWMO raised several questions and asked EPA to address a number of issues regarding this topic in its October 17, 2012 Position Paper.

While EPA's December 15, 2016 Memorandum addressed several of ASTSWMO's requests, and provides guidance on this issue, it does not fully address all of ASTSWMO's concerns and the situations faced by the States with disposal units at the end of the 30-year post closure period cited in the regulations. Failure to address these concerns may lead to hazardous waste disposal units exiting post-closure care without sufficient controls (including land use restrictions) in place. If this occurs, ASTSWMO is concerned that unregulated development, or even simple neglect of these units will result in the release of hazardous wastes and hazardous constituents. This will ultimately lead to those units/facilities being regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

ASTSWMO members agree that controls need to remain in place in perpetuity if wastes are present in the disposal units. These controls must be required even if the unit has met all the requirements of its post-closure permit and there is currently no groundwater contamination associated with the unit.



**ASTSWMO POSITION PAPER  
POST-CLOSURE CARE BEYOND 30 YEARS AT RCRA SUBTITLE C FACILITIES**

**ISSUES**

The Hazardous Waste Subcommittee's Corrective Action and Permitting (CAP) Task Force has highlighted the following as key issues:

- A clear statement is needed from the EPA that there is a presumption that a Subtitle C post-closure care obligation remains as long as hazardous waste remains in a closed land disposal unit, even if there is no evidence of a release after 30 years of post-closure care (although a facility may be able to rebut this presumption on a case-by-case basis),
- The need for a clear statement identifying facility financial assurance obligations during an extended post-closure period, that ensures cost estimates are periodically updated and that financial assurance instruments are maintained to ensure adequate coverage,
- If an alternate enforceable document (such as an order or environmental covenant under the Unified Environmental Covenant Act) can be used in place of a post-closure permit, identification of the minimum controls and restrictions that need to be included in this document or order, and
- Guidance addressing the addition of an emerging or newly listed contaminant to monitoring requirements.

**POSITION**

The ASTSWMO Board of Directors recommends that EPA either revise the RCRA regulations for post-closure or issue supplemental guidance on the implementation of the post-closure regulations under Subtitle C of RCRA. Such guidance should be congruent with the key issues highlighted in the issues section of this position paper. ASTSWMO remains ready to work with EPA to achieve a mutually satisfactory outcome on this very important issue.

**Approved by the ASTSWMO Board of Directors on July 20, 2022 in Park City, UT.**



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

R 000139

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3300

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED****NOV 15 2022****7011 1150 0001 0857 8322**

Mr. William J. Sawitz  
RCH Newco II, LLC  
27501 Bella Vista Parkway  
Warrenville, IL. 60555

Re: 1978030005 -- Will County  
RCH Newco II, LLC -- New Ave. & Ceco Rd.  
ILD990785453  
Log No. C-68  
RCRA Closure  
Permit Correspondence

Dear Mr. Sawitz

As you are aware, RCH Newco II, LLC (RCH Newco) located at New Avenue and Ceco Road has been required to provide post-closure care for the two-acre hazardous waste landfill under the facility's Interim Status Post-Closure Plan since January 1, 1993. The approved Interim Status post-closure plan (Log No. C-68) required post-closure care be maintained for a minimum of thirty (30) years or until at least January 1, 2023.

The purpose of this letter is to inform the facility that the Illinois EPA has conducted a review of the post-closure status of the subject hazardous waste management unit and has determined that the post-closure care period for the two-acre landfill must be extended to address current and future environmental concerns identified in this letter in accordance with 35 Ill. Adm. Code 725.218.(g)(2) and the USEPA's "Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA", dated December 15, 2016 (2016 USEPA Guidance).

The following comments and conditions apply to this determination:

1. In accordance with 35 Ill. Adm. Code 725.245(h), this letter shall constitute notification to RCH Newco that Illinois EPA has determined that extending the post-closure care period for the two-acre hazardous waste landfill at the RCH Newco site is required.
2. In accordance with 35 Ill. Adm. Code 725.218(g)(2)(A), the Illinois EPA's decision to extend the post-closure care period for the subject site will be publicly noticed through a newspaper and made available for public comment within thirty (30) days after the date of this letter by Illinois EPA. Illinois EPA will issue a final determination after the comment period ends and, if necessary, a public hearing is held.

2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120  
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

1978030005/RCH Newco.

Log No. C-68

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3. In accordance with 35 Ill. Adm. Code 703.121(b), RCH Newco shall address the future post-closure care and long-term stewardship for the subject site under a RCRA Post-Closure Care Permit. Modification of the existing Interim Status Post-Closure Plan may be necessary to meet the requirements of 35 Ill. Adm. Code 724.211, 724.217, 724.218, and 724.131, and adequately protect human health and the environment.
4. The facility shall provide an application for a RCRA Post-Closure permit to the Illinois EPA Bureau of Land Permit Section within 180 days of Illinois EPA's final determination to extend the post-closure period as described in Condition 2 above. The Illinois EPA will provide the facility with the instructions for an application for a RCRA Post-Closure Permit when it issues its final determination.
5. The facility must continue to provide post-closure care for the unit in accordance with its existing approved post-closure plan, Illinois EPA letters with conditions and modifications to the approved post-closure plan, and the requirements of 35 Ill. Adm. Code Part 725 until a RCRA Post-Closure Permit is issued to the facility.
6. The facility must also continue to provide the Illinois EPA with an acceptable financial assurance for the post-closure care of the site to meet the requirements of 35 Ill. Adm. Code Part 725, Subpart H.
7. Pursuant to Section 39(g) of the Illinois Environmental Protection Act (the Act), necessary restrictions upon the future use of the site and long-term stewardship requirements to protect public health and the environment must be addressed, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment.

The following criteria are the basis of the determination to extend the post-closure care period for the two-acre landfill at the above referenced facility:

- a. Nature of waste in the landfill: The waste in the landfill includes a listed hazardous waste, electric arc furnace dust (EAF) (K061). This waste is also characteristically hazardous for hexavalent chromium (D007), lead (D008) and cadmium (D006). The waste was not pre-treated to meet the Land Disposal Restrictions (LDRs) for hazardous waste prior to disposal in the landfill.
- b. Unit Type/Design: The landfill contains an admix of EAF (K061) and non-hazardous slag material. The bottom liner consists of compacted clay. The final cover consists of 2-feet of compacted clay, 18 inches of select fill and 6 inches of topsoil with vegetation.

A viable cover is one of the most important mechanisms in preventing leachate generation and, ultimately, release of contaminants. The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained. Vegetation with well-established tap roots is growing on the landfill cover. This is not allowed under

1978030005/RCH Newco.

Log No. C-68

Page 3

**RCRA post-closure care requirements.**

- c. **Leachate:** The 2016 USEPA Guidance suggests that monitoring for leachate generation serves as the most effective way of examining the integrity of the waste management unit (e.g., it can suggest a cover or liner failure when leachate is detected late in the post-closure care period). The hazardous waste landfill does not have a leachate collection or monitoring system so it cannot be determined if leachate is present within the landfill. More specifically, it cannot be determined if the integrity and effectiveness of the cover system has been maintained during the post-closure period as required by 35 Ill. Adm. Code 725.410(a)(1) & (5), 725.410(b) and 725.217(a)(1).
- d. **Long Term Care:** Establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste left in place. Long-term restrictions of future land use must be placed on the site to minimize future exposure.

This action shall constitute Illinois EPA's final action on the subject identified in this letter. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within thirty-five (35) days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed ninety (90) days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency  
Division of Legal Counsel  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, IL 62794-9276  
217/782 5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk  
State of Illinois Center  
100 West Randolph Street, Suite 11 500  
Chicago, IL 60601  
312/814 3620

Work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from

1978030005/RCH Newco.

Log No. C-68

Page 4

compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

If you have any questions regarding the groundwater related aspects of this project, please contact Adam Shade at 217/785-9633. Questions regarding other aspects of this project should be directed to Kelly Huser at 217/524-3867.

Sincerely,



W. Robert Watson, P.E., Manager  
Manager, RCRA Unit  
Division of Land Pollution Control  
Bureau of Land

WRW: KDH:1978030005-RCRA-C68-Corr.docx

*KDA*

CC: Bruce Shabino, P.G., Carlson Environmental, Inc.  
Norberto Gonzalez, USEPA Region V  
Charlene Thigpen, FOS Des Plaines

**Huser, Kelly**

---

**From:** Metz, Cassandra  
**Sent:** Monday, December 19, 2022 4:31 PM  
**To:** Huser, Kelly  
**Cc:** Frost, Brad; Watson, Rob; Hubbard, Thomas  
**Subject:** FW: RCH Newco Public Comment re: Notice to Extend Post-Closure Care  
**Attachments:** ReducedCombined Exhibits for RCH Newco Public Comment.pdf; Final RCH Newco II Public Comment re Notice to Extend Post-Closure Care (00088054xA9B67).pdf

We received a comment on RCH Newco II, LLC.

**From:** Drew Nishioka <dn@nijmanfranzetti.com>  
**Sent:** Monday, December 19, 2022 4:15 PM  
**To:** Metz, Cassandra <Cassandra.Metz@Illinois.gov>  
**Cc:** Jennifer Nijman <jn@nijmanfranzetti.com>  
**Subject:** [External] RCH Newco Public Comment re: Notice to Extend Post-Closure Care

Hi Cassandra,

Attached please find RCH Newco II, LLC's Public Comments regarding the notice to extend post-closure care. A hard copy was sent today as well.

If possible, would you please confirm receipt of this email and attachments? Thank you in advance.

Best regards,

Drew

**Drew Nishioka | Nijman Franzetti LLP**

T: 312-868-0081 M: 773-320-4207

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December 19, 2022

## VIA EMAIL AND MAIL

Cassandra Metz  
Illinois Environmental Protection Agency  
1021 N. Grand Avenue East, P.O. Box 19276  
Springfield, Illinois 62794-9276

Re: Public Comment for notice of intent to extend Resource Conservation and Recovery Act post-closure care period for a two-acre fill area at the RCH Newco II, LLC property located at New Ave. and Ceco Rd. in Lemont, Illinois.

Dear Ms. Metz:

On November 18, 2022, the Illinois Environmental Protection Agency (IEPA) published a public notice regarding its intent to extend Resource Conservation and Recovery Act (RCRA) post-closure care for a closed hazardous waste fill area (the Fill Area) at the RCH Newco II, LLC property located at New Ave. and Ceco Rd. in Lemont, Illinois (Property). This public comment is submitted on behalf of RCH Newco II, LLC (the Company). It is timely filed because the thirty day period for public comment ends on Sunday December 18, 2022, making Monday December 19, 2022 the final date for filing comments. This was confirmed by your email dated of December 15, 2022.

IEPA notified the Company of IEPA's intent to extend post-closure care in a letter dated November 15, 2022. In its letter, IEPA relied on a general regulation (35 Ill. Adm. Code 725.218(g)(2)) and the United States Environmental Protection Agency's (USEPA) "Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA" (USEPA Guidance) to justify an extended post-closure care period for the Fill Area. Specifically, the IEPA letter stated that the reasons to extend the post-closure care period are: (a) waste treatment and the nature of the waste (listed as hazardous), (b) the landfill type/design (concerns about vegetation), (c) the possibility of leachate (potential impact to groundwater), and (d) the need to ensure long-term care. While USEPA Guidance recommends weighing additional factors -- such as groundwater monitoring, site geology and hydrology, facility history, and integrity of the cover system -- to determine if post-closure care should be extended, it does not appear that IEPA considered those additional factors.

The regulations relied on by IEPA do not support or require extended post-closure care -- especially because IEPA appears to be extending the post-closure period for some indefinite period of time. IEPA's November 15<sup>th</sup> letter cites to 35 Ill. Admin Code 725.218 (g)(2) which states that the Agency may propose to extend a post closure care period, but only if it "determines that it is

Cassandra Metz  
December 19, 2022

necessary to prevent threats to human health and the environment.” IEPA is unable to support such a determination in this case.<sup>1</sup>

### Site Background

The history of the Fill Area should be fully understood to comply with USEPA Guidance and Illinois regulations that require a finding of harm or threat of harm. At issue is a two-acre area that was used, with IEPA approval, to consolidate non-hazardous materials that had remnants of electric arc furnace dust (EAF) adhering to non-hazardous materials.

As background, in 1985, the then-owner of the Property (Ceco) took steps to close and remediate its Property by removing both non-hazardous materials and EAF dust resulting from steel processes, and properly disposing of the materials off-site. Ex. A, RCRA Facility Investigation Phase I Report, May 1996<sup>2</sup>, pp. 4-8 (Phase I). However, for some of the non-hazardous materials, Ceco could not remove all traces of the EAF dust. *Id.* at 9. As a result, Ceco proposed and IEPA agreed to allow Ceco to consolidate the non-hazardous materials with traces of dust into the Fill Area. *Id.* The Fill Area was constructed in accordance with an approved IEPA closure plan. *Id.* The Fill Area contains approximately 2,500 cubic yards of EAF dust as compared to approximately 29,500 cubic yards of miscellaneous non-hazardous steel plant by-products that was co-excavated with the EAF dust. *Id.* In other words, only about 8.5% of the material in the Fill Area consists of EAF dust. Groundwater has been monitored since 1993, with no evidence of contamination migrating from the Fill Area.

The sole purpose for extending post-closure care beyond thirty years is to prevent threats to human health and the environment. USEPA Guidance, p. 1. As this comment demonstrates, extending post-closure care is not necessary to protect human health and the environment. Any potential for some future, unknown minimal risk that may exist is addressed by an existing deed restriction, which can be modified if necessary with additional restrictions on title.

### **I. Post Closure Care Should Cease Because the Fill Area Poses no Threat to Human Health or the Environment.**

IEPA alleges because the Fill Area contains EAF, a listed hazardous substance, and because the EAF was not treated, post-closure care should be extended. However, IEPA’s conclusion does not address the lack of any risk for migration and does not account for the unique characteristics of waste and the Fill Area itself. USEPA Guidance clarifies that the purpose of knowing whether waste was treated is because treatment reduces the “mobility or leachability of hazardous constituents” and is another “means of achieving LDR’s groundwater protection goal.” USEPA Guidance, p. 4. Here, no such mobility concern exists.

---

<sup>1</sup> IEPA also cites to 35 Ill. Adm. Code 725.245(h). (Nov. 15, 2022 letter, page 1, para. 1) That provision is inapplicable on its face as it relates to releasing an owner/operator from financial assurance. Further, that provision is based on receiving certifications from an owner that post closure care period has ended, and requires that the Agency show non-compliance with a post closure plan – none of which apply in this case.

<sup>2</sup> Attachments to RCRA Facility Investigation Phase I Report, May 1996 included in digital copy submitted via email.



Cassandra Metz  
December 19, 2022

The only reason for the Fill Area was to contain a small amount of EAF dust that could not be separated from non-hazardous steel waste. Only 8.5% of the Fill Area consists of the EAF dust – the remainder being non-hazardous materials. The Fill Area contents have not changed since the Fill Area was finished almost three decades ago. The Fill Area is covered with two feet of compacted clay, 18 inches of select fill and six inches of topsoil with vegetation to prevent infiltration. The Fill Area is lined with compacted clay to protect from migration. IEPA approved of the Fill Area design as appropriate for the waste at issue.

Without referencing the fact that thirty years of monitoring has shown no risk of harm, IEPA seems to be arguing that simply because a small amount of a listed hazardous waste exists, it must be assumed to be a threat to human health or the environment. That is not the standard set out by Illinois regulations or USEPA Guidance.

A. Thirty Years of Groundwater Monitoring at the Fill Area Demonstrates No Risk to Human Health and the Environment.

IEPA does not appear to evaluate almost three decades of groundwater sampling that shows there is no risk to human health and the environment. According to USEPA Guidance, “[g]roundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. “Groundwater should not exceed risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based levels and scenarios.” *Id.* The objective of the groundwater sampling is to collect data that would determine whether the Fill Area is impacting the groundwater.

The well network around the Fill Area consists of five wells. Monitoring wells MWD-1 and MWD-5 are located hydraulically upgradient from the Fill Area for the purpose of monitoring the “background” groundwater concentrations. Ex. B., RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022<sup>3</sup>, p. 2. Monitoring wells MWD-2, MWD-3, and MWD-4 are located hydraulically downgradient from the Fill Area. *Id.* The downgradient wells were installed at the limit of the waste management area to ensure the immediate detection of any hazardous constituent. *Id.* The placement of the wells was designed based on the northeastern potentiometric groundwater flow in the uppermost aquifer. *Id.*

Three decades of groundwater sampling history surrounding the Fill Area show *no* threat to human health or the environment from the Fill Area. Quarterly groundwater sampling began in April 1993. The sampling frequency was changed to semi-annual in 1996, with IEPA approval, based on the lack of impact to groundwater. RCRA post-closure ground water monitoring of the Fill Area showed that the hazardous constituents for which EAF dust is a listed hazardous waste (i.e., lead, cadmium, and hexavalent chromium), were either non-detectable or present in extremely low concentrations (well below any groundwater standard) in the ground water. Phase I, p. 2.

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<sup>3</sup> Attachments to RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022 included in digital copy submitted via email.

Cassandra Metz  
December 19, 2022

Sample results from 2021 continue to show no impact to groundwater from the Fill Area. Based on the analytical data for both sampling events in 2021, groundwater did not exceed the drinking water standards as referenced in 35 IAC 725, Appendix C, USEPA Interim Primary Drinking Water Standards. RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022, p. 6. In fact, the groundwater sampling every year since monitoring started revealed similar results. See e.g., Groundwater and Hazardous Waste Reports 1993 to 2021. Further, inspection of the wells in 2021 shows the wells were in good condition and locked securely -- as they have been every year since 1993. *Id.* p. 2. In other words, the wells have been maintained to provide valid data. Consequently, the extensive history of groundwater monitoring indicates there is no threat to human health or the environment.

**B. Groundwater Monitoring is Equally Relevant to Leachate in Assessing Impact.**

IEPA alleges because there is no leachate collection or monitoring system, it cannot be determined if leachate is present or if the integrity of the cover has been maintained. IEPA ignores USEPA guidance that states that groundwater monitoring is “the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. In fact, Illinois regulations allow for IEPA to consider either leachate OR groundwater monitoring results in determining whether there is the potential for migration of hazardous wastes at levels that may be harmful to human health and the environment (725.218 (g)(1)(A)(i)). Here, IEPA fails to consider the thirty years of groundwater monitoring that shows no potential for harm to human health or the environment.

The absence of a specific *leachate* monitoring system does not indicate there is an increased risk to human health or the environment where there is a long history of groundwater monitoring. Groundwater testing indicates there is no risk of or impact from any alleged leachate. Moreover, the geochemical conditions present in the subsurface show that transport of metals in the ground water as dissolved species will not occur. Phase I, p. 8. The presence of large amounts of alkaline slag and the calcium-magnesium carbonate which comprises the dolomitic limestone bedrock ensure that any low pH water entering the subsurface would be immediately neutralized, and any dissolved metals present in such water would precipitate as insoluble carbonate complexes. *Id.* These same permanently alkaline conditions will prevent any ground water moving through the subsurface from being capable of leaching metals from the Fill Area materials because the requisite low pH conditions required for leaching to occur, cannot exist. *Id.*

As to integrity of the Fill Area cover, inspections conducted for the last twenty years indicate the landfill cover is in good condition. The Company is currently in the process of general cover maintenance and is removing some vegetation that has grown in the area. As described in Section II below, ongoing maintenance of the cover can be established in a land use restriction if necessary.

**C. The Fill Area Poses No Risk Because it is Located in a Secured, Industrial Area.**

USEPA Guidance looks to “relevant facility location characteristics” such as “proximity to vulnerable areas” like residential areas and surface and drinking water sources, surrounding land use, areas prone to flooding and whether facility conditions minimize the potential for adverse

Cassandra Metz  
December 19, 2022

impacts on local populations if there is a release from the unit. USEPA Guidance, p. 7 IEPA's notice letter does not evaluate the Fill Area's location characteristics.

The Fill Area occupies two-acres surrounded by a ten-foot-high, locked chain link fence that is located in the center of 25 acres of industrial property formerly used by Ceco, and now owned by RCH Newco. Access to the Property is by an unnamed paved road from New Avenue. The entire Property, including the Fill Area, is surrounded by a heavily industrialized area.

The Fill Area is almost entirely in Zone C, which is characterized by minimal flooding. Phase I, p. 3. "There are no significant surface water bodies, streams or wetland areas located at the Property". *Id.* at p. 11. No drinking water sources exist downstream of the Fill Area that take water from the I & M Canal. *Id.* at 12. Similarly, no drinking water sources using ground water are located hydraulically down-gradient from the Property. *Id.* The location characteristics of the Fill Area support a finding of no risk to human health or the environment.

## **II. Reasonable Alternatives Should be Utilized in Lieu of Indefinite Post Closure Care**

In its November 15<sup>th</sup> letter, IEPA states the "establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste left in place. Long-term restrictions of future land use must be placed on the Site to minimize future exposure." However, IEPA fails to consider the fact that the Fill Area is surrounded by a locked fence, and a deed restriction already exists on the Property to preclude access. The deed restriction, already recorded against the title of the Property, limits the Property to industrial use unless permission is granted by IEPA, restricts worker contact with the co-disposed material, and requires that any of the co-disposed material removed must be managed in accordance with the provisions of 35 Ill. Adm. Code, Subtitle G. Ex. C., Deed Restriction. In the event IEPA determines that additional property restrictions are necessary, they can be easily added without extending post closure care. The Deed Restriction could be converted to an environmental land use control (ELUC) to permanently restrict property use (at least until IEPA agrees to remove the restriction). ELUCS are enforceable documents (35 Ill. Admin. Code 742.1010(c)(3)). Examples of land use limitations or requirements that IEPA generally imposes include a prohibition of use of groundwater for potable purposes, an industrial/commercial property use restriction, and maintenance of an engineered barrier. "Environmental Land Use Control," IEPA Website; 35 Ill. Adm. Code 742 subpart J. In this case, the Deed Restriction already in place could include maintenance of the landfill cover if necessary. This would eliminate any potential argument IEPA has that there could be a risk to human health and the environment without ongoing maintenance.

Assuming IEPA can establish a threat of harm that is not addressed by the existing (or amended) Deed Restriction, Illinois regulations allow for more reasonable methods of including long term controls – rather than an indefinite RCRA permit. Specifically, 35 Ill. Adm. Code 703.121(b) (citing to 703.161) provides for an alternative Agency plan or other enforceable document (such as an administrative order on consent, or ELUC) to establish any long term controls that might be necessary.

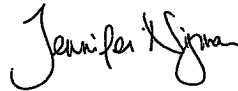
**Conclusion**

Before a post-closure care period can be extended, IEPA must show cause – and must be able to show that there is a need to prevent threats to human health and the environment. 725.218(g). IEPA cannot make such a showing in this case as there is no such threat. The Fill Area on the Property contains only 8.5% of EAF dust mixed with non-hazardous materials, is in the center of 25-acres of land used for industrial purposes, has almost three decades of groundwater samples that are within acceptable limits, and can be adequately maintained with appropriate environmental land use controls. For these reasons, IEPA should withdraw its notice for the extension of post-closure care.

The Company requests a public meeting to address these issues.

Please contact the undersigned if you have any questions.

Very truly yours,



Jennifer Nijman  
Counsel for RCH Newco II, LLC

attachments

**REVIEW NOTES – KELLY HUSER****Groundwater Unit Reviewer – Adam Shade****1978030005 – Will County****RCH Newco II, LLC (f.k.a. Lemont/CECO Corporation)****ILD990785453****Log No. C-68****Notification of Public Hearing****RCRA Closure File**

Facility Contact --	William J. Sawitz Officer 27501 Bella Vista Parkway Warrensville, IL. 60555 630-353-5000	Consultant --	Bruce Shabino, P.G. Carlson Environmental, Inc. 65 E. Wacker Place, Suite 1500 Chicago, IL. 60601 312-346-2140 312-952-2552 (mobile)
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**Background**

On November 15, 2022 Illinois EPA notified RCH Newco that we would be extending their post-closure care period for the closed hazardous waste landfill and there will be a public notice. On December 19, 2022, RCH Newco submitted comments on the post-closure care extension via email through their attorney's office. Besides the comments listed in the letter, RCH Newco requested a public hearing.

**2-23-23****Summary of Events**

- On January 10, 2023, an internal meeting was held with DLC, Permits and Community Relations and it was decided that I would reach out to the facility and ask if they wanted a public hearing or just a meeting with Illinois EPA. It was determined that if they just want a meeting with Illinois EPA, then I would ask them to submit a withdrawal letter for the public hearing.
- On January 11, 2023, I talked with Kristin Pelizza (facility contact).
- On January 24, 2023, Illinois EPA received a letter via email from RCH Newco's attorney proposing an agenda for the meeting and stating they would withdrawal the request for a public hearing if Illinois EPA met certain conditions. (Letter attached)
- After further review of the situation and the January 24, 2023 letter, DLC recommended to Permits, in an email dated February 9, 2023, that we move forward with the public hearing and not hold a meeting with RCH Newco and their attorney.

I prepared a letter with assistance from John McDonough, DLC (email string with John attached), notifying RCH Newco we are moving forward with a public hearing as they requested. They will receive a copy of the public notice for the hearing when it is published and distributed. This was confirmed by Community Relations, Brad Frost.



Agency ID: 170000174683

Bureau ID: 1978030005

Site Name: RCH Newco II LLC

Site Address1: Stephen St

Site Address2:

Site City: Lemont

State: IL

Zip: 60439-

**This record has been determined to be partially or wholly exempt from public disclosure**

**Exemption Type:**

**Portion Removed**

**Exempt Doc #: 100**

**Document Date: 3 /13/2024**

**Staff: SAB**

**Document Description: FINAL DTERMINATION FILE: INTERNAL E-MAILS**

**Category ID: 24B**

**Category Description: RCRA/CLOSURE - RESOURCE CONSERVATION RECOVERY ACT**

**Exempt Type: Portion Removed**

**Permit ID: LOG C-68**

**Date of Determination:**

**4 /10/2024**

**Huser, Kelly**

---

**From:** Drew Nishioka <dn@nijmanfranzetti.com>  
**Sent:** Tuesday, January 24, 2023 4:39 PM  
**To:** Huser, Kelly; Watson, Rob  
**Cc:** Jennifer Nijman  
**Subject:** [External] Letter re: RCH Newco II, LLC property located at New Ave. and Ceco Rd. in Lemont, Illinois.  
**Attachments:** RCH Newco Letter Withdrawing Public Hearing Request Conitgent Upon Meeting.pdf

Kelly,

Please see attached RCH Newco's letter withdrawing its public hearing request contingent upon a meeting with IEPA.

Regards,  
Drew

**Drew Nishioka | Nijman Franzetti LLP**

T: 312-868-0081 M: 773-320-4207

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NIJMAN · FRANZETTI LLP

10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603  
312.251.5250 · fax 312.251.4610 · www.nijmanfranzetti.comJennifer T. Nijman  
jn@nijmanfranzetti.com  
312.251.5255

January 24, 2023

VIA EMAIL

Kelly D. Huser  
Illinois Environmental Protection Agency  
Bureau of Land/Permits/RCRA  
Kelly.Huser@illinois.govRECEIVED  
JAN 30 2023  
IEPA-BOL  
PERMIT SECTION

Re: Public Comment for notice of intent to extend Resource Conservation and Recovery Act post-closure care period for a two-acre fill area at the RCH Newco II, LLC property located at New Ave. and Ceco Rd. in Lemont, Illinois.

Dear Ms. Huser:

On November 18, 2022, the Illinois Environmental Protection Agency (IEPA) published a public notice seeking comments regarding its intent to extend Resource Conservation and Recovery Act (RCRA) post-closure care for a closed hazardous waste fill area at the RCH Newco II, LLC property located at New Ave. and Ceco Rd. in Lemont, Illinois. On December 19, 2022, RCH Newco II, LLC (the Company) filed a public comment containing objections to extending post-closure care and requesting a public hearing. It is our understanding that the Company was the only entity to submit a public comment or request for hearing. As a result, you, on behalf of IEPA, suggested that a meeting between IEPA and the Company in Springfield could be of more value and would allow for more discussion between the parties. You also suggested that the Company withdraw its request for public hearing assuming a meeting were to take place.

The Company is concerned that withdrawal of its request for a public hearing could result in IEPA immediately finalizing its notice to extend RCRA post-closure care at the Property. In order to ensure this is not the case, the Company agrees to withdraw its request for a public hearing made in its December 19, 2022 public comment contingent upon IEPA's agreement to refrain from making a "final" decision until after the parties meet and confer. Please confirm that this is acceptable to IEPA.

You also asked that the Company prepare an agenda for the meeting. We suggest the agenda include the following:

- A. Introductions.
- B. The basis for IEPA seeking on-going RCRA post-closure care.
- C. IEPA responses to the Company's public comments (nature of waste; no exceedances; no risk; no mobility; secure industrial area, etc.)



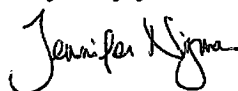
Kelly D. Huser  
January 24, 2023

**D. Options to end post-closure care.**

- technical options
- legal options
- institutional controls

As the Company has shown throughout the post-closure care period, it is committed to resolving any post-closure care concerns, and welcomes the opportunity to meet with IEPA. We look forward to hearing from you concerning the above.

Very truly yours,



Jennifer Nijman  
Counsel for RCH Newco II, LLC

Cc: Robert Watson; Rob.Watson@Illinois.gov



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

R 000155

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3300

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

FEB 27 2023

7011 1150 0001 0857 9701

Mr. William J. Sawitz  
RCH Newco II, LLC  
27501 Bella Vista Parkway  
Warrenville, IL 60555

Re: 1978030005 -- Will County  
RCH Newco II, LLC – New Ave. & Ceco Rd.  
ILD990785453  
Log No. C-68  
RCRA Closure  
Permit Correspondence

Dear Mr. Sawitz:

This letter is in response to an emailed letter dated January 24, 2023, submitted by Ms. Jennifer Nijman, counsel for RCH Newco II, LLC (RCH Newco), on your behalf, regarding the above-referenced site in Lemont, Illinois.

The Illinois EPA will proceed with a public hearing as requested in RCH Newco's public comments submitted December 19, 2022. RCH Newco will receive a copy of the public notice for the hearing when it is published and distributed.

If you have any questions regarding this letter, please contact Kelly Huser at 217/524-3867.

Sincerely,

*Jacqueline M. Cooperider, P.E.*

Jacqueline M. Cooperider, P.E.  
Permit Section Manager  
Bureau of Land

JMC: KDH:1978030005-RCRA-C68-Corr(2).docx

*KDH SLR AMS WPLW*

CC: Kristin Pelizza, RCH Newco  
Bruce Shabino, P.G., Carlson Environmental, Inc.

2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120  
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

PUBLIC PARTICIPATION CHECKLIST  
FOR  
EXTENSION OF POST-CLOSURE CARE PERIOD  
FOR  
INTERIM STATUS RCRA SITE

FACILITY: 1978030005 -Will County  
RCH Newco II, LLC  
ILD990785453  
Log No. C-68

DATES: November 18, 2022 – June 2023

- Public Notice
- Radio paid advertisement and/or payment voucher
- Cover letters (legislative, concerned citizens, etc.)
- Repository cover letter
- Verification that materials were received by repository location
- Press release or evidence of any other public participation activity
- Dated mailing list
- Newspaper tear sheets or affidavit of publications and payment voucher
- Public hearing transcript or hearing record # (if hearing held)
- Public comment(s) (Copy of comments or hearing record # where comments may be found)
- Response summary (if prepared)
- Final permit issuance or denial notice (if any)

**Illinois Environmental Protection Agency**  
**PUBLIC NOTICE**  
**HAZARDOUS WASTE POST-CLOSURE CARE EXTENSION**

The Illinois Environmental Protection Agency (EPA) hereby gives notice of intent to extend a Resource Conservation and Recovery Act (RCRA) post-closure care period for the RCH Newco II, LLC facility located at New Ave. and Ceco Rd. in Lemont. The facility's mailing address is 27501 Bella Vista Parkway in Warrenville, Illinois. RCH Newco II, LLC is currently providing post-closure care under interim status. This action will require RCH Newco II, LLC to continue to provide post-closure care for the closed hazardous waste landfill.

Written comments on the draft post-closure renewal permit may be submitted during the 30-day comment period. Send comments to the Illinois EPA contact listed at the end of this notice postmarked by 11:59 PM, December 18, 2022. In response to public requests or at the discretion of the Illinois EPA, a public hearing can be held to clarify technical issues concerning the post-closure care period. A public hearing request must be made in writing, express opposition to the draft post-closure renewal permit and state the nature of the issue(s) to be raised at the hearing. Written hearing requests should be sent to the Illinois EPA contact listed below by the end of the comment period. Public notice will be issued 30 days before any hearing.

All comments received will become part of the Administrative Record (AR) and will be evaluated by the Illinois EPA in making the final post-closure renewal permit decision. The Illinois EPA will respond to comments on the draft post-closure renewal permit and indicate whether additional documents have been included in the AR. Commenters will be notified of the final post-closure renewal permit decision and the permit decision appeal process.

Requests for information, comments and questions should be directed to:

Cassandra Metz, [Cassandra.metz@illinois.gov](mailto:Cassandra.metz@illinois.gov)  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East, P.O. Box 19276  
Springfield, Illinois 62794-9276

Phone: 217/785-7491

For further RCRA information, go to: <https://www.epa.gov/rcra>

WILL COUNTY

# Man charged with \$40,000 PPP loan fraud

By FELIX SARVER  
fsarver@shawmedia.com

A man has been jailed in Will County on charges accusing him of defrauding \$40,000 from the Paycheck Protection Program and working with a woman to steal \$75,000 in unemployment benefits with the use of stolen identities.

At 9:21 a.m. Wednesday, Kaquanice Larry, 27, of Mt. Prospect was booked into the Will County jail on charges of identity theft, government property theft, state benefits fraud, forgery and theft.

Larry's bond has been set at \$1.1 million.

Whitney Flowers, 22, of Glen Ellyn, Larry's co-defendant, already was booked into jail Aug. 22. She was

released Aug. 25 after posting 10% of her \$50,000 bond.

Larry and Flowers worked together to file for unemployment benefits with the state by using information they stole from three victims, according to a news release from Illinois Attorney General Kwame Raoul's Office.

Larry and Flowers fraudulently obtained \$75,000 in unemployment benefits, according to Raoul's office.

With the use of a fictitious company, Larry also filed applications for Paycheck Protection Program

loans and fraudulently obtained \$40,000 loans in total, according to Raoul's office.

The loans were forgiven by the Small Business Administration.

Whitney Flowers, 22, of Glen Ellyn

The Paycheck Protection Program was established in 2020 to help businesses with payroll costs during the COVID-19 pandemic.

In a statement, Raoul said thousands of struggling residents and small businesses in Illinois "were forced to rely on unemployment benefits and loans from the SBA during the height of the pandemic."

"Those who used the crisis to commit fraud and steal from the government also slowed the processing of legitimate claims," Raoul said.

The Joliet Police Department and other law enforcement agencies have been conducting an investigation that has resulted in numerous arrests in Will County with defrauding the Paycheck Protection Program.

At a press conference on the investigation, Joliet Police Chief William Evans said the targets of the investigation were "in custody and using jail phones to complete the fraudulent PPP loan process."

Joliet Police Detective James Kilgore said it appeared some of those people used the money to bond out of jail in felon cases.



Kaquanice Larry, 27, of Mt. Prospect



Whitney Flowers, 22, of Glen Ellyn

## PRIME PROPERTIES

<p style="text-align: center; font-weight: bold;">APARTMENTS, UNFURNISHED</p> <p><b>Joliet - 1BR, 1BA, \$1,000/mo. + dep.</b> 4BR, 2BA, home for rent \$1,585/mo. + dep. Call 630-697-2235 for info.</p>	<p style="text-align: center; font-weight: bold;">APARTMENTS, UNFURNISHED</p> <p><b>Twin Oaks</b> Pretty 1 BR. New white kitchen with stainless appl. DW, Micro, Blinds, Huge closet, free heat, Sep DR 815-744-1155</p>
<p style="text-align: center; font-weight: bold;">JOLIET Studio &amp; 1 BR</p> <p>Utilities &amp; Appl Incl, on site laundry. Updated units near bus &amp; downtown. \$499 - \$775/mo + 815-726-2000 jolietrentalunits.com</p>	<p style="text-align: center; font-weight: bold;">ROOMS FOR RENT</p> <p><b>EFFICIENCIES - MAZON, NO LEASE</b> Kitchen, Laundry, Utilities Provided. 630-698-2229</p>
<p><b>Kungs Way</b> Private. Freshly updated Studio. Appl, DW, Micro, Stove, Fridge, 1st floor, oval NOW. 815-744-5141</p>	

Ads that work pay for themselves.  
Ads that don't work are expensive

## Description brings results!

### Illinois Environmental Protection Agency PUBLIC NOTICE HAZARDOUS WASTE POST-CLOSURE CARE EXTENSION

The Illinois Environmental Protection Agency (EPA) hereby gives notice of intent to extend a Resource Conservation and Recovery Act (RCRA) post-closure care period for the RCH Newco II, LLC facility located at New Ave. and Ceco Rd. in Lemont. The facility's mailing address is 27501 Bella Vista Parkway in Warrenville, Illinois. RCH Newco II, LLC is currently providing post-closure care under interim status. This action will require RCH Newco II, LLC to continue to provide post-closure care for the closed hazardous waste landfill.

Written comments on the draft post-closure renewal permit may be submitted during the 30-day comment period. Send comments to the Illinois EPA contact listed at the end of this notice postmarked by 11:59 PM, December 18, 2022. In response to public requests or at the discretion of the Illinois EPA, a public hearing can be held to clarify technical issues concerning the post-closure care period. A public hearing request must be made in writing, express opposition to the draft post-closure renewal permit and state the nature of the issue(s) to be raised at the hearing. Written hearing requests should be sent to the Illinois EPA contact listed below by the end of the comment period. Public notice will be issued 30 days before any hearing.

All comments received will become part of the Administrative Record (AR) and will be evaluated by the Illinois EPA in making the final post-closure renewal permit decision. The Illinois EPA will respond to comments on the draft post-closure renewal permit and indicate whether additional documents have been included in the AR. Commenters will be notified of the final post-closure renewal permit decision and the permit decision appeal process.

Requests for information, comments and questions should be directed to:

Cassandra Metz, [Cassandra.metz@illinois.gov](mailto:Cassandra.metz@illinois.gov)  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East, P.O. Box 19276 Phone: 217/785-7491  
Springfield, Illinois 62794-9276

For further RCRA information, go to: <https://www.epa.gov/rcra>

## Please Recycle Your Newspaper



**TRANSMITTAL MEMORANDUM**

**To:** Kelly Huser #24  
**Date:** May 26, 2023  
**From:** Jeff Guy, Hearing Officer  
**Re:** Hearing Record – RCH Newco II, LLC

**CONTENTS OF HEARING RECORD (35 Ill. Adm. Code 166.180)**

Permit or Closure Plan Application (N/A)  
All Notices (refer to Exhibit No. 2)  
Draft Permit or Closure Plan (N/A)  
Fact Sheet (N/A)  
Transcript and Exhibits<sup>(1)</sup> (Exhibit No. 1 – Exhibit No. 6)  
List of People who Made Comments  
Hearing Officer Recommendation (N/A)  
Responsiveness Summary<sup>(2)</sup>

**FOOTNOTES**

<sup>(1)</sup> Exhibit No. 4 includes a six-page letter and a 455-page attachment. Since the attachment is on record with Bureau of Land, it is not included with this documentation.

<sup>(2)</sup> Since the Responsiveness Summary is incomplete, it is not included with this documentation.

**RCH Newco II, LLC**

Request for Public Hearing

Public Hearing Notice

IEPA RCRA Closure letter dated 11/15/2022

Written comments from Jennifer Nijman of Nijman - Franzetti

LLP (Counsel for RCH Newco, II, LLC) dated 12/29/2022 including  
six-page letter and 455-page attachment

Public Hearing Recording

Hearing Transcript

IEPA Final Determination and Responsiveness Summary

Final Correspondence

**Exhibit No.**

1

2

3

4

5

6

7

8



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397 R 000161

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

Date: Notice of public hearing anticipated – March 3, 2023  
Virtual public hearing – April 19, 2023  
Comment period closing – May 19, 2023

To: John Kim, Director

From: Kyle Rominger, BOL Chief

Subject: Request for Public Hearing  
RCH Newco II, LLC (BOL ID: 1978030005)  
Extension of Post-Closure Care for Interim Status RCRA Site

Exhibit 1

## Facility Background

RCH Newco II, LLC is located at New Avenue and Ceco Road in Lemont. They have been required to provide post-closure care for the two-acre hazardous waste landfill under the facility's Interim Status Post-Closure Plan since January 1, 1993.

## Permitting Action

The approved Interim Status post-closure plan required post-closure care be maintained for a minimum of thirty years or until at least January 1, 2023. The RCRA Permits section has determined that the post-closure care period must be extended to address current and future environmental concerns, which are identified in the Bureau's letter dated November 15, 2022.

## Comments and Hearing Request

During the comment period, the Office of Community Relations received one comment requesting a public hearing. The request was from a representative of the facility. A virtual public hearing should be acceptable to the requestors.

## Environmental Justice

The facility is *not* located in an Environmental Justice Area of Concern as determined by the Agency's EJStart mapping tool.

## Hearing Rules

The relevant state rules concerning public hearings for this facility includes 35 IAC 166 Subpart A, 35 IAC 725 Subpart G, and 35 IAC 705 Subparts D and E.

## Scheduling Timeline

35 IAC 166.130(a) requires a 45-day notice prior to the hearing. If approved, the proposed date for holding a hearing is April 19, 2023. The comment period would close 30 days later, per 35 IAC 166.191.

4302 N. Main Street, Rockford, IL 61103 (815) 987-7760  
595 S. State Street, Elgin, IL 60123 (847) 608-3131  
2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
2009 Mall Street Collinsville, IL 62234 (618) 346-5120

9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
100 W. Randolph Street, Suite 4-500, Chicago, IL 60601



**Recommendation**

There is current interest in the facility's operations, as indicated by the comment received during the recent comment period. Taking this into consideration, the Bureau of Land and Office of Community Relations recommend the Agency schedule a virtual public hearing for this permitting action.

If you have any questions, please contact Brad Frost, 217/782-7027.

I concur,



John Kim, Director

Comments or Directions:

**Illinois Environmental Protection Agency****Notice of Public Comment Period and Public Hearing  
Proposed Extension of Post-Closure Care for Hazardous Waste Landfill  
RCH Newco II, LLC in Lemont**

The Illinois Environmental Protection Agency (Illinois EPA) has given notice of its intent to extend a Resource Conservation and Recovery Act (RCRA) post-closure care period for the RCH Newco II, LLC facility located at New Avenue and Ceco Road in Lemont, Illinois. The facility mailing address is 27501 Bella Vista Parkway, Warrenville, Illinois 60555. RCH Newco II, LLC is currently providing interim status post-closure care. This action will require RCH Newco II, LLC to continue to provide post-closure care for the closed hazardous waste landfill. Prior to making a final decision on this action, the Illinois EPA is holding a public comment period and public hearing to offer an opportunity to the public to provide both written and oral comments in this matter.

**The Illinois EPA is accepting written public comments until 11:59 p.m. CT on May 19, 2023.** If you would like to provide written comments, please email your comments to [EPA.PublicHearingCom@Illinois.gov](mailto:EPA.PublicHearingCom@Illinois.gov). Written comments may also be mailed to the Illinois EPA, attention Jeff Guy, Illinois EPA Hearing Officer, P.O. Box 19276, 1021 North Grand Avenue, Springfield, Illinois 62974-9276. Please reference 'RCH Newco II, LLC' in your email or letter. Email comments originating on third party systems or servers intended for submittal of multiple emails of the same or nearly the same content will not be accepted without prior approval from the Illinois EPA Hearing Officer.

**In addition to accepting written public comments, the Illinois EPA Bureau of Land will hold an online public hearing beginning at 6:30 p.m. CT on Wednesday, April 19, 2023 to receive oral comments from the public concerning the post-closure care plan.** Lengthy comments and questions should be submitted in writing. The hearing will be held pursuant to 35 Ill. Adm. Code Part 166, Subpart A (Procedures for Permit and Closure Plan Hearings), 35 Ill. Adm. Code Part 725, Subpart G (Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities), and 35 Ill. Adm. Code Part 705, Subparts D and E (Procedures for Permit Issuance). The Illinois EPA will present opening statements prior to accepting public comments during the hearing. Computer and telephone connection instructions are provided at the bottom of this Notice.

**Registration is required if you would like to provide comments during the hearing.** Please contact the Illinois EPA Hearing Officer by email at [EPA.PublicHearingCom@Illinois.gov](mailto:EPA.PublicHearingCom@Illinois.gov) or by calling (217) 785-8724 to reserve an opportunity to provide comments during the hearing (if you are limited on time, please let the Illinois EPA Hearing Officer know so that you may be provided a more specific commenting time). The deadline to register to comment at the hearing is 5:00 p.m. CT on Monday, April 17, 2023.

Requests for interpretation (including sign language) must be made by 5:00 p.m. CT on Wednesday, March 22, 2023 by contacting the Illinois EPA Hearing Officer by email at [EPA.PublicHearingCom@Illinois.gov](mailto:EPA.PublicHearingCom@Illinois.gov) or by calling (217) 785-8724. Questions regarding hearing procedures or requests to address special needs should be made to the Illinois EPA Hearing Officer by email at [EPA.PublicHearingCom@Illinois.gov](mailto:EPA.PublicHearingCom@Illinois.gov), by calling (217) 785-8724, or by calling the TDD phone number (866) 273-5488.

## Public Hearing Connection Instructions

If you have questions or need assistance with Webex or connecting, please contact the Illinois EPA Hearing Officer by email at [EPA.PublicHearingCom@Illinois.gov](mailto:EPA.PublicHearingCom@Illinois.gov) or by calling (217) 785-8724.

### Webinar Information

Date: Wednesday, April 19, 2023

Time: 6:30 p.m. CT

Webinar Number: 2463 554 0088

Password: RCH1 (7241 from phones)

You may connect to the hearing by computer or telephone up to 15 minutes prior to the start of the hearing or anytime during the hearing. You will automatically be muted upon entry into the hearing.

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### Tips

- Find a quiet location with a power source for your device.
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# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

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JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3300

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

NOV 15 2022

7011 1150 0001 0857 8322

Mr. William J. Sawitz  
RCH Newco II, LLC  
27501 Bella Vista Parkway  
Warrenville, IL. 60555

E X H I B I T 3

Re: 1978030005 -- Will County  
RCH Newco II, LLC - New Ave. & Ceco Rd.  
ILD990785453  
Log No. C-68  
RCRA Closure  
Permit Correspondence

Dear Mr. Sawitz

As you are aware, RCH Newco II, LLC (RCH Newco) located at New Avenue and Ceco Road has been required to provide post-closure care for the two-acre hazardous waste landfill under the facility's Interim Status Post-Closure Plan since January 1, 1993. The approved Interim Status post-closure plan (Log No. C-68) required post-closure care be maintained for a minimum of thirty (30) years or until at least January 1, 2023.

The purpose of this letter is to inform the facility that the Illinois EPA has conducted a review of the post-closure status of the subject hazardous waste management unit and has determined that the post-closure care period for the two-acre landfill must be extended to address current and future environmental concerns identified in this letter in accordance with 35 Ill. Adm. Code 725.218.(g)(2) and the USEPA's "Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA", dated December 15, 2016 (2016 USEPA Guidance).

The following comments and conditions apply to this determination:

1. In accordance with 35 Ill. Adm. Code 725.245(h), this letter shall constitute notification to RCH Newco that Illinois EPA has determined that extending the post-closure care period for the two-acre hazardous waste landfill at the RCH Newco site is required.
2. In accordance with 35 Ill. Adm. Code 725.218(g)(2)(A), the Illinois EPA's decision to extend the post-closure care period for the subject site will be publicly noticed through a newspaper and made available for public comment within thirty (30) days after the date of this letter by Illinois EPA. Illinois EPA will issue a final determination after the comment period ends and, if necessary, a public hearing is held.

2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120  
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

1978030005/RCH Newco.

Log No. C-68

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3. In accordance with 35 Ill. Adm. Code 703.121(b), RCH Newco shall address the future post-closure care and long-term stewardship for the subject site under a RCRA Post-Closure Care Permit. Modification of the existing Interim Status Post-Closure Plan may be necessary to meet the requirements of 35 Ill. Adm. Code 724.211, 724.217, 724.218, and 724.131, and adequately protect human health and the environment.
4. The facility shall provide an application for a RCRA Post-Closure permit to the Illinois EPA Bureau of Land Permit Section within 180 days of Illinois EPA's final determination to extend the post-closure period as described in Condition 2 above. The Illinois EPA will provide the facility with the instructions for an application for a RCRA Post-Closure Permit when it issues its final determination.
5. The facility must continue to provide post-closure care for the unit in accordance with its existing approved post-closure plan, Illinois EPA letters with conditions and modifications to the approved post-closure plan, and the requirements of 35 Ill. Adm. Code Part 725 until a RCRA Post-Closure Permit is issued to the facility.
6. The facility must also continue to provide the Illinois EPA with an acceptable financial assurance for the post-closure care of the site to meet the requirements of 35 Ill. Adm. Code Part 725, Subpart H.
7. Pursuant to Section 39(g) of the Illinois Environmental Protection Act (the Act), necessary restrictions upon the future use of the site and long-term stewardship requirements to protect public health and the environment must be addressed, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment.

The following criteria are the basis of the determination to extend the post-closure care period for the two-acre landfill at the above referenced facility:

- a. Nature of waste in the landfill: The waste in the landfill includes a listed hazardous waste, electric arc furnace dust (EAF) (K061). This waste is also characteristically hazardous for hexavalent chromium (D007), lead (D008) and cadmium (D006). The waste was not pre-treated to meet the Land Disposal Restrictions (LDRs) for hazardous waste prior to disposal in the landfill.
- b. Unit Type/Design: The landfill contains an admix of EAF (K061) and non-hazardous slag material. The bottom liner consists of compacted clay. The final cover consists of 2-feet of compacted clay, 18 inches of select fill and 6 inches of topsoil with vegetation.

A viable cover is one of the most important mechanisms in preventing leachate generation and, ultimately, release of contaminants. The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained. Vegetation with well-established tap roots is growing on the landfill cover. This is not allowed under

1978030005/RCH Newco.

Log No. C-68

Page 3

RCRA post-closure care requirements.

- c. Leachate: The 2016 USEPA Guidance suggests that monitoring for leachate generation serves as the most effective way of examining the integrity of the waste management unit (e.g., it can suggest a cover or liner failure when leachate is detected late in the post-closure care period). The hazardous waste landfill does not have a leachate collection or monitoring system so it cannot be determined if leachate is present within the landfill. More specifically, it cannot be determined if the integrity and effectiveness of the cover system has been maintained during the post-closure period as required by 35 Ill. Adm. Code 725.410(a)(1) & (5), 725.410(b) and 725.217(a)(1).
- d. Long Term Care: Establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste left in place. Long-term restrictions of future land use must be placed on the site to minimize future exposure.

This action shall constitute Illinois EPA's final action on the subject identified in this letter. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within thirty-five (35) days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed ninety (90) days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency  
Division of Legal Counsel  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, IL 62794-9276  
217/782 5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk  
State of Illinois Center  
100 West Randolph Street, Suite 11 500  
Chicago, IL 60601  
312/814 3620

Work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from

1978030005/RCH Newco.

Log No. C-68

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compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

If you have any questions regarding the groundwater related aspects of this project, please contact Adam Shade at 217/785-9633. Questions regarding other aspects of this project should be directed to Kelly Huser at 217/524-3867.

Sincerely,



W. Robert Watson, P.E., Manager  
Manager, RCRA Unit  
Division of Land Pollution Control  
Bureau of Land

WRW: KDH:1978030005-RCRA-C68-Corr.docx

~~KDH~~

CC: Bruce Shabino, P.G., Carlson Environmental, Inc.  
Norberto Gonzalez, USEPA Region V  
Charlene Thigpen, FOS Des Plaines

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10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603  
312.251.5250 · fax 312.251.4610 · www.nijmanfranzetti.com**RECEIVED**

DEC 19 2022

Jennifer T. Nijman  
jn@nijmanfranzetti.com  
312.251.5255

Community Relations  
Illinois EPA  
VIA EMAIL AND MAIL  
Cassandra Metz  
Illinois Environmental Protection Agency  
1021 N. Grand Avenue East, P.O. Box 19276  
Springfield, Illinois 62794-9276

December 19, 2022

Exhibit 4

Re: Public Comment for notice of intent to extend Resource Conservation and Recovery Act post-closure care period for a two-acre fill area at the RCH Newco II, LLC property located at New Ave. and Ceco Rd. in Lemont, Illinois.

Dear Ms. Metz:

On November 18, 2022, the Illinois Environmental Protection Agency (IEPA) published a public notice regarding its intent to extend Resource Conservation and Recovery Act (RCRA) post-closure care for a closed hazardous waste fill area (the Fill Area) at the RCH Newco II, LLC property located at New Ave. and Ceco Rd. in Lemont, Illinois (Property). This public comment is submitted on behalf of RCH Newco II, LLC (the Company). It is timely filed because the thirty day period for public comment ends on Sunday December 18, 2022, making Monday December 19, 2022 the final date for filing comments. This was confirmed by your email dated of December 15, 2022.

IEPA notified the Company of IEPA's intent to extend post-closure care in a letter dated November 15, 2022. In its letter, IEPA relied on a general regulation (35 Ill. Adm. Code 725.218(g)(2)) and the United States Environmental Protection Agency's (USEPA) "Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA" (USEPA Guidance) to justify an extended post-closure care period for the Fill Area. Specifically, the IEPA letter stated that the reasons to extend the post-closure care period are: (a) waste treatment and the nature of the waste (listed as hazardous), (b) the landfill type/design (concerns about vegetation), (c) the possibility of leachate (potential impact to groundwater), and (d) the need to ensure long-term care. While USEPA Guidance recommends weighing additional factors -- such as groundwater monitoring, site geology and hydrology, facility history, and integrity of the cover system -- to determine if post-closure care should be extended, it does not appear that IEPA considered those additional factors.

The regulations relied on by IEPA do not support or require extended post-closure care -- especially because IEPA appears to be extending the post-closure period for some indefinite period of time. IEPA's November 15<sup>th</sup> letter cites to 35 Ill. Admin Code 725.218 (g)(2) which states that the Agency may propose to extend a post closure care period, but only if it "determines that it is



Cassandra Metz  
December 19, 2022

necessary to prevent threats to human health and the environment.” IEPA is unable to support such a determination in this case.<sup>1</sup>

### Site Background

The history of the Fill Area should be fully understood to comply with USEPA Guidance and Illinois regulations that require a finding of harm or threat of harm. At issue is a two-acre area that was used, with IEPA approval, to consolidate non-hazardous materials that had remnants of electric arc furnace dust (EAF) adhering to non-hazardous materials.

As background, in 1985, the then-owner of the Property (Ceco) took steps to close and remediate its Property by removing both non-hazardous materials and EAF dust resulting from steel processes, and properly disposing of the materials off-site. Ex. A, RCRA Facility Investigation Phase I Report, May 1996<sup>2</sup>, pp. 4-8 (Phase I). However, for some of the non-hazardous materials, Ceco could not remove all traces of the EAF dust. *Id.* at 9. As a result, Ceco proposed and IEPA agreed to allow Ceco to consolidate the non-hazardous materials with traces of dust into the Fill Area. *Id.* The Fill Area was constructed in accordance with an approved IEPA closure plan. *Id.* The Fill Area contains approximately 2,500 cubic yards of EAF dust as compared to approximately 29,500 cubic yards of miscellaneous non-hazardous steel plant by-products that was co-excavated with the EAF dust. *Id.* In other words, only about 8.5% of the material in the Fill Area consists of EAF dust. Groundwater has been monitored since 1993, with no evidence of contamination migrating from the Fill Area.

The sole purpose for extending post-closure care beyond thirty years is to prevent threats to human health and the environment. USEPA Guidance, p. 1. As this comment demonstrates, extending post-closure care is not necessary to protect human health and the environment. Any potential for some future, unknown minimal risk that may exist is addressed by an existing deed restriction, which can be modified if necessary with additional restrictions on title.

#### **I. Post Closure Care Should Cease Because the Fill Area Poses no Threat to Human Health or the Environment.**

IEPA alleges because the Fill Area contains EAF, a listed hazardous substance, and because the EAF was not treated, post-closure care should be extended. However, IEPA’s conclusion does not address the lack of any risk for migration and does not account for the unique characteristics of waste and the Fill Area itself. USEPA Guidance clarifies that the purpose of knowing whether waste was treated is because treatment reduces the “mobility or leachability of hazardous constituents” and is another “means of achieving LDR’s groundwater protection goal.” USEPA Guidance, p. 4. Here, no such mobility concern exists.

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<sup>1</sup> IEPA also cites to 35 Ill. Adm. Code 725.245(h). (Nov. 15, 2022 letter, page 1, para. 1) That provision is inapplicable on its face as it relates to releasing an owner/operator from financial assurance. Further, that provision is based on receiving certifications from an owner that post closure care period has ended, and requires that the Agency show non-compliance with a post closure plan – none of which apply in this case.

<sup>2</sup> Attachments to RCRA Facility Investigation Phase I Report, May 1996 included in digital copy submitted via email.

Cassandra Metz  
December 19, 2022

The only reason for the Fill Area was to contain a small amount of EAF dust that could not be separated from non-hazardous steel waste. Only 8.5% of the Fill Area consists of the EAF dust – the remainder being non-hazardous materials. The Fill Area contents have not changed since the Fill Area was finished almost three decades ago. The Fill Area is covered with two feet of compacted clay, 18 inches of select fill and six inches of topsoil with vegetation to prevent infiltration. The Fill Area is lined with compacted clay to protect from migration. IEPA approved of the Fill Area design as appropriate for the waste at issue.

Without referencing the fact that thirty years of monitoring has shown no risk of harm, IEPA seems to be arguing that simply because a small amount of a listed hazardous waste exists, it must be assumed to be a threat to human health or the environment. That is not the standard set out by Illinois regulations or USEPA Guidance.

A. Thirty Years of Groundwater Monitoring at the Fill Area Demonstrates No Risk to Human Health and the Environment.

IEPA does not appear to evaluate almost three decades of groundwater sampling that shows there is no risk to human health and the environment. According to USEPA Guidance, “[g]roundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. “Groundwater should not exceed risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based levels and scenarios.” *Id.* The objective of the groundwater sampling is to collect data that would determine whether the Fill Area is impacting the groundwater.

The well network around the Fill Area consists of five wells. Monitoring wells MWD-1 and MWD-5 are located hydraulically upgradient from the Fill Area for the purpose of monitoring the “background” groundwater concentrations. Ex. B., RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022<sup>3</sup>, p. 2. Monitoring wells MWD-2, MWD-3, and MWD-4 are located hydraulically downgradient from the Fill Area. *Id.* The downgradient wells were installed at the limit of the waste management area to ensure the immediate detection of any hazardous constituent. *Id.* The placement of the wells was designed based on the northeastern potentiometric groundwater flow in the uppermost aquifer. *Id.*

Three decades of groundwater sampling history surrounding the Fill Area show no threat to human health or the environment from the Fill Area. Quarterly groundwater sampling began in April 1993. The sampling frequency was changed to semi-annual in 1996, with IEPA approval, based on the lack of impact to groundwater. RCRA post-closure ground water monitoring of the Fill Area showed that the hazardous constituents for which EAF dust is a listed hazardous waste (i.e., lead, cadmium, and hexavalent chromium), were either non-detectable or present in extremely low concentrations (well below any groundwater standard) in the ground water. Phase I, p. 2.

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<sup>3</sup> Attachments to RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022 included in digital copy submitted via email.

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December 19, 2022

Sample results from 2021 continue to show no impact to groundwater from the Fill Area. Based on the analytical data for both sampling events in 2021, groundwater did not exceed the drinking water standards as referenced in 35 IAC 725, Appendix C, USEPA Interim Primary Drinking Water Standards. RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022, p. 6. In fact, the groundwater sampling every year since monitoring started revealed similar results. See e.g., Groundwater and Hazardous Waste Reports 1993 to 2021. Further, inspection of the wells in 2021 shows the wells were in good condition and locked securely -- as they have been every year since 1993. *Id.* p. 2. In other words, the wells have been maintained to provide valid data. Consequently, the extensive history of groundwater monitoring indicates there is no threat to human health or the environment.

**B. Groundwater Monitoring is Equally Relevant to Leachate in Assessing Impact.**

IEPA alleges because there is no leachate collection or monitoring system, it cannot be determined if leachate is present or if the integrity of the cover has been maintained. IEPA ignores USEPA guidance that states that groundwater monitoring is “the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. In fact, Illinois regulations allow for IEPA to consider either leachate OR groundwater monitoring results in determining whether there is the potential for migration of hazardous wastes at levels that may be harmful to human health and the environment (725.218 (g)(1)(A)(i)). Here, IEPA fails to consider the thirty years of groundwater monitoring that shows no potential for harm to human health or the environment.

The absence of a specific *leachate* monitoring system does not indicate there is an increased risk to human health or the environment where there is a long history of groundwater monitoring. Groundwater testing indicates there is no risk of or impact from any alleged leachate. Moreover, the geochemical conditions present in the subsurface show that transport of metals in the ground water as dissolved species will not occur. Phase I, p. 8. The presence of large amounts of alkaline slag and the calcium-magnesium carbonate which comprises the dolomitic limestone bedrock ensure that any low pH water entering the subsurface would be immediately neutralized, and any dissolved metals present in such water would precipitate as insoluble carbonate complexes. *Id.* These same permanently alkaline conditions will prevent any ground water moving through the subsurface from being capable of leaching metals from the Fill Area materials because the requisite low pH conditions required for leaching to occur, cannot exist. *Id.*

As to integrity of the Fill Area cover, inspections conducted for the last twenty years indicate the landfill cover is in good condition. The Company is currently in the process of general cover maintenance and is removing some vegetation that has grown in the area. As described in Section II below, ongoing maintenance of the cover can be established in a land use restriction if necessary.

**C. The Fill Area Poses No Risk Because it is Located in a Secured, Industrial Area.**

USEPA Guidance looks to “relevant facility location characteristics” such as “proximity to vulnerable areas” like residential areas and surface and drinking water sources, surrounding land use, areas prone to flooding and whether facility conditions minimize the potential for adverse

Cassandra Metz  
December 19, 2022

impacts on local populations if there is a release from the unit. USEPA Guidance, p. 7 IEPA's notice letter does not evaluate the Fill Area's location characteristics.

The Fill Area occupies two-acres surrounded by a ten-foot-high, locked chain link fence that is located in the center of 25 acres of industrial property formerly used by Ceco, and now owned by RCH Newco. Access to the Property is by an unnamed paved road from New Avenue. The entire Property, including the Fill Area, is surrounded by a heavily industrialized area.

The Fill Area is almost entirely in Zone C, which is characterized by minimal flooding. Phase I, p. 3. "There are no significant surface water bodies, streams or wetland areas located at the Property". *Id.* at p. 11. No drinking water sources exist downstream of the Fill Area that take water from the I & M Canal. *Id.* at 12. Similarly, no drinking water sources using ground water are located hydraulically down-gradient from the Property. *Id.* The location characteristics of the Fill Area support a finding of no risk to human health or the environment.

## **II. Reasonable Alternatives Should be Utilized in Lieu of Indefinite Post Closure Care**

In its November 15<sup>th</sup> letter, IEPA states the "establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste left in place. Long-term restrictions of future land use must be placed on the Site to minimize future exposure." However, IEPA fails to consider the fact that the Fill Area is surrounded by a locked fence, and a deed restriction already exists on the Property to preclude access. The deed restriction, already recorded against the title of the Property, limits the Property to industrial use unless permission is granted by IEPA, restricts worker contact with the co-disposed material, and requires that any of the co-disposed material removed must be managed in accordance with the provisions of 35 Ill. Adm. Code, Subtitle G. Ex. C., Deed Restriction. In the event IEPA determines that additional property restrictions are necessary, they can be easily added without extending post closure care. The Deed Restriction could be converted to an environmental land use control (ELUC) to permanently restrict property use (at least until IEPA agrees to remove the restriction). ELUCS are enforceable documents (35 Ill. Admin. Code 742.1010(c)(3)). Examples of land use limitations or requirements that IEPA generally imposes include a prohibition of use of groundwater for potable purposes, an industrial/commercial property use restriction, and maintenance of an engineered barrier. "Environmental Land Use Control," IEPA Website; 35 Ill. Adm. Code 742 subpart J. In this case, the Deed Restriction already in place could include maintenance of the landfill cover if necessary. This would eliminate any potential argument IEPA has that there could be a risk to human health and the environment without ongoing maintenance.

Assuming IEPA can establish a threat of harm that is not addressed by the existing (or amended) Deed Restriction, Illinois regulations allow for more reasonable methods of including long term controls – rather than an indefinite RCRA permit. Specifically, 35 Ill. Adm. Code 703.121(b) (citing to 703.161) provides for an alternative Agency plan or other enforceable document (such as an administrative order on consent, or ELUC) to establish any long term controls that might be necessary.

Cassandra Metz  
December 19, 2022

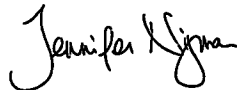
### Conclusion

Before a post-closure care period can be extended, IEPA must show cause – and must be able to show that there is a need to prevent threats to human health and the environment. 725.218(g). IEPA cannot make such a showing in this case as there is no such threat. The Fill Area on the Property contains only 8.5% of EAF dust mixed with non-hazardous materials, is in the center of 25-acres of land used for industrial purposes, has almost three decades of groundwater samples that are within acceptable limits, and can be adequately maintained with appropriate environmental land use controls. For these reasons, IEPA should withdraw its notice for the extension of post-closure care.

The Company requests a public meeting to address these issues.

Please contact the undersigned if you have any questions.

Very truly yours,



Jennifer Nijman  
Counsel for RCH Newco II, LLC

attachments

**E X H I B I T 5**  
**Illinois Environmental Protection Agency**

R 000175

RCH Newco II, LLC

Public Hearing April 19, 2023

**PUBLIC HEARING RECORDING**

On April 19, 2023, the Illinois EPA conducted an online public hearing via Webex beginning at 6:30 p.m. to solicit public comments regarding the Illinois EPA's determination to extend post-closure care for the hazardous waste landfill owned by RCH Newco II, LLC in Lemont, Illinois. The recording of the hearing is accessible at the following link:

<https://multimedia.illinois.gov/epa/EPA-RCH-Newco-Hearing-041923.html>

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

(ILLINOIS EPA)

IN RE: PROPOSED EXTENSION OF POST-CLOSURE CARE FOR  
HAZARDOUS WASTE LANDFILL RCH NEWCO II, LLC IN LEMONT

E X H I B I T 6

Public

Hearing in the above-entitled cause, commencing at  
6:32 p.m. on the 19th day of April, 2023.

1 MR. GUY: Okay. We're going to go  
2 ahead and get started with this public  
3 hearing. The current time is 6:32 Central  
4 Time. And good evening on behalf of the  
5 Illinois Environmental Protection Agency  
6 and its director, John Kim. Welcome to  
7 tonight's hearing. My name is Jeff Guy,  
8 and I am the Illinois EPA hearing officer.  
9 We look forward to receiving your comments  
10 after tonight's opening remarks. If you  
11 have connection or audio issues, please  
12 attempt to reconnect.

13 This hearing is being held  
14 pursuant to regulatory procedures for  
15 permit and closure plan hearings, which can  
16 be found at Title 35 Illinois  
17 Administrative Code Part 166, Subpart A.  
18 These regulations are available on the  
19 Illinois Pollution Control Board website at  
20 [pcb.illinois.gov](http://pcb.illinois.gov). Again, that's  
21 [pcb.illinois.gov](http://pcb.illinois.gov). My responsibility this  
22 evening as the hearing officer is to ensure  
23 that this hearing is conducted in a fair  
24 and orderly manner according to these



1 regulations.

2 This hearing is being  
3 transcribed by a court reporter, and the  
4 transcript of this hearing will be posted  
5 on the Illinois EPA Bureau of Land public  
6 notice web page in the same place where the  
7 hearing notice and other pertinent  
8 documents have been posted for public  
9 review.

10 The Illinois EPA has tentatively  
11 determined that the post-closure care  
12 period for the RCH Newco facility in  
13 Lemont, Illinois needs to be extended. A  
14 representative from the Illinois EPA Bureau  
15 of Land will provide more information on  
16 this momentarily.

17 The Illinois EPA is conducting a  
18 public comment period, including this  
19 public hearing, to provide an opportunity  
20 for the public to comment on this matter  
21 prior to making a final determination. The  
22 Illinois EPA is accepting written public  
23 comments during the comment period. As  
24 indicated in the public hearing notice,

1 which is shared on the screen, written  
2 comments must be received no later than  
3 11:59 p.m. Central Time on May 19th, 2023  
4 and should be submitted via e-mail to --  
5 I'm going to give you an e-mail address --  
6 epa.publichearingcom@illinois.gov, and that  
7 is also provided in the public notice.

8 Again, that's

9 epa.publichearingcom@illinois.gov. Or they  
10 can be mailed to the Illinois EPA,  
11 attention myself, Jeff Guy, Hearing  
12 Officer, PO Box 19276, 1021 North Grand  
13 Avenue, Springfield, Illinois 62974-9276.

14 Again, this information is provided in the  
15 public notice. Please reference "RCH  
16 Newco" in your e-mail or letter.

17           Written comments are given the  
18 same consideration as oral comments made  
19 during this hearing and may be submitted to  
20 the Illinois EPA at any time during the  
21 comment period. Although we will continue  
22 to accept written comments through May  
23 19th, 2023, tonight is the only time that  
24 we will accept oral comments. The Illinois

1 EPA will fully consider and respond to all  
2 significant oral and written comments.

3 At this time, a representative  
4 from the Illinois EPA Bureau of Land will  
5 provide information we believe is relevant  
6 to tonight's hearing. This will be  
7 followed by additional instructions from me  
8 on how we will receive public comments.

9 MR. WATSON: Good evening. My  
10 name's Rob Watson. I've been the manager  
11 of the Resource Conservation and Recovery  
12 Act Unit, otherwise known as the "RCRA"  
13 Unit, since 2018. The RCRA Unit is within  
14 the Permit Section of the Bureau of Land  
15 within the Illinois EPA. In that capacity,  
16 I'm responsible for management of the  
17 hazardous waste permitting and corrective  
18 action programs in the State of Illinois.  
19 I recently retired from the Illinois EPA,  
20 but am currently working under contract as  
21 the RCRA Unit manager.

22 I'm a professional engineer and  
23 have worked for the Illinois EPA for almost  
24 40 years. I spent all but one and a half

1 years of that time in the Bureau of Land  
2 Permit Section, and most of that time was  
3 involved in the permitting of hazardous  
4 waste facilities.

5           The purpose of my statement at  
6 this public hearing is to provide a brief  
7 overview of the permitting history related  
8 to the RCH Newco facility in Lemont,  
9 Illinois, current site conditions, and the  
10 regulations governing the hazardous waste  
11 landfill at the site, all of which served  
12 as the basis for Illinois EPA's tentative  
13 determination that post-closure care needs  
14 to be extended at that landfill.

15           In the early 1990s, the RCH  
16 Newco facility, formerly known as CECOs,  
17 constructed a hazardous waste landfill in  
18 Lemont, Illinois in accordance with the  
19 closure plan. The landfill is  
20 approximately two acres in size and  
21 contains electric arc furnace dust, also  
22 know as EAF dust, which is a hazardous  
23 waste due to lead and cadmium. The EAF  
24 dust is mixed in with non-hazardous slag.

1 The bottom liner consists of three feet of  
2 recompact clay, and the final cover  
3 consists of two feet of compacted clay, one  
4 and one half feet of fill, and one half a  
5 foot of topsoil with vegetation.

6 On February 7, 1996, the  
7 Illinois EPA determined that post-closure  
8 care for the landfill began on January 1st,  
9 1993. Thus, the regulatory required  
10 30 years of post-closure care would last  
11 until at least January 1 of 2023.

12 Post-closure care included requirements for  
13 monitoring, maintaining, and repairing the  
14 cover system as well as monitoring of the  
15 groundwater.

16 On August 29, 1996, the Illinois  
17 EPA issued a modification to the  
18 closure/post-closure plan, which is Log No.  
19 C-68-M-5. Included in that modification  
20 was a condition stating that, pursuant to  
21 35 Illinois Administrative Code 703.121(b),  
22 the facility must also eventually obtain a  
23 RCRA post-closure permit.

24 The groundwater monitoring

1 results indicate that the hazardous waste  
2 constituents in the landfill have not  
3 leaked out of the landfill during the past  
4 30 years. Currently, there is no leachate  
5 collection or monitoring system in the  
6 landfill.

7 The management of hazardous  
8 waste in Illinois is regulated under RCRA  
9 and the federal/state regulations developed  
10 under it. These regulations give the  
11 Illinois EPA the authority to review and  
12 approve the design, construction,  
13 operation, monitoring, maintenance,  
14 closure, and post-closure care of units  
15 used to manage hazardous waste in the State  
16 of Illinois.

17 The regulations for landfills  
18 are designed to remove liquids and keep the  
19 waste within the landfill as dry as  
20 possible. The landfill's liner and cover  
21 systems are designed to prevent liquids,  
22 such as precipitation and groundwater, from  
23 getting into the waste. This is because  
24 minimizing the amount of liquid within a

1 landfill minimizes the potential for the  
2 movement of hazardous constituents from  
3 within the landfill out into the  
4 environment.

5           It's also important to note that  
6 the RCRA regulations are necessarily broad  
7 in nature, and USEPA has issued many  
8 guidance documents, technical memos, and  
9 letters to address more specific  
10 situations. These documents are available  
11 for use by both facilities and regulators  
12 for the operation and regulation of  
13 hazardous waste sites.

14           In this case, the landfill's  
15 currently regulated under the Interim  
16 Status regulations at Title 35 Illinois  
17 Administrative Code Part 725. Title 35  
18 Illinois Administrative Code  
19 Section 725.218 includes provisions that  
20 allow Illinois EPA to extend the  
21 post-closure care period of a hazardous  
22 waste landfill if we determine that it is  
23 necessary to protect human health and the  
24 environment. The regulations require

1 Illinois EPA to public notice our tentative  
2 decision to extend the post-closure period,  
3 review any comments received during the  
4 comment period, and, if necessary, hold a  
5 public hearing, such as this one here  
6 tonight, prior to making a final  
7 determination regarding the post-closure  
8 care of the facility.

9 Illinois EPA informed the  
10 facility of its tentative decision to  
11 extend post-closure care at the facility in  
12 a letter dated November 15, 2022. The  
13 letter identified the reasons why extending  
14 post-closure care is needed to protect  
15 human health and the environment. As a  
16 recap of that letter: Hazardous waste  
17 remains in the landfill. The landfill  
18 liner and cover design does not meet the  
19 minimum technology requirements for  
20 landfills currently required by the  
21 hazardous waste landfill regulations,  
22 relev- -- and the relevant regulations are  
23 cited in the letter.

24 The landfill does not have a



1 leachate monitoring or collection system,  
2 so it cannot be determined if leachate is  
3 present in the landfill. The presence of  
4 liquids within a landfill increases the  
5 risk of an unforeseeable and unknown  
6 release of hazardous constituents into the  
7 environment, if unmonitored.

8           And continued long-term care of  
9 a landfill in the form of maintenance,  
10 monitoring, and legally enforceable  
11 controls is required to ensure that neglect  
12 or future activities of a landfill do not  
13 result in the release of hazardous waste or  
14 hazardous constituents that could threaten  
15 human health and the environment.

16           As noted in the letter, a viable  
17 cover is one of the most important  
18 mechanisms offering environmental  
19 protection. It was noted in the letter  
20 that the cover was not properly maintained,  
21 and well-established tap roots were growing  
22 on the landfill and into the landfill.

23           The November 15th, 2022, letter  
24 also made the tentative determination for

1 the facility to submit an application for a  
2 RCRA hazardous waste permit for the  
3 landfill once a final determination is  
4 made.

5           Should the Illinois EPA's final  
6 determination affirm its tentative  
7 decision, the extended post-closure care  
8 for the facility would be conducted in  
9 accordance with a RCRA hazardous waste  
10 post-closure permit pursuant to Title 35  
11 Ill. Adm. Code Section 703.121 as well as  
12 Condition 1.b of the modified RCRA closure  
13 plan Log No. C-68-M-5 that was issued on  
14 August 29, 1996, rather than the closure  
15 plan the facility has been regulated under  
16 for the past 30 years.

17           As noted by the Hearing Officer,  
18 the purpose of this public hearing is to  
19 provide a forum for the public to provide  
20 comments on the Illinois EPA's tentative  
21 decision to extend the post-closure care  
22 period of the RCH Newco facility's  
23 hazardous waste landfill. Upon conclusion  
24 of this public hearing and a follow-up

1 post-hearing comment period, the Illinois  
2 EPA will review all comments received and  
3 take said comments into consideration when  
4 deliberating and finalizing our  
5 determination. Thank you.

6 MR. GUY: Thank you, Mr. Watson.

7 If you have extensive comments  
8 this evening, please consider giving only a  
9 summary of those comments and then  
10 submitting the entirety of your comments to  
11 the Illinois EPA before the end of the  
12 comment period on May 19th, 2023.

13 While the record is open, all  
14 comments will be placed into the hearing  
15 record as exhibits. If anyone does not  
16 wish to make comments or if we cannot  
17 accommodate everyone who wishes to make  
18 comments this evening, for whatever reason,  
19 please submit your comments to the Illinois  
20 EPA in writing. Again, written comments  
21 are given the same consideration as  
22 comments made orally during this hearing.

23 As the hearing officer, I intend  
24 to treat everyone in a respectful manner,

1 and I ask that Illinois EPA staff and the  
2 public please do the same. Comments should  
3 be relevant to issues associated with the  
4 Illinois EPA's tentative decision --  
5 determination rather -- to extend the  
6 post-closure period.

7 If your comments fall outside of  
8 the scope of this hearing, I may ask you to  
9 proceed to another issue. Again, all  
10 significant comments, written or oral, will  
11 be addressed as part of the Illinois EPA  
12 responsiveness summary. The responsiveness  
13 summary will also provide a statement of  
14 the Illinois EPA's final determination in  
15 this matter. All who provide their e-mail  
16 address, mailing address, or submit written  
17 comments during the comment period will be  
18 notified of the Illinois EPA's final  
19 determination in this matter and the  
20 availability of the responsiveness summary,  
21 which will be posted on the Illinois EPA  
22 Bureau of Land public notice web page.

23 The Illinois EPA public notice  
24 for this hearing required registration by

1 April 17th, 2023, to provide oral comments  
2 during tonight's hearing. It should be  
3 noted that the Illinois EPA did not receive  
4 any request to provide comments during  
5 tonight's hearing. Regardless, the  
6 Illinois EPA will -- at this time will  
7 allow oral public comments for the record.  
8 So if you want to provide a comment, please  
9 use the 'Raise Hand' feature. And when I  
10 call on you to speak, be sure to unmute  
11 your line. Please state your name and  
12 affiliation for the record. And for the  
13 benefit of creating an accurate record,  
14 please spell your last name. Please keep  
15 your comments courteous and on-topic, and  
16 keep your comments no longer than five  
17 minutes in length.

18 We're going to give it a few  
19 minutes to see if there's anyone that may  
20 connect and wish to make comments. Again,  
21 that can be done by using the 'Raise Hand'  
22 feature on the WebEx.

23 (A short break was had.)

24 MR. GUY: Just to repeat, the

1 Illinois EPA public notice did require  
2 registration by April 17th, 2023, to  
3 provide oral public comments this evening.  
4 And although the Illinois EPA did not  
5 receive any requests to provide comments  
6 tonight, we are allowing oral comments by  
7 using the 'Raise Hand' feature, if you  
8 would like to provide oral comments.

9 So at this time, we're going to  
10 wait just a few more minutes. We don't  
11 have anyone on the call. And we'll give it  
12 just a few more minutes, and if we don't  
13 have anyone wishing to make oral comments,  
14 we'll go ahead and conclude our public  
15 hearing this evening. So we're going to  
16 wait just a few more minutes. Thank you.

17 (A short break was had.)

18 MR. GUY: Okay. Well, that's going  
19 to conclude our public hearing this  
20 evening. If you did not present oral  
21 comments tonight but still wish to comment,  
22 please submit your comments -- your written  
23 comments to the Illinois EPA, as directed  
24 in the public notice, which can be accessed

1 at the Illinois EPA Bureau of Land public  
2 notice web page. Written comments will be  
3 included in the hearing record and reviewed  
4 by the Illinois EPA as the responsiveness  
5 summary is prepared. The record closes at  
6 11:59 p.m. Central Time on May 19, 2023.  
7 Please send your written comments to the  
8 attention of myself, Jeff Guy, as indicated  
9 in the public notice.

10 Pertinent documents are  
11 available on the Illinois EPA Bureau of  
12 Land public notice web page and at the  
13 Illinois EPA office located at 1021 North  
14 Grand Avenue East, Springfield, Illinois  
15 62794 -- I'm sorry -- 62974. You can  
16 obtain copies of available documents  
17 through a Freedom of Information Request to  
18 the Illinois EPA. This can be done through  
19 our website, or you can contact myself  
20 directly if you need help with this  
21 request. I think I might have to re- --  
22 correct the zip code. 62974 -- 62794.  
23 This must be a typo in my notes.

24 Again, you can obtain copies of

1 available documents through a Freedom of  
2 Information Request to the Illinois EPA.  
3 That can be done through our website, or  
4 you can contact myself directly if you need  
5 help.

6 Thank you for your participation  
7 this evening. The current time is  
8 6:56 p.m. Central Time, and this hearing is  
9 adjourned.

10 (Which were all the proceedings had  
11 at this time in the above-entitled  
12 cause.)  
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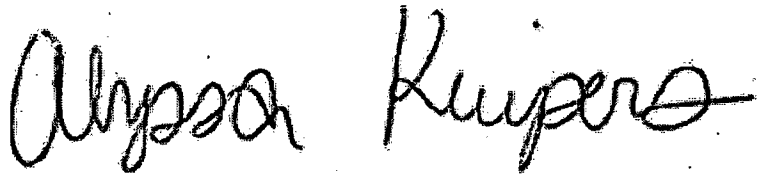
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STATE OF ILLINOIS )  
 ) SS.  
COUNTY OF COOK )

Alyssa N. Kuipers, being first duly sworn, on oath says that she is a Certified Shorthand Reporter, Registered Professional Reporter, doing business in the City of Chicago, County of Cook and the State of Illinois;

That she reported in shorthand the proceedings had at the foregoing public hearing;

And that the foregoing is a true and correct transcript of her shorthand notes so taken as aforesaid and contains all the proceedings had at the said public hearing.



ALYSSA N. KUIPERS, CSR, RPR

CSR No. 084-004857

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		<b>unforeseeable</b>	<b>years</b> 5:24 6:1 7:10 8:4 12:16

**RCH Newco – Lemont – BOL**

On April 19, 2023, the Illinois EPA conducted an online public hearing via Webex beginning at 6:30 p.m. to solicit public comments regarding the Illinois EPA's determination to extend post-closure care for the hazardous waste landfill owned by RCH Newco II, LLC in Lemont, Illinois. The company requested the hearing. There were no participants that joined the online hearing (with the exception of the court reporter). As a result, the Agency provided their remarks, and the hearing was adjourned at approximately 7 p.m.

**List of People who Provided Written Comments**

Jennifer Nijman of Nijman - Franzetti LLP (Counsel for RCH Newco, II, LLC) dated 12/29/2022.  
Submittal includes a six-page letter and 455-page attachment.

NIJMAN · FRANZETTI LLP

10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603  
312.251.5250 · fax 312.251.4610 · www.nijmanfranzetti.com**RECEIVED**

DEC 19 2022

Jennifer T. Nijman  
jn@nijmanfranzetti.com  
312.251.5255Community Relations  
Illinois EPA

December 19, 2022

VIA EMAIL AND MAIL

Cassandra Metz

Illinois Environmental Protection Agency  
1021 N. Grand Avenue East, P.O. Box 19276  
Springfield, Illinois 62794-9276

Re: Public Comment for notice of intent to extend Resource Conservation and Recovery Act post-closure care period for a two-acre fill area at the RCH Newco II, LLC property located at New Ave. and Ceko Rd. in Lemont, Illinois.

Dear Ms. Metz:

On November 18, 2022, the Illinois Environmental Protection Agency (IEPA) published a public notice regarding its intent to extend Resource Conservation and Recovery Act (RCRA) post-closure care for a closed hazardous waste fill area (the Fill Area) at the RCH Newco II, LLC property located at New Ave. and Ceko Rd. in Lemont, Illinois (Property). This public comment is submitted on behalf of RCH Newco II, LLC (the Company). It is timely filed because the thirty day period for public comment ends on Sunday December 18, 2022, making Monday December 19, 2022 the final date for filing comments. This was confirmed by your email dated of December 15, 2022.

IEPA notified the Company of IEPA's intent to extend post-closure care in a letter dated November 15, 2022. In its letter, IEPA relied on a general regulation (35 Ill. Adm. Code 725.218(g)(2)) and the United States Environmental Protection Agency's (USEPA) "Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA" (USEPA Guidance) to justify an extended post-closure care period for the Fill Area. Specifically, the IEPA letter stated that the reasons to extend the post-closure care period are: (a) waste treatment and the nature of the waste (listed as hazardous), (b) the landfill type/design (concerns about vegetation), (c) the possibility of leachate (potential impact to groundwater), and (d) the need to ensure long-term care. While USEPA Guidance recommends weighing additional factors -- such as groundwater monitoring, site geology and hydrology, facility history, and integrity of the cover system -- to determine if post-closure care should be extended, it does not appear that IEPA considered those additional factors.

The regulations relied on by IEPA do not support or require extended post-closure care -- especially because IEPA appears to be extending the post-closure period for some indefinite period of time. IEPA's November 15<sup>th</sup> letter cites to 35 Ill. Admin Code 725.218 (g)(2) which states that the Agency may propose to extend a post-closure care period, but only if it "determines that it is



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necessary to prevent threats to human health and the environment.” IEPA is unable to support such a determination in this case.<sup>1</sup>

### Site Background

The history of the Fill Area should be fully understood to comply with USEPA Guidance and Illinois regulations that require a finding of harm or threat of harm. At issue is a two-acre area that was used, with IEPA approval, to consolidate non-hazardous materials that had remnants of electric arc furnace dust (EAF) adhering to non-hazardous materials.

As background, in 1985, the then-owner of the Property (Ceco) took steps to close and remediate its Property by removing both non-hazardous materials and EAF dust resulting from steel processes, and properly disposing of<sup>2</sup> the materials off-site. Ex. A, RCRA Facility Investigation Phase I Report, May 1996<sup>2</sup>, pp. 4-8 (Phase I). However, for some of the non-hazardous materials, Ceco could not remove all traces of the EAF dust. *Id.* at 9. As a result, Ceco proposed and IEPA agreed to allow Ceco to consolidate the non-hazardous materials with traces of dust into the Fill Area. *Id.* The Fill Area was constructed in accordance with an approved IEPA closure plan. *Id.* The Fill Area contains approximately 2,500 cubic yards of EAF dust as compared to approximately 29,500 cubic yards of miscellaneous non-hazardous steel plant by-products that was co-excavated with the EAF dust. *Id.* In other words, only about 8.5% of the material in the Fill Area consists of EAF dust. Groundwater has been monitored since 1993, with no evidence of contamination migrating from the Fill Area.

The sole purpose for extending post-closure care beyond thirty years is to prevent threats to human health and the environment. USEPA Guidance, p. 1. As this comment demonstrates, extending post-closure care is not necessary to protect human health and the environment. Any potential for some future, unknown minimal risk that may exist is addressed by an existing deed restriction, which can be modified if necessary with additional restrictions on title.

#### **I. Post Closure Care Should Cease Because the Fill Area Poses no Threat to Human Health or the Environment.**

IEPA alleges because the Fill Area contains EAF, a listed hazardous substance, and because the EAF was not treated, post-closure care should be extended. However, IEPA’s conclusion does not address the lack of any risk for migration and does not account for the unique characteristics of waste and the Fill Area itself. USEPA Guidance clarifies that the purpose of knowing whether waste was treated is because treatment reduces the “mobility or leachability of hazardous constituents” and is another “means of achieving LDR’s groundwater protection goal.” USEPA Guidance, p. 4. Here, no such mobility concern exists.

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<sup>1</sup> IEPA also cites to 35 Ill. Adm. Code 725.245(h). (Nov. 15, 2022 letter, page 1, para. 1) That provision is inapplicable on its face as it relates to releasing an owner/operator from financial assurance. Further, that provision is based on receiving certifications from an owner that post closure care period has ended, and requires that the Agency show non-compliance with a post closure plan – none of which apply in this case.

<sup>2</sup> Attachments to RCRA Facility Investigation Phase I Report, May 1996 included in digital copy submitted via email.

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The only reason for the Fill Area was to contain a small amount of EAF dust that could not be separated from non-hazardous steel waste. Only 8.5% of the Fill Area consists of the EAF dust – the remainder being non-hazardous materials. The Fill Area contents have not changed since the Fill Area was finished almost three decades ago. The Fill Area is covered with two feet of compacted clay, 18 inches of select fill and six inches of topsoil with vegetation to prevent infiltration. The Fill Area is lined with compacted clay to protect from migration. IEPA approved of the Fill Area design as appropriate for the waste at issue.

Without referencing the fact that thirty years of monitoring has shown no risk of harm, IEPA seems to be arguing that simply because a small amount of a listed hazardous waste exists, it must be assumed to be a threat to human health or the environment. That is not the standard set out by Illinois regulations or USEPA Guidance.

A. Thirty Years of Groundwater Monitoring at the Fill Area Demonstrates No Risk to Human Health and the Environment.

IEPA does not appear to evaluate almost three decades of groundwater sampling that shows there is no risk to human health and the environment. According to USEPA Guidance, “[g]roundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. “Groundwater should not exceed risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based levels and scenarios.” *Id.* The objective of the groundwater sampling is to collect data that would determine whether the Fill Area is impacting the groundwater.

The well network around the Fill Area consists of five wells. Monitoring wells MWD-1 and MWD-5 are located hydraulically upgradient from the Fill Area for the purpose of monitoring the “background” groundwater concentrations. Ex. B., RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022<sup>3</sup>, p. 2. Monitoring wells MWD-2, MWD-3, and MWD-4 are located hydraulically downgradient from the Fill Area. *Id.* The downgradient wells were installed at the limit of the waste management area to ensure the immediate detection of any hazardous constituent. *Id.* The placement of the wells was designed based on the northeastern potentiometric groundwater flow in the uppermost aquifer. *Id.*

Three decades of groundwater sampling history surrounding the Fill Area show no threat to human health or the environment from the Fill Area. Quarterly groundwater sampling began in April 1993. The sampling frequency was changed to semi-annual in 1996, with IEPA approval, based on the lack of impact to groundwater. RCRA post-closure ground water monitoring of the Fill Area showed that the hazardous constituents for which EAF dust is a listed hazardous waste (i.e., lead, cadmium, and hexavalent chromium), were either non-detectable or present in extremely low concentrations (well below any groundwater standard) in the ground water. Phase I, p. 2.

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<sup>3</sup> Attachments to RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022 included in digital copy submitted via email.

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Sample results from 2021 continue to show no impact to groundwater from the Fill Area. Based on the analytical data for both sampling events in 2021, groundwater did not exceed the drinking water standards as referenced in 35 IAC 725, Appendix C, USEPA Interim Primary Drinking Water Standards. RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022, p. 6. In fact, the groundwater sampling every year since monitoring started revealed similar results. See e.g., Groundwater and Hazardous Waste Reports 1993 to 2021. Further, inspection of the wells in 2021 shows the wells were in good condition and locked securely -- as they have been every year since 1993. *Id.* p. 2. In other words, the wells have been maintained to provide valid data. Consequently, the extensive history of groundwater monitoring indicates there is no threat to human health or the environment.

**B. Groundwater Monitoring is Equally Relevant to Leachate in Assessing Impact.**

IEPA alleges because there is no leachate collection or monitoring system, it cannot be determined if leachate is present or if the integrity of the cover has been maintained. IEPA ignores USEPA guidance that states that groundwater monitoring is "the primary means of detecting leachate releases and groundwater contamination." USEPA Guidance, p. 6. In fact, Illinois regulations allow for IEPA to consider either leachate OR groundwater monitoring results in determining whether there is the potential for migration of hazardous wastes at levels that may be harmful to human health and the environment (725.218 (g)(1)(A)(i)). Here, IEPA fails to consider the thirty years of groundwater monitoring that shows no potential for harm to human health or the environment.

The absence of a specific *leachate* monitoring system does not indicate there is an increased risk to human health or the environment where there is a long history of groundwater monitoring. Groundwater testing indicates there is no risk of or impact from any alleged leachate. Moreover, the geochemical conditions present in the subsurface show that transport of metals in the ground water as dissolved species will not occur. Phase I, p. 8. The presence of large amounts of alkaline slag and the calcium-magnesium carbonate which comprises the dolomitic limestone bedrock ensure that any low pH water entering the subsurface would be immediately neutralized, and any dissolved metals present in such water would precipitate as insoluble carbonate complexes. *Id.* These same permanently alkaline conditions will prevent any ground water moving through the subsurface from being capable of leaching metals from the Fill Area materials because the requisite low pH conditions required for leaching to occur, cannot exist. *Id.*

As to integrity of the Fill Area cover, inspections conducted for the last twenty years indicate the landfill cover is in good condition. The Company is currently in the process of general cover maintenance and is removing some vegetation that has grown in the area. As described in Section II below, ongoing maintenance of the cover can be established in a land use restriction if necessary.

**C. The Fill Area Poses No Risk Because it is Located in a Secured, Industrial Area.**

USEPA Guidance looks to "relevant facility location characteristics" such as "proximity to vulnerable areas" like residential areas and surface and drinking water sources, surrounding land use, areas prone to flooding and whether facility conditions minimize the potential for adverse

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impacts on local populations if there is a release from the unit. USEPA Guidance, p. 7 IEPA's notice letter does not evaluate the Fill Area's location characteristics.

The Fill Area occupies two-acres surrounded by a ten-foot-high, locked chain link fence that is located in the center of 25 acres of industrial property formerly used by Ceco, and now owned by RCH Newco. Access to the Property is by an unnamed paved road from New Avenue. The entire Property, including the Fill Area, is surrounded by a heavily industrialized area.

The Fill Area is almost entirely in Zone C, which is characterized by minimal flooding. Phase I, p. 3. "There are no significant surface water bodies, streams or wetland areas located at the Property". *Id.* at p. 11. No drinking water sources exist downstream of the Fill Area that take water from the I & M Canal. *Id.* at 12. Similarly, no drinking water sources using ground water are located hydraulically down-gradient from the Property. *Id.* The location characteristics of the Fill Area support a finding of no risk to human health or the environment.

## **II. Reasonable Alternatives Should be Utilized in Lieu of Indefinite Post Closure Care**

In its November 15<sup>th</sup> letter, IEPA states the "establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste left in place. Long-term restrictions of future land use must be placed on the Site to minimize future exposure." However, IEPA fails to consider the fact that the Fill Area is surrounded by a locked fence, and a deed restriction already exists on the Property to preclude access. The deed restriction, already recorded against the title of the Property, limits the Property to industrial use unless permission is granted by IEPA, restricts worker contact with the co-disposed material, and requires that any of the co-disposed material removed must be managed in accordance with the provisions of 35 Ill. Adm. Code, Subtitle G. Ex. C., Deed Restriction. In the event IEPA determines that additional property restrictions are necessary, they can be easily added without extending post closure care. The Deed Restriction could be converted to an environmental land use control (ELUC) to permanently restrict property use (at least until IEPA agrees to remove the restriction). ELUCS are enforceable documents (35 Ill. Admin. Code 742.1010(c)(3)). Examples of land use limitations or requirements that IEPA generally imposes include a prohibition of use of groundwater for potable purposes, an industrial/commercial property use restriction, and maintenance of an engineered barrier. "Environmental Land Use Control," IEPA Website; 35 Ill. Adm. Code 742 subpart J. In this case, the Deed Restriction already in place could include maintenance of the landfill cover if necessary. This would eliminate any potential argument IEPA has that there could be a risk to human health and the environment without ongoing maintenance.

Assuming IEPA can establish a threat of harm that is not addressed by the existing (or amended) Deed Restriction, Illinois regulations allow for more reasonable methods of including long term controls – rather than an indefinite RCRA permit. Specifically, 35 Ill. Adm. Code 703.121(b) (citing to 703.161) provides for an alternative Agency plan or other enforceable document (such as an administrative order on consent, or ELUC) to establish any long term controls that might be necessary.

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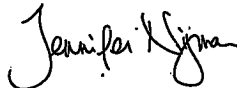
### Conclusion

Before a post-closure care period can be extended, IEPA must show cause – and must be able to show that there is a need to prevent threats to human health and the environment. 725.218(g). IEPA cannot make such a showing in this case as there is no such threat. The Fill Area on the Property contains only 8.5% of EAF dust mixed with non-hazardous materials, is in the center of 25-acres of land used for industrial purposes, has almost three decades of groundwater samples that are within acceptable limits, and can be adequately maintained with appropriate environmental land use controls. For these reasons, IEPA should withdraw its notice for the extension of post-closure care.

The Company requests a public meeting to address these issues.

Please contact the undersigned if you have any questions.

Very truly yours,



Jennifer Nijman  
Counsel for RCH Newco II, LLC

attachments



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3301

MAR 13 2024

Mr. William J. Sawitz  
RCH Newco II, LLC  
27501 Bella Vista Parkway  
Warrenville, IL 60555

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

9589 0710 5270 0477 0564 15

E X H I B I T 7

Re: 1978030005 – Will County  
RCH Newco II, LLC – New Ave. & Ceco Rd.  
ILD990785453  
Log No. C-68 (Notification)  
RCRA Closure  
Permit Correspondence

Dear Mr. Sawitz:

The purpose of this letter is to inform RCH Newco II, LLC (RCH Newco), located at New Avenue and Ceco Road in Lemont, Illinois, that the Illinois EPA has conducted a review of the post-closure status of the subject hazardous waste management unit and has determined that the post-closure care period for the two-acre hazardous waste landfill must be extended to address current and future environmental concerns identified in this letter in accordance with 35 Ill. Adm. Code 725.218(g)(2) and the USEPA's "Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA", dated December 15, 2016 (2016 USEPA Guidance).

This letter constitutes the Illinois EPA's final determination to extend the RCRA post-closure care period at the above-referenced site for at least an additional thirty (30) years beyond January 1, 2023, pursuant to 35 Ill. Adm. Code 725.217(a)(1) and 725.218(g)(2), and to require RCH Newco to maintain its post-closure care financial assurance for the above-referenced site, based on the Illinois EPA's determination and basis for decision included herein.

## I. SITE AND PROCEDURAL HISTORY

- a. On February 7, 1996, the Illinois EPA determined that post-closure care for the two-acre hazardous waste landfill began on January 1, 1993, under the facility's approved Interim Status Post-Closure Plan (Log No. C-68), requiring that post-closure care be maintained for a minimum of thirty (30) years or until at least January 1, 2023. Post-closure care included requirements for monitoring, maintaining, and repairing the cover system of the hazardous waste landfill as well as monitoring of the groundwater.
- b. On August 29, 1996, the Illinois EPA issued a decision approving a modification to the closure/post-closure plan (Log No. C-68-M-5). Included in that modification, Condition 1(b) stated that, pursuant to 35 Ill. Adm. Code 703.121(b), the facility must also eventually obtain a RCRA post-closure permit.
- c. The Illinois EPA stated again, "the facility must also eventually obtain a RCRA post-closure permit," in the following correspondence:

2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120  
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

1978030005/RCH Newco  
Log No. C-68 (Notification)  
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June 24, 1998, (C-68-M-7), Condition 3 and Condition 6.b;  
December 20, 1999, (C-68-M-8), Condition 11.

- d. On June 2, 2009, Illinois EPA issued a letter to RCH Newco (Log No. C-68-M-12) approving modifications to the approved interim status closure/post-closure plan, subject to various conditions including the following:
  - Condition 1(b): The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained.
  - Condition 1(b)(2): Corrective action shall be taken if: (a) ponding is observed on the final cover; (b) cracks or erosion channels greater than one inch form for whatever reason; (c) the vegetative cover is distressed; (d) vector problems arise; or (e) vegetation with tap roots are found to be growing on the final cover.
- e. On July 12, 2022, RCH Newco submitted a request to modify its post-closure care plan and cost estimate.
- f. On September 21, 2022, the Illinois EPA responded to RCH Newco's request, determining the need for additional information, but also noting that certain post-closure care plan conditions, notably Condition 1(b) and its subsections, were not being met.
- g. On November 15, 2022, the Illinois EPA notified RCH Newco of its tentative decision to extend the post-closure care period for the two-acre hazardous waste landfill at the above-referenced facility.
- h. On November 18, 2022, the Illinois EPA's tentative decision was publicly noticed through The Herald News and made available for public comment, as required by 35 Ill. Adm. Code 725.218(g)(2)(A).
- i. During the 30-day public comment period, the Illinois EPA received comments from Nijman Franzetti LLP, on behalf of RCH Newco, dated December 19, 2022. These comments were the only comments received and were reviewed and considered before the Illinois EPA made its final determination.
- j. At the request of RCH Newco, a public hearing to discuss the extension of the post-closure care period at the site was held on April 19, 2023, via the WebEx online platform. No one representing RCH Newco attended the public hearing. No comments were received during the public hearing.

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## 2. ILLINOIS EPA DETERMINATION AND BASIS FOR DECISION

The Illinois EPA has reviewed RCH Newco's December 19, 2022, comments, and provides its responses in Attachment 1 to this document. Having considered all comments submitted, the Illinois EPA's final decision to extend the post-closure care period for the two-acre landfill at the above-referenced facility is based on the following determinations:

- a. Nature of waste in the landfill: The waste in the landfill includes approximately 2,500 cubic yards of electric arc furnace dust (EAF Dust) which is a listed hazardous waste (K061), and approximately 29,500 cubic yards of non-hazardous slag. The EAF Dust is also characteristically hazardous for lead (D008) and cadmium (D006). Pursuant to 35 Ill. Adm. Code 721.103(a)(2)(D), when a listed hazardous waste (EAF Dust) is mixed with a nonhazardous waste (the slag), the entire mixture becomes a listed hazardous waste.

The Illinois EPA therefore has determined that, by definition, the entire 32,000 cubic yard of waste in the landfill is considered a listed hazardous waste. The waste was not pre-treated to meet the Land Disposal Restrictions (LDRs) for hazardous waste prior to disposal in the hazardous waste landfill.

- b. Unit Type/Design: The bottom liner consists of compacted clay. The final cover consists of 2-feet of compacted clay, 18 inches of select fill and 6 inches of topsoil with vegetation. A viable cover is one of the most important mechanisms in preventing leachate generation and, ultimately, a release of contaminants from a landfill. The integrity and effectiveness of the landfill's final cover must be adequately monitored and maintained. Vegetation with well-established tap roots was found to have been growing on the landfill cover and is growing adjacent to the landfill.

This lack of cover maintenance is in violation of RCRA post-closure care requirements as well as Condition 1(b), and specifically, 1(b)(2), of Illinois EPA's June 2, 2009 letter (Log No. C-68-M-12). The Illinois EPA issued Violation Notice (VN) L-2023-00075 on March 27, 2023 to RCH Newco due to lack of cover maintenance at the site. On August 17, 2023, a Notice of Compliance commitment Agreement Non-Issuance was issued to the facility by Illinois EPA regarding the violations. This letter indicated that the resolution would involve the Office of the Attorney General or other appropriate prosecutorial authority.

- c. Leachate: According to the 2016 US EPA Guidance, monitoring for leachate generation serves as the most effective way of examining the integrity of the waste management unit (e.g., it can suggest a cover or liner failure when leachate is detected late in the post-closure care period). The hazardous waste landfill does not have a leachate collection or monitoring system.

The Illinois EPA therefore determines that it cannot be known if leachate is present within the landfill. Without a working leachate collection/monitoring system, the extent of liquids that may have penetrated the compromised cover system during the post-closure period cannot be determined as required by 35 Ill. Adm. Code 725.410(a)(1) & (5), 725.410(b), and 725.217(a)(1).



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- d. **Long Term Care:** The establishment and maintenance of physical and legal controls at the site are necessary to prevent unacceptable exposure to the hazardous waste and hazardous constituents abandoned within the landfill. The Illinois EPA has determined that long-term monitoring including maintenance of the cover systems and groundwater monitoring systems, control of any liquids (leachate) in landfills, and restrictions of future land uses must be placed on hazardous waste landfills to minimize future exposures and potential hazardous waste release.

Pursuant to 35 Ill. Adm. Code 703.121, the site must obtain a RCRA post-closure permit to achieve the required long-term care of the landfill. The permit will be the mechanism the Illinois EPA uses to verify the facility is maintaining the landfill.

The landfill is currently regulated under the RCRA Interim Status Standards at 35 Ill. Adm. Code Part 725; however, this site is required to obtain a RCRA post-closure permit pursuant to 35 Ill. Adm. Code 703.121, as specified in several previous decision documents from the Illinois EPA. Therefore, Section 39(g) of the Environmental Protection Act (Act) is applicable and states: *"The Agency shall include as conditions upon all permits issued for hazardous waste disposal sites such restrictions upon the future use of such sites as are reasonably necessary to protect public health and the environment, including permanent prohibition of the use of such sites for purposes which may create an unreasonable risk of injury to human health or to the environment."*

This final determination to extend the post-closure care period for the hazardous waste landfill at this facility is based upon the requirements at 35 Ill. Adm. Code 703.121, 725.218, 725.131, Sections 12(a), 21(n), and 39(g) of the Act, Illinois EPA's November 15, 2022 letter, and the responses to comments attached to this letter.

The facility must provide an application for a RCRA post-closure permit to the Illinois EPA Bureau of Land Permit Section within 180 days of the date of this letter. 35 Ill. Adm. Code 703.214 describes the information that must be submitted by an owner/operator for a RCRA Post-Closure Care Permit. Attached to this letter are two (2) documents to assist in preparing your application, *Information Which Must be Provided in an Application for a RCRA Post-Closure Permit (May 2021)* and *RCRA Post-Closure Permit Application Completeness and Technical Review Checklist (May 2021)*.

This final determination action shall constitute the Illinois EPA's final action on the subject identified in this letter. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within thirty-five (35) days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed ninety (90) days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

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Illinois Environmental Protection Agency  
Division of Legal Counsel  
Attn: Land Enforcement Unit Manager  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, IL 62794-9276  
217/782 5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk  
State of Illinois Center  
100 West Randolph Street, Suite 11 500  
Chicago, IL 60601  
312/814 3620

Work required by this letter, the associated submittal, or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Any questions regarding the groundwater related aspects of this project, please contact Amy Butler at 217/558-4716. Questions regarding other aspects of this project should be directed to Kelly Huser at 217/524-3867.

Sincerely,



Jacqueline M. Cooperider, P.E.  
Permit Section Manager  
Bureau of Land

JMC: KDH:1978030005-RCRA-C68-Corr(3).docx

*KDH TWH AMB slr*

Attachments:

1. Illinois EPA's Responses to RCH Newco's December 19, 2022, Comments
2. Information Which Must be Provided in an Application for a RCRA Post-Closure Permit (May 2021)
3. RCRA Post-Closure Permit Application Completeness and Technical Review Checklist (May 2021)

CC: Kristin Pelizza, RCH Newco  
Bruce Shabino, P.G., Carlson Environmental, Inc.  
Emily Keener, Norberto Gonzalez, USEPA Region V

## ATTACHMENT 1

### ILLINOIS EPA'S RESPONSE TO COMMENTS RCH Newco II, LLC 1978030005 – Will County

The responses below address comments received from Jennifer Nijman, counsel for RCH Newco II, LLC (RCH Newco), dated December 19, 2022, and received by the Illinois EPA on December 19, 2022 (via email) pertaining to the Illinois EPA's Intent to Extend the Post-Closure Care for RCH Newco's interim status landfill issued November 18, 2022.

Section A of this attachment includes the Illinois EPA's general response to RCH Newco's Comments regarding extending post-closure care, followed by more detailed responses to the specific comments provided in their letter in Section B.

#### A. Illinois EPA General Response to Comments

Landfills are man-made structures and need to be consistently monitored and maintained to ensure they continue to function as designed and to prevent failure of the structure and negative effects on human health and the environment. Unaddressed small problems can result in bigger, potentially catastrophic, and expensive problems.

Current hazardous waste landfills are designed to contain hazardous wastes and prevent hazardous constituents from entering the environment. The design standard for RCH Newco's landfill do not meet these current standards. Buried hazardous constituents continue to pose a threat to human health and the environment as long as they remain in place. Therefore, permits and post-closure care plans for landfills must restrict the types of activities that can occur on a closed landfill. Additionally, they must include, monitoring of any leachate in the landfill, monitoring and maintenance of the cover system, and monitoring of the groundwater. The permits and plans must also provide remediation strategies and contingency plans for an accidental release of hazardous constituents.

Federal and state RCRA regulations allow for the Illinois EPA to extend the post-closure care period at these facilities because removing all regulatory control over a hazardous waste landfill would be a significant threat to human health and the environment.

Termination of permits and/or post-closure plans would eliminate requirements to monitor and maintain the hazardous waste disposal units and undermine any enforceable land use restrictions on the property. Future property owners, unaware of the environmental hazard, could constructing a building, bury utility lines, or conduct other activities on the landfill that could compromise the integrity of the cover or base liner system. These activities would allow water to enter the landfill and create pathways for hazardous constituents to enter the surrounding environment. The USEPA's December 15, 2016, guidance memo on post-closure care states; "*An overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit.*" (2016 USEPA Guidance p. 4.)

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There are unpredictable concerns regarding future population, land use, groundwater, surface water, drinking water, or flood conditions in the area around the hazardous waste landfill. Hence, the risks posed by an uncontrolled hazardous waste landfill could be considerably higher in the future.

Removing regulatory oversight from a hazardous waste landfill (i.e., terminating a closure plan or permitting requirements), is not protective of human health and the environment. If neglected, the soil cover system on a landfill will erode and eventually no longer keep water out of the landfill and hazardous constituents will be released from the landfill. This is an unacceptable risk to the public and the environment.

## **B. Illinois EPA's Detailed Response to RCH Newco's Comments**

### **COMMENT 1**

#### ***I. Post Closure care should cease because the fill area poses no threat to human health or the environment.***

***IEPA alleges because the Fill Area contains [Electric Arc Furnace Dust (K061)], a listed hazardous substance, and because the EAF was not treated, post-closure care should be extended. However, IEPA's conclusion does not address the lack of any risk for migration and does not account for the unique characteristics of waste and the Fill Area itself. USEPA Guidance clarifies that the purpose of knowing whether waste was treated is because treatment reduces the "mobility or leachability of hazardous constituents" and is another "means of achieving LDR's groundwater protection goal." USEPA Guidance, p. 4. Here, no such mobility concern exists.***

***The only reason for the Fill Area was to contain a small amount of EAF dust that could not be separated from non-hazardous steel waste. Only 8.5% of the Fill Area consists of the EAF dust – the remainder being non-hazardous materials. The Fill Area contents have not changed since the Fill Area was finished almost three decades ago. The Fill Area is covered with two feet of compacted clay, 18 inches of select fill and six inches of topsoil with vegetation to prevent infiltration. The Fill Area is lined with compacted clay to protect from migration. IEPA approved of the Fill Area design as appropriate for the waste at issue.***

***Without referencing the fact that thirty years of monitoring has shown no risk of harm, IEPA seems to be arguing that simply because a small amount of a listed hazardous waste exists, it must be assumed to be a threat to human health or the environment. That is not the standard set out by Illinois regulations or USEPA Guidance. (RCH Newco Comment p. 2-3).***

#### **Illinois EPA Response to Comment 1:**

Electric Arc Furnace Dust (K061) is a listed hazardous waste due to toxicity from hexavalent chromium, lead, and cadmium (35 Ill. Adm. Code 721.132, Part 721, Appendix G). In addition, EP Toxicity testing indicated that the EAF dust at this site is a characteristically hazardous waste due to lead and cadmium (See Section 2.2.1 of Carlson

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RFI Phase I Report: May 1996). Approximately 2,500 cubic yards of EAF dust was disposed of in the on-site landfill.

The RCRA regulations at 35 Ill. Adm. Code 721.103(a)(2)(D) are clear that a mixture of a solid waste and a listed hazardous waste (in this case electric arc furnace dust – K061) is a hazardous waste. Hence, the entire contents of the landfill (32,000 cubic yards) are considered a listed hazardous waste.

As noted on page 3 of the December 19, 2022 letter, the contents of the landfill (Fill Area) have not changed since the landfill was closed almost three decades ago. The contents continue to be hazardous waste (32,000 cy) and as such, there is continued concern about the mobility of hazardous constituents and potential for contamination of the soil and groundwater if the appropriate monitoring, maintenance, and land use restrictions are not continued at the landfill in the future. As stated in 2016 USEPA Guidance, “an overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit.”

## COMMENT 2

### I.A. Thirty Years of Groundwater Monitoring at the Fill Area Demonstrates No Risk to Human Health and the Environment

*IEPA does not appear to evaluate almost three decades of groundwater sampling that shows there is no risk to human health and the environment. According to USEPA Guidance, “[g]roundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination.” USEPA Guidance, p. 6. “Groundwater should not exceed risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based levels and scenarios.” Id. The objective of the groundwater sampling is to collect data that would determine whether the Fill Area is impacting the groundwater. (RCH Newco Comment p. 3).*

#### Illinois EPA Response to Comment 2:

Illinois EPA acknowledges that hazardous constituents have not currently been detected in the groundwater. However, this does not indicate that there will be no risk to human health and the environment in the future. As stated in 2016 USEPA Guidance, “there are often uncertainties in whether controls will continue to function as planned or whether future activities will lead to unplanned exposures to human and environmental receptors. Even if there is not current evidence of actual releases from the facility, significant factors can change over time.” As long as hazardous waste remains in the landfill, there is an inherent risk that hazardous waste and hazardous constituents could find potential pathways into the groundwater and soil. Without continued monitoring, the public would be at risk of being unaware if hazardous constituents were released from the landfill.

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### COMMENT 3

***Sample results from 2021 continue to show no impact to groundwater from the Fill Area. Based on the analytical data for both sampling events in 2021, groundwater did not exceed the drinking water standards as referenced in 35 IAC 725, Appendix C, USEPA Interim Primary Drinking Water Standards. RCRA 2021 Annual Groundwater Monitoring Report, April 8, 2022, p. 6. In fact, the groundwater sampling every year since monitoring started revealed similar results. See e.g., Groundwater and Hazardous Waste Reports 1993 to 2021. Further, inspection of the wells in 2021 shows the wells were in good condition and locked securely -- as they have been every year since 1993. Id. p. 2. In other words, the wells have been maintained to provide valid data. Consequently, the extensive history of groundwater monitoring indicates there is no threat to human health or the environment. (RCH Newco Comment p. 4).***

#### **Illinois EPA Response to Comment 3:**

See Illinois EPA's General Response to Comments and Illinois EPA's Response to Comment 2.

### COMMENT 4

#### **I.B Groundwater Monitoring is Equally Relevant to Leachate in Assessing Impact**

***IEPA alleges because there is no leachate collection or monitoring system, it cannot be determined if leachate is present or if the integrity of the cover has been maintained. IEPA ignores USEPA guidance that states that groundwater monitoring is "the primary means of detecting leachate releases and groundwater contamination." USEPA Guidance, p. 6. In fact, Illinois regulations allow for IEPA to consider either leachate OR groundwater monitoring results in determining whether there is the potential for migration of hazardous wastes at levels that may be harmful to human health and the environment (725.218 (g)(1)(A)(i)). Here, IEPA fails to consider the thirty years of groundwater monitoring that shows no potential for harm to human health or the environment. (RCH Newco Comment p. 4).***

#### **Illinois EPA Response to Comment 4:**

In addition to below, see Illinois EPA's General Response to Comments as well as Illinois EPA's Response to Comment 6.

The Illinois EPA acknowledges that hazardous constituents have not currently been detected in the groundwater. However, this does not indicate that there is no potential risk to human health and the environment in the future. If hazardous waste remains in place, there is and always will be a risk that hazardous waste and hazardous constituents could migrate given many different factors including, but not limited to, unknown future environment and climate factors resulting in erosion or flooding and potential for human error.

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#### COMMENT 5

***As to integrity of the Fill Area cover, inspections conducted for the last twenty years indicate the landfill cover is in good condition. The Company is currently in the process of general cover maintenance and is removing some vegetation that has grown in the area. As described in Section II below, ongoing maintenance of the cover can be established in a land use restriction if necessary. (RCH Newco Comment p. 4).***

#### **Illinois EPA Response to Comment 5:**

On November 22, 2022, an inspection by the Illinois EPA documented that there has been a lack of maintenance of the vegetative cover. The inspection found that there were multiple bare spots, erosion issues, growth of woody shrubs, and multiple ruts present in the cover. An 8-inch tree stump was found in the middle of the final cover. The root system from a tree this size likely penetrated the final cover of the landfill and as a result created a conduit for water (precipitation & run-off) to enter the landfill. The Illinois EPA also observed trees growing adjacent to the landfill. Therefore, it is likely that tree root systems are encroaching and could potentially penetrate the final cover or liner of the landfill. The approved closure plan required the facility to monitor and maintain the effectiveness of the landfill's cover. The results of the November 22, 2022, Illinois EPA inspection indicate that the final cover of the landfill has been neglected. The facility's maintenance records and compliance history of the post-closure plan must also be taken into consideration as relevant information when considering extending or shortening the post-closure care period in accordance with 2016 USEPA's guidance. The historic negligence demonstrates that it is appropriate to regulate the facility under a RCRA permit for future post-closure care of the landfill at this facility.

#### COMMENT 6

##### **I.C. The Fill Area Poses No Risk Because it is located in a Secured Industrial Area**

***USEPA Guidance looks to "relevant facility location characteristics" such as "proximity to vulnerable areas" like residential areas and surface and drinking water sources, surrounding land use, areas prone to flooding and whether facility conditions minimize the potential for adverse impacts on local populations if there is a release from the unit. USEPA Guidance, p. 7 IEPA's notice letter does not evaluate the Fill Area's location characteristics.***

***The Fill Area occupies two-acres surrounded by a ten-foot-high, locked chain link fence that is located in the center of 25 acres of industrial property formerly used by Ceco, and now owned by RCH Newco. Access to the Property is by an unnamed paved road from New Avenue. The entire Property, including the Fill Area, is surrounded by a heavily industrialized area.***

***The Fill Area is almost entirely in Zone C, which is characterized by minimal flooding. Phase I, p. 3. "There are no significant surface water bodies, streams or wetland areas located at the Property". Id. at p. 11. No drinking water sources exist downstream of the Fill Area that take water from the I & M Canal. Id. at 12. Similarly, no drinking water sources using ground water are located hydraulically down-gradient from the Property. Id. The location***

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**characteristics of the Fill Area support a finding of no risk to human health or the environment. (RCH Newco Comment p. 4-5).**

#### **Illinois EPA Response to Comment 6:**

As noted in 2016 USEPA guidance, there are considerable unknowns, and no guarantees, regarding future population, land use, groundwater, surface water, drinking water, flood conditions, or any other factors associated with potential climate change around the hazardous waste landfill. The hazardous waste in the landfill should not change over time, but the factors surrounding the landfill will continue to fluctuate, therefore the waste presents a continued threat to human health and the environment.

#### **COMMENT 7**

#### **II. Reasonable Alternatives Should be Utilized in Lieu of Indefinite Post-Closure Care**

***In its November 15<sup>th</sup> letter, IEPA states the “establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste left in place. Long-term restrictions of future land use must be placed on the Site to minimize future exposure.” However, IEPA fails to consider the fact that the Fill Area is surrounded by a locked fence, and a deed restriction already exists on the Property to preclude access. The deed restriction, already recorded against the title of the Property, limits the Property to industrial use unless permission is granted by IEPA, restricts worker contact with the co-disposed material, and requires that any of the co-disposed material removed must be managed in accordance with the provisions of 35 Ill. Adm. Code, Subtitle G. Ex. C., Deed Restriction. In the event IEPA determines that additional property restrictions are necessary, they can be easily added without extending post closure care. The Deed Restriction could be converted to an environmental land use control (ELUC) to permanently restrict property use (at least until IEPA agrees to remove the restriction). ELUCS are enforceable documents (35 Ill. Admin. Code 742.1010(c)(3)). Examples of land use limitations or requirements that IEPA generally imposes include a prohibition of use of groundwater for potable purposes, an industrial/commercial property use restriction, and maintenance of an engineered barrier. “Environmental Land Use Control,” IEPA Website; 35 Ill. Adm. Code 742 subpart J. In this case, the Deed Restriction already in place could include maintenance of the landfill cover if necessary. This would eliminate any potential argument IEPA has that there could be a risk to human health and the environment without ongoing maintenance.***

***Assuming IEPA can establish a threat of harm that is not addressed by the existing (or amended) Deed Restriction, Illinois regulations allow for more reasonable methods of including long term controls – rather than an indefinite RCRA permit. Specifically, 35 Ill. Adm. Code 703.121(b) (citing to 703.161) provides for an alternative Agency plan or other enforceable document (such as an administrative order on consent, or ELUC) to establish any long-term controls that might be necessary. (RCH Newco Comment p. 4-5).***



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#### **Illinois EPA Response to Comment 7:**

In addition to below, see Illinois EPA's Response to Comment 5.

An environmental land use control (ELUC) is not applicable in this case because the Tiered Approach to Corrective Action Objectives (TACO) regulations at 35 Ill. Adm. Code Part 742 are only applicable when waste is removed from a site. Landfills by design leave waste in place and are therefore excluded per 35 Ill. Adm. Code 742.105(h). RCH Newco is leaving waste in place and therefore, the remediation standards of 35 Ill. Adm. Code Part 742 do not apply.

A Deed Restriction is not considered an enforceable document. Therefore, it cannot be relied upon to ensure a hazardous waste landfill is properly monitored and maintained, or that future land use of the landfill is adequately limited and protective of human health and the environment. Also, refer to Illinois EPA's Response to Comment 5.

An environmental covenant (EC) under the Uniform Environmental Covenant Act could potentially be an enforceable document that could be applied to the landfill. However, this legal document could take several years to establish. Therefore, to ensure that long term controls are maintained at the facility, the site needs to continue post-closure care and obtain a RCRA Post-Closure permit subject to 35 IAC Part 724.

#### **COMMENT 8**

*Before a post-closure care period can be extended, IEPA must show cause – and must be able to show that there is a need to prevent threats to human health and the environment. 725.218(g). IEPA cannot make such a showing in this case as there is no such threat. The Fill Area on the Property contains only 8.5% of EAF dust mixed with non-hazardous materials, is in the center of 25-acres of land used for industrial purposes, has almost three decades of groundwater samples that are within acceptable limits, and can be adequately maintained with appropriate environmental land use controls. For these reasons, IEPA should withdraw its notice for the extension of post-closure care.*

#### **Illinois EPA Response to Comment 8:**

Hazardous waste remains in place at the landfill which presents an inherent uncertainty and potential threat to human health and the environment. A landfill is a man-made structure built to contain hazardous waste and keep hazardous constituents from entering the environment. Regulations requiring that a landfill be properly designed, constructed, operated, closed, and maintained, are in place to provide protection of human health and the environment. Unless the hazardous waste is completely remediated from the subject property, continued maintenance and oversight is required.

**ATTACHMENT 2**

**Information Which Must be Provided in an Application for a  
RCRA Post-Closure Permit (May 2021)**



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

## Information Which Must be Provided in an Application for a RCRA Post-Closure Permit May 2021

### Introduction/Purpose

35 Ill. Admin. Code 702.121 requires facilities that have closed a hazardous waste management unit as a landfill to obtain a RCRA post-closure permit. This permit will set forth the requirements which must be met in providing the closed unit at least thirty years of post-closure care: it will also contain requirements regarding corrective action efforts for the solid waste management units of concern at the facility. This document sets forth in an organized and logical form, the information which must be provided in an application for a RCRA post-closure permit; it was developed in general accordance with 35 Ill. Admin. Code 703.214

Hazardous waste management units closed as landfills (and thus must be covered by a RCRA post-closure permit) typically fall into one of four categories:

- Hazardous waste surface impoundments that could not achieve "clean closure" and thus were closed as landfills;
- Hazardous waste surface impoundments that were operated as disposal units and closed as a landfill;
- Landfills which co-disposed of hazardous waste with municipal and non-hazardous special waste; and
- Landfills which received hazardous waste as well as non-hazardous special waste.

The key components of post-closure care of a unit closed as a landfill includes: maintenance of the final cover; operation of any leachate/gas collection system(s); and implementation of a groundwater monitoring and, as necessary, remediation system. In addition, as noted above, another other key item that must be addressed under a RCRA post-closure permit is the implementation of an appropriate corrective action program on the solid waste manage units of concern at the facility.

This document is comprised of the following six sections which identify in outline form the information which should be contained in an application for a RCRA post-closure permit:

- A. Forms, Certifications, Confidentiality, and Public Involvement
- B. Facility Description
- C. Groundwater Monitoring
- D. Procedures to Prevent Hazards
- E. Post-Closure Requirements
- F. Corrective Action

The forms mentioned in this document can be found on Illinois EPA's internet site (<https://www2.illinois.gov/epa/Pages/default.aspx>). Illinois EPA will follow the procedures set forth in 35 Ill. Admin. Code 702, 703, and 705, as well as the Illinois Environmental Protection Act, in reviewing and processing this application.

The Illinois EPA's Bureau of Land Permit Section is responsible for reviewing RCRA post-closure permit applications; these applications should be submitted to Illinois EPA at the address above. Questions regarding the development of the groundwater-related aspects of an application should be directed to the Groundwater Unit of the Permit Section while questions related to other aspects of the application should be directed to the RCRA Unit of the Permit Section. The general telephone number for both the Groundwater Unit and the RCRA Unit is 217/524-3300.

4302 N. Main Street, Rockford, IL 61103 (815) 987-7760  
595 S. State Street, Elgin, IL 60123 (847) 608-3131  
2125 S. First Street, Champaign, IL 61820 (217) 278-5800  
2009 Mall Street Collinsville, IL 62234 (618) 346-5120

9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000  
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022  
2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200  
100 W. Randolph Street, Suite 4-500, Chicago, IL 60601

## **Table of Contents**

In addition to identifying the sections, tables, figures and attachments, the Table of Contents for the application should include a list of acronyms used in the application. This information will aid both the Illinois EPA and anyone from the general public who reads the permit application.

## **SECTION A--FORMS, CERTIFICATIONS, CONFIDENTIALITY, and PUBLIC INVOLVEMENT**

### **A.1 RCRA Part A Application Form: 702.121, 702.123, 702.126(a) and (d),703.181**

The Part A application must be complete and consistent with the Part B application. 703.181 specifies the contents of a Part A application. Signatures must be provided for both the owner and operator of the facility as described in Item A.2.1 below (of special concern is when the landowner(s) of a site are different from the company operating the hazardous waste facility).

### **A.2 Certification Using the LPC-PA23 Form: (703.182)**

A completed LPC-PA23 form must be included in the application (this form is available on Illinois EPA's internet site). Completion of this form should ensure the requirements of A.2.1 and A.2.2 below are met.

#### **A.2.1. Facility Certification: 702.121, 703.182, 702.126**

Applications must be accompanied by a certification as specified in 702.126(d) signed by authorized representatives of both the owner and operator of the facility (of special concern is when the landowner(s) of a site are different from the company operating the hazardous waste facility). Authorized representatives of an owner or operator which must complete and sign this certification are as follows: (1) for a corporation, a principal executive officer (at least at the level of vice-president); (2) for a partnership or sole proprietorship, a general partner or the proprietor, respectively; (3) for a municipal, state, Federal, or other public Agency, either a principal executive officer or ranking elected official. If the application is not signed by representatives other than those just described, information must be provided indicating that the person is authorized to sign RCRA permit applications for the owner or operator.

#### **A.2.2. Technical Information Certification: 703.182, Illinois Professional Engineering Act**

Technical data, such as design drawings, specifications and engineering studies, must be certified (sealed) by a qualified Professional Engineer licensed to practice in the State of Illinois in accordance with Ill. Rev. Stat., par. 5101, Sec. 1 and par. 5119, Sec. 13.1. Work required to be conducted in developing an application or work required to be conducted for compliance with the RCRA regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

#### **A.2.3. 39i Certification: Section 39 (i) of Environmental Protection Act**

Section 39, Paragraph (i) of the Illinois Environmental Protection Act requires that Illinois EPA conduct an evaluation of prospective owner's or operator's prior experience in waste management operations

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before it issues a RCRA permit. This paragraph goes on to state that the Illinois EPA may deny such a permit if the prospective owner or operator or any employee or officer of the prospective owner or operator has a history of:

1. Repeated violations of federal, State, local laws, regulations, standards, or ordinances in the operation of waste management facilities; or
2. Conviction in this or another State of any crime which is a felony under the laws of this State, or conviction of a felony in a federal court, or conviction in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition; or
3. Proof of gross carelessness or incompetence in handling, storing, processing, transporting, or disposing of waste.

Illinois EPA has created a form (available on its internet site) which applicants (the owner and the operator) must use to provide it with the information necessary to make the evaluation described above.

**A.3 Public Disclosure Exemption Claims and Trade Secret Claims:**  
 Section 7 of the Act; 2 Ill. Adm. Code Part 1828; **35 Ill. Adm. Code Part 130**

Note: A.3.2 thru A.3.5 below are only applicable if an applicant desires to request a public disclosure exemption claim or trade secret claim. Any documents submitted that are not properly marked and justified will not be regarded as exempt and will be released to the public upon request.

**A.3.1. No Information Claimed Exempt from Public Disclosure**

If no information in the application is claimed exempt from public disclosure, the applicant should clearly state this in the cover letter and this subsection of the application. This will release any disclaimers on drawings, plans etc. that are included in the application.

**A.3.2. Trade Secrets Claims**

This claim should be asserted if any portion of the application is regarded as trade secret pursuant to **35 Ill. Adm. Code 130**. To assert this claim

1. Provide a claim and justification letter;
2. Stamp each page in red ink "TRADE SECRET" that is to be exempt.
3. Provide a version for public review which does not include the trade secret information.

**A.3.3. Exempt or Exempt In-Part Data Claims: 2 Ill. Adm. Code 1828.401**

This claim should be asserted if any portion of the application is regarded as exempt or exempt in part pursuant to **2 Ill. Adm. Code 1828.401**. To assert this claim:

1. Provide a claim and justification letter;
2. Appropriately mark those portions of the application for which the exemption is requested.
3. Provide a version of the application for public review which does not contain the information for which the exemption is requested.

**A.3.4. Privileged Information: 2 Ill. Adm. Code 1828.401**

This claim should be asserted if any portion of the submittal is regarded as privileged and meets the definition of privileged information pursuant to **1828.401**. To assert this claim:

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1. Provide a claim and justification letter;
2. Appropriately mark those portions of the application for which the claim is requested.
3. Provide a version of the application for public review which does not contain the information for which the exemption is requested.

**A.4 Public Participation: Facility Mailing List & Information Repositories:**  
Environmental Protection Act, Section 39(d), 35 Ill. Admin. Code 703.193, 703.248, 705.163

**A.4.1. Facility Mailing List:**

The Facility Mailing List required to be established and maintained in 35 Ill. Adm. Code 705.163(a) is a list of all entities who must be notified of any permit-related activities at a RCRA permitted facility. The application must include the most-recent list the facility has; this list must identify its last revision date and be provided as an attachment to the application. A printed copy and an electronic copy in MS Word format must be provided.

The list must be updated and resubmitted to the IEPA as needed to include individuals who have interacted with the facility such as: those attending the pre-application meeting, respondents to mailings, and those attending the public meeting when a permit modification is requested. IEPA will review and approve all updates prior to using the mailing list. Mailing lists originally developed by IEPA are available from IEPA's RCRA community involvement coordinator.

**A.4.2. Identification of Repositories:**

It is important that information regarding a RCRA permitted hazardous waste management facility be available to the local citizens for review. Thus, all information submitted to IEPA in furtherance of a RCRA permit application, (with the exception of trade secrets), must be made available to the public at the office of the County Board or governing body of the municipality and also in another location in the host community (or nearest community to the facility) no later than the date the permit application is submitted to IEPA. Provide the name, address, contact person, phone number, and business hours for each repository.

*Note: The community repository may not be located at the facility and must be available to the community for review and copying of application documents after regular office hours. Public libraries are recommended repository locations.*

**A.4.3. Contents of Repository:**

The repository contents must include all information submitted to IEPA in furtherance of a RCRA permit application (with the exception of trade secrets). The applicant is required to maintain, verify and update the contents of the repositories throughout the application process. Each time information is submitted to Illinois EPA, a copy must also be placed in the repository. Placement of a given submittal in the repository should be documented in the cover letter transmitting the submittal to Illinois EPA.

Repositories must be well-organized and kept up to date. A comprehensive inventory of all documents in the repository should be maintained, as well as a brief description of each document listed in the inventory. The applicant should visit each repository on a regular basis to ensure its organization is maintained.

**A.4.4. Public Notice of Repository Availability:**

The applicant must provide written notice of the repositories' availability for public review to everyone on the facility mailing list; this notice must include all of the following information:

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1. Identification and address or map of the facility and the hazardous waste management operations that the permit application addresses;
2. A statement that permit application materials have been prepared and are available for community members to review and copy at the repository.
3. The location and business hours of the repository.
4. A statement that the applicant will update the repository materials periodically during the Illinois EPA's review of the permit application.
5. The name, address and telephone number of the applicant's contact person to address questions regarding the application or to be added to the facility's mailing list for future permit activities.
6. The following statement "For general information on the hazardous waste management permit program in Illinois, please contact" then provide the address of the Illinois EPA RCRA Community Involvement Coordinator.

This notice must be made no later than the date the permit application is submitted to the Illinois EPA. Documentation that the public notices were made must be included in the application. Specifically provide a copy of the letter sent to individuals on the approved facility mailing list. Indicate the date the letter was sent, and the revision date of the mailing list used for the mailings.

## SECTION B--FACILITY DESCRIPTION

### **B.1 General Facility Description: 702.123, 703.183(a), 703.183(n), 703.183(s)**

#### **B.1.1. Operation of Facility:**

Provide the following information about the facility:

1. Identify the owner and operator of the facility as well as the address and size of the facility;
2. Describe the facility in general, its operations, and the specific activities conducted by the applicant that require a permit under RCRA, including the nature of the business.
  - a. Commercial facilities should identify the types of industry served;
  - b. On-site facilities should briefly describe the process(es) involved in the generation of hazardous waste.
3. A legal description of the facility developed and certified by a professional land surveyor licensed to practice in Illinois.
4. The Tax Property Identification Number(s) of the land which comprises the facility. If more than one Property Identification Numbers are associated with the facility, a scaled drawing showing the boundaries of each parcel within the facility must be provided.

#### **B.1.2. Hazardous Waste Management Units at the Facility**

Identify and briefly describe the hazardous waste management units at the facility.

Note: More information about these units will be provided in Section E of the application.

#### **B.1.3. Solid Waste Management Units at the Facility**

Identify and briefly describe the solid waste management units at the facility which are the focus of the RCRA corrective action program at the facility.

Note: More information about these units will be provided in Section F of the application.

### **B.2 Topographic Map: 702.123(g), 703.183(s), 703.184, 703.185(c), 703.185(d), 724.195, 724.197**

#### **B.2.1. Facility + 1 mile:**

Provide a topographic map (or Quadrangle map) that extends at least 1 mile beyond the property boundaries. This map must depict the legal boundaries of the facility and surrounding land uses.

#### **B.2.2. Facility + 1000 feet:**

Provide a topographic map that shows the layout of the facility and the surrounding area a distance of 1,000 feet outside the facility's property line. This map must be at a scale of 1 inch equal to not more than 200 feet. Ground surface contours must be shown on the map; the contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each hazardous waste management unit at the facility (a two foot interval should be used if the ground surface relief at the facility is less than 20' and a five foot interval should be used if the relief is greater than 20').

Multiple maps may be submitted to meet this requirement if necessary. The map(s) should contain/identify the following:



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<b>Map Requirements: Facility + 1,000 ft</b>	
Map Orientation (north arrow)	Areas in the 100-year flood plain
Map Date	Flood control or drainage barriers
Scale	Run-on/run-off control systems
Legal boundaries of the facility	Fire control facilities
Surrounding land uses	A wind rose
Access controls	Hazardous waste management units
Buildings and Structures	Solid waste management units
Storm drains	Equipment required by Item D.2 below
Sewers: storm, sanitary and process	Surface waters including intermittent streams
Any waste injection or groundwater withdrawal wells (both on-site and off-site)	

If multiple maps are used, a discussion of how the various maps meet the above requirements must be provided. In addition, if an applicant feels that some of these requirements cannot be met for some reason or are not applicable, then sufficient information must be provided in the application to support this position. Finally, with appropriate supporting justification/discussion in the application, the applicant may vary from the above requirements if what is provided meets the general intent of these requirements.

**B.3 Location Standards: 703.184, 724.118**

**B.3.1 Seismic Standard:**

Identify any hazardous waste management units within 200 feet (61 meters) of a fault which has had displacement during Holocene time.

**B.3.2. Floodplain Standard:**

Document whether or not the facility is located within a 100-year floodplain. Provide the source of this data as well as a copy of the relevant flood map produced by the National Flood Insurance Program (NFIP). Appropriate calculations/maps must be provided when NFIP maps are not available.

**B.3.3. Facilities in the 100-year Floodplain**

Facilities within the 100-year floodplain must provide the following information regarding procedures in place to prevent its flooding:

**B.3.3.1. Engineering Analysis and Structural/Engineering Study.**

Provide the following regarding information to demonstrate that flooding of the hazardous waste management units will not occur:

1. An engineering analysis that identifies and evaluates the various hydrodynamic and hydrostatic forces expected to result at the site as a consequence of a 100-year flood;
2. A structural or other engineering study that shows how the design of the hazardous waste management units and flood protection devices at the facility will prevent flooding of the units.

**B.3.3.2. Procedures to Remove Waste**

In lieu of B.3.3.1, provide a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded. This information must include:

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1. Timing of movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility.
2. The location(s) to which the waste will be moved, and a demonstration that those facilities are eligible to receive hazardous waste in accordance with 35 Ill. Admin. Code 702, 703, 724 and 725;
3. The planned procedures, equipment, and personnel to be used, and the means to ensure that such resources will be available in time for such use;
4. The potential for accidental discharge of waste during movement.

**B.3.4. Existing Facilities Not in Compliance with 35 Ill. Admin. Code 724.118(b)**

Provide a plan showing how the facility will be brought in compliance and a schedule for compliance with 35 Ill. Admin. Code 724.118(b). A variance petition regarding this plan/schedule to come into compliance with 35 Ill. Admin. Code 724.118(b) must be filed concurrently with the Illinois Pollution Control Board.

**B.4 Operating Record: 724.173**

The Permittee must keep and maintain a written operating record that includes all the records, reports, notifications, and data required by 35 Ill. Admin. Code 724.173 and the conditions in this permit for the entirety of the post-closure care period. Identify the location where the Operating Record is maintained at the facility. Describe the procedures used to record the following information described in 724.173 in the facility's operating record (as such information becomes available) during the post-closure period:

1. Records of inspections, and repairs
2. Monitoring, testing, analytical data, and corrective action data when required,
3. All closure and post-closure cost estimates,
4. Annual certification that a program is in place to reduce the volume/toxicity of hazardous waste generated at the facility.

Separate documents may be used to compile this information, provided the requirements of 724.173 are met. A description of where the operating record will be maintained must also be provided.

## SECTION C—GROUNDWATER MONITORING

### **C.1 Exemption from Groundwater Protection Requirements: 703.185, 724.190(b)**

If a waiver from the 35 Ill. Admin. Code 724, Subpart F groundwater monitoring requirements is requested, the applicant must demonstrate one of the following conditions applies to the facility or exempted under 724.101.

#### **C.1.1. Waste Piles: 724.190(b)(2) and (5)**

The waste pile has been designed and operated to meet conditions specified in 724.350(c).

#### **C.1.2. Landfill: 724.190(b)(2)**

The landfill has been designed and operated to meet conditions specified herein.

#### **C.1.3. No Migration: 724.190(b)(4)**

No potential for migration of liquid from a regulated unit to the uppermost aquifer exists during the active life of the regulated unit (including the closure period) and the post closure period. Predictions must be based on assumptions maximizing the rate of liquid migration.

### **C.2 Interim Status Groundwater Monitoring Data: 703.185(a)**

The applicant must provide, by reference, the location of a summary of the groundwater monitoring data obtained during the interim status period.

### **C.3 Historical Hydrogeological Summary: 703.185(b), 620.210**

The applicant must provide an identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property. Include groundwater classification, flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area). A table of hydraulic properties must be submitted which includes at a minimum permeability, sieve analysis, porosity, hydraulic conductivities, etc.

### **C.4 Topographic Map Requirements: 703.183(s), 703.185(c)**

The applicant must provide on the map required in 703.183(s) a complete legal description of the property boundary along with the following additional information:

The waste management area, the property boundary, the proposed point of compliance, the proposed groundwater monitoring zone (if applicable), the proposed location of groundwater monitoring wells and the information required in 703.185(b)

### **C.5 Contaminant Plume Description: 703.185(d), 721-Appendix I**

The applicant must provide a description of any plume of contamination detected in the groundwater originating from a regulated unit. Identify the concentrations of Part 721, Appendix I constituents (throughout the plume or the maximum concentration of each Appendix I constituent) for the plume of contamination delineated on the topographic map.

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**Note:** *The monitoring program for a given unit must be established based on the monitoring data from the facility and be appropriate for the groundwater conditions beneath the regulated unit.*

**Only complete the monitoring program section which is currently appropriate for the facility.**

**C.6: Detection, C.7: Compliance, C.8: Corrective action**

**C.6 Detection Monitoring Program: 703.185(f), 724.198**

If the presence of hazardous constituents has not been detected in the groundwater at the time of permit application, the applicant must provide sufficient information, supporting data and analyses to establish a detection monitoring program which meets the requirements of 724.198.

A detection monitoring program must include at a minimum the ability to monitor for specific indicator parameters based upon the type and characteristics of waste(s) managed at the facility and to maintain a complete and accurate record and statistical evaluation of all groundwater monitoring data.

**C.6.1. Indicator Parameters, Waste Constituents, Reaction Products to be Monitored: 703.185(f)(1), 724.198(a)**

The applicant must provide a list of indicator parameters, waste constituents or reaction products to be used in providing a reliable indication of the presence of hazardous constituents in the groundwater.

**C.6.2. General Monitoring Program Requirements: 703.185(e), 724.197**

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197.

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

**C.6.3. Groundwater Monitoring System: 703.185(f)(2), 724.197(a) & (b), 724.198(b)**

The detection monitoring system must be installed at the established compliance point and comply with 724.197(a) & (b). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft. bgs): well depth, screen interval, ground surface, and stick-up.

**C.6.4. Description of Sampling and Analysis Procedures: 703.185(f)(4), 724.197(d) & (e)**

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

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**C.6.5. Evaluation of Groundwater Surface: 724.197(f), 724.198(e)**

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation each time the groundwater is sampled. The applicant must determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

**C.6.6. Background Quality: 703.185(f)(3), 724.197(g), 724.198(c)**

The applicant must provide an evaluation of background groundwater quality and if necessary, reestablish background based on the historical data gathered over the active life of the permit using a trend analysis.

**C.6.7. Statistical Evaluations: 703.185(f)(4), 724.197(h), 724.198(d)**

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

**C.6.8. Statistically Significant Increases: 724.198(f) & (g)**

Using methods required in item C.6.7, the applicant must evaluate the existence of statistically significant evidence of contamination in the groundwater. If such evidence exists, specific measures of retesting and Illinois EPA notification must be provided.

**C.7 Compliance Monitoring Program: 703.185(g), 724.199**

If the presence of hazardous constituents has been detected in the groundwater at the point of compliance at the time of permit application, The applicant must submit sufficient information, supporting data and analyses to establish a compliance monitoring program which meets the requirements of 724.199.

**C.7.1. Description of the Monitoring Program: 724.199(a)**

The program will be used to determine if compliance standards have been achieved by a regulated unit.

**C.7.1.1. Waste Description: 703.185(g)(1), 724.193(a), 724.199(a)(1)**

The applicant must provide a list of hazardous constituents for groundwater that are reasonably expected to be in or derived from waste(s) in the regulated unit.

**C.7.1.2. Concentration Limits: 703.185(g)(4), 724.194(a), 724.199(a)(2)**

The applicant must provide a discussion addressing the appropriate concentration limits for the hazardous constituents in groundwater.

**C.7.1.3. Compliance Point: 724.195, 724.199(a)(3)**

The applicant must provide a discussion addressing the compliance point including rationale for location of groundwater monitoring wells utilized to delineate the compliance point.

**C.7.1.4. Compliance Period: 724.196, 724.199(a)(4)**

The applicant must provide a discussion addressing the compliance period.

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**C.7.2. Alternate Concentration Limits: 703.185(g)(4), 724.194(b)**

In situations where the Illinois EPA determines, based on information and supporting data provided by the applicant, a constituent will not pose a substantial hazard an alternate concentration limit can be established.

**C.7.2.1. Adverse Effects on Groundwater Quality: 724.193(b)(1), 724.194(b)(1)**

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on groundwater quality.

**C.7.2.2. Potential Adverse Effects on Hydraulically Connected Surface Water Quality: 724.193(b)(2), 724.194(b)(2)**

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and potential adverse effects on hydraulically connected surface water quality.

**C.7.3. General Monitoring Program Requirements: 703.185(g)(5), 724.197**

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197. Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

**C.7.4. Groundwater Monitoring System: 724.197(a), (b) & (c), 724.199(b)**

The compliance monitoring system must be installed at the established compliance point as specified by 724.197(a)(2), 724.197(b) and 724.197(c). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft bgs): well depth, screen interval, ground surface, and stick-up.

**C.7.5. Description of Sampling and Analysis Procedures: 703.185(g)(6), 724.197(d) & (e), 724.199(c)**

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

**C.7.6. Background Quality: 724.197(g)**

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

**C.7.7. Statistical Evaluations: 703.185(g)(6), 724.197(h), 724.199(d)**

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

**C.7.8 Evaluation of Groundwater Surface: 724.197(f), 724.199(e)**

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation must take place each time the groundwater is sampled. The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

**C.7.9. Annual Appendix I: 724.199(g)**

The applicant must provide procedures for the Annual Appendix I sampling event. Samples from all monitoring wells at the compliance point must be analyzed for all constituents listed in Appendix I at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer.

**C.7.10. Statistically Significant Increases: 724.199(h) & (i)**

Using methods required in C.7.7, The applicant must evaluate the existence of statistically significant evidence of contamination in the groundwater of the point of compliance. If such evidence exists, specific measures of retesting and IEPA notification must be met.

**C.8 Corrective Action Program: 703.185(h), 724.191(a)(2) & (3), 724.200**

If hazardous constituents have been measured in the groundwater which exceed the concentration limits established under 724.194, Table 1, or if groundwater monitoring conducted at the waste boundary indicates the presence of hazardous constituents from the facility in groundwater over background concentrations, The applicant must submit sufficient information supporting data and analyses to establish a corrective action program which meets the requirements of 724.200.

**C.8.1. Description of Corrective Action Program: 703.185(h), 724.200**

The program will be used to demonstrate the effectiveness of a corrective action measure.

**C.8.1.1. Characterization of Contaminated Groundwater: 703.185(h)(1), 724.200(a)(1)**

The applicant must include a characterization of the contaminated groundwater, including concentrations.

**C.8.1.2. Concentration Limits: 703.185(h)(2), 724.194(a), 724.200(a)(2)**

The applicant must provide a discussion addressing the appropriate concentration limits for groundwater for each of the hazardous constituents.

**C.8.1.3. Compliance Point: 724.195, 724.200(a)(3)**

The applicant must provide a discussion addressing the compliance point.

**C.8.1.4. Compliance Period: 724.196, 724.200(a)(4)**

The applicant must provide a discussion addressing the compliance period.

**C.8.1.5. Construction Detail: 703.185(h)(3)**

The applicant must provide detailed plans and an engineering report describing the corrective action to be taken, including all aspects of any groundwater and/or product removal/treatment system.

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**C.8.1.6 Effectiveness of Corrective Action: 703.185(h)(4), 724.200(d) & (g)**

The applicant must describe how the groundwater monitoring program will assess the adequacy of the corrective action.

**C.8.2. Alternate Concentration Limits: 724.194(b)**

In situations where the Illinois EPA determines, based on information and supporting data provided by the applicant, a constituent will not pose a substantial hazard an alternate concentration limit can be established.

**C.8.2.1. Adverse Effects on Groundwater Quality: 724.193(b)(1), 724.194(b)(1)**

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on groundwater.

**C.8.2.2. Potential Adverse Effects on Hydraulically-Connected Surface Water Quality: 724.193(b)(2), 724.194(b)(2)**

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on hydraulically connected surface water quality.

**C.8.3. Corrective Action Plan: 703.185(h), 724.200(b), 724.200(c), 724.200(e)**

In addition to the other requirements of 724.200, The applicant must provide and describe a corrective action program to remove or treat in place hazardous waste constituents in groundwater between the point of compliance and the downgradient facility boundary, or beyond the facility boundary where necessary to protect human health and the environment.

The corrective action program must begin corrective action within a reasonable time period after the groundwater protection standard is exceeded considering the extent of contamination.

**C.8.4. Groundwater Monitoring Program: 703.185(h), 724.192, 724.200(d)**

The groundwater monitoring program must be as effective as the program required under C.7 above in determining compliance with groundwater protection standards and in determining the success of a corrective action program.

**C.8.4.1. General Monitoring Program Requirements: 703.185(e), 724.197**

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197.

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

**C.8.4.2. Groundwater Monitoring System: 724.197(a) & (b), 724.200(d)**

The corrective action monitoring system must be installed at the established compliance point as specified by 724.197(a)(2), 724.197(b), and 724.197(c). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.



The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft. bgs): well depth, screen interval, ground surface, and stick-up.

**C.8.4.3. Description of Sampling and Analysis Procedures: 724.197(d) & (e)**

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

**C.8.4.4. Background Quality: 724.197(g), 724.199(c)**

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

**C.8.4.5. Statistical Evaluations: 703.185(f), 724.197(h), 724.199(d)**

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

**C.8.4.6. Evaluation of Groundwater Surface: 724.197(f), 724.199(e)**

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation each time the groundwater is sampled. The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

**C.8.4.7. Extension of Compliance Period: 724.200(f)**

The applicant must provide a discussion addressing the extension of the compliance period. The compliance period during which the groundwater protection standard applies shall be extended until the applicant demonstrates that the groundwater protection standard of 724.192 has not been exceeded for three consecutive years.

**C.8.4.8. Effectiveness of Corrective Action: 724.200(g)**

The applicant must provide a discussion addressing the evaluation and reporting of the effectiveness of the corrective action program to the Illinois EPA. The written reports must be submitted semi-annually.

**C.8.4.9. Evaluation of the Corrective Action Program: 724.200(h)**

The applicant must provide a discussion addressing any determination that the corrective action program no longer satisfies the requirements of 724.200.

**C.9. Reporting Requirements: 724.197(i)**

The applicant must provide a discussion addressing groundwater monitoring data collected and the maintenance of the data in the facility operating record.

## SECTION D--PROCEDURES TO PREVENT HAZARDS

### D.1 Security: 703.183(d), 724.114

The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the unit(s) closed as landfills. Unless a waiver is granted, the facility must have either a 24-hour surveillance systems, or a barrier and a means to control entry as set forth in Item D.1.2 below.

#### D.1.1. Waiver from the Security Requirements:

Facilities seeking a waiver from the security requirements must provide information demonstrating that:

1. Physical contact with the waste, structures or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and
2. Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of 724.

#### D.1.2. Restricting Entry to the Facility

Describe the means used to restrict entry the facility

1. 24-Hour Surveillance System. Describe the 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) at the facility that continuously monitors and controls entry onto the active portion of the facility; or
2. Barrier and Controlled Entry: Describe the artificial or natural barrier system (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and the means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance or controlled roadway access to the facility).

#### D.1.3. Warning Signs

Identify the locations of all warning signs on a scale drawing of the facility. A sign with the legend, "Danger - Unauthorized Personnel Keep Out", must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The sign must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

### D.2. Equipment Requirements: 703.183, 724.132, 724.133, 724.134, 724.135

All facilities must have the equipment and procedures listed in D.2.2 thru D.2.8 below in place unless the applicant submits a waiver request as identified in D.2.1 below. The location within the facility of the equipment described in this section must be shown on the drawings required in Section B.2.2 above.

**D.2.1. Waiver**

Facilities may seek a waiver from any or all of the equipment/procedure requirements below. To obtain a waiver, the applicant must demonstrate that none of the hazards posed at the facility would require the particular type of equipment/procedure at issue.

**D.2.2. Internal Communications**

Describe the internal communications or alarm system for providing immediate emergency instruction (voice or signal) to facility personnel.

**D.2.3. External Communications**

Describe the device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, state or local emergency response teams.

**D.2.4. Emergency Response Equipment**

Describe the following emergency response equipment present at the facility: portable fire extinguishers; fire control equipment, spill control equipment; and decontamination equipment.

**D.2.5. Water for Fire Control**

Provide a statement signed by an independent fire control professional, or the responsible fire department, certifying that the facility has water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems. The document must include an original signature from the fire control professional or responsible fire department.

**D.2.6. Personnel Protection Equipment**

Describe the procedures, structures, and clothing equipment used to protect personnel from undue exposure to hazardous waste.

**D.2.7. Testing & Maintenance of Emergency Equipment**

Demonstrate that all facility communications or alarm systems, fire protection equipment, spill control equipment and decontamination equipment, where required, is tested, maintained, and calibrated, as necessary to assure its proper operation in time of emergency.

**D.2.7.1. Equipment Testing:**

Identify all emergency equipment and describe how the equipment is tested, maintained, and calibrated.

**D.2.7.2. Schedule**

Provide a testing and maintenance/calibration schedule for all communications, monitoring, safety, spill control, decontamination, and emergency equipment.

**D.2.8. Equipment and Power Failure**

Describe the procedures, structures, and equipment used to mitigate the effects of equipment failure and power outage.

**D.3 Inspection Requirements: 703.183(e), 724.115**

Describe the procedures followed to inspect/ensure the functionality of everything needed to provide adequate post-closure care of the unit closed as a landfill at the facility in accordance with the RCRA requirements.

Copies of the inspection log and repair log that are used to document inspections and repairs at the facility in accordance with the RCRA requirements must be provided as part of the permit application.

Indicate that copies of the inspection log and repair log are maintained at the facility as part of the operating record.

**D.3.1. Inspection Log**

An inspection log must be maintained which includes all of the items listed below. The log must also include the date and time of each inspection, the name of the inspector, notation of the observations made, and the date of any repairs or remedial actions.

**D.3.1.1. Items Inspected**

Identify each item to be inspected at the facility in order to comply with the RCRA requirements. These items include, all RCRA regulated units, monitoring equipment, safety and emergency equipment, security and communication devices, and operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards.

**D.3.1.2. Types of Problems**

Identify the types of problems (e.g. malfunctions or deterioration) the inspector must look for during an inspection (e.g. inoperable sump pump, leaking fitting, eroding dike).

**D.3.1.3. Inspection Frequency:**

Identify the inspection frequency for each item in the log. In addition, provide justification for the inspection frequency proposed for each item. (This justification should be separate from the actual inspection log.). The frequency of inspection needs to be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections.

**D.3.2. Repair Log**

The repair log must be used to schedule and record repairs (deterioration, or malfunction of equipment or structures) revealed by an inspection of the items listed in the inspection log. The repair log must include the following items:

1. The item needing repair;
2. The problem identified during the inspection that needs repair;
3. The date the inspection took place;
4. The name of the person who conducted the inspection;
5. The name of the person who makes the corrected repair;
6. The date the repair was made;
7. The efforts carried out in making the repair;
8. Any other appropriate comments.

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Most repairs should be made at the time it is determined to be necessary and all repairs should be made within 24 hours. The timeliness of the repair is dependent on the potential impact the problem needing repair may have on protecting human health, the environment, and the safe operation of the facility.

**D.3.3. 24 Hour Reporting (702.152(f), 703.245(b))**

Describe the procedures to be followed if an inspection reveals any noncompliance with the permit which may endanger health or the environment: 1) report the required information about the incident orally within 24 hours from the time the Permittee becomes aware of the circumstances, and 2) provide a written description of the incident within 5 days of the time the Permittee becomes aware of the circumstances.

## SECTION E--POST-CLOSURE REQUIREMENTS

See 703.183(m), 703.203(f), 703.204(h), 703.207(e), 724.218, 724.297(b) and (c), 724.328(b), 724.328(c)(1)(B), 724.380(c), 724.410(b)

### **E.1 Information Regarding the Unit(s) Closed as a Landfill**

The foundation for developing an appropriate post-closure care program for a unit closed as a landfill is a thorough understanding of the unit, focusing on its surroundings, construction, operation and closure.

#### **E.1.1. General Information Regarding of the Unit to Receive Post-Closure Care**

Identify the unit(s) at the facility which were closed as landfills to which the post-closure requirements of 35 Ill. Admin. 724, Subpart G apply. Among other things, provide:

1. A scaled drawing showing the location and boundaries of the unit within the facility;
2. A copy of Illinois EPA's letter accepting certification of closure of the unit as a landfill;
3. The date that the post-closure care period for the unit began; and
4. A certified copy of the survey plat and post-closure notices filed in accordance with 35 Ill. Admin. Code 724, Subpart G or 725, Subpart G with the county in which the facility is located.

#### **E.1.2. Geology and Hydrogeology Around/Beneath the Unit**

Provide a detailed description of the geology and hydrogeology around/beneath the unit. Of special concern is the presence of silt, sand or other permeable zones around and beneath the unit which, if not properly addressed, could be a conduit for the migration of leachate or landfill gas away from the landfill. This description should be supplemented with boring logs, drawings and cross-sections.

#### **E.1.3. Characterization of Waste/Contaminated Soil Present in the Landfill Unit**

Provide a description of the type, quantity and characteristics of the waste and/or contaminated soil remaining in the unit.

#### **E.1.4. Initial Closure Activities**

Provide a detailed description, as appropriate, of the following initial activities carried out in closing the unit as a landfill:

1. Removal of waste and contaminated soil;
2. Stabilization of material remaining in the unit; and
3. Use of structural fill material to establish final contours.

#### **E.1.5. Details Associated with the Closed Unit**

Provide a detailed description, as-built drawings, cross-sections, and scaled drawings of the overall unit that includes/shows the following. Of special concern is the vertical elevations associated with each component of the unit. Note: the specific information regarding any leachate collection system, leak detection system and/or gas management system present in the landfill that must be described/shown is identified in Sections E.3 thru E.5 below.

1. The soils underlying the unit;

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2. The bottom liner system of the unit (if any is present);
3. A description of the base of the unit if it has no constructed liner system;
4. Any permeable zones around or beneath the landfill and a description of the procedures used to seal off these zones;
5. Any cut-off walls or slurry walls constructed outside the landfill boundaries to address migration of leachate or landfill gas from the landfill;
6. The final cover system over the unit;
7. The final contours established for the unit; and
8. The run-on and run-off control systems of the unit.

### **E.2 Contact Person**

Provide the name, address and phone number of the person or office to contact about the unit during the post-closure care period. A copy of the post-closure permit and associated approved permit modifications must be maintained by this person/office; a copy of these documents must also be maintained at the facility subject to the permit.

### **E.3 Operation of the Leachate Collection System**

Note: This section need only be addressed if a leachate collection system is present in the landfill unit.

#### **E.3.1. Quality of Leachate in the Leachate Collection System**

1. The leachate needs to be analyzed for the parameters listed below, and the results of annual analyses conducted on representative samples of leachate must be provided in the permit application. This will give an indication of the potential contaminants in a subsurface release from the unit to the groundwater. The leachates need to be analyzed for:
  - a. Those constituents for which a public or food processing water supply standard has been established in 35 Ill. Admin. Code 302;
  - b. Those constituents for which a groundwater quality standard has been established in 35 IAC 620;
  - c. The 51 organic chemicals in drinking water described in 40 CFR 141.40.
  - d. Any other contaminants expected to be present in the leachate, based on the characteristics of the waste and materials present in the unit.

A list of all the above contaminants is provided as Attachment 1 to this document. This list may be reduced if information is provided indicating that certain listed contaminants are not expected to be present in the leachate.

2. If the list of analytes has been reduced, provide an analysis for all constituents listed in E.3.1.1 each time the post-closure permit is renewed. Compare the reduced list, to the full list. If no new parameters are detected, the application can propose to resume analyzing leachate for the previously approved reduced list. If any new parameters are detected, they must be added to the reduced list and the list of groundwater monitoring parameters.
3. If there is more than one leachate sump but the application does not propose to analyze the leachate from each sump, provide justification for how the leachate sample(s) are considered "representative" for a given landfill.

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4. Describe the procedures used to collect, handle, and analyze the leachate samples discussed above. All such efforts must be carried out in accordance with procedures approved/established by Illinois EPA or USEPA.

**E.3.2. Leachate Collection System Within the Landfill**

1. Identify the general components of the leachate collection system within the landfill (includes the filter layer, leachate collection layer, leachate collection trenches, the leachate collection pipes, leachate level monitoring locations, leachate collection sumps, leachate collection wells, leachate removal pumps or other equipment used to remove leachate, manholes, clean-outs, etc.).
2. Provide a detailed description of the procedures used to construct the leachate collection system within the landfill. Provide specifications and as-built drawings (plan view, detail and cross-sectional) of the installed system. Identify the contours of the top of the liner system including any leachate collection trenches; the elevation of the lateral leachate collection pipes; the screened interval of any leachate collection wells or monitoring points; and the elevation of the bottom of the leachate collection sumps, wells, manholes and clean-outs.
3. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system within the landfill. Specifically:
  - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
  - b. Identify each piece of equipment on a piping and instrumentation diagram; and
  - c. Describe the operational function and capabilities of each piece of equipment.
4. If the landfill was designed to meet the requirements of 35 Ill. Admin. Code 724.401, then an engineering report must be provided demonstrating that the system was constructed and will be operated in such a manner to prevent the leachate depth over the top liner from exceeding one foot. Appropriate calculations must be provided as part of this demonstration along with justification of all assumed parameters and of the numerical techniques used in making the demonstration.
5. If it was not necessary for the landfill to meet the requirements of 35 Ill. Admin. Code 724.401, then information must be provided regarding the maximum leachate levels which will be present at the leachate removal points and throughout the landfill. An engineering report/analysis of the leachate levels which will be present in the landfill must be provided as well as information from past operations of the leachate collection system which will verify the projected levels.

**E.3.3. Leachate Collection System Outside the Landfill**

1. Identify the general components of the leachate collection system which allow for the removal and of the leachate and its storage on-site (includes the piping from each leachate pump to the top of each leachate sump/well, the piping and associated appurtenances which transfer the leachate to a final storage tank, any pump stations needed in this transfer, and the tank where the leachate is eventually stored). In addition:
  - a. Provide a detailed description of the procedures used to install the components of leachate collection system mentioned above;
  - b. Provide specifications, piping and instrumentation diagram, and as-built drawings (plan view, detail, elevations and cross-sectional) of these components.
  - c. Identify the sample point(s) used to collect leachate samples on the piping and instrumentation diagram.



- d. Indicate the locations of the leachate collection system sampling points on a scale drawing of each landfill. Identify the sample points by both the facility and Illinois EPA identification numbers for each sample point.
2. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system outside the landfill. Specifically:
  - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
  - b. Identify each piece of equipment on a piping and instrumentation diagram; and
  - c. Describe the operational function and capabilities of each piece of equipment.

#### E.3.4. Management of Leachate Collection System (LCS)

Describe how the LCS is managed. Discuss how all parts of the leachate collection system are operated.

1. Provide piping and instrumentation diagrams and other schematics which depicts the overall leachate collection system, from the pump within each leachate collection sump/well to the leachate accumulation tank. For each leachate collection sump/well, identify:
  - a. The approximate elevation of the bottom of the sump or landfill at that location,
  - b. The leachate elevation which activates the pump in each sump or extraction well,
  - c. The leachate level which activates the pump within the sump/well,
  - d. The leachate elevation when the pump shuts off, and
  - e. A description of the instrumentation in place so that the amount of leachate removed from a given sump/well over a given time period can be determined.
2. Describe the procedures which will be followed to document/record all aspects of the management of the leachate collection system(s). At a minimum, the results of leachate quality analyses and the amount of leachate removed from a given sump/well each month must be documented in the operating record.
3. Describe how the collected leachate will ultimately be managed and provide copies of the permits in place to take the leachate to an off-site facility for treatment or disposal.

#### E.3.5. Summary of Leachate Management Program Conducted to Date

Provide information addressing the items in Section E.3.4 regarding the leachate management program implemented during the past ten years. This information should discuss the efficiency of the existing leachate management program or identify deficiencies which must be addressed to ensure leachate is adequately managed in the landfill.

#### E.4 Operation of the Leak Detection System: 724.402, 724.403 and 724.404

This subsection must be addressed if a Leak Detection System (LDS) is present in the landfill. The LDS must be capable of detecting, collecting and removing leaks through the upper liner system at the earliest practicable time throughout all areas of the landfill. The LDS must be constructed of a drainage layer along with sumps and pumps of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer.

1. Each landfill unit must have its own set of LDS sumps.

2. Each LDS sump and associated removal system must be designed so that volume of liquid in the LDS sump can be measured and as well as the volume of leachate removed from the sump.

**E.4.1. Description of the Leak Detection System Within the Landfill**

Provide an engineering report describing how the leak detection system was constructed and will be operated to ensure the requirements of 35 Ill. Admin. Code 724.401 are met. Among other things, this report must:

1. Identify the general components of the leak detection system within the landfill (includes the drainage layer, the leachate collection trenches, the leachate collection pipes, leachate level monitoring locations, leachate collection sumps; manholes, clean-outs, etc.).
2. Provide a detailed description of the procedures used to construct the leak detection system. Provide specifications and as-built drawings (plan view, detail and cross-sectional) of the installed system. Information of special importance includes: the contours of the top of the liner system; the elevation of the leachate collection pipes; and the elevation of the bottom of the leachate collection sumps, manholes and clean-outs.
3. Provide detailed information regarding all equipment associated with the leak detection system (pumps, monitoring equipment, etc.) within the landfill. Specifically:
  - a. Provide information regarding the make, model and specifications of each piece of equipment;
  - b. Identify each piece of equipment on a piping and instrumentation diagram;
  - c. Describe the operational functions and capabilities of each piece of equipment.
4. Provide the pump operating level for each LDS sump within each landfill unit. This is the maximum level of leachate which can accumulate in each LDS sump before the pump within the sump is activated and leachate is removed from the sump.
  - a. This level can be no more than the depth of leachate that can accumulate within the LDS sump without allowing any leachate to back-up into the drainage layer.
  - b. This level must also minimize the hydraulic head on the liner of the LDS sump.
  - c. Development of the pump operating level for each LDS sump should also take into account the pump activation level and the sump dimensions.
5. Provide the action leakage rate (ALR) (in gallons per acre per day) for each LDS sump. The action leakage rate is the maximum design flow, modified by a factor of safety, that the LDS can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate factor of safety to allow for uncertainties in the:
  - a. Design; construction; layout and operation of the system;
  - b. Characteristics of the waste and leachate in the landfill;
  - c. Likelihood and amounts of other sources of liquids in the LDS and
  - d. Proposed response actions

Examples of uncertainties/concerns with the LDS include decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, and overburden pressure.

#### **E.4.2. Description of the Leak Detection System Outside the Landfill**

1. Identify the general components of the leak detection system which allow for the removal of the leachate from the landfill and its storage on-site (includes the piping from each leachate pump to the top of each leachate sump/well, the piping and associated appurtenances which transfer the leachate to a final storage tank, any pump stations needed in this transfer, and the tank where the leachate is eventually stored). In addition:
  - a. Provide a detailed description of the procedures used to install the components of leak detection system mentioned above.
  - b. Provide specifications and as-built drawings (plan view, detail, elevations and cross-sectional) of these components.
2. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system outside the landfill. Specifically:
  - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
  - b. Identify each piece of equipment on a piping and instrumentation diagram;
  - c. Describe the operational function and capabilities of each piece of equipment.

#### **E.4.3. Management of Leachate Accumulating in the Leak Detection System**

Describe how the LDS is managed. Discuss how all parts of the leak detection system are operated.

1. Provide piping and instrumentation diagrams and other schematics which depict the overall leak detection system, from the pump within each leachate collection sump to the leachate accumulation tank. For each leak detection sump/well, identify:
  - a. The approximate elevation of the bottom of the landfill at that location,
  - b. The pump operating level,
  - c. The leachate level which activates the pump within the sump/well, and
  - d. The leachate elevation when the pump shuts off.
2. Describe the procedures which will be followed to document/record all aspects of the management of the LDS. At a minimum, the permittee needs to provide documentation of the amount of leachate removed from a given LDS sump over a set time period, and any exceedances of the action leakage rate in the operating record.
3. Describe how the leachate collected in the LDS will ultimately be managed and provide copies of the permits in place to take the leachate to an off-site facility for treatment or disposal.

#### **E.4.4. Recent Operation of the Leak Detection System**

Provide information addressing the items discussed in Section E.4.3 regarding the operation of the LDS during the past ten years. This information should discuss the efficiency of the existing LDS or identify deficiencies which must be addressed to ensure system is operating properly.

#### **E.5 Operation of the Gas Monitoring/Collection System**

This subsection must be addressed if the closed unit has a landfill gas monitoring/collection system.

#### E.5.1. Detailed Description of the Landfill Gas Collection System

The following information needs to be provided regarding any landfill gas collection system at the facility (in addition to drawings, it is also important to include text describing the various aspects of this system and the chronological history of the installation of this system).

1. A map and detailed drawings showing the location of the collection points and the layout and construction details of the collection system.
2. A description and specifications for all machinery, compressors, flares, piping and appurtenances in the system.
3. A piping and instrumentation diagram as well as other schematics to depict the system's operation.
4. A description of how the landfill gas collection system operates. Describe the information which will be monitored, evaluated and recorded regarding the operation of the system. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.
5. Documentation or assurance that the gas collection system meets the following standards:
  - a. The system is designed and will be operated such that the limits described in 35 IAC 811.311(a)(1), (a)(2) and (a)(3) will not be exceeded;
  - b. The gas collection system will transport gas to a central point or points for processing for beneficial uses or disposal in accordance with the requirements of 35 IAC 811.312;
  - c. The gas collection system has been designed to function for the entire design period;
  - d. All materials and equipment used in construction of the system have been rated by the manufacturer as safe for use in hazardous or explosive environments and shall be resistant to corrosion by constituents of the landfill gas;
  - e. The gas collection system has been designed to withstand all landfill operating conditions, including settlement;
  - f. Provisions have been made for collecting and draining gas condensate to a management system meeting the requirements of 35 IAC 811.309;
  - g. The gas collection system will not compromise the integrity of the liner, leachate collection or cover systems; and
  - h. The gas collection system shall be equipped with a mechanical device, such as a compressor, capable of withdrawing gas, or has been designed so that a mechanical device can be easily installed.
6. A description of the criteria that will be used to determine when operation of the gas collection system may be discontinued.
7. A description of the testing procedures that will be used to assure that the lines from the collection points to the gas processing or disposal facility are air tight.
8. Identify where condensate in the system will be collected and then stored prior to shipment off-site for treatment or disposal. Include a description of all equipment associated with collection and storage of the condensate.

#### E.5.2. Landfill Gas Monitoring Plan

Provide the following information regarding the landfill gas monitoring system's ability to monitor the buildup and composition of landfill gas.

1. A narrative and plan sheets describing the most likely paths of migration for gas generated by the unit and demonstrating that the proposed gas monitoring program will detect any gas buildup and/or migration.
2. Detailed drawings and material specifications of the four types of gas monitoring devices required (i.e., devices within the waste unit, below ground devices around the unit, air ambient monitoring devices and continuous air monitoring devices within buildings) on site or near the facility if there is an indication of gas.
3. A map showing the locations of the below ground monitoring devices and the continuous air monitoring devices.
4. Documentation that the various types of below ground gas monitoring devices:
  - a. Are placed at intervals and elevations within the waste to provide a representative sampling of the composition and buildup of gases within the unit.
  - b. Are placed around the unit at locations and elevations capable of detecting migrating gas from the ground surface to the lowest elevation of the liner system or the top elevation of the groundwater, whichever is higher.
  - c. Are constructed from materials that will not react with or be corroded by the landfill gas.
  - d. Have been designed and constructed to measure pressure and allow collection of a representative sample of gas.
  - e. Are constructed and maintained to minimize gas leakage.
  - f. Do not interfere with the operation of the liner, leachate collection system or delay the construction of the final cover system.
5. A description of the procedures and prerequisite weather conditions for performing ambient air monitoring including the location standards for placement of the monitoring devices and maximum wind speed.
6. A description (narrative or graphic) of the location of the continuous air monitoring devices inside the buildings within the facility (and nearby buildings if applicable).
7. A schedule specifying the frequency and minimum duration of gas monitoring.
8. Identification of the parameters that samples from each type of monitoring device will be analyzed.
9. A description of the procedures which will be used to collect and analyze the various air samples to be obtained as part of the landfill gas monitoring program.

#### E.5.3. Landfill Gas Disposal/Processing System

The following information must be provided regarding the gas disposal system or gas processing system at this facility. These systems can be either an on-site or an off-site facility.

1. For on-site facilities (either flare systems or facilities which process the gas for beneficial use) the following information must be provided:
  - a. A map showing the location of the facility;

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- b. Engineered drawings showing the layout and details of landfill gas processing and disposal system, including compressors, blowers, raw gas monitoring systems, devices used to control the flow of gas from the unit, flares, gas treatment devices, air pollution control devices and monitoring equipment;
  - c. A copy of the approved air discharge permit or, if the permit is pending, a copy of the air discharge permit application required by 35 Ill. Admin. Code 200 through 245; and
  - d. A list of the parameters and constituents for which the gas shall be monitored.
2. For off-site processing facilities the following information must be provided:
- a. A list of the parameters and constituents for which the gas shall be monitored;
  - b. A description of the means by which the gas shall be conveyed from the landfill to the off-site processing facility; and
  - c. Documentation that the off-site processing facility meets the following requirements:
    - (1) The solid waste disposal facility will contribute less than 50 percent of the total volume of gas accepted by the gas processing facility. (Otherwise, the processing facility must be considered a part of the solid waste management facility); and
    - (2) The gas processing facility is sized to handle the expected volume of gas.

**E.5.4. Summary of the Landfill Gas Collection / Monitoring / Processing Systems**

- 1. Describe the procedures followed to document/record information associated with the operation of the landfill gas collection, monitoring, and processing systems in the operating record.
- 2. Summarize the operation of the landfill gas collection, monitoring, and processing systems during the past ten years. Describe any adjustments to the design or operation of the systems since the unit was closed.

**E.6 Post-Closure Inspection Plan**

Describe the procedures followed to inspect/ensure the functionality of everything needed to provide adequate post-closure care of the unit closed as a landfill at the facility in accordance with the RCRA requirements.

Copies of the inspection log and repair log that are used to document inspections and repairs at the facility in accordance with the RCRA requirements must be provided as part of the permit application.

Indicate that copies of the inspection log and repair log are maintained at the facility as part of the operating record and where they are located.

**E.6.1. Inspection Log**

An inspection log must be maintained which includes all of the items listed below. The log must include the date and time of each inspection, the name of the inspector, notation of the observations made, and the date of any repairs or remedial actions.

**E.6.1.1. Items Inspected**

The plan must identify each item to be inspected in order to comply with the RCRA requirements. These include, but not necessarily limited to:

- 1. All RCRA regulated units;
- 2. Monitoring equipment;

3. Safety and emergency equipment;
4. Security control devices;
5. Erosion damage;
6. Cover settlement, subsidence and displacement;
7. Vegetative cover condition;
8. Integrity of run-on and run-off control measures;
9. Cover drainage system functioning;
10. Leachate collection and removal system;
11. Leak detection system;
12. Gas monitoring/extraction system;
13. Condition of the groundwater monitoring wells;
14. Benchmark integrity; and
15. All operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards.

#### E.6.1.2. Types of Problems

For each item to be inspected as identified above, describe the types of problems (e.g. malfunctions or deterioration) the inspector must look for during an inspection (e.g. inoperable sump pump, leaking fitting, cracks, eroding berm, etc.).

#### E.6.1.3. Inspection Frequency

Identify the inspection frequency for each item in the log. In addition, provide justification for the inspection frequency proposed for each item. (This justification should be separate from the actual inspection log.) The frequency of inspection needs to be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections.

Indicate the facility will be inspected within 24 hours of any rain fall event of 2 or more inches in 24 hours to detect evidence of any of deterioration, malfunctions, or improper operation of run-on and run off systems. Indicate that appropriate corrective action shall be taken if problems, including erosion, blockage of the channels, slope failure, etc. are observed.

#### E.6.2. Repair Log:

The repair log must be used to schedule and record repairs (deterioration, or malfunction of equipment or structures) revealed by an inspection of the items listed in the inspection log. The repair log must include the following items:

1. The item needing repair;
2. The problem identified during the inspection that needs repair;
3. The date the inspection took place;
4. The name of the person who conducted the inspection;
5. The name of the person who made the corrected repair;
6. The date the repair was made;

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7. The efforts carried out in making the repair;
8. Any other appropriate comments.

Most repairs should be made at the time it is determined to be necessary and all repairs should be made within 24 hours. The timeliness of the repair is dependent on the potential impact the problem needing repair may have on protecting human health, the environment, and the safe operation of the facility.

**E.6.3. 24 Hour Reporting (702.152(f), 703.245(b))**

Describe the how the Permittee will take the following actions if an inspection reveals any noncompliance with the permit which may endanger health or the environment: 1) report the required information about the incident orally within 24 hours from the time the Permittee becomes aware of the circumstances, and 2) provide a written description of the incident within 5 days of the time the Permittee becomes aware of the circumstances.

**E.7 Post-Closure Monitoring Plan**

Describe the monitoring to be conducted during the post-closure care period, including, as applicable, the procedures for conducting and evaluating the data gathered in accordance with the RCRA requirements.

Indicate that copies of the monitoring reports and data are maintained at the facility as part of the operating record.

**E.7.1. Facility Controls**

Indicate that the benchmarks used to identify the location of disposal units, solid waste management units, and units/areas covered by an Environmental Land Use Controls (ELUCs) or the Uniform Environmental Covenants Act (UECA) are surveyed at least once every five (5) years.

**E.7.2. Surveys and Corrective Action**

Identify the units at the facility that will be surveyed every five years. The following units need to be surveyed at least once every five years:

- Units subject to post-closure requirements per 35 Ill. Admin. Code 724.210(b)
- Solid Waste Management Units (SWMUs) with cover systems and/or engineered barriers
- Units/Areas subject to an Environmental Land Use Controls (ELUCs) or the Uniform Environmental Covenants Act (UECA).

**E.7.2.1. Provide the following for the units identified in Item E.7.2:**

1. A copy of the survey provided to the Illinois EPA when the unit was certified closed.
2. A copy of the survey for each unit generated every five years since the unit was closed that shows the horizontal and vertical extent of the unit, drainage control structures, leachate collection wells, and groundwater monitoring wells.
3. Scale drawing(s) (1 inch = 200ft) and cross sections that identify those areas of the cover system or engineered barrier that have changed 1 foot or more in elevation since the unit was closed.
4. If corrective action was required in response to a release, damage to the cover system, settlement, erosion, stressed vegetation, or damage to a leachate well, groundwater monitoring well, or benchmark since post-closure care began, identify the date and location of the corrective action on the scale drawings required above. Also, provide copies of the inspection



and repair logs that includes the date each incident was discovered, a description of the incident & corrective action taken, and the date corrective action was completed.

5. If corrective action occurred in the same general area 2 or more times since post-closure began, discuss the actions the permittee has implemented to prevent this from happening again.

### E.7.3. Leachate Collection System

Describe how the information about the leachate collection system for each unit identified in E.7.2 is monitored, evaluated, and recorded. Frequent evaluation of this information is essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

#### E.7.3.1. Leachate Quality

Describe the procedures which are followed to monitor the quality of the leachate in the unit on a regular basis during the post-closure care period (including sample collection, sample handling and sample analysis). Discuss if the concentrations of the constituents in the leachate have changed during the post closure period and any actions taken in response.

These samples should be collected quarterly for the first two years at which time the frequency can be decreased to semi-annually. The samples must be analyzed for the constituents described in Item E.3.1 above

1. Summary of Sample Results: Provide a summary table of the leachate sampling results for each unit since post closure began for that unit. Identify the concentration for each parameter detected in each sampling event.
2. Parameter Comparison: Indicate if any of the leachate analyses detected a parameter for which the groundwater is/was not being analyzed and the actions taken if this occurred.

#### E.7.3.2. Leachate Quantity

1. Provide a record of the amount of liquid removed from each leachate collection sump (in gallons) at least monthly after closure of the unit identified in E.7.2 above. The following information regarding leachate generation rates needs to be provided both in table form and graphically:
  - a. Monthly for each year for each sump since the unit was closed
  - b. Annually for each sump since the unit was closed
  - c. Annually for each unit since the unit was closed
2. If the leachate generation rates are not trending downward during the post closure period, discuss why this is not happening. Provide information regarding precipitation rates during the post-closure period, as well as groundwater elevations relative to the invert of the LCS sumps.

#### E.7.3.3. Leachate Reporting

Describe the procedures followed to electronically report the quality and quantity of leachate generated at the facility to the Illinois EPA.

### E.7.4. Leak Detection System (LDS) 724.402, 724.403, 724.404

Describe how the information from the leak detection system for each unit identified in E.7.2 will be monitored, evaluated, and recorded. Frequent evaluation of this information will be essential in ensuring

the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

**E.7.4.1. LDS Leachate Quantity**

1. Describe the procedures used to determine the volume of leachate removed from each LDS sump over a given time period. This determination must initially be made monthly. If the liquid level in a LDS sump stays below the pump operating level (and thus no leachate is removed during that time period) for two consecutive months, then the amount of liquids in the LDS sump need only be recorded quarterly. Similarly, if the liquid level in a LDS sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps need only be recorded semi-annually. Finally, if the pump operating level for an LDS sump is exceeded during the quarterly or semi-annual monitoring, then monitoring of the amount of leachate removed from that LDS sump must revert back to monthly.
2. Provide a record of the amount of liquid removed from each LDS sump (in gallons) at least monthly after closure of the unit identified in E.7.2 above. The following information regarding leachate generation rates needs to be provided both in table form and graphically:
  - a. Monthly for each year for each sump since the unit was closed
  - b. Annually for each sump since the unit was closed
  - c. Annually for each unit since the unit was closed
3. If the leachate generation rates are not trending downward during the post closure period, discuss why this is not happening. Provide information regarding precipitation rates during the post-closure period, as well as groundwater elevations relative to the invert of the LDS sumps.

**E.7.4.2. Action Leakage Rate (ALR)**

1. Identify the Action Leakage Rate (ALR) from Section E.4 for each LDS sump, and indicate if the action leakage rate has been exceeded during the post-closure period.
2. To determine if the ALR has been exceeded, the owner or operator must convert the monthly flow rate from the monitoring data to an average daily flow rate (gallons per acre per day) for each sump. The average daily flow rate for each LDS sump must be calculated monthly during the post-closure care period, unless Illinois EPA approves a different frequency pursuant to Section 724.403(c)(2).
3. Describe the response action(s) meeting the requirements of 35 Ill. Admin. Code 724.404 that will be implemented if the leachate removal rate exceeds the action leakage rate.

**E.7.5. Groundwater Monitoring System**

**E.7.6. Gas Collection System**

For units required to have a gas collection / monitoring system, describe how the information about the gas collection system for each unit identified in E.7.2 is monitored, evaluated, and recorded. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

**E.7.6.1. Gas Quality**

Describe the procedures followed to monitor the quality of the gas in the unit on a regular basis during the post-closure care period (including sample collection, sample handling and sample

analysis). Discuss how the parameters (Methane, Pressure, Oxygen; and Carbon Dioxide) in the gas system have changed during the post closure period and any actions taken in response to those changes.

1. **Summary of Sample Results:** Provide a summary table of the gas sampling results for each unit since post closure began for that unit. Identify the concentration for each parameter detected in each sampling event.
2. **Parameter Comparison:** Describe the parameter thresholds used to adjust the gas collection system to improve overall efficiency of the system. Describe any major gas system upgrades/ overhauls since post closure began.

#### **E.7.6.2. Gas Quantity**

1. Provide a record of the amount of gas removed from each unit at least monthly after closure of the unit identified in E.7.2 above. The following information regarding gas generation rates needs to be provided both in table form and graphically:
  - a. Monthly for each year for each unit since the unit was closed
  - b. Annually for each unit since the unit was closed
2. If the gas generation rates are not trending downward during the post closure period, discuss why this is not happening.

#### **E.7.6.3. Summary of Results from the Gas Collection / Monitoring System**

1. Describe the procedures followed to document/record information associated with the operation of the landfill gas collection, monitoring, and processing systems in the operating record.
2. Summarize the operation of the landfill gas collection, monitoring, and processing systems since the unit was closed. Describe any adjustments to the design or operation of the systems since the unit was closed.

### **E.8 Post-Closure Maintenance Plan**

#### **E.8.1. Procedures, Equipment & Materials:**

Describe the preventive and corrective maintenance procedures; equipment and materials that will be required to properly maintain everything needed to provide adequate post-closure care of the unit closed as a landfill. Include the following items in the maintenance plan, as applicable:

1. Repair of security control devices;
2. Erosion damage repair;
3. Correction of settlement, subsidence and displacement;
4. Mowing, fertilization and other vegetative cover maintenance;
5. Repair of run-on and run-off control structures;
6. Maintenance of any leachate removal system(s) including the flushing of the LCS and LDS;
7. Maintenance of any gas monitoring/extraction system;
8. Replacement of groundwater monitoring wells; and
9. Surveyed benchmarks

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**E.8.2. Rationale**

Provide the rationale which will be used to determine the need for corrective maintenance activities for each of the items mentioned above.

**E.8.3. Frequency**

Provide the frequency for maintaining each of the items mentioned above if it is known. This needs to include, but not be limited to:

1. The frequency for mowing, fertilization and other vegetative cover maintenance, and
2. Annual maintenance / cleaning of pumps used in the LCS, LDS, and gas collection systems.
3. The manufacturer's recommended replacement rate for the pumps used in the LCS, LDS or gas collection systems.
4. High pressure jet flushing of the LCS & LDS collection pipes and sump every 5 years.
5. Procedures and scheduling of non-routine maintenance and change-out of equipment.

**E.9 Survey Plat: 724.216**

The application must include documentation that a survey plat was prepared/submitted no later than the submission of the certification of closure for each disposal unit or areas where hazardous waste is left in place. The application must also describe the wording placed on the survey plat.

- The survey plat must indicate the location and dimensions of landfill cells or other disposal units/areas with respect to permanently surveyed benchmarks and the legal boundary of the facility.
- The plat must contain a note, prominently displayed that states: (1) the land has been used to manage hazardous wastes; and (2) the owner's and operator's obligations to restrict disturbance of the units containing hazardous waste in accordance with the applicable Subpart G regulations.
- The plat must be prepared and certified using the wording at 702.126(d)(1) by a professional land surveyor.
- The survey plat must be filed with any local zoning authority or authority with jurisdiction over local land use, the IEPA, and recorded with the land titles.
- If the facility includes a RCRA disposal unit that is already certified closed, provide a copy of the survey plat for that unit.

**E.10 Notice in Deed and Certification: 703.183(n), 724.216, 724.217(c), 724.219**

The application must include copies, as appropriate, of the notation recorded on the deed to the facility property, or on some other instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:

- The land has been used to manage hazardous waste.
- Use of these areas is restricted.
- A survey plat and record of the type, location, and quantity of material in the disposal units or areas have been filed with the Illinois EPA, the County Recorder, and any local zoning authority or authority with jurisdiction over local land use.

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- For hazardous wastes disposed prior to January 12, 1981, identify the type, location and quantity of the hazardous waste to the best of the owner or operator's knowledge and in accordance with any records the owner or operator has kept.

A certification signed by the owner or operator, that the owner or operator has properly recorded the notification must be developed after this notice has been recorded and submitted to Illinois EPA. This submittal must include a copy of the document in which the notification has been placed.

For facilities which have already filed: Provide a copy of the notice for the unit and the document in which it was placed, the required notice of or the deed, the application should contain: a certified copy of the filed notice; the document that the notice was placed in, and certification by the owner or operator that it was properly filed.

**E.11 Post Closure Cost Estimate: 703.183(p), 724.244**

Provide an estimate of the cost of completing the required post-closure care activities, based on current year costs, including all calculations and supporting information used in developing the estimate. The following must be used in preparing this estimate:

1. Cost estimates must be based on third party costs and cannot include the salvage value from the sales of hazardous wastes, structures or equipment present at the facility.
2. The number of years for which post-closure care must still be provided must be identified.
3. Due to the fact that inflation affects the actual value of a given amount of money over time, the year in which this cost estimate is developed must be clearly identified. It must be noted that inflation will always need to be taken into account to bring estimates from previous year up to the current year.
4. The various tasks need to carry out the required post-closure care activities must be identified as well as the cost associated with each task;
5. The amount of time/materials/efforts needed to complete each task must be provided as well as their unit costs. Justification must be provided for all values used in making these calculations;
6. An estimate of the annual cost of providing all required post-closure care activities should be developed;
7. Some post-closure care activities are not carried out on an annual basis, but at some other frequency. These activities, their frequency, and their cost must be presented.
8. The estimate for providing all required post-closure care activities must be developed using the information in Items 4 and 5 above.

A copy of the most recent post-closure care cost estimate provided to the Illinois EPA must also be provided. In general, these estimates are provided in annual reports and financial assurance documents.

**E.12 Financial Assurance Mechanism for Post-Closure Care: 703.183(p), 724.245**

Provide a copy of the established financial assurance mechanism for post-closure care of the facility. The mechanism must be one of those described in 724.245. Contact the Illinois EPA Bureau of Land Permit Section to obtain the proper forms and instructions.

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**E.13 State Mechanisms: 40 CFR 264.149, 40 CFR 264.150, 40 CFR 264.151, 40 CFR 220.14(b)(18)**

If the State of Illinois assumes legal responsibility for compliance with closure, post closure, or liability requirements, or the state assures that state funds are available to cover those requirements, submit a copy of a letter from the state describing the state assumption of responsibility and including the facility EPA ID number, name, address, and amounts of liability coverage or funds for closure or post-closure care that are assured by the state, together with a letter requesting that the state's assumption of responsibility be considered acceptable.

## SECTION F—CORRECTIVE ACTION

35 Ill. Adm. Code 724.201 requires that facilities seeking a RCRA permit institute corrective action, as necessary, to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit. The information identified in Items F.1 through F.3 below must be contained in the original RCRA permit application submitted by a facility to allow Illinois EPA to develop permit conditions for ensuring this requirement is met; only the information in Item F.4 below needs to be submitted by facilities seeking a renewed RCRA permit.

### F.1 Identification of Solid Waste Management Units (703.187(a))

Identify the solid waste management units (SWMUs) present at the facility. A SWMU includes any unit where solid waste has been managed in the past and which is not a hazardous waste management unit. Units that are SWMUs include, but are not limited to, the following:

- Landfills
- Surface impoundments
- Waste piles
- Land treatment units
- Injection wells
- Incinerators
- Tanks (including wastewater treatment units)
- Container storage areas
- Waste transfer areas
- Waste recycling operations

### F.2 Characterization of the SWMUs (703.187(a))

For each solid waste management unit identified above, submit the following information:

1. Type of unit
2. Location on the topographic map required by Item B.2 of the decision guide/checklist
3. Engineering drawings and construction details as available
4. General dimensions
5. Dates when the unit was in operation
6. Description (including physical/chemical characteristics) of the materials/wastes managed in the unit
7. Quantity or volume of waste managed in the unit, if known
8. A description of: (1) the soil types present at the unit; and (2) the geology of the area where the unit is located.
9. An indication of whether the wastes managed in the unit have been removed or still remain in it.

### F.3 Characterization of Releases from SWMUs (703.187(b))

Provide all available information on whether or not any releases have occurred from each of the SWMUs identified above. Reasonable efforts to identify releases must be made, even if releases have not been verified. A release may include: spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. If a determination is made that there has not been a release from a given SWMU, then a description of the efforts and information used to reach this conclusion must be provided.

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The information to be provided regarding any releases from a SWMU, as available, includes:

1. Date of the release
2. Type of waste or constituent released
3. Physical and chemical characteristics of the released material
4. Quantity or volume released
5. Nature of the release (such as spill, overflow, ruptured pipe or tank, etc.).
6. Groundwater monitoring or other analytical data describing the nature/extent of the release.
7. Physical evidence of distressed vegetation or soil contamination
8. Historical evidence of releases, such as tanker truck accidents
9. Any state, local or federal enforcement actions which may address releases
10. Any public citizen complaints about the facility which could indicate a release
11. Any information showing the migration of the release.
12. A detailed description of any remedial activities taken in response to the release.

**F.4 Information Required for Renewal Applications (703.187(c))**

Facilities seeking a renewed RCRA permit have likely completed a substantial amount of corrective action under the original permit. Illinois EPA has only been authorized to implement the corrective action program in RCRA permits since April 1990; the USEPA portion of permits issued before this date contained corrective action requirements. For permits issued before April 1990, Illinois EPA likely does not have a complete file of corrective action efforts carried out at the facility, as such efforts were overseen by USEPA. However, for permits issued after April 1990, Illinois EPA already has a complete file of all corrective action efforts carried out to date at the facility.

A summary/description of the corrective action efforts completed to date at the facility must be provided in the application. The level of detail of this summary/description will be dependent on whether Illinois EPA oversaw these corrective action efforts and thus has a complete file of these efforts already. This summary/description will create an administrative record adequate to support the corrective action requirements eventually placed in the renewed permit and will form the foundation for determining future corrective action efforts to ensure the requirements of 35 Ill. Admin. Code 724.201 are met.

**F.4.1. Required Information if USEPA Oversaw Initial Corrective Action Program**

Facilities applying for a renewed RCRA permit which conducted corrective action efforts in accordance with requirements of the USEPA portion of the original RCRA permit issued to the facility must provide the following information:

1. A detailed chronology of all corrective action correspondence between USEPA and the facility, starting from the issuance of the original permit;
2. Copies of all letters received from USEPA regarding corrective action efforts, starting with the issuance of the original RCRA permit;
3. Copies of all letters and documents sent to the USEPA regarding corrective action efforts conducted in accordance with the original RCRA permit;
4. A detailed discussion of each of the SWMU identified and addressed in accordance with the provision of the facility's original RCRA permit, including:
  - a. A detailed description of each unit as outlined in Item F. 2 above, including layout drawings;



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- b. A summary of the investigation/remediation efforts completed to date; and
  - c. A discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.
5. The information in the appropriate portions of Section C (Groundwater Monitoring) of this document regarding any on-going groundwater monitoring/remediation program being carried out at the facility.

**F.4.2 Required Information if IEPA Oversaw the Initial Corrective Action Program**

Facilities which carried out corrective action under the requirements of the Illinois EPA portion of the original permit must provide the following information regarding corrective action efforts at the facility:

1. A chronological list of all documents submitted to Illinois EPA regarding the corrective action efforts required by the original RCRA permit and Illinois EPA's response to each submittal. For each document, provide:
  - a. The name of the document;
  - b. A brief discussion of the contents/purpose of the document;
  - c. The date the document was submitted to Illinois EPA;
  - d. The person who submitted the document
  - e. A discussion of Illinois EPA's response to the document (include the date of the response and the general conclusions/requirements in the response).
2. Copies of all Illinois EPA letters, in chronological order, regarding corrective action efforts at the facility (these letters serve as important decision documents and will help to verify corrective action efforts completed to date and what must still be done to complete corrective action responsibilities at the facility.
3. A detailed discussion of each of the SWMUs identified and addressed in accordance with the facility's permit. This should include:
  - a. A detailed description of each unit as outlined in Item F.2 above;
  - b. A summary of the investigation/remediation efforts completed to date; and
  - c. A discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.
4. The information in the appropriate portions of Section C (Groundwater Monitoring) of this document regarding any on-going groundwater monitoring/remediation program being carried out at the facility.

**F.5 Proposed Interim Measures to be Conducted: (703.187)**

An applicant may propose to begin/continue interim measures for the purpose of preventing/mitigating releases from a SWMU before completing a formal RCRA Facility Investigation or Corrective Measures Program. Requests to begin/continue interim measures should contain detailed information about the proposed effort, including:

1. Background information about the unit and surrounding area (including, but not limited to, construction/operation of the unit, wastes managed in the unit; geology/hydrogeology of the area; and discussion/presentation of all sampling/analysis efforts conducted in/around the unit);
2. The objectives of the interim measure. Of special concern is how the measure will prevent/mitigate the release of concern and how it will be integrated into any necessary long-term corrective measures at the facility;

3. Information regarding the design, construction, operation and maintenance of the measure;
4. Schedules for design, construction and operation of the measure.

It must be noted that it may be necessary to complete a RCRA Facility Investigation and a Corrective Measures Study for the SWMU of concern while the interim measure is being carried out. Such efforts will be necessary if the extent of contamination at the SWMU has not been completely determined or if additional remedial efforts are needed to properly address the contamination resulting from the release in the long term.

#### **F.6 Cost Estimate for Required Corrective Action (724.201)**

35 Ill. Admin. Code 724.201 requires that permitted facilities provide financial assurance for any required corrective action: As such, the application must contain an estimate of the cost of the required corrective action efforts to be carried out at the facility.

1. If a facility proposes to conduct an interim measure as set forth in Item F.5 above, then an estimate of the cost of these measures must be provided in the application.
2. Development/presentation of a cost estimate must be carried out in accordance with Item E.5 above. This cost estimate will then form the foundation for the establishment of financial assurance for corrective action in the permit. This estimate will need to be updated, as appropriate, to reflect the cost of carrying out all approved corrective action activities at this facility.
3. As each workplan/report associated with corrective action is developed, they must contain cost estimates for carrying out the activities proposed in the workplans and then financial assurance must be established for these activities once they are approved.

#### **F.7 Financial Assurance for Corrective Action (724.201)**

Adequate financial assurance must be provided in the amount developed in Item F.6 above. Establishment of this financial assurance must meet the requirements of 35 Ill. Admin. Code 724, Subpart H and Item E.6 above. Financial assurance for corrective action must be updated, as appropriate, to reflect the current corrective action cost estimate.

## Instructions for RCRA Post-Closure Permit Applications

### Attachment 1

Baseline List of Constituents Expected to be Present in Landfill Leachate							
Parameter	Predicted Values for SW Landfill (ug/l) <sup>1,2</sup>	Basis for Inclusion on List					
		40 CFR 258 App. II	Expected In Leachate	35 IAC Part 620	35 IAC Part 302	40 CFR Part 141.40	40 CFR 258 App. I <sup>3</sup>
Butanol	15,000	X	X				
N-butylbenzene						X	
Sec-butylbenzene						X	
Butyl benzyl phthalate	150	X	X				
Cadmium (total)	100	X	X	X	X		5
Calcium	1,200,000		X				
Carbofuran				X			
Carbon disulfide	6	X	X				22
Carbon tetrachloride	400	X	X	X			23
Chemical oxygen demand (COD)	10,000,000		X				
Chlordane		X		X	X		
Chloride	3,000,000		X	X	X		
Chlorobenzene	400	X	X	X		X	24
Chloroethane	400	X	X			X	25
Bis (2-chloroethoxy) methane	25	X	X				
Chloroform	400	X	X			X	26
Chloromethane	400	X	X			X	44
Bis (chloromethyl) ether	400	X	X			X	
O-chlorotoluene						X	
P-chlorotoluene						X	
Chromium (total)	50	X	X	X	X		6
Chlorodibromomethane		X				X	27
Cobalt	130	X	X	X			7
Copper	1,000	X	X	X	X		8
P-cresol		X					
Cyanide	300	X	X	X	X		
Dalapon							
DDT		X		X	X		
Dibromomethane	10	X	X			X	45
M-dichlorobenzene		X				X	
O-dichlorobenzene		X				X	30
P-dichlorobenzene		X		X			31
Dichlorodifluoromethane	450	X	X			X	
Dichloromethane		X		X		X	46

Information Required in an Application for a RCRA Post-Closure Permit  
 May 2021  
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Baseline List of Constituents Expected to be Present in Landfill Leachate							
Parameter	Predicted Values for SW Landfill (ug/l) <sup>1,2</sup>	Basis for Inclusion on List					
		40 CFR 258 App. II	Expected In Leachate	35 IAC Part 620	35 IAC Part 302	40 CFR Part 141.40	40 CFR 258 App. I <sup>3</sup>
Dieldrin		X			X		
Diethyl phthalate	200	X	X				
Dimethyl phthalate	60	X	X				
Di-n-butyl phthalate	150		X				
Dinoseb		X		X			
1,4-dioxane			X				
Endothall		X		X			
Endrin		X	X				
Ethyl acetate	130		X				
Bis (2-ethylhexyl) phthalate	400		X				
Ethyl methacrylate		X					
Ethylbenzene	500	X	X	X		X	41
Ethylene dibromide (EDB)		X		X		X	29
Fluoride				X			
Fluorotrichloromethane						X	
gross alpha (pCi/l)				X			
Heptachlor		X		X	X		
Heptachlor epoxide		X		X	X		
Hexachlorobutadiene		X				X	
Hexachlorocyclopentadiene		X		X			
Iodomethane		X		X	X		48
Iron	500,000		X	X	X		
Isophorone	2,500	X	X				
Isopropylbenzene						X	
p-isopropyltoluene						X	
Lead	500	X	X	X	X		9
Lindane	25		X	X	X		
Magnesium	500,000		X				
Manganese	20,000		X	X	X		
Mercury	10	X	X	X			
Methoxychlor				X	X		
methylene chloride (Chloromethene)	46	X	X				
Naphthalene	75	X	X			X	
Nickel	1,000	X	X	X			10
Nitrate				X	X		
Nitrobenzene	120	X	X				
Oil (hexane-soluble or equivalent)					X		
Parathion		X			X		

Information Required in an Application for a RCRA Post-Closure Permit  
 May 2021  
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Baseline List of Constituents Expected to be Present in Landfill Leachate							
Parameter	Predicted Values for SW Landfill (ug/l) <sup>1,2</sup>	Basis for Inclusion on List					
		40 CFR 258 App. II	Expected In Leachate	35 IAC Part 620	35 IAC Part 302	40 CFR Part 141.40	40 CFR 258 App. I <sup>3</sup>
Pentachlorophenol	400	X	X	X			
pH	9-May		X	X			
Phenanthrene	3	X	X				
Phenols	5,000	X	X	X	X		
Picloram				X			
Polychlorinated biphenyls (PCBs)		X		X			
Potassium	500,000		X				
N-propylbenzene						X	
Radium				X			
Selenium	50	X	X	X	X		11
Silver	50	X	X	X			12
Simazene							
Sodium	1,500,000		X	X			
strontium - 90				X			
Styrene		X		X		X	50
Sulfate	1,000,000		X	X	X		
TDS	10,000,000		X	X	X		
TOC	6,000,000		X				
tert-butylbenzene						X	
Tetrachloroethylene	300	X	X	X		X	53
Tetrahydrofuran	1,000		X				
Thallium	500	X	X	X			13
Tin	2,000	X	X				
Toluene	2,000	X	X	X		X	54
Toxaphene	2	X	X	X	X		
Trichloroethylene (or ethene)	400	X	X	X			57
Trichlorofluoromethane	150	X	X				58
Tritium				X			
Vanadium	30	X	X				14
Vinyl chloride	60	X	X	X			61
Vinyl acetate							60
Xylenes (total)	300	X	X	X			62
m-xylene	200	X	X			X	
o-xylene						X	
p-xylene						X	
Zinc	20,000	X	X	X			15

Information Required in an Application for a RCRA Post-Closure Permit  
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References

- <sup>1</sup> Gasper, James A. and Jeff M. Harris, Management of Leachate from Sanitary Landfills (for Browning Ferris Industries).
- <sup>2</sup> Dolan, David, Helen Keough, R.E. O'Hara and Kevin O'Leary, 1991, A Comparison of Chemical Constituents in Industrial Hazardous Waste Municipal Waste Landfill Leachates (for Waste Management of North America, Inc.).
- <sup>3</sup> From 40 CFR Part 258 Appendix I & II numbered as presented in Federal Register, Vol. 56, No. 196, October 9, 1991 pages 51032-51038

**ATTACHMENT 3**

**RCRA Post-Closure Permit Application Completeness and  
Technical Review Checklist (May 2021)**

**RCRA POST-CLOSURE PERMIT APPLICATION  
COMPLETENESS AND TECHNICAL REVIEW CHECKLIST  
May 2021**

Facility Name : \_\_\_\_\_  
 Log No. : \_\_\_\_\_  
 State ID No. : \_\_\_\_\_  
 USEPA No. : \_\_\_\_\_

Date Application Received : \_\_\_\_\_  
 Revision No. : \_\_\_\_\_  
 Reviewer : \_\_\_\_\_  
 Review Dates : \_\_\_\_\_

	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
<b>A</b>	<b>Forms, Certifications, Confidentiality, and Public Involvement</b>	<b>XX</b>	<b>XX</b>		
<b>A.1</b>	<b>RCRA Part A Application Form</b>				
<b>A.2</b>	<b>Certification Using the LPC-PA23 Form</b>				
A.2.1	Facility Certification				
A.2.2	Technical Information Certification				
A.2.3	39i Certification				
<b>A.3</b>	<b>Public Disclosure Exemption Claims and Trade Secret Claims</b>				
A.3.1	No information Claimed Exempt from Public Disclosure				
A.3.2	Trade Secrets Claims				
A.3.3	Exempt or Exempt In-Part Data Claims				
A.3.4	Privileged Information				
<b>A.4</b>	<b>Public Participation: Facility Mailing List &amp; Information Repositories</b>				
A.4.1	Facility Mailing				
A.4.2	Identification of Repositories				
A.4.3	Contents of Repository				



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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
A.4.4	Public Notice of Repository Availability				
<b>B</b>	<b>Facility Description</b>	<b>XX</b>	<b>XX</b>		
<b>B.1</b>	<b>General Facility Description</b>				
B.1.1	Operation of Facility				
B.1.2	Hazardous Waste Management Units at the Facility				
B.1.3	Solid Waste Management Units at the Facility				
<b>B.2</b>	<b>Topographic Map</b>				
B.2.1	Facility + 1 mile				
B.2.2	Facility + 1000 feet				
<b>B.3</b>	<b>Location Standards</b>				
B.3.1	Seismic Standard				
B.3.2	Floodplain Standard				
B.3.3	Facilities in the 100-year Floodplain				
B.3.3.1	Engineering Analysis and Structural/Engineering Study				
B.3.3.2	Procedures to Remove Waste				
B.3.4	Existing Facilities not in Compliance with 35 Ill. Admin Code 724.118(b)				
<b>B.4</b>	<b>Operating Record</b>				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
<b>C</b>	<b>Groundwater Monitoring</b>	<b>XX</b>	<b>XX</b>		
<b>C.1</b>	<b>Exemption from Groundwater Protection Requirements</b>				
C.1.1	Waste Piles				
C.1.2	Landfills				
C.1.3	No Migration				
<b>C.2</b>	<b>Interim Status Groundwater Monitoring Data</b>				
<b>C.3</b>	<b>Historical Hydrogeological Summary</b>				
<b>C.4</b>	<b>Topographic Map Requirements</b>				
<b>C.5</b>	<b>Contaminant Plume Description</b>				
<b>C.6</b>	<b>Detection Monitoring Program</b>				
C.6.1	Indicator Parameters, Waste Constituents, Reaction Products to be Monitored				
C.6.2	General Monitoring Program Requirements				
C.6.3	Groundwater Monitoring System				
C.6.4	Description of Sampling and Analysis Procedures				
C.6.5	Evaluation of Groundwater Surface				
C.6.6	Background Quality				
C.6.7	Statistical Evaluations				
C.6.8	Statistically Significant Increases				
<b>C.7</b>	<b>Compliance Monitoring Program</b>				
C.7.1	Description of the Monitoring Program				
C.7.1.1	Waste Description				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
C.7.1.2	Concentration Limits				
C.7.1.3	Compliance Point				
C.7.1.4	Compliance Period				
C.7.2	Alternate Concentration Limits				
C.7.2.1	Adverse Effects on Groundwater Quality				
C.7.2.2	Potential Adverse Effects on Hydraulically Connected Surface Water Quality				
C.7.3	General Monitoring Program Requirements				
C.7.4	Groundwater Monitoring System				
C.7.5	Description of Sampling and Analysis Procedures				
C.7.6	Background Quality				
C.7.7	Statistical Evaluations				
C.7.8	Evaluation of Groundwater Surface				
C.7.9	Annual Appendix I				
C.7.10	Statistically Significant Increases				
<b>C.8</b>	<b>Corrective Action Program</b>				
C.8.1	Description of Corrective Action Program				
C.8.1.1	Characterization of Contaminated Groundwater				
C.8.1.2	Concentration Limits				
C.8.1.3	Compliance Point				
C.8.1.4	Compliance Period				
C.8.1.5	Construction Detail				
C.8.1.6	Effectiveness of Corrective Action				

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Log No.:

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
C.8.2	Alternate Concentration Limits				
C.8.2.1	Adverse Effects on Groundwater Quality				
C.8.2.2	Potential Adverse Effects on Hydraulically-Connected Surface Water Quality				
C.8.3	Corrective Action Plan				
C.8.4	Groundwater Monitoring Program				
C.8.4.1	General Monitoring Program Requirements				
C.8.4.2	Groundwater Monitoring System				
C.8.4.3	Description of Sampling and Analysis Procedures				
C.8.4.4	Background Quality				
C.8.4.5	Statistical Evaluations				
C.8.4.6	Evaluation of Groundwater Surface				
C.8.4.7	Extension of Compliance Period				
C.8.4.8	Effectiveness of Corrective Action				
C.8.4.9	Evaluation of the Corrective Action Program				
C.9	Reporting Requirements				
<b>D</b>	<b>Procedures to Prevent Hazards</b>	<b>XX</b>	<b>XX</b>		
<b>D.1</b>	<b>Security</b>				
D.1.1	Waiver from the Security Requirements				
D.1.2	Restricting Entry to the Facility				
D.1.3	Warning Signs				
<b>D.2</b>	<b>Equipment Requirements</b>				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
D.2.1	Waiver				
D.2.2	Internal Communications				
D.2.3	External Communications				
D.2.4	Emergency Response Equipment				
D.2.5	Water for Fire Control				
D.2.6	Personnel Protection Equipment				
D.2.7	Testing & Maintenance of Emergency Equipment				
D.2.7.1	Equipment Testing				
D.2.7.2	Schedule				
D.2.8	Equipment and Power Failure				
<b>D.3</b>	<b>Inspection Requirements</b>				
D.3.1	Inspection Log				
D.3.1.1	Items Inspected				
D.3.1.2	Types of Problems				
D.3.1.3	Inspection Frequency				
D.3.2	Repair Log				
D.3.3	24 Hour Reporting				
<b>E</b>	<b>Post-Closure Requirements</b>	<b>XX</b>	<b>XX</b>		
<b>E.1</b>	<b>Information Regarding the Unit(s) Closed as a Landfill</b>				
E.1.1	General Information Regarding the Unit to Receive Post-Closure Care				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
E.1.2	Geology and Hydrogeology Around/ Beneath the Unit				
E.1.3	Characterization of Waste/ Contaminated Soil Present in the Landfill Unit				
E.1.4	Initial Closure Activities				
E.1.5	Details Associated with the Closed Unit				
<b>E.2</b>	<b>Contact Person</b>				
<b>E.3</b>	<b>Operation of the Leachate Collection System</b>				
E.3.1	Quality of Leachate in the Leachate Collection System				
E.3.2	Leachate Collection System Within the Landfill				
E.3.3	Leachate Collection System Outside the Landfill				
E.3.4	Management of Leachate Collection System				
E.3.5	Summary of Leachate Management Program Conducted to Date				
<b>E.4</b>	<b>Operation of the Leak Detection System</b>				
E.4.1	Description of the Leak Detection System Within the Landfill				
E.4.2	Description of the Leak Detection System Outside the Landfill				
E.4.3	Management of Leachate Accumulating in the Leak Detection System				
E.4.4	Recent Operation of the Leak Detection System				
<b>E.5</b>	<b>Operation of the Gas Monitoring/ Collection System</b>				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
E.5.1	Detailed Description of the Landfill Gas Collection System				
E.5.2	Landfill Gas Monitoring Plan				
E.5.3	Landfill Gas Disposal/ Processing System				
E.5.4	Summary of the Landfill Gas Collection/ Monitoring/ Processing Systems				
<b>E.6</b>	<b>Post-Closure Inspection Plan</b>				
E.6.1	Inspection Log				
E.6.1.1	Items Inspected				
E.6.1.2	Types of Problems				
E.6.1.3	Inspection Frequency				
E.6.2	Repair Log				
E.6.3	24-Hour Reporting				
<b>E.7</b>	<b>Post-Closure Monitoring Plan</b>				
E.7.1	Facility Controls				
E.7.2	Surveys and Corrective Action				
E.7.2.1	Provide the Following				
E.7.3	Leachate Collection System (LCS)				
E.7.3.1	Leachate Quality				
E.7.3.2	Leachate Quantity				
E.7.3.3	Leachate Reporting				
E.7.4	Leak Detection System (LDS)				
E.7.4.1	LDS Leachate Quantity				
E.7.4.2	Action Leakage Rate (ALR)				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
E.7.5	Groundwater Monitoring System				
E.7.6	Gas Collection System				
E.7.6.1	Gas Quality				
E.7.6.2	Gas Quantity				
E.7.6.3	Summary of Results from the Gas Collection/ Monitoring System				
<b>E.8</b>	<b>Post-Closure Maintenance Plan</b>				
E.8.1	Procedures, Equipment & Materials				
E.8.2	Rationale				
E.8.3	Frequency				
<b>E.9</b>	<b>Survey Plat</b>				
<b>E.10</b>	<b>Notice in Deed and Certification</b>				
<b>E.11</b>	<b>Post Closure Cost Estimate</b>				
<b>E.12</b>	<b>Financial Assurance Mechanism for Post-Closure Care</b>				
<b>E.13</b>	<b>State Mechanisms</b>				
<b>F</b>	<b>Corrective Action (CA)</b>				
<b>F.1</b>	<b>Identification of Solid Waste Management Units (SWMUs)</b>				
<b>F.2</b>	<b>Characterization of the SWMUs</b>				
<b>F.3</b>	<b>Characterization of Releases from SWMUs</b>				
<b>F.4</b>	<b>Information Required for Renewal Applications</b>				

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	<b>Section</b>	<b>Complete (Y/N)</b>	<b>Technical Adequacy (Y/N)</b>	<b>Location</b>	<b>Comments</b>
<b>F.4.1</b>	<b>Required Information if USEPA Oversaw Initial Corrective Action Program</b>				
	(1) Chronology of all CA related correspondence between USEPA & facility				
	(2) Copies of all letters received from USEPA regarding CA				
	(3) Copies of all letters regarding CA sent to USEPA				
	(4) Detailed discussion of each SWMU				
	(5) Information in Section C regarding any on-going groundwater monitoring/remediation				
<b>F.4.2</b>	<b>Required Information if IEPA Oversaw Initial Corrective Action Program</b>				
	(1) Chronology of all corrective action efforts completed to date				
	(2) Discussion of all CA related correspondence between IEPA and facility & copies of all correspondence				
	(3) Detailed discussion of each SWMU				
	(4) Information in Section C regarding any on-going groundwater monitoring/remediation effort				
<b>F.5</b>	<b>Proposed Interim Measures to be Conducted</b>				
<b>F.6</b>	<b>Cost Estimate for Required Corrective Action</b>				
<b>F.7</b>	<b>Financial Assurance for Corrective Action</b>				

R 000274

## E X H I B I T 8

**From:** Brubaker, Sarah  
**To:** Brubaker, Sarah  
**Bcc:** [jn@nijmanfranzetti.com](mailto:jn@nijmanfranzetti.com); [wsawitz@heicocompanies.com](mailto:wsawitz@heicocompanies.com); [kpelizza@CorpEHS.com](mailto:kpelizza@CorpEHS.com); Guv, Jeff; Frost, Brad; Huser, Kelly; Halteman, Takako; San Diego, Nick M; Jarvis, Melanie; Cooperider, Jacki  
**Subject:** RCH Newco, II, LLC Proposed Extension of Post-Closure Care Final Determination and Responsiveness Summary  
**Date:** Thursday, March 14, 2024 10:39:00 AM  
**Attachments:** [image001.png](#)

---

Dear Stakeholder,

This email is to inform you that the Illinois EPA has posted the Final Determination and Responsiveness Summary for the RCH Newco, II, LLC Proposed Extension of Post-Closure Care to the Agency's [Bureau of Land Public Notice Webpage](#).

The Illinois EPA would like to thank the Stakeholders for your involvement throughout the RCH Newco II, LLC Proposed Extension of Post-Closure Care process.

If you have any questions, do not hesitate to contact me.

Sincerely,

Sarah Brubaker (she/her)  
Community Relations Coordinator  
Office of Community Relations  
[Sarah.Brubaker@Illinois.gov](mailto:Sarah.Brubaker@Illinois.gov)  
217/786-0790



# **EXHIBIT A**



**CARLSON ENVIRONMENTAL, Inc.**

MAY 31 1996  
EPA-EOL  
PERMIT SECTION

**RCRA FACILITY INVESTIGATION  
PHASE I REPORT**

**Robertson-Ceco Corporation  
Lemont, Illinois**

Prepared by  
**CARLSON ENVIRONMENTAL, INC.**  
312 West Randolph Street  
Suite 300  
Chicago, Illinois 60606  
(312) 346-2140

Project No. 9236A  
May 1996



**CARLSON ENVIRONMENTAL, Inc.**

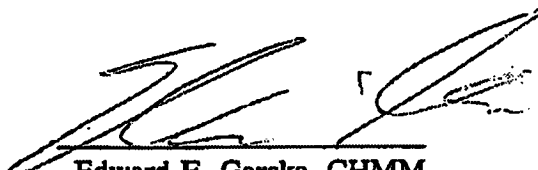
**RCRA FACILITY INVESTIGATION  
PHASE I REPORT**

**Robertson-Ceco Corporation  
Lemont, Illinois**

**Prepared by  
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312 West Randolph Street  
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(312) 346-2140**

**Project No. 9236A  
May 1996**

  
\_\_\_\_\_  
**Peter E. Barys  
Project Manager**

  
\_\_\_\_\_  
**Edward E. Garske, CHMM  
Project Director**



**CARLSON ENVIRONMENTAL, Inc.**

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**CARLSON ENVIRONMENTAL, Inc.**

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## **1.0 INTRODUCTION**

### **1.1 Purpose of the RFI**

This Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Phase I Report (Report) has been prepared to fulfill corrective action requirements at a facility owned by Robertson-Ceco Corporation (Robertson-Ceco) (Figure One). The RFI Phase I activities were performed by Carlson Environmental, Inc. in accordance with the RFI Phase I Work Plan prepared by Halliburton-NUS Corporation (NUS) and approved by the Illinois Environmental Protection Agency (IEPA) on September 12, 1995.

The objectives of the Phase I RFI, were to determine if electric arc furnace (EAF) dust (RCRA listed hazardous waste K061) remained on-site outside of the RCRA Closure Unit, and to collect information to assess the impact of the entire 25-acre site on human health and the environment.

### **1.2 Project Background**

The subject property (the "Site") was owned during the 1970's and early 1980's by The Ceco Corporation (Ceco), a corporate predecessor to Robertson-Ceco. It was used in connection with the operation of an electric arc furnace steel production plant owned by Ceco located north of the Site, for the management of steel-making by-products, including emission control dust (EAF dust) from the electric arc furnaces. In 1980, EAF dust was designated as "listed" hazardous waste K061 by the United States Environmental Protection Agency (USEPA) under RCRA. During the active life of the Site, approximately 12,500 cubic yards of EAF dust were deposited. Most of the EAF dust (10,000 cubic yards) was deposited in a large bermed storage area. The remainder was deposited at undocumented locations in the eastern part of the Site.

EAF dust deposition at the Site ceased in 1980, before the RCRA hazardous waste management regulations became effective. Following excavation and disposal by Ceco of approximately 10,000 cubic yards of EAF dust from the large bermed storage area at a RCRA-permitted off-site hazardous waste disposal facility during 1981-1982, Ceco determined that roughly 2,500 cubic yards of EAF dust remained on-site. In 1983, Ceco contracted with NUS to conduct an investigation to locate and remove the remaining EAF dust deposits. Under an IEPA-approved RCRA Closure Plan, the remaining deposits were located and excavated in 1985 together with approximately 29,500 cubic yards of miscellaneous non-hazardous steel plant by-products, primarily



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slag, which was co-excavated with the EAF dust to insure that all EAF dust was removed. These materials, altogether comprising a volume of 32,000 cubic yards, were placed in a RCRA interim-status waste pile closure unit constructed at the Site in accordance with an IEPA-approved Closure Plan.

The RCRA Closure Unit occupies approximately two acres of the Site and is surrounded by a 10-foot high chain link fence which is locked to prevent unauthorized access. RCRA post-closure ground water monitoring of the Closure Unit has disclosed no significant impact on the quality of the ground water in the uppermost aquifer. The hazardous constituents for which EAF dust is a listed hazardous waste (*i.e.*, lead, cadmium and hexavalent chromium), are either non-detectable or present in extremely low concentrations in the ground water.

In order to demonstrate that the Site does not pose a threat to human health or the environment, Robertson-Ceco, proposed on February 7, 1994, to conduct a RCRA corrective action investigation. The proposal was accepted by the IEPA in a letter dated May 10, 1994. IEPA's letter included a detailed scope of work for a Phase I RCRA RFI Work Plan and required that a Work Plan be submitted by October 1, 1994.

Robertson-Ceco's RFI Work Plan was timely submitted and approved by IEPA on September 12, 1995. IEPA's approval letter required that the RFI Documentation Report be submitted not later than May 31, 1996.

## **2.0 GENERAL SITE INFORMATION**

### **2.1 Site Description**

The Site is located one-mile west of the city of Lemont in Will County, Illinois. (Figure One) and occupies approximately 25 acres. Access to the Site is by an unnamed paved road from New Avenue. The Site is characterized by the presence of steel production wastes and by-products (primarily furnace slag) which cover the entire property. Several small buildings are located in the western portion of the Site. A former slag processing operation (which in the past had been used to crush and size slag prior to sale as aggregate) is located in the north-central portion of the Site (Figure Two). Most of the Site surface is not vegetated, although some small shrubs and trees are present along the southern and northern boundaries.

According to the Flood Insurance Rate Maps (FIRMs) Community Panel Numbers



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170695-0080 for Will County and Panel Numbers 170054-0165 and 170054-0190 for Cook County, the Site is located almost entirely in Zone C, which is characterized as areas of minimal flooding. A small peninsula of "Zone A" extends into the site area from the I & M Canal near the northwestern part of the Site. Zone A is characterized by areas of 100-year flooding (Figure Two).

A two-acre RCRA closure unit is located in the central portion of the Site secured with a locked chain-link fence. Five RCRA post-closure ground water monitoring wells are present and are used to perform regular post-closure ground water monitoring. The wells were sited and are sampled in accordance with applicable Illinois RCRA regulatory requirements.

The Site is within a heavily industrialized area. It occupies a portion of a former flagstone (Silurian dolomite) quarry. It is bounded to the east by Dudek, Inc., a scrap iron and metal dealer; to the south, by the Gulf, Mobile & Ohio Railroad; to the west, by an unnamed road which provides access to the Auburn Steel Plant (formerly the Ceco Steel Plant). A Union Oil Company of California oil refinery is located west of the unnamed road. To the north of the Site, is the I & M Canal, the Santa Fe Railroad and the Auburn Steel facility (Figure Two).

### **2.1.1 Historical Site Operations**

Prior to the use of the Site as a scrap-processing and by-product management area in conjunction with the steel mill, it was a limestone quarry in which flagstone was mined for use as building stone. The mining operation left an open pit area roughly 10 feet in depth across most of the Site, with a bedrock surface as its base.

The steel plant to the north was built by Ceco and began operations in 1969. The plant consists of several electric arc scrap-melting furnaces as well as fabrication facilities for billet and other shapes, including concrete reinforcing bar. The source of the steel melted in the electric arc furnaces was and is, steel scrap.

Beginning in 1969, the Site was used in conjunction with the steel mill to process scrap metal for the furnaces, and to manage solid wastes and by-products generated by the steel mill. The principal by-product from electric arc steel-manufacturing is slag, with much lesser amounts of mill scale and EAF dust. In addition to these uses, the Site has been used for slag reclamation operations. The slag reclamation process involved the processing of slag "skulls." Slag skulls are large, slag masses that form in the furnaces where the steel is melted with fluxing material. Often the melting of scrap in the furnace is incomplete, and partially melted scrap steel becomes incorporated in the solidified slag mass. Because of its value as furnace feed stock,

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the steel scrap incorporated in the skulls was reclaimed by breaking and crushing the skulls with a wrecking ball. The separated steel scrap is then returned to the mill to be used as feed stock for the furnaces. The crushed slag was either used as fill at the Site, or further crushed, sized and sold as aggregate. The slag reclamation process is no longer active. Slag produced by Auburn Steel Company, the current owner of the steel mill, is managed elsewhere.

Over the years, the continued deposit of slag at the Site resulted in the gradual expansion of the slag fill from west to east as well as an increase in elevation of the Site. The Site surface is now at an average elevation of 10 feet above the bedrock surface (Figures Three, Six, Seven and Eight).

When steel scrap is melted, a very fine dust (EAF dust) is produced. In 1972, the State of Illinois adopted air pollution control regulations which required installation of particulate emission control equipment on the steel plant's electric arc furnaces to capture EAF dust emissions. Baghouse dust collectors were installed to comply with the new regulations. After being collected in the baghouses, EAF dust was mixed with water to form a slurry in order to facilitate handling and control fugitive emissions. The slurry was then transported in trucks from the steel mill to the Site and deposited.

From late 1972 until 1980, slurried EAF dust collected by the baghouses was deposited at the Site. During 1972 - 1973, slurried EAF dust was reportedly brought to the Site in trucks, and deposited into various low areas in the eastern portion of the Site. These deposits were subsequently covered by layers of slag as the Site surface built up.

After about 1973, the slurried EAF dust was deposited exclusively in a discreet bermed area created for that purpose. The bermed area was also located in the eastern portion of the Site.

When the RCRA hazardous waste management regulations became effective in late 1980, and EAF dust became a listed hazardous waste, Ceko applied for and received RCRA interim status to store EAF dust in a "waste pile." No EAF dust was deposited at the Site after November 19, 1980, the effective date of the RCRA regulations. After that date, all EAF dust generated at the steel plant was transported directly to a RCRA-permitted off-site hazardous waste disposal facility. During 1981-1982, approximately 10,000 cubic yards of previously deposited EAF dust was excavated from the principal bermed EAF dust storage area, and disposed of at an off-site hazardous waste disposal facility. At that time, based on steel plant operating

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records, Ceco determined that approximately 2,500 cubic yards of EAF dust remained in the subsurface at the Site.

On February 3, 1983, Ceco sold the steel mill to Thomas Steel Company. The sales agreement provided that Ceco would retain title to the Site which was then operated under lease by Dudek, Inc. Following the sale of the mill, Ceco leased the Site to Thomas Steel which in turn sub-leased the Site to Dudek. Under this arrangement, Dudek continued to provide the same scrap and slag processing services to Thomas Steel as it had previously provided to Ceco. Subsequently, following Thomas Steel's bankruptcy, the steel mill was sold to its current owner, Auburn Steel Company.

In 1991, Ceco Industries, Inc., the corporate parent of The Ceco Corporation, and H.H. Robertson & Company merged to form Robertson-Ceco Corporation.

Since the RCRA interim status waste pile closure unit construction was completed in July of 1988, no hazardous waste management activity has occurred at the Site, other than RCRA post-closure ground water monitoring and inspection, and the RFI Phase I activities described in this Report.

#### 2.1.2 Current Site Operations

All operations at the Site have ceased with the exception of RCRA post-closure activities associated with the Closure Unit.

### **2.2 Previous Investigations**

Following the sale of the steel mill to Thomas Steel, Ceco hired NUS as its environmental consultant to locate and develop a RCRA closure plan for the 2,500 cubic yards of EAF dust still present at the Site.

#### 2.2.1 1983 - EAF Dust Delineation and Impact Investigations

**Initial Site Characterization** - In April 1983, NUS began a study to determine the location of the remaining subsurface EAF dust deposits. The study included interviews of former Ceco employees and Dudek personnel, and a thorough Site inspection. These activities were followed by a surface and subsurface investigation utilizing soil borings and other sampling techniques to delineate the locations of EAF dust deposits beneath the then-existing Site surface. Collectively, this work provided the basis for the design of a subsurface investigation.

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**Subsurface Investigation and EAF Dust Deposit Delineation - NUS' EAF dust deposit delineation field investigation began in October 1983, with sampling subsurface materials using a split-barrel sampler during the advancement of 17 soil borings across the entire Site. The borings and sampling were extended to bedrock. The locations of the borings and the results of the investigation were presented in the Final Closure Plan for Waste Storage Area EPA ID No. ILD990785453, Will County, Illinois which was submitted to IEPA (January, 1985).**

**In general, NUS found the subsurface to consist of sand-to-boulder sized slag. Sample recovery was low, except in areas where discreet layers of fine-grained material which was believed to be EAF dust, was encountered. Conclusions drawn from research and personnel interviews concerning the probable locations of subsurface EAF dust deposits were confirmed during this phase of the investigation. Deposits of fine-grained materials, believed to be EAF dust, were found in the Site subsurface only in the eastern portion of the Site where EAF dust was expected to be encountered. Eight of the 17 borings encountered fine-grained material, all of which occurred in visually distinct subsurface layers indicative of the deposition of a fine water-slurried material. Samples of fine-grained material taken from these eight borings were subjected to EP Toxicity analyses for lead, cadmium and hexavalent chromium. One boring of the 17 contained fine-grained material which was EP toxic for lead and cadmium. Based upon these analyses, and the characteristic presentation as extremely fine-grained material in distinct subsurface layers, NUS determined that layers of fine-grained material found in the subsurface were most probably EAF dust deposits. Chemical analysis could not be used to identify EAF dust because EAF dust is a "listed" RCRA hazardous waste regardless of its chemical constituents (which vary substantially) and because metals are present at the Site from other sources. Nevertheless NUS' evaluation of all of the circumstantial evidence concluded that the fine-grained material found in distinct subsurface layers was most likely EAF dust.**

**Evaluation of the Ground Water Regime - Temporary ground water monitoring wells were installed in ten locations for the purpose of collecting water level/elevation data to determine the ground water flow direction and to collect ground water samples for analysis. The monitoring wells were 2-inch diameter PVC with slotted well screens throughout the saturated zone.**

**The temporary ground water monitoring wells were converted from the soil borings so that representative ground water samples could be obtained form across the Site, as documented in the January 1985 Closure Plan. The temporary monitoring wells were sampled twice during 1983. Measurements from these wells indicated that the ground water table was above the bedrock surface in the southern portion of the Site,**

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and within the bedrock under other portions of the Site. Ground water elevations varied slightly from October to December 1983.

The analytical results from the temporary ground water monitoring wells (unfiltered samples) are presented in the January 1985 Closure Plan for lead, cadmium and chromium. In general, the unfiltered ground water samples were turbid, and showed detectable levels of lead, cadmium and chromium when analyzed under the "total metals" laboratory protocol.

During the ground water investigation, NUS also sampled four off-site wells previously installed by a prior environmental consultant (Eldridge Associates). One well was located up-gradient, south of the Site on the railroad right-of-way, and three wells were located down-gradient of the Site, on the I & M Canal right-of-way. The Eldridge monitoring wells were 4-inch PVC and were screened below the bedrock surface.

Analytical results from these wells, which reflect ground water quality in the uppermost aquifer both up-gradient and down-gradient of the Site showed non-detectable to extremely low concentrations of arsenic and chromium in both the up-gradient and down-gradient wells.

**Surface Water Evaluation** - Surface water was sampled twice during the 1983 field investigation. The results of the surface water analyses are provided in Ceko's responses to IEPA comments on the January 1985 Closure Plan. Surface water was sampled from three points along the I & M Canal, which is the closest surface water which receives runoff from the Site. Analysis of the I&M Canal surface water samples showed concentrations of arsenic, chromium and lead below Maximum Contaminant Level's (MCL's) or non-detectable.

Standing surface water was also sampled within the slag processing area where water was temporarily ponded on the bedrock surface. The laboratory results showed detectable levels of arsenic, cadmium, chromium, lead and selenium, however, all concentrations were below their respective MCL's.

#### 2.2.2 1984 - Further EAF Dust Deposit Location and Ground water Studies

During August 1984, nine test pits were excavated with a back-hoe to provide additional information concerning the subsurface distribution of EAF dust deposits. In addition, eleven temporary ground water monitoring wells were installed into the top portion of the bedrock beneath the Site to further characterize ground water flow conditions in the saturated zone within the bedrock.

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The results of the 1984 subsurface investigation were consistent with the 1983 borings, and disclosed EAF dust deposits in distinct layers of fine-grained material in the subsurface. Temporary monitoring wells showed that the ground water flow was the same as ground water flow patterns in the unconsolidated slag material above the bedrock, indicating that these units were hydraulically interconnected. Analyses of ground water samples from these monitoring wells showed no detectable concentrations of lead, cadmium or hexavalent chromium.

**2.2.3 January 1985 - RCRA Closure Plan**

In January 1985, a RCRA Closure Plan for the Site was submitted for approval to IEPA. The plan summarized the Site data concerning the probable distribution of subsurface EAF dust deposits, and described the physio-chemical processes which appeared to restrict transport of metals in ground water beneath the Site.

Because for reasons discussed earlier in this report (Section 2.2.1), there is no chemical analysis capable of identifying EAF dust, Ceko's initial Closure Plan provided for visual identification of EAF dust deposits during excavation and for physical separation and off-site RCRA disposal of all excavated material less than 0.25 inches in diameter.

The Closure Plan also included information which demonstrated that because of geochemical conditions present in the Site subsurface, transport of metals in the ground water as dissolved species was not possible. The presence of large amounts of alkaline slag and the calcium-magnesium carbonate which comprises the dolomitic limestone bedrock insure that any low pH water entering the subsurface would be immediately neutralized, and any dissolved metals present in such water would precipitate as insoluble carbonate complexes. These same permanently alkaline conditions will prevent any ground water moving through the subsurface from being capable of leaching metals from the Site materials because the requisite low pH conditions required for leaching to occur, cannot exist.

A series of IEPA comments on the Closure Plan were addressed by NUS in April 1985 and on June 13, 1985, the IEPA approved the Closure Plan with several conditions. Work on the closure began during July 1985.

On September 18, 1985, a Site inspection was conducted by representatives of Ceko, IEPA and NUS. Following that inspection, a Compliance Inquiry Letter was prepared by the IEPA which identified several concerns with respect to the implementation of the approved Closure Plan. At a November 29, 1985 meeting to



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discuss these issues, IEPA advised Ceko that the hazardous waste "mixture rule" would require that the mechanical waste separation process operate to insure that all traces of EAF dust be removed from the non-hazardous (*i.e.*, greater than 0.25 inches in diameter) portion of the excavated material before the non-hazardous material could be returned to the excavation as fill. On January 20, 1986, Ceko advised IEPA that it was physically impossible for the mechanical separation process to remove all traces of EAF dust from the non-hazardous portion of the admixed excavated material, and consequently Ceko would prepare an Amended Closure Plan, which would close the Site by placement of the excavated EAF dust and admixed non-hazardous solid materials in an on-site RCRA Closure Unit.

During the course of the above discussions, excavation continued in accordance with the IEPA approved closure plan. Excavation was completed in early January 1986, and produced approximately 32,000 cubic yards of solid material comprised of EAF dust (2,500 cubic yards) and admixed non-hazardous slag/other materials (29,500 cubic yards).

#### 2.2.4 March 1986 - Amendment to the Closure Plan

In March 1986, Ceko submitted an Amendment to Closure Plan which proposed to place the admixed EAF dust and non-hazardous co-excavated material in an on-site RCRA waste pile closure unit. The amended Closure Plan was approved by the IEPA on September 11, 1986 with certain conditions which required Ceko to perform additional investigation at the Site to insure that all EAF dust deposits had been located and excavated during the 1985 excavation. Ceko objected to that portion of the IEPA's Closure Plan approval which required a supplemental Site investigation, but did not object to any IEPA approval condition with respect to the proposed closure unit design. Accordingly, Ceko directed NUS to construct the Closure Unit. Construction of the RCRA Closure Unit was completed in accordance with the IEPA-approved design, on or about August 1, 1988.

#### 2.2.5 1988 - 1993

Ceko pursued administrative remedies under Illinois law, to review IEPA's September 11, 1986 Closure Plan approval conditions concerning the supplemental Site investigation and certain aspects of the post-closure ground water monitoring plan. For the most part, Ceko was unsuccessful in its challenges.



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### **2.2.6 1993 - Installation and Sampling of Ground Water Monitoring Well Network**

In April, 1993, NUS installed five RCRA post-closure ground water monitoring wells at the Site. Two wells were installed hydraulically up-gradient and three wells in down-gradient locations. As required by applicable ground water monitoring regulations, the post-closure ground water monitoring wells were installed in the uppermost aquifer, which is partly within the upper portion of the bedrock unit. Quarterly ground water sampling rounds have been conducted since the wells were installed.

The wells were sampled to establish background water quality levels in accordance with 35 ILL. ADM. Code, Part 725, Subpart F. Analyses of unfiltered ground water samples collected during successive calendar quarters since well installation demonstrate that concentrations of lead, cadmium and hexavalent chromium in the ground water are either below detection limits or detectable at extremely low concentrations. These results show that the ground water in the upper-most aquifer is not being significantly impacted by the Closure Unit.

In the fall of 1995, Robertson-Ceco hired Carlson Environmental, Inc. (CEI) to perform the RCRA post-closure ground water monitoring and the RFI activities.

### **2.3 Regional and Site Physiography**

The present-day physiographic features in the Site area were formed approximately 20,000 years ago by glacial and fluvial actions which physically shaped the surrounding land. Glacial deposits almost completely mask the bedrock surface in the area (Willman, 1971). The Site, which is located in the Des Plaines River Valley, lies within the physiographic province known as the Central Lowlands, a broad, relatively low area that roughly outlines the glaciated area. The local relief in the Central Lowlands seldom exceeds a few hundred feet. For the most part, the Site is above the 100-year flood plain elevation of the Des Plaines River (FEMA, 1982 - Figure Two).

The Site is situated on a former flagstone quarry, which is located in the northeast portion of Will County, near the Will County/Cook County border in Lemont, Illinois.

Surface water from the Site discharges to the I&M Canal located immediately to the north. Precipitation at the Site infiltrates quickly through the highly permeable slag

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and discharges to the ground water system. A small, intermittent drainage ditch runs the length of the southern boundary of the Site. An intermittent drainage channel located on the west-central portion of the Site runs from south to north and discharges to both the I & M Canal and the drainage ditch to the south of the Site. Water that collects in the former slag processing area discharges to the I & M Canal through a drainage ditch.

There are no significant surface water bodies, streams or wetland areas located at the Site. Significant surface water features in the vicinity of the Site include the Des Plaines River, the Chicago Sanitary and Ship Canal, and the I&M Canal.

The climate is continental with cold winters and warm summers. Average daily temperature is 51.4°Fahrenheit (F). The highest average daily temperature is 81°F in August, and the lowest daily temperature is 20.3°F in December. Mean annual precipitation is 38 inches. The prevailing wind direction is easterly at a velocity of less than 13 miles per hour.

#### 2.4 Site Geology

The geology in the vicinity of the Site is characterized by relatively flat-lying, dolomitic bedrock overlain by river alluvium within the river valley and glacial deposits which form the surficial materials outside the river.

Dolomitic (calcium magnesium carbonate) bedrock lying beneath the Site belongs to the Niagaran Series of the Silurian System, Joliet Formation and is 40 to 60 feet thick (Willman, 1971). The Site is within a former quarry where dolomite was removed for use as building stone. Approximately 10 feet of limestone was removed from the estimated original surface down to approximately an elevation of 580 feet above mean sea level (msl). The slag fill at the Site is located within the quarry pit. A bedrock sill, consisting of bedrock left in place, is present between the Site and the I & M Canal. The dolomite is characterized by a yellow-brown (buff) color, moderate fracture densities with vertical fractures ranging from one-half foot to several feet apart, and horizontal bedding fractures that produce a general flaggy nature to the near surface bedrock. Bedrock is also exposed along the I & M Canal, which forms the northern boundary of the Site. The surface of the Site is covered with a layer of fill consisting primarily of steel furnace slag, which is approximately 10 feet in thickness across the Site. A summary of the slag thickness recorded in the soil borings and depth to bedrock is included in Table 8. Geologic cross sections were constructed to show the vertical distribution of the slag deposits and the Site geology. One cross section (A-A') was constructed through the center of the Site from the



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western boundary to the eastern limit of slag (see Figure Eight). Two additional cross sections were constructed perpendicular to A-A' in order to depict the three-dimensional nature of the deposits (B-B' and C-C' Figure Eight).

### **2.5 Site Hydrogeology**

The Des Plaines River, Chicago Sanitary and Ship Canal, and I & M Canal all flow within the dolomitic bedrock in the vicinity of the Site.

The Des Plaines River drains to the Illinois River approximately 20 miles downstream from the Lemont area, and ultimately to the Mississippi River.

Generally, the ground water beneath and in proximity to the Site flows northwest as depicted on Figure Four. This ground water flow direction agrees with the earlier findings of NUS.

Infiltration of precipitation at the Site is moderate to high given the relatively high permeability of the Site materials. The uppermost aquifer at the Site is a water table aquifer, which fluctuates seasonally from within the slag fill (*i.e.*, above the bedrock surface) to below the bedrock surface (NUS, 1994). Field data demonstrates that these units are hydraulically connected. Ground water flow in the bedrock is primarily through a fracture system. Most of the surface water that infiltrates the Site enters the ground water and discharges to the I & M Canal as base flow discharge. Ground water from beneath the Site that does not discharge to the I & M Canal discharges to the Chicago Sanitary and Ship Canal, which lies immediately north of the steel mill.

No drinking water sources exist downstream of the Site that take water from the I&M Canal. Similarly, no drinking water sources using ground water are located hydraulically down-gradient from the Site between the Site and the Chicago Sanitary and Ship Canal.

## **3.0 NATURE AND EXTENT OF CONTAMINATION**

### **3.1 Identification and Description of Site Units**

The approved Work Plan for the RFI Phase I activities divides the Site into three identifiable units: Existing RCRA Closure Unit, Previously Excavated Areas, and the

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Remaining Area (Figure One).

**3.1.1 Existing RCRA Closure Unit -Unit 1**

This unit is located in the approximate center of the Site, along the southern border, with dimensions of 300 feet by 220 feet. The Closure Unit is surrounded by a locked chain-link fence. The Closure Unit contains 32,000 cubic yards of excavated materials (approximately 29,500 cubic yards of non-hazardous slag admixed with 2,500 cubic yards of EAF dust). Five post-closure monitoring wells, two hydraulically up-gradient and three hydraulically down-gradient, surround the Closure Unit. For a detailed description of the Closure Unit see NUS's Draft Work Plan for the Phase I Facility Investigation Appendices A and B, Volume 2 of 2 (NUS, 1994).

**3.1.2 Previously Excavated Areas-Unit 2**

This unit includes the former 10,000 cubic yard principal EAF dust storage area as well as the remaining areas of the Site which were excavated down to the bedrock surface in 1985. The 32,000 cubic yards of excavation spoil from this unit were placed into the RCRA closure unit described in Section 3.1.1.

**3.1.3 Remaining Area-Unit 3**

Unit 3 is the remainder of the Site. Subsurface boring and trenching investigations conducted in 1983, 1984, 1985 and 1995/1996 did not identify any subsurface EAF dust deposits in this area. In general, the subsurface in this unit is characterized by slag deposits up to 16 feet in thickness on top of the quarried bedrock surface. For a detailed description of each of these investigations, refer to Section 2.2 and to previous NUS investigation reports (1983, 1984, 1985 and 1993).

**3.2 Site Survey**

In February 1996, Reiter & Associates surveyed the Site and adjacent rights of way as required under the approved RFI Work Plan.

A Plat of Survey constructed by Reiter & Associates was utilized as a base map to construct the Site maps included in this Report (Figure One and Three through Seven).



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### **3.3 Waste Characterization**

#### **3.3.1 EAF Dust**

EAF dust is designated by USEPA as listed hazardous waste (K061). USEPA's designation was based upon the fact that EAF dust may contain the hazardous constituents lead, cadmium, and hexavalent chromium, 40 C.F.R. Part 261, App. VII. Physically, EAF dust is a very fine particulate, 70 percent of which, by weight, is less than 5 microns in diameter. Its chemical make-up is primarily iron oxide together with oxides of other metals of a degree and type dependent upon the alloying and associated non-ferrous metals present with the scrap steel which was being melted when the EAF dust was created (*e.g.*, lead may be present from a lead-acid automobile battery which was not removed from an automobile carcass before compacting).

#### **3.3.2 Slag**

Slag is a non-metallic alkaline by-product of electric arc steel making which contains residual fluxes and other materials (including some metals) fused under high temperature in a vitreous mass. Electric arc furnace slag is not a hazardous waste and in fact is commonly sized and sold for use as aggregate. Most slag present on the Site ranges in size from 100 sieve size to 1 to 2 inches in diameter with occasional pieces up to 6 inches or more in diameter. Larger masses of slag are irregularly shaped with jagged edges. The texture of even the finest slag particles is far more coarse than that of EAF dust. Assuming a uniform thickness of approximately 10 feet across the entire Site, approximately 460,000 cubic yards of slag are present at the Site.

#### **3.3.3 Mill Scale**

Mill scale is another non-hazardous by-product in the steel making process which is present at the Site. Mill scale is iron oxide (rust) which forms on and is removed from the surface of steel bars during the rolling process. Mill scale was periodically deposited at the Site. No records were maintained as to the quantity or locations of disposed mill scale.



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### **4.0 INVESTIGATION AND CHARACTERIZATION OF SITE FILL MATERIAL**

#### **4.1 EAF Dust Investigation**

During December 1995 and January 1996, CEI retained Rock and Soil Drilling Corporation to advance 28 soil borings, 24 on-site (SB-1 through SB-24 - Figure One) and 4 off-site (SB-25 through SB-28 - Figure Two), to bedrock (depths from 3.5 to 18.5 feet below ground surface (bgs)). Samples at these locations were taken in accordance with the approved RFI Work Plan. Four surface perimeter samples (PS-01 through PS-04) and ten sediment samples (SS-01 through SS-10) were also collected. No EAF dust deposits were identified at any grid location using the EAF dust identification criteria contained in the RFI Work Plan. Attachment A includes photographs taken during the RFI field activities.

##### **4.1.1 Sampling Grid**

Soil borings were located according to the grid pattern specified in the approved RFI Work Plan (300 foot centers) and advanced to bedrock to characterize the soils at the Site as well as to collect samples for environmental analysis (Figures One and Two and Table One).

##### **4.1.2 Soil Boring Procedures**

Soil borings were advanced with a Diedrich D-120 drill rig utilizing 4.25 inch inner diameter hollow-stemmed augers. The soil borings were continuously sampled using a standard 2 inch diameter by 24-inch long split-spoon sampler which was driven into the subsurface by a 140 pound hammer free-falling 30 inches. All drilling and sampling activities were performed in accordance with the American Society for Testing Materials (ASTM) and USEPA methods. Geologic materials were visually classified and recorded on boring logs (Attachment B). Because EAF dust can only be identified visually, a CEI senior geologist was present during all soil boring operations to examine the materials collected. In addition, an Illinois Licensed Professional Engineer, Kenneth W. James, oversaw all field activities.

##### **4.1.3 Soil Sampling and Analytical Methods**

The reader should recognize that references to "soil" in the context of the Site surface and subsurface, in fact describe furnace slag because nearly the entire Site is comprised of furnace slag on a quarried bedrock surface. Little, if any, true "soil" exists.

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After each sample was brought to the surface, the split-spoon sampler was opened and described by the CEI geologist. Following physical observation and description of the sample, a CEI staff scientist transferred the sample into laboratory-supplied new glass jars equipped with Teflon-lined lids. The samples were maintained at a temperature of approximately 4 degrees C in an insulated container. All samples were maintained under strict chain-of-custody procedures. This process was repeated continuously until bedrock was encountered. All samples were delivered daily to Great Lakes Analytical laboratory in Buffalo Grove, Illinois for analysis.

Samples from each soil boring were assigned alphanumeric identification numbers based on the soil boring number, and the depth of collection. The shallowest sample was given the letter "A", the next "B", *etc.* (e.g., SB-1A, SB-1B).

**Soil Borings** - From each boring, one sample was analyzed for the "long list" of metals which consists of antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc as specified in the IEPA letter dated September 12, 1995. Two other soil samples from each boring were analyzed for the "short list" of metals consisting of lead, cadmium, and hexavalent chromium. Soil samples were chosen for laboratory analysis based on visual observations (grain size). The finest soil sample from each boring was submitted for "long list" analysis and the two next-finest samples were submitted for "short list" analysis. All metals analyses were performed using the "total metals" protocol as required by the approved RFI Work Plan. The laboratory results for these analyses are summarized on Table 2 and the complete laboratory report is included in Attachment D.

To obtain typical background soil samples, four off-site soil borings to bedrock (SB-25 through SB-28) were advanced. These borings were sampled in the same manner as the on-site soil borings. Locations of the background soil borings are shown on Figure Two. Two of the off-site soil borings were advanced on the UNOCAL petroleum refinery property to the west of the Site, and two borings were advanced on property east of the Site. The analytical results for these samples are summarized on Table 3 and the complete laboratory reports are included in Attachment D.

**Perimeter Samples** - The four perimeter samples were collected from the surface at the locations depicted on Figure One. At each location a stainless steel trowel was used to scoop the soil, and transfer it to a laboratory supplied new glass jar equipped with a Teflon-lined lid. The same protocols were used for these samples as for the soil boring samples. The results are summarized in Table 4 and the complete analytical report is included in Attachment D.





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**Sediment Samples** - The ten sediment samples were collected from the perimeter of the Site as shown on Figure One. At each location, the surface soil (or if water was present as in the case of the I & M Canal samples, the uppermost soil), was collected and placed into laboratory supplied new glass sample jars. These samples were submitted to the laboratory for analysis of the "long list" of metals. Figure One depicts the sampling locations and Tables 4 and 5 contain a summary of the laboratory results. The complete analytical report is included in Attachment D.

### **4.1.4 Soil Sampling Results**

A summary of the analytical results for the soil boring samples collected during the RFI field activities is included in Tables 1-3. Ninety-three soil samples, including 11 duplicate quality assurance / quality control (QA/QC) samples, from the soil borings were submitted to the laboratory for metals analysis. Of these, 33 samples were submitted for the "long list" and 60 soil samples for the "short list" as shown on Table 1. Several of the soil boring samples showed slightly elevated metals concentrations.

When metals concentrations in these samples were compared to IEPA's Tiered Approach to Cleanup Objectives Guidance Document (TACO), January, 1996, only lead and in one instance, cadmium, exceeded their respective Tier I TACO values. In soil boring SB-20A, from 1 to 3 feet bgs, cadmium was detected at a concentration of 110 mg/kg. The Tier I TACO value for construction worker for ingestion is 100 mg/kg. When this value is averaged out with two other samples collected from the same boring at depths of 3 to 5 and 7 to 9 feet bgs, the average is 41.9 mg/kg, which is significantly below the Tier I TACO value. No other cadmium soil sample exceeded 100 mg/kg.

The results for total lead in several samples exceed the Tier I TACO value of 400 mg/kg. Total lead concentrations in individual soil samples ranged up to 3,800 mg/kg (SB-14B from 3-5 feet bgs). On average the total lead in all soil samples taken at the Site is 578.54 mg/kg. Figure Five depicts the total lead concentration across the entire Site, displaying the highest concentration from each boring location.

In addition to the soil samples from the 28 borings, 14 perimeter/sediment samples were collected and submitted for the "long list" of metals from various locations along the perimeter of the property as depicted on Figure One. The laboratory results for these samples are summarized in Table 4. In general, elevated total metals were detected in some of the samples collected for laboratory analysis, but only one perimeter surface sample, PS-01, exceeded the Tier I TACO value for total lead with a concentration of 510 mg/kg (Figure Five).



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Background soil samples were collected from borings SB-25 through SB-28, in areas where no slag was present (Figure Two). The highest background concentration for total lead was from SB-27A (1 to 3 feet bgs) at a concentration of 760 mg/kg. Analytical results for background soil samples are summarized on Table 3, and the complete laboratory report is included in Attachment D.

### **4.1.5 Equipment Decontamination Procedures**

After each soil boring, all down-hole drilling equipment was thoroughly cleaned using a high-pressure steam-cleaner. Between each sample collection, the split-spoon sampler was scrubbed in a soap solution (Alconox® and water) and triple-rinsed with deionized water to prevent cross-contamination.

## **4.2 Ground Water Investigation**

On December 11, 1995, CEI inspected all previously installed ground water monitoring wells which remain on-site. In addition to the five ground water monitoring wells installed to perform post-closure monitoring of the RCRA Closure Unit, eleven other monitoring wells exist at the Site. Of these wells, nine were in good condition, and two had been damaged, preventing their use as monitoring points. Construction details and other information concerning existing monitoring wells, are presented in Table 6.

### **4.2.1 Monitoring Well Development**

In order to insure accurate permeability testing, CEI developed the nine existing monitoring wells between December 18 and 20, 1995, utilizing an electric pump designed specifically for purging water from 2-inch wells. At least three well volumes of ground water were evacuated from each well during development. The five post-closure monitoring wells associated with the RCRA Closure Unit were not developed since the status of those wells was known as the result of their recent use in post-closure ground water monitoring.

### **4.2.2 Ground Water Level Measurements**

The inner casings of all ground water monitoring wells were surveyed by Reiter & Associates to determine elevations. Ground water level measurements were obtained using an electronic sounding device which is accurate to the nearest hundredth of a foot. At each well, a Solinst® model 101 water level meter was lowered into the well

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until the meter sounded. At that point, the depth to water was measured from the north side of the inner casing and recorded (Table 7). This process was performed twice for each well to ensure accurate measurements. Thirteen of the 16 ground water wells located on-site, were used to determine the ground water flow direction. Monitoring wells E and I were damaged and unusable for data collection. Old Well-3 was not used because anomalously high water levels were measured. With the information collected from the remaining 13 wells, depth to water and casing elevations, the ground water flow direction (Figure Four) and hydraulic gradient were calculated. The calculations used to determine the hydraulic gradient are included in section 4.2.3.

#### 4.2.3 Ground Water Flow

Ground water flow directions were calculated from information collected on March 25 and April 25, 1996. Ground water elevation contour maps are shown on Figure Four. The flow direction for the shallow ground water is to the northwest, towards the I & M Canal. The average hydraulic gradient was determined by plotting water level measurements on a base map and dividing the difference in hydraulic head between the distance of two points perpendicular to the flow direction. An average horizontal ground water gradient of 0.027 foot per foot (ft/ft) was calculated for the Site.

#### 4.2.4 Hydraulic Conductivity

On December 20, 1995 and January 16, 1996, "rising-head slug test method" permeability tests", were performed on all fourteen functional ground water monitoring wells to evaluate the hydraulic conductivity (K) in the upper-most aquifer beneath the Site. (Bouwer, H. and Rice, R.C., 1976; and Bouwer, H., 1988).

The slug test method involves the instantaneous withdraw of a volume of water from a well, which partially penetrates an unconfined aquifer, and measurement of the rate of ground water recharge into the well. To perform the test in the field, a 1.9 inch diameter, 36 inch long stainless steel bailer was lowered into each well. After allowing the water to equilibrate in the well, the bailer was quickly removed and the ground water recharge rate was recorded using a Hermit 100-C Data Logger which recorded measurements at a rate of three per second. The data logger records the height of the water column using a pressure-sensitive transducer probe. The drawdown verses time data was then interpreted using the AQTESOLV<sup>®</sup> computer software program by Geraghty & Miller, which incorporates the Bouwer and Rice method of evaluating hydraulic conductivity from slug test data. The hydraulic conductivity for each monitoring well is presented on Table 7. The range of

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determined  $K_p$ -values for the Site is  $1.06 \times 10^{-3}$  cm/sec to  $6.6 \times 10^{-6}$  cm/sec with a mean of  $3.49 \times 10^{-4}$  cm/sec. Data collected from the data logger and the time versus drawdown graphs are included in Attachment C.

**4.2.5 Ground Water Sampling and Analytical Methods**

Ground water samples were collected from each of the fourteen monitoring wells using a low-flow ground water sampling technique described in the RFI Work Plan. The monitoring wells were sampled on January 16 - 17, 1996. The five post-closure monitoring wells were sampled on January 18, 1996 as part of the regular post-closure quarterly ground water monitoring program. All ground water samples were submitted to Great Lakes Analytical laboratory for analysis of total and dissolved metals using USEPA method 3015/ and 6000 and 7000 series analytical protocols as specified in USEPA SW-846 Test Methods for Evaluating Solid Waste, (Third Edition).

The well sampling procedures were as follows:

- 1.) The Solinst® model 101 electric water level meter probe was carefully lowered into the well to minimize disturbance of the water column. When the meter sounded, the static water level was measured from the north side of the inner well casing and recorded to 0.01 feet. This process was performed twice for each monitoring well for accuracy purposes.
- 2.) The required length of Teflon tubing was calculated, measured and marked for attachment to a peristaltic pump, so that the intake was located at the mid-point of the saturated screen interval. A minimal length of tubing was used to minimize the temperature change from the collection point to the discharge point.
- 3.) Tubing was inserted slowly to the measured depth and secured to the well casing to minimize disturbance to the water column. The tubing was dedicated to each well, secured to the cap, and left inside the protective casing to minimize disturbance to the water column during subsequent sampling events.
- 4.) Monitoring instruments were calibrated and assembled, and the tubing was connected to a peristaltic pump and a flow-through chamber in which the instrument probes were located.

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- 5.) The water level was measured and recorded on a data sheet and compared to the previous static water level.
- 6.) The pump was started at the minimum continuous flow rate attainable by the pump, between 0.02 to 0.05 liters per minute. Start times and flow times were recorded. The flow rate was adjusted to a rate that minimized drawdown in the well. A full round of measurements were recorded every five minutes, including time, temperature, specific conductance, pH, turbidity, dissolved oxygen and water level.
- 7.) All data and changes were recorded on the data sheets and flow rates were adjusted to provide for minimal drawdown. If drawdown increased significantly, the wells were pumped intermittently until parameters stabilized.
- 8.) Once field parameters stabilize, ground water samples were collected. The stabilization was defined by readings within a range of ten percent for three consecutive five minute intervals, or until three well volumes had been purged and turbidity levels below 20 NTUs were achieved.
- 9.) Once stabilization was achieved, the flow-through chamber was disconnected and the samples were collected directly from the tubing.
- 10.) The samples were maintained at a temperature of approximately 4 degrees C in an insulated container containing ice. Upon completion of sampling, the collected samples were transferred to Great Lakes Analytical for laboratory analysis. The samples were maintained under strict standard chain-of-custody procedures/documents.

**4.2.6 Ground Water Results**

Analytical results from the ground water samples showed all metals concentrations below laboratory detection limits. A summary of the laboratory results is included in Table 6 and the complete laboratory report is included in Attachment D.

**4.2.7 Surface Water Sampling**

Surface water samples were collected at six locations (WS-2, WS-5, WS-7, WS-8, WS-9, and WS-10 - Table 5) (Figure One). The samples were collected by slowly lowering laboratory supplied new containers into the water and allowing them to fill.

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When the containers were filled, they were immediately capped, labeled and placed into a cooler. The samples were maintained at a temperature of approximately 4 degrees C until they were transferred to the laboratory for analysis. The samples were analyzed for the "long list" of metals and the results of the surface water sampling are summarized on Table 5 and the complete laboratory report is included in Attachment D.

Sample WS-2, collected from the ditch along the southern property boundary, had a total lead concentration of 0.036 mg/L. The samples collected from the I & M Canal (WS-8, WS-9, and WS-10) had detectable concentrations of total chromium (WS-9, 0.039 mg/L) and lead (WS-8 - 0.007 mg/L, WS-9 - 0.037 mg/L, and WS-10 - 0.013 mg/L). All samples were analyzed without filtration and therefore contained suspended solids. On the day the water samples were collected from the I & M Canal, the Canal water was sediment-laden as the result of winds gusting up to 45 miles per hour, and samples collected were noticeably turbid.

## 5.0 EVALUATION OF MONITORING WELL NETWORK

### 5.1 Description of Monitoring Well Network

All 14 functional ground water monitoring wells at the Site are screened within the bedrock. Three are up-gradient wells (OW-4, MW-D1, and MW-D5). Six are down-gradient wells (OW-1, OW-2, OW-3, WELL-B, WELL-C, and WELL-D). The remaining wells (MW-D2, MW-D3, MW-D4, WELL-J, and WELL-K) are mid-gradient in respect to the entire Site (See, Table 7).

### 5.2 Site Hydrogeology

The Site hydrology has been thoroughly characterized. Ground water occurs at between 2 and 13 feet bgs, and for most of the season, the water table is below the bedrock surface. The ground water flow direction is northwest, towards the I & M Canal, where discharge as base flow to the Canal most likely occurs (Figure Four).

Data collected from the in-situ permeability tests establishes hydraulic conductivity ranges from  $1.06 \times 10^{-3}$  cm/sec to  $6.6 \times 10^{-6}$  cm/sec with a mean of  $3.49 \times 10^{-4}$  cm/sec.



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### **5.3 Additional Monitoring Wells**

Because the ground water has been adequately characterized, CEI does not recommend installation of any additional monitoring wells.

### **5.4 Surface Water Bodies**

Very little precipitation flows off the Site as surface runoff because of the high permeability of the Site surface materials. Two intermittent drainage courses for surface runoff exist. One is a drainage ditch that runs north / south across the western portion of the Site. Only during periods of precipitation was the drainage ditch observed to contain water. In January 1996, during RFI Phase I activities, CEI observed water flowing to the north into the I & M Canal, from the unpaved road which bisects the Site from west to east. Water south of the unpaved road, was flowing to the south, into the drainage ditch which runs between the railroad tracks and the Site. The surficial hydraulic divide was in the vicinity where the unpaved road on the Site crossed the ditch.

A second drainage ditch runs from the slag processing area to the I & M Canal (Figure One). The slag processing area is directly on the bedrock surface and receives runoff from precipitation and seepage from the surrounding elevated slag fill material.

During the RFI field activities, CEI collected water samples from run-off points shown on Figure One. A summary of the laboratory results for the surface water samples is included in Table Five. Section 4.2.7 presents the analytical results for these surface water samples.

## **6.0 POTENTIAL RECEPTORS**

### **6.1 Ground Water Receptors**

Existing well information was obtained by NUS from the Illinois State Water Survey. That information shows nine private ground water supply wells located within 1,500 feet of the Site. Six of these are industrial and commercial supply wells. The remaining three are domestic supply wells located to the south (hydraulically up-gradient). The industrial and commercial water supply wells are all screened at depths of more than 1000 feet bgs, and are unlikely to be impacted by ground water in the uppermost aquifer which has contacted Site materials. No municipal water



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supply wells are located within one half-mile of the Site.

### **6.2 Surface Water Receptors**

Most precipitation falling or running onto the Site infiltrates the permeable surficial materials and exits the Site through the ground water pathway. The ground water flow for the Site is to the northwest towards the I & M Canal where it discharges as base flow. The small amount of surface water which does run-off the Site likewise drains to the I&M Canal.

### **6.3 Site Access**

Access to the Site is limited due to a chain link fence along the western property boundary. To the north of the Site, access is limited by the I & M Canal. To the south and east of the Site, no barriers exist, but due to the topography, access to the Site is difficult. The RCRA Closure Unit is surrounded by a chain-link fence which remains locked at all times to prevent unauthorized access.

### **6.4 Identification of Potential Ecological Receptors**

CEI contacted the Illinois Department of Natural Resources (DNR) and requested a listing of "potential endangered species" in the vicinity of the Site. According to the DNR, there were no species on the endangered species list in the immediate vicinity of the Site.

## **7.0 SUMMARY AND CONCLUSIONS**

The Phase I RFI field activities confirm that no additional EAF dust deposits remain on-site. All EAF dust is contained within the existing RCRA Closure Unit. Ground water monitoring done during the RFI reports all metals of concern in ground water at below detection levels, despite the presence of substantial amounts of EAF dust on the Site for many years prior to RCRA, and despite very permeable subsurface conditions. These results are consistent with earlier ground water monitoring, and support NUS' conclusion that geochemical conditions in the subsurface and in ground water, primarily related to naturally alkaline pH and abundant carbonate and bicarbonate ions from the dolomite, will not allow metals to exist in solution. (See, January 1985 Final Closure Plan, §2.3.3.).

Of the metals analyzed from the soil/sediment materials, only lead was detected at



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several grid-intersect boring locations in concentrations that exceed the Tier I TACO value (400 mg/kg) for a construction worker for industrial / commercial use property. The average total lead concentrations in soils/sediments across the Site (578.54 mg/kg) is only slightly above the Tier I TACO value for commercial/industrial use. Lead in soils/sediments should also be evaluated in light of the fact that the highest background (off-site) lead concentration was 760 mg/kg, and that the Site is located in a heavily industrialized area with limited access. Further, given that the Site "soils" are in fact furnace slag, it is unlikely that the lead levels reported by the "total metals" analysis are even remotely related to the concentrations of lead which would be biologically or environmentally available from these materials. All metals present in the slag exist tightly bound in a fused vitreous substrate, and are digested (*i.e.*, become soluble) during the "total metals" analysis only under the extremely aggressive digestion conditions which that protocol employs. For these reasons CEI believes that Site "soils" pose no threat to human health or to the environment, and require no corrective action.

While the RFI results show total lead in "soils" to be elevated for the Site in reference to the Tier I TACO objectives, lead in ground water was below detection levels. Because most of the ground water monitoring wells have been emplaced since the 1980's, and have consistently reported very low or zero concentrations of metals of concern (including lead) in ground water, CEI believes that no further ground water monitoring is necessary for the entire Site. Future ground water monitoring should be limited to the RCRA Closure Unit. All ground water monitoring wells except the RCRA post-closure wells, should be removed or abandoned in accordance with applicable law.

To date, the cost for the RCRA Facility Investigation Phase I activities is approximately \$ 145,000 with a projected total cost for this phase estimated at \$ 155,000.



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FIGURES

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## FIGURES

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|---------------------|--|
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## **TABLES**

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<b>TABLE 1</b> <b>SOIL BORING AND SAMPLE DATA</b> Robertson-Ceco Lemont, Illinois				
Soil Boring Number	Total Depth (feet)	Sample Interval	ANALYSIS	
			Long List of Metals	Short List of Metals
SB-01	12	A(1-3)	X	
		B(3-5)		X
		C(5-7)		X
SB-02	12	A(1-3)	X	
		B(3-5)		X
		D(7-9)		X
SB-03	18.5	A(1-3)	X	X
		B(3-5)		X
		C(5-7)		
SB-04	16.75	B(3-5)	X	X
		C(5-7)		
		F(11-13)		X
SB-05	15	D(7-9)	X	X
		F(11-13)		X
		G(13-15)		
SB-06	3.5	A(1-3)	X	X
		B(3-5)		
SB-07	13	A(1-3)	X	X
		B(3-5)		
		C(5-7)		X
SB-08	12.5	C(5-7)	X	X
		D(7-9)		X
		F(11-13)		
SB-09	15	C(5-7)	X	X
		D(7-9)		X
		E(9-11)		
SB-10	14.5	B(3-5)	X	
		DUP-B(3-5)		X
		C(5-7)		
		DUP-C(5-7)		
		E(9-11)		X
		DUP-E(9-11)		X
SB-11	13	A(1-3)		X

**TABLE 1 (continued)**  
**SOIL BORING AND SAMPLE DATA**

Robertson-Ceco  
 Lemont, Illinois

Soil Boring Number	Total Depth (feet)	Sample Interval	ANALYSIS	
			Long List of Metals	Short List of Metals
SB-11	13	C(5-7)	X	
		D(7-9)		X
SB-12	21	A(1-3)		X
		B(3-5)	X	
		C(5-7)		X
SB-13	12.75	B(3-5)		X
		C(5-7)	X	
		D(7-9)		X
SB-14	13	B(3-5)		X
		C(5-7)		X
		D(7-9)	X	
SB-15	12	A(1-3)		X
		DUP-A(1-3)		X
		C(5-7)	X	
		DUP-C(5-7)	X	
		D(7-9)		X
		DUP-D(7-9)		X
SB-16	13.5	A(1-3)		X
		B(3-5)	X	
		C(5-7)		X
SB-17	5	A(1-3)		X
		B(3-5)	X	
SB-18	5.75	A(1-3)	X	
		B(3-5)		X
SB-19	9	A(1-3)	X	
		B(3-5)		X
		C(5-7)		X
SB-20	12	A(1-3)	X	
		B(3-5)		X
		D(7-9)		X
SB-21	12.5	A(1-3)		X
		B(3-5)	X	



TABLE 1 (continued) SOIL BORING AND SAMPLE DATA Robertson-Ceco Lemont, Illinois				
Soil Boring Number	Total Depth (feet)	Sample Interval	ANALYSIS	
			Long List of Metals	Short List of Metals
SB-21	12.5	C(3-5)		X
SB-22	9.5	A(1-3)		X
		DUP-A(1-3)		X
		B(3-5)	X	
		DUP-B(3-5)	X	
		D(7-9)		X
		DUP-D(7-9)		X
SB-23	9	A(1-3)	X	
		B(3-5)		X
		C(5-7)		X
SB-24	9	A(1-3)		X
		DUP-A(1-3)		X
		B(3-5)		X
		DUP-B(3-5)		X
		C(5-7)	X	
		DUP-C(5-7)	X	
SB-25	5.5	A(1-3)	X	
		B(3-5)		X
		C(5-5.5)	X	
SB-26	5.5	A(1-3)	X	
		B(3-5)		X
		C(5-5.5)		X
SB-27	16.5	A(1-3)		X
		B(3-5)	X	
		C(5-7)		X
SB-28	16.5	A(1-3)	X	
		B(3-5)		X
		D(7-9)		X

**Long List of Metals:** Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

**Short List of Metals:** Cadmium, Hexavalent Chromium, and Lead

**TABLE 2**  
**SUMMARY OF TOTAL METALS IN SOIL BORING SAMPLES**

Robertson-Ceco Corporation  
 Lemont, Illinois

Sample No./Depth (ft)	Metals (mg/kg)														
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SB-01A (1-3)	ND	6	310	0.62	3.7	1,300	NA	220	0.16	36	ND	ND	ND	210	580
SB-01B (3-5)	NA	NA	NA	NA	2.4	NA	ND	95	NA	NA	NA	NA	NA	NA	NA
SB-01C (5-7)	NA	NA	NA	NA	14	NA	ND	330	NA	NA	NA	NA	NA	NA	NA
SB-02A (1-3)	ND	ND	390	ND	1.4	2,300	NA	48	ND	34	ND	ND	ND	330	1,400
SB-02B (3-5)	NA	NA	NA	NA	0.96	NA	ND	42	NA	NA	NA	NA	NA	NA	NA
SB-02D (7-9)	NA	NA	NA	NA	ND	NA	ND	19	NA	NA	NA	NA	NA	NA	NA
SB-03A (1-3)	NA	NA	NA	NA	36	NA	ND	1,200	NA	NA	NA	NA	NA	NA	NA
SB-03B (3-5)	NA	NA	NA	NA	11	NA	ND	340	NA	NA	NA	NA	NA	NA	NA
SB-03C (5-7)	ND	3.6	690	1	7.2	1,300	NA	200	ND	34	ND	ND	ND	190	1,400
SB-04B (3-5)	NA	NA	NA	NA	7.9	NA	ND	170	NA	NA	NA	NA	NA	NA	NA
SB-04C (5-7)	ND	4.4	300	ND	1.7	2,200	NA	84	ND	18	ND	ND	ND	94	590
SB-04F (11-13)	NA	NA	NA	NA	1.8	NA	3.8	61	NA	NA	NA	NA	NA	NA	NA
SB-05D (7-9)	NA	NA	NA	NA	53	NA	ND	2,800	NA	NA	NA	NA	NA	NA	NA
SB-05F (11-13)	NA	NA	NA	NA	17	NA	ND	990	NA	NA	NA	NA	NA	NA	NA
SB-05G (13-15)	ND	5.9	170	0.63	10	51	NA	430	0.19	27	ND	ND	ND	25	1,600
SB-06A (1-3)	NA	NA	NA	NA	4.5	NA	2.2	1,200	NA	NA	NA	NA	NA	NA	NA
SB-06B (3-5)	ND	5.7	460	ND	6.7	680	NA	950	0.29	44	ND	ND	ND	330	1,200
SB-07A (1-3)	NA	NA	NA	NA	19	NA	ND	1,100	NA	NA	NA	NA	NA	NA	NA
SB-07B (3-5)	ND	19	310	ND	9.5	110	NA	1,100	0.73	130	ND	ND	ND	26	1,700
SB-07C (5-7)	NA	NA	NA	NA	9	NA	ND	850	NA	NA	NA	NA	NA	NA	NA
SB-08C (5-7)	NA	NA	NA	NA	2.1	NA	ND	110	NA	NA	NA	NA	NA	NA	NA
SB-08D (7-9)	NA	NA	NA	NA	5	NA	ND	340	NA	NA	NA	NA	NA	NA	NA
SB-08F (11-13)	ND	17	280	ND	10	72	NA	1,200	0.75	81	ND	ND	ND	18	1,900
SB-09C (5-7)	NA	NA	NA	NA	0.89	NA	3.7	89	NA	NA	NA	NA	NA	NA	NA

**TABLE 2 (continued)**  
**SUMMARY OF TOTAL METALS IN SOIL BORING SAMPLES**

Robertson-Ceco Corporation  
 Lemont, Illinois

Sample No./Depth (ft)	Metals (mg/kg)														
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SB-09D (7-9)	NA	NA	NA	NA	4.3	NA	ND	380	NA	NA	NA	NA	NA	NA	NA
SB-09E (9-11)	ND	9.3	600	ND	11	450	NA	2,200	1.9	81	ND	ND	ND	180	4,400
SB-10B (3-5)	ND	9.3	280	ND	80	1,100	NA	1,900	ND	43	ND	2.6	ND	180	9,200
DUP-10B (3-5)(1B)	ND	8.1	180	ND	56	1,000	NA	1,200	ND	55	ND	4	ND	250	6,600
SB-10C (5-7)	NA	NA	NA	NA	60	NA	8.1	1,800	NA	NA	NA	NA	NA	NA	NA
DUP-10C (5-7)(1C)	NA	NA	NA	NA	40	NA	5.8	1,200	NA	NA	NA	NA	NA	NA	NA
SB-10E (9-11)	NA	NA	NA	NA	13	NA	ND	320	NA	NA	NA	NA	NA	NA	NA
DUP-10E (9-11)(1E)	NA	NA	NA	NA	30	NA	ND	450	NA	NA	NA	NA	NA	NA	NA
SB-11A (1-3)	NA	NA	NA	NA	3.3	NA	ND	130	NA	NA	NA	NA	NA	NA	NA
SB-11C (5-7)	ND	19	120	ND	2.3	1,400	NA	73	ND	110	1	3.4	ND	450	260
SB-11D (7-9)	NA	NA	NA	NA	0.66	NA	ND	26	NA	NA	NA	NA	NA	NA	NA
SB-12A (1-3)	NA	NA	NA	NA	3.3	NA	ND	320	NA	NA	NA	NA	NA	NA	NA
SB-12B (3-5)	ND	7.9	140	ND	19	770	NA	730	ND	28	ND	ND	ND	170	2,500
SB-12C (5-7)	NA	NA	NA	NA	4.8	NA	ND	160	NA	NA	NA	NA	NA	NA	NA
SB-13B (3-5)	NA	NA	NA	NA	0.88	NA	6.3	13	NA	NA	NA	NA	NA	NA	NA
SB-13C (5-7)	ND	6.8	270	ND	2.1	1,400	NA	27	ND	28	ND	2.6	ND	210	200
SB-13D (7-9)	NA	NA	NA	NA	2.4	NA	4.4	81	NA	NA	NA	NA	NA	NA	NA
SB-14B (3-5)	NA	NA	NA	NA	64	NA	ND	3,800	NA	NA	NA	NA	NA	NA	NA
SB-14C (5-7)	NA	NA	NA	NA	2.4	NA	ND	140	NA	NA	NA	NA	NA	NA	NA
SB-14D (7-9)	ND	7	270	ND	47	880	NA	2,400	0.61	46	3.6	5.3	ND	150	8,700
SB-15A (1-3)	NA	NA	NA	NA	6.4	NA	4.5	230	NA	NA	NA	NA	NA	NA	NA

**Table 2 (continued)**  
**SUMMARY OF TOTAL METALS IN SOIL BORING SAMPLES**  
 Robertson-Ceco Corporation  
 Lemont, Illinois

Sample/Depth (feet)	Metals (mg/kg)														
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
DUP-15A (1-3)(2A)	NA	NA	NA	NA	4.8	NA	ND	180	NA	NA	NA	NA	NA	NA	NA
SB-15C (5-7)	ND	ND	400	ND	0.65	1,900	NA	34	ND	37	6.5	ND	ND	230	210
Dup-15C (5-7)(2C)	ND	3.4	470	0.63	0.9	1,900	NA	38	ND	52	3.8	ND	ND	270	260
SB-15D (7-9)	NA	NA	NA	NA	0.97	NA	ND	45	NA	NA	NA	NA	NA	NA	NA
DUP-15D (7-9)(2D)	NA	NA	NA	NA	ND	NA	ND	28	NA	NA	NA	NA	NA	NA	NA
SB-16A (1-3)	NA	NA	NA	NA	1.8	NA	ND	97	NA	NA	NA	NA	NA	NA	NA
SB-16B (3-5)	ND	ND	330	3.4	2.7	1,000	NA	89	ND	33	ND	ND	ND	170	790
SB-16C (5-7)	NA	NA	NA	NA	0.94	NA	ND	140	NA	NA	NA	NA	NA	NA	NA
SB-17A (1-3)	NA	NA	NA	NA	6.8	NA	ND	780	NA	NA	NA	NA	NA	NA	NA
SB-17B (3-5)	ND	5.6	25	ND	ND	12	NA	30	ND	9.8	ND	ND	ND	11	57
SB-18A (1-3)	ND	ND	530	ND	3.8	230	NA	570	0.55	24	1.3	ND	ND	180	690
SB-18B (3-5)	NA	NA	NA	NA	4	NA	ND	480	NA	NA	NA	NA	NA	NA	NA
SB-19A (1-3)	ND	ND	260	ND	4.6	1,500	NA	380	ND	62	0.78	ND	ND	180	900
SB-19B (3-5)	NA	NA	NA	NA	4.4	NA	ND	390	NA	NA	NA	NA	NA	NA	NA
SB-19C (5-7)	NA	NA	NA	NA	1.4	NA	ND	110	NA	NA	NA	NA	NA	NA	NA
SB-20A (1-3)	ND	6.7	210	0.63	110	880	NA	3,000	0.56	45	2.3	ND	ND	200	13,000
SB-20B (3-5)	NA	NA	NA	NA	13	NA	ND	390	NA	NA	NA	NA	NA	NA	NA
SB-20D (7-9)	NA	NA	NA	NA	2.7	NA	ND	200	NA	NA	NA	NA	NA	NA	NA
SB-21A (1-3)	NA	NA	NA	NA	12	NA	ND	380	NA	NA	NA	NA	NA	NA	NA
SB-21B (3-5)	ND	4.4	70	ND	3.7	94	NA	160	ND	27	ND	ND	ND	35	720
SB-21C (5-7)	NA	NA	NA	NA	3.1	NA	ND	130	NA	NA	NA	NA	NA	NA	NA
SB-22A (1-3)	NA	NA	NA	NA	12	NA	ND	1,500	NA	NA	NA	NA	NA	NA	NA
DUP-22A (1-3)(3A)	NA	NA	NA	NA	13	NA	ND	1,700	NA	NA	NA	NA	NA	NA	NA

**Table 2 (continued)**  
**SUMMARY OF TOTAL METALS IN SOIL BORING SAMPLES**

Robertson-Ceco Corporation  
 Lemont, Illinois

Sample Depth (ft)	Metals (mg/kg)														
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SB-22B (3-5)	ND	3.3	110	0.71	1.6	61	NA	67	ND	22	ND	ND	ND	41	190
Dup-22B (3-5)(3B)	ND	17	340	ND	5.4	740	NA	440	0.16	100	0.68	ND	ND	250	1,100
SB-22D (7-9)	NA	NA	NA	NA	3.3	NA	ND	210	NA	NA	NA	NA	NA	NA	NA
DUP-22D (7-9)(3D)	NA	NA	NA	NA	0.99	NA	ND	57	NA	NA	NA	NA	NA	NA	NA
SB-23A (1-3)	ND	5.5	320	ND	7.9	440	NA	530	1.1	33	0.64	ND	ND	250	1,500
SB-23B (3-5)	NA	NA	NA	NA	39	NA	ND	1,300	NA	NA	NA	NA	NA	NA	NA
SB-23C (5-7)	NA	NA	NA	NA	37	NA	ND	1,300	NA	NA	NA	NA	NA	NA	NA
SB-24A (1-3)	NA	NA	NA	NA	3.7	NA	ND	220	NA	NA	NA	NA	NA	NA	NA
DUP-24A (1-3)(4A)	NA	NA	NA	NA	0.74	NA	ND	17	NA	NA	NA	NA	NA	NA	NA
SB-24B (3-5)	NA	NA	NA	NA	1.4	NA	ND	66	NA	NA	NA	NA	NA	NA	NA
DUP-24B (3-5)(4B)	NA	NA	NA	NA	1.5	NA	ND	84	NA	NA	NA	NA	NA	NA	NA
SB-24C (5-7)	ND	ND	290	0.94	1.2	860	NA	53	ND	22	0.68	ND	ND	300	220
Dup-24C (5-7)(4C)	ND	ND	320	0.64	0.52	440	NA	19	ND	16	0.7	ND	ND	200	94
TACO-CWIC Values	82	46	14,000	19	100	4,100	4,100	400	61	4,100	1,000	1,000	160	1,400	61,000

All concentrations are measured in parts per million (ppm) or milligrams per kilogram (mg/kg)

fbgs = feet below ground surface

ND = None Detected

Shaded areas indicate contaminant exceeding TACO values for Commercial/Industrial Properties for construction worker inhalation concentration

TACO-Values = Construction Worker Ingestion Concentrations for Industrial/Commercial Properties

from IEPA's Tiered Approach to Cleanup Objectives (TACO) Guidance Document - January 1996



**Table 3**  
**SUMMARY OF TOTAL METALS IN**  
**BACKGROUND SOIL BORINGS**  
 Robertson-Geco Corporation  
 Lemont, Illinois

Sample No./Depth (fbgs)	Metals (mg/kg)														
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Hexavalent Chromium	Chromium	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SB-25A (1-3)	ND	40	49	ND	ND	NA	9.3	19	0.048	9.1	ND	ND	ND	11	76
SB-25B (3-5)	NA	NA	NA	NA	ND	ND	NA	11	NA	NA	NA	NA	NA	NA	NA
SB-25C (5-5.5)	NA	NA	NA	NA	0.63	ND	NA	12	NA	NA	NA	NA	NA	NA	NA
SB-26A (1-3)	ND	36	60	1	1.3	NA	7.2	71	0.31	9.9	ND	ND	ND	9.3	270
SB-26B (3-5)	NA	NA	NA	NA	0.87	ND	NA	40	NA	NA	NA	NA	NA	NA	NA
SB-26C (5-5.5)	NA	NA	NA	NA	0.8	ND	NA	44	NA	NA	NA	NA	NA	NA	NA
SB-27A (1-3)	NA	NA	NA	NA	8.2	ND	NA	760	NA	NA	NA	NA	NA	NA	NA
SB-27B (3-5)	ND	4.2	200	0.68	2.9	NA	450	210	ND	68	ND	ND	ND	79	480
SB-27C (5-7)	NA	NA	NA	NA	2.9	ND	NA	190	NA	NA	NA	NA	NA	NA	NA
SB-28A (1-3)	ND	4.2	280	0.57	3.7	NA	410	150	ND	24	ND	ND	ND	89	820
SB-28B (3-5)	NA	NA	NA	NA	0.57	ND	NA	21	NA	NA	NA	NA	NA	NA	NA
SB-28D (7-9)	NA	NA	NA	NA	0.7	ND	NA	35	NA	NA	NA	NA	NA	NA	NA
TACO-Values	82	46	14,000	19	100	4,100	4,100	400	61	4,100	1,000	1,000	160	1,400	161,000

All concentrations are measured in parts per million (ppm) or milligrams per kilogram (mg/kg)

fbgs = feet below ground surface

ND = Compound was not detected at laboratory detection limit

NA = Not Analyzed

TACO-Values = For Construction Worker Ingestion Concentrations for Industrial/Commercial Properties  
 from IEPA's Tiered Approach to Cleanup (TACO) Guidance Document - January 1996

**TABLE 4**  
**SUMMARY OF TOTAL METALS IN**  
**SURFACE PERIMETER AND SEDIMENT SAMPLES**

Robertson-Ceco Corporation  
 Lemont, Illinois

Sample Number	Metals (mg/kg)													
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
PS-01	ND	4.5	200	ND	5.1	790	510	0.18	27	ND	ND	ND	140	930
PS-02	ND	25	37	ND	2	150	160	ND	190	ND	ND	ND	35	410
PS-03	ND	4.6	160	ND	3.4	160	100	0.33	24	ND	ND	ND	57	670
PS-04	ND	ND	60	ND	1.6	56	50	ND	9.8	ND	ND	ND	28	260
SS-01	ND	5.8	47	ND	1.5	19	64	0.07	8.8	ND	ND	ND	13	260
SS-02	ND	ND	ND	ND	0.97	13	160	ND	3.3	ND	ND	ND	6.2	140
SS-03	ND	5.3	40	ND	2.5	23	150	0.17	9.7	ND	ND	ND	15	370
SS-04	ND	14	72	ND	3	22	260	4.5	13	ND	ND	ND	18	1500
SS-05	ND	9.1	35	ND	ND	12	22	0.048	14	ND	ND	ND	20	110
SS-06	ND	34	82	0.57	1.8	58	88	ND	20	ND	ND	ND	34	440
SS-07	ND	3.6	83	ND	0.53	17	26	ND	12	ND	ND	ND	22	140
SS-08	ND	3.4	ND	ND	ND	11	13	ND	8.8	ND	ND	ND	14	66
SS-09	ND	2.8	130	ND	4.6	170	170	0.3	18	ND	ND	ND	47	1,000
SS-10	ND	2.7	ND	ND	0.86	7.4	57	0.14	6.8	ND	ND	ND	5.4	95
TACO-Values	82	46	14,000	19	100	4,100	400	6.1	4,100	1,000	1,000	160	1,400	61,000

PS = Perimeter surface sediment sample

SS = Surface sediment sample

Total metals analysis utilizing USEPA Methods 3015/6000 or 7000

All concentrations are measured in parts per million (ppm) or milligrams per kilogram (mg/kg)

fbgs = feet below ground surface

ND = Compound was not detected at laboratory detection limit

TACO-Values = Construction Worker Ingestion Concentrations for Industrial/Commercial Properties from  
 IEPA's Tiered Approach to Cleanup Objectives (TACO) Guidance Document - January 1996

**TABLE 5**  
**SUMMARY OF TOTAL METALS**  
**IN SURFACE WATER SAMPLES**  
 Robertson-Ceco Corporation  
 Lemont, Illinois

Sample Number	Metals (mg/L)													
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
WS-2	ND	ND	ND	ND	ND	ND	0.036	ND	ND	ND	ND	ND	ND	ND
WS-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WS-7	ND	ND	ND	ND	ND	ND	0.0057	ND	ND	ND	ND	ND	ND	ND
WS-8	ND	ND	ND	ND	ND	ND	0.007	ND	ND	ND	ND	ND	ND	ND
WS-9	ND	ND	ND	ND	ND	0.039	0.037	ND	ND	ND	ND	ND	0.17	ND
WS-10	ND	ND	ND	ND	ND	ND	0.013	ND	ND	ND	ND	ND	ND	ND

Total metals analysis utilizing USEPA Methods 3015/6000 or 7000

All concentrations are measured in parts per million (ppm) or milligrams per liter (mg/L)

ND = Concentration of compound was not detected at laboratory detection limit



**TABLE 6**  
**SUMMARY OF TOTAL METALS IN**  
**GROUND WATER SAMPLES**

Robertson-Ceco Corporation  
 Lemont, Illinois

Sample Number	Metals (mg/kg)													
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
OW-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OW-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OW-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OW-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WELL B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WELL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WELL D	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WELL J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WELL K	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-D1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-D2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-D3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-D4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-D5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L.D.L.	0.10	0.05	0.05	0.01	0.01	0.01	0.005	0.002	0.050	0.010	0.050	0.200	0.100	0.050

PS = Perimeter surface sediment sample

SS = Surface sediment sample

Total metals analysis utilizing USEPA Methods 3015/6000 or 7000

All concentrations are measured in parts per million (ppm) or milligrams per kilogram (mg/kg)

fbgs = feet below ground surface

ND = Compound was not detected at laboratory detection limit

TACO-Values = Construction Worker Ingestion Concentrations for Industrial/Commercial Properties from  
 IEPA's Tiered Approach to Cleanup Objectives (TACO) Guidance Document - January 1996

**TABLE 7**  
**MONITORING WELL CONSTRUCTION DETAILS**

Robertson-Ceco Corporation  
Lemont, Illinois

<i>Well Number</i>	<i>Installed By</i>	<i>Date Installed</i>	<i>Well Material</i>	<i>Total Depth (feet bgs)</i>	<i>Screen Interval (feet bgs)</i>	<i>Formation Screened</i>	<i>Depth to Bedrock (feet bgs)</i>	<i>Relative Ground Water Location</i>	<i>Hydraulic Conductivity (cm/sec)</i>
OW-1	Eldredge	4/4/80	4" PVC	55.3	16.8 - 55.3	Bedrock	13.8	DG	$4.95 \times 10^{-5}$
OW-2	Eldredge	4/4/80	4" PVC	54.7	16.7 - 54.7	Bedrock	13.7	DG	$2.55 \times 10^{-3}$
OW-3	Eldredge	4/4/80	4" PVC	55.5	8.5 - 55.5	Bedrock	5.5	DG	$1.06 \times 10^{-3}$
OW-4	Eldredge	4/4/80	4" PVC	54.3	14.3 - 54.3	Bedrock	11.3	UG	$1.07 \times 10^{-3}$
B	NUS	8/11/84	2" PVC	24.5	19.5 - 24.5	Bedrock	5.0	DG	$5.9 \times 10^{-6}$
C	NUS	8/11/84	2" PVC	23.5	18.5 - 23.5	Bedrock	9.0	DG	$1.68 \times 10^{-5}$
D	NUS	8/10/84	2" PVC	24.0	19.0 - 24.0	Bedrock	4.0	DG	$6.6 \times 10^{-6}$
E	NUS	8/8/84	2" PVC	24.5	19.5-24.5	Bedrock	14.0	MG	NA
I	NUS	8/9/84	2" PVC	20.0	15.0-20.0	Bedrock	0.0	MG	NA
J	NUS	8/10/84	2" PVC	25.0	20.0 - 25.0	Bedrock	13.0	MG	$5.7 \times 10^{-6}$
K	NUS	8/9/84	2" PVC	24.5	19.5 - 24.5	Bedrock	9.5	MG	$8.15 \times 10^{-5}$
MW-D1	HNUS	4/7/93	2" 316 SS	30.4	24.9 - 29.9	Bedrock	20.3	UG-ISU	$1.05 \times 10^{-5}$
MW-D2	HNUS	4/12/93	2" 316 SS	29.0	21.0 - 26.0	Bedrock	17.0	DG-ISU	$1.15 \times 10^{-5}$
MW-D3	HNUS	4/14/93	2" 316 SS	26.5	20.5 - 25.5	Bedrock	16.0	DG-ISU	$3.4 \times 10^{-6}$
MW-D4	HNUS	4/8/93	2" 316 SS	26.0	19.5 - 24.5	Bedrock	15.5	DG-ISU	$4.4 \times 10^{-6}$
MW-D5	HNUS	4/6/93	2" 316 SS	29.0	19.5 - 24.5	Bedrock	15.5	UP-ISU	$6.1 \times 10^{-6}$

PVC = Polyvinyl Chloride (rigid)

SS = Stainless Steel

DG = Down Gradient of the Fill

UG = Up Gradient of the Fill

MG = Mid Gradient

DG-ISU = Down Gradient inside the Interim Surface Unit

UP-ISU = Up Gradient inside the Interim Surface Unit

**TABLE 8**  
**GROUND WATER ELEVATION DATA**

Robertson-Ceco Corporation  
Lemont, Illinois

Well Number	TOC MPE (ft)	1/31/96		3/25/96		4/25/96	
		Depth to Water (ft btoc)	Ground Water Elevation (ft)	Depth to Water (ft btoc)	Ground Water Elevation (ft)	Depth to Water (ft btoc)	Ground Water Elevation (ft)
OW-1	596.42	12.46	583.96	12.64	583.78	12.17	584.25
OW-2	591.74	7.15	584.59	7.15	584.59	7.09	584.65
OW-3	592.01	2.64	589.37	3.05	588.96	2.62	589.39
OW-4	592.53	3.69	588.84	4.05	588.48	3.59	588.94
B	593.56	11.4	582.16	11.8	581.76	11.09	582.47
C	593.76	11.44	582.32	11.92	581.84	11.1	582.66
D	588.79	6.45	582.34	6.88	581.91	6.1	582.69
J	600.34	13.96	586.38	13.75	586.59	13.41	586.93
K	600.64	12.19	588.45	12.15	588.49	11.95	588.69
MW-D1	600.56	-	-	12.49	588.07	12.16	588.4
MW-D2	601.04	-	-	15.15	585.89	14.87	586.17
MW-D3	601.27	13.98	587.29	13.84	587.43	13.51	587.76
MW-D4	601.89	15.46	586.43	15.58	586.31	15.27	586.62
MW-D5	602.77	-	-	14.19	588.58	13.73	589.04

ft btoc = Feet Below Top Of Casing

TOC = Top Of Casing

MPE = Measuring Point Elevation

- = Water level unable to be measured

**TABLE 9**  
**SLAG FILL THICKNESS AND**  
**DEPTH TO BEDROCK DATA**

Robertson-Ceco  
 Lemont, Illinois

Borehole Number	Surface Elevation	Depth to Bedrock (feet)	Bedrock Surface Elevation (feet)	Thickness of Slag Fill (feet)
SB-01	590.9	12.0	578.9	9.5
SB-02	590.5	12.0	578.5	8.0
SB-03	592.4	18.5	573.9	11.5
SB-04	598.2	16.75	581.5	16.75
SB-05	598.5	15.0	583.5	7.0
SB-06	587.5	3.5	584.0	3.5
SB-07	598.9	13.0	585.9	9.25
SB-08	599.3	12.5	586.8	12.5
SB-09	600.8	15.0	585.8	15.0
SB-10	594.2	14.5	579.7	10.5
SB-11	592.5	13.0	579.5	7.5
SB-12	598.6	21.0	577.6	1.0
SB-13	598.3	12.75	585.6	3.0
SB-14	600.1	13.0	587.1	7.0
SB-15	600.3	12.0	588.3	7.25
SB-16	600.9	13.5	587.4	13.5
SB-17	589.7	5.0	584.7	2.5
SB-18	588.8	5.75	583.1	1.0
SB-19	592.2	9.0	583.2	7.5
SB-20	595.7	12.0	583.7	11.0
SB-21	596.0	12.5	583.5	1.0
SB-22	596.3	9.5	586.8	1.0
SB-23	596.3	9.0	587.3	1.0
SB-24	600.7	9.0	591.7	1.0

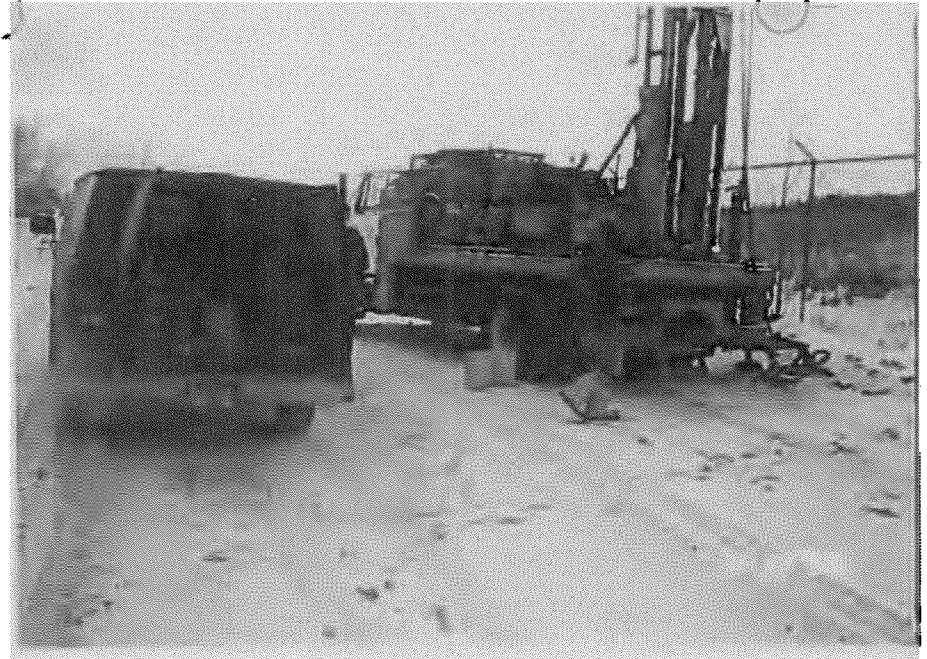
\* All elevations are in reference to actual mean sea level

ATTACHMENT A

**ATTACHMENT A**  
**PHOTOGRAPH LOG**



**Photograph 1**



**Photograph 2**

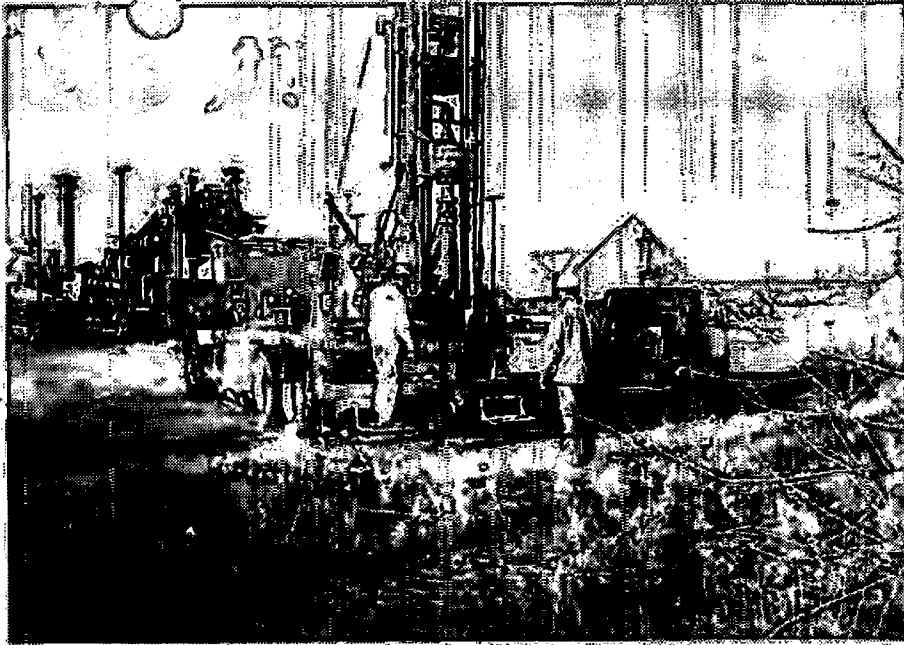


**Photograph 3**

**Robertson-Ceco Corporation Property, Lemont, Illinois  
Site Photographs from RFI Phase I Field Activities**

- Photograph 1** View from south looking north. CEI personnel performing "slug test" on monitoring Well C.
- Photograph 2** Rock & Soil Drilling Corp. setting up on soil boring SB-4.
- Photograph 3** Rock & Soil Drilling Corp. advancing soil boring SB-6.





Photograph 4



Photograph 5



Photograph 6

**Robertson-Ceco Corporation Property, Lemont, Illinois  
Site Photographs from RFI Phase I Field Activities**

- Photograph 4      Rock & Soil Drilling Corp. advancing  
off-site soil boring SB-26.
- Photograph 5      View from west looking east. Rock & Soil  
Drilling Corp. advancing off-site soil boring SB-27.
- Photograph 6      Ground water sampling equipment set up on monitoring  
well MW-D2.



ATTACHMENT B

**ATTACHMENT B**  
**SOIL BORING LOGS**

MAJOR DIVISIONS			TYPICAL NAMES		
COARSE-GRAINED SOILS More than 50% larger than No. 200 sieve size	GRAVEL AND GRAVELLY SOILS More than 50% of coarse fraction is larger than No. 4 sieve size	CLEAN GRAVELS Little or no fines		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES With over 12% fines		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
				GM	Silty gravels, gravel-sand-silt mixtures
		SAND AND SANDY SOILS More than 50% of coarse fraction is smaller than No. 4 sieve size	CLEAN SAND Little or no fines		SW
	SANDS WITH FINES With over 12% fines			SP	Poorly-graded sands, gravelly sands, little or no fines
				SM	Silty-sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
	FINE-GRAINED SOILS More than 50% smaller than No. 200 sieve size	SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts, with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
			OL	Organic silts and organic silty clays of low plasticity	
SILTS AND CLAYS Liquid limit greater than 50%			MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils	
			CH	Inorganic clays of high plasticity, fat clays	
			OH	Organic clays of medium to high plasticity, organic silts	
HIGHLY ORGANIC SOILS			PT	Peat, humus, swamp soils with high organic content	

UNIFIED SOIL CLASSIFICATION SYSTEM

<ul style="list-style-type: none"> <li> - Bulk or classification sample</li> <li> - Sample preserved for possible analysis</li> <li> - First-encountered ground water level (saturation)</li> <li> - Static ground water level</li> <li>SPT - Standard Penetration Test</li> <li>P - Push sample (thin walled sampler "Shebby Tube")</li> </ul>	<ul style="list-style-type: none"> <li>OVA - Organic Vapor Analyzer, including both the PID and FID</li> <li>PID - Phototization Detector, (Microtip H-200) calibrated to 100 ppm isobutylene standard with a 10.2 eV lamp</li> <li>FID - Flameionization Detector (Century 125) calibrated with 95 ppm methane</li> <li>Blow Counts - Blows required to drive a standard splitpoon sampler 6 inches with a 140 pound hammer free falling 30 inches. Blow counts for S &amp; H samplers are converted to approximate "equivalent" SPT N values (<math>n = 0.5 \times S + H</math> blows per foot)</li> <li>"n" value - Number of blows required to advance the splitpoon sampler in two 6 inch increments falling 6 inches of seating</li> </ul>
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KEY TO BORING LOG

CARLSON ENVIRONMENTAL, INC.

312 West Randolph Street  
Chicago, Illinois 60606  
(312) 346-2140



Soil Classification Chart  
&  
Key To Test Data

Date 9-8-95	Drawn By P. Bays	Revised Date	Sheet of
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Carlson Environmental, Inc. 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-8958				Log of Boring SB-01 Robertson-Ceco Corporation New Avenue Lemont, Illinois			Sheet 1 of 1 Job Number: 9236A Elevation: NA	
Driller: Rock & Soil Drilling Corp.					Date/Time Started: 12/11/95 0810			
Drill Method: Hollow Stemmed Augers					Date/Time Completed: 12/11/95 0845			
Sample Method: 2-Inch Diameter Split-Spoon					Depth to Water: 9.5 ft. BGS		Depth to Rock: 12 ft. BGS	
Borehole Diameter: 6 in.			Total Depth: 12 ft. BGS		Logged By: BAS		Checked By: PEB	
Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks	
SB-01A (0816)	1-3	20"	14,33 42,50/3"	1		Gray SLAG, dry, fine sand to coarse gravel size		
SB-01B (0817)	3-5	10"	8,38 24,23	2				
SB-01C (0820)	5-7	15"	5,11 11,50/5"	3				
SB-01D (0825)	7-9	1"	50/3"	4				
SB-01E (0835)	9-11	15"	3,5 5,8	5				
SB-01F (0838)	11-13	5"	4,50/5"	6				
				7			Dark gray slag, wet, fine sand to coarse gravel size, trace soft white inclusions	
				8				
				9				
				10			Black CLAY (CL), saturated, with coarse gravel	Approximate boundary between fill material and native soil
				11		Green SILT (OL), wet to saturated, some organics		
				12		Gray/white WEATHERED DOLOMITE, fractured		
				13		Dolomite bedrock at 12 feet bgs		
				14				
				15				
				16				
				17				
				18				
				19				
				20				

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8858	<b>Log of Boring SB-02</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1
		Job Number: 9236A
		Elevation: NA

<b>Driller:</b> Rock & Soil Drilling Corp.		<b>Date/Time Started:</b> 12/11/95 0905	
<b>Drill Method:</b> Hollow Stemmed Augers		<b>Date/Time Completed:</b> 12/11/95 1035	
<b>Sample Method:</b> 2-Inch Diameter Split-Spoon		<b>Depth to Water:</b> 9 ft. BGS	<b>Depth to Rock:</b> 12 ft. BGS
<b>Borehole Diameter:</b> 6 in.	<b>Total Depth:</b> 12 ft. BGS	<b>Logged By:</b> BAS	<b>Checked By:</b> PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Gray SLAG, dry, fine sand to fine gravel size, trace soft white inclusions	Auger refusal at 4.5 feet bgs. Moved borehole 3X, large pieces of metal in cuttings
SB-02A (0911)	1-3	20"	10,42 25,20	2			
SB-02B (0915)	3-5	15"	8,17 50/3"	3		Gray/black slag, moist to wet, medium sand to fine gravel size	
				4			
SB-02C (1000)	5-7	2"	50/3"	5		Some coarse gravel sized slag	
				6			
				7		Trace wood debris	
SB-02D (1015)	7-9	12"	7,28 10,8	8			
				9	Dark gray CLAYEY SILT (ML), moist, some organics	Approximate boundary between fill material and native soil	
SB-02E (1020)	9-11	20"	3,3 4,4	10	Green SILT (OL), saturated, trace organics		
				11			
SB-02F (1025)	11-13	3"	47,50/5"	12	Gray/white WEATHERED DOLOMITE, fractured		
				13	Dolomite bedrock at 12 feet bgs		
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-6956	<b>Log of Boring SB-03</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9238A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/11/95 1040		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/11/95 1215		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: 9 ft. BGS	Depth to Rock: 18.5 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 18.5 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
SB-03A (1052)	1-3	20"	8,34 24,25	1		Gray SLAG, dry, very fine to coarse sand size	
				2		2" black slag seam, dry, shiny, silt to very fine sand size	
				3		Dark brown slag, dry, fine sand to coarse sand size	
SB-03B (1100)	3-5	20"	15,19 21,25	4	Slag becomes moist		
				5	Dark brown slag, wet, silt to coarse sand size, trace clay and wood		
SB-03C (1103)	5-7	18"	15,15 21,24	6		Black slag, wet, fine sand to coarse gravel size (mostly medium sand size)	
SB-03D (1110)	7-9	5"	10,50/4"	7			
				8			
SB-03E (1115)	9-11	18"	15,8 2,5	9		Color change to brown/black, saturated at 9 feet bgs	
				10		1.5" piece of wood	
SB-03F (1154)	11-13	13"	10,11 4,4	11		Brown/green CLAYEY SILT (OL), saturated, black streaks, organic-rich	
SB-03G (1159)	13-15	20"	2,4 1,1	12			Approximate boundary between fill material and native soil
				13			
SB-03H (1206)	15-17	24"	1,2 1,2	14	Brown/green SILTY CLAY (OL), moist, organic-rich		
				15	Color change to black at 14.5 feet bgs		
SB-03I (1210)	17-19	14"	1,10 50/4"	16		Gray/white WEATHERED DOLOMITE, fractured	
				17			
				18	Dolomite bedrock at 18.5 feet bgs		
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-8958	<b>Log of Boring SB-04</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9238A <hr/> Elevation: NA
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<b>Driller: Rock &amp; Soil Drilling Corp.</b>		<b>Date/Time Started: 12/11/95 1320</b>	
<b>Drill Method: Hollow Stemmed Augers</b>		<b>Date/Time Completed: 12/11/95 1435</b>	
<b>Sample Method: 2-Inch Diameter Split-Spoon</b>		<b>Depth to Water: 13 ft. BGS</b>	<b>Depth to Rock: 16.75 ft. BGS</b>
<b>Borehole Diameter: 6 in.</b>	<b>Total Depth: 16.75 ft. BGS</b>	<b>Logged By: BAS</b>	<b>Checked By: PEB</b>

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1	○	Gray SLAG, dry, silt to fine gravel size (mostly fine gravel)	
SB-04A (1345)	1-3	2"	50/4"	2	○		
				3	○	Dark brown slag, moist, silt to fine gravel size	
SB-04B (1355)	3-5	8"	No Counts	4	○		
				5	○	Dark brown slag, moist, fine sand to coarse gravel size, trace clay	
SB-04C (1400)	5-7	15"	27,60 50/4"	6	○	trace limestone fragments	
				7	○		
SB-04D (1405)	7-9	4"	25,50/3"	8	○	Large metal fragments	
				9	○		
SB-04E	9-11	NR	50/2"	10	○		
				11	○	Brown slag, moist, fine sand to coarse gravel size	
SB-04F (1418)	11-13	15"	19,17 14,30	12	○		
				13	○	▼ Dark brown slag, saturated, fine sand to coarse gravel size (mostly fine gravel size)	
SB-04G (1425)	13-15	3"	17,31 18,12	14	○		
				15	○		
SB-04H (1430)	15-17	5"	10,10 12,50/2"	16	○	Large limestone fragments	
				17	○		
				18	○	Dolomite bedrock at 16.75 feet bgs	Approximate boundary between fill material and bedrock
				19	○		
				20	○		

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-8956	<b>Log of Boring SB-05</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/12/95 0730		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/12/95 0848		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: 12 ft. BGS	Depth to Rock: 15 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 15 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1	○	Gray <b>SLAG</b> , dry, fine to coarse gravel size	
SB-05A (0746)	1-3	20"	24,24 32,50	2	○	Dark brown slag, moist, fine sand to fine gravel size, trace limestone and red brick	
				3	○	Dark brown/gray slag, moist, silt to medium sand size, trace soft white inclusions	
SB-05B (0750)	3-5	6"	48,50/1"	4	○	trace wood debris and large slag cobbles	
				5	○	Dark brown slag, moist, silt to medium sand size, trace coarse gravel size, trace wood, clay	
SB-05C (0802)	5-7	10"	31,22 24,18	6	○		
				7	○		
SB-05D (0807)	7-9	8"	9,18 14,15	8	○	Dark brown <b>CLAYEY SILT (ML)</b> , moist	
				9	○	3" of carpet fibers	
SB-05E (0815)	9-11	6"	7,11 16,12	10	○	Dark brown <b>CLAYEY SILT (ML)</b> , moist, trace fine to coarse gravel sized slag, carpet fibers	
				11	○		
SB-05F (0823)	11-13	10"	7,8 9,10	12	○	Dark brown <b>GRAVELLY SAND (GM)</b> , saturated, coarse sand, some silt	
				13	○		
SB-05G (0828)	13-15	4"	4,2 50/3"	14	○	Dark brown/gray <b>SILTY CLAY (CL)</b> , saturated, trace copper wire	
				15	○		
				16	○	Dolomite bedrock at 15 feet bgs	Approximate boundary between fill material and bedrock
				17	○		
				18	○		
				19	○		
				20	○		



<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-8958	<b>Log of Boring SB-06</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9238A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/12/95 0915		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/12/95 0940		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: NA ft. BGS	Depth to Rock: 3.5 ft. BGS	
Borehole Diameter: 8 in.	Total Depth: 3.5 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
SB-08A (0920)	1-3	8"	18,32 42,50/4"	1		Gray SLAG, dry, silt to fine gravel size Dark brown slag, moist, silt to coarse gravel size	
				2			
				3			
SB-08B (0925)	3-5	5"	50/3"	4		Dolomite bedrock at 3.5 feet bgs	Approximate boundary between fill material and bedrock
				5			
				6			
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 80606 Phone (312) 346-2140 Fax (312) 346-8858	<b>Log of Boring SB-07</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.		Date/Time Started: 12/12/95 0942	
Drill Method: Hollow Stemmed Augers		Date/Time Completed: 12/12/95 1100	
Sample Method: 2-Inch Diameter Split-Spoon		Depth to Water: NA ft. BGS	Depth to Rock: 13 ft. BGS
Borehole Diameter: 6 in.	Total Depth: 13 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1	○ ○ ○ ○ ○	Gray SLAG, dry, fine to coarse gravel size	
SB-07A (1000)	1-3	12"	39,50/4"	2	○ ○ ○ ○ ○	Dark brown slag, moist, silt to coarse sand size	
				3	○ ○ ○ ○ ○		
SB-07B (1005)	3-5	20"	18,24 34,34	4	○ ○ ○ ○ ○	Black slag, moist, silt to fine gravel size, trace plastic, glass, soft white inclusions	
				5	○ ○ ○ ○ ○		
SB-07C (1009)	5-7	12"	18,35 50/4"	6	○ ○ ○ ○ ○	trace limestone and red brick	
				7	○ ○ ○ ○ ○	2" of black glassy shards, very fine to coarse sand size, trace coarse gravel sized slag	Auger refusal at 6.75 feet bgs. Moved borehole location 4X. Cuttings contain plastic and metal fragments
SB-07D (1035)	7-9	3"	11,11 11,8	8	○ ○ ○ ○ ○	Large piece of slag in spoon	
				9	○ ○ ○ ○ ○		
SB-07E (1040)	9-11	20"	5,5 3,8	10	/ / / / /	Black CLAY (CL), moist, soft, trace fine to coarse limestone	Approximate boundary between fill material and native soil
				11	/ / / / /		
SB-07F (1049)	11-13	18"	9,10 8,11	12	/ / / / /		
				13	/ / / / /	Gray/white WEATHERED DOLOMITE, fractured	
SB-07G	13-15	1"	50/1"	14	/ / / / /	Dolomite bedrock at 13 feet bgs	
				15	/ / / / /		
				16	/ / / / /		
				17	/ / / / /		
				18	/ / / / /		
				19	/ / / / /		
				20	/ / / / /		

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8956	<b>Log of Boring SB-08</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/12/95 1140		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/12/95 1350		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: NA ft. BGS	Depth to Rock: 12.5 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 12.5 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1	○	Gray SLAG, dry, fine to coarse gravel size	
SB-08A (1145)	1-3	3"	50/5"	2	○	Brown slag, dry to moist, silt to fine gravel size	
				3	○		
SB-08B (1200)	3-5	8"	18,25 35,38	4	○	Gray slag, moist, coarse	
				5	○	Brown slag, moist, fine sand to coarse gravel size	
SB-08C (1205)	5-7	8"	3,4 13,50	6	○		Auger refusal at 8 feet bgs. Moved borehole location 4X. Large blocks of slag visible in open borehole.
				7	○	Brown slag, moist, silt to coarse gravel size, trace red brick	
SB-08D (1320)	7-9	8"	18,18 18,17	8	○		
				9	○		
SB-08E (1325)	9-11	2"	7,10 14,15	10	○		
				11	○		
SB-08F (1335)	11-13	6"	14,15 50/4"	12	○	trace polyethylene sheeting, clay	
				13	○	Dolomite bedrock at 12.5 feet bgs	Approximate boundary between fill material and bedrock
				14	○		
				15	○		
				16	○		
				17	○		
				18	○		
				19	○		
				20	○		








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<b>Driller:</b> Rock & Soil Drilling Corp.		<b>Date/Time Started:</b> 12/12/95 1355	
<b>Drill Method:</b> Hollow Stemmed Augers		<b>Date/Time Completed:</b> 12/12/95 1440	
<b>Sample Method:</b> 2-Inch Diameter Split-Spoon		<b>Depth to Water:</b> 12 ft. BGS	<b>Depth to Rock:</b> 15 ft. BGS
<b>Borehole Diameter:</b> 8 in.	<b>Total Depth:</b> 15 ft. BGS	<b>Logged By:</b> BAS	<b>Checked By:</b> PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1	○	Gray SLAG, dry, fine to coarse gravel size	
SB-09A (1400)	1-3	6"	21,25 28,19	2	○	Dark gray slag, dry, silt to coarse gravel size, trace wood	
				3	○		
SB-09B (1405)	3-5	20"	17,18 15,15	4	○	Dark gray/brown slag, moist, silt to coarse gravel size (mostly medium sand size), trace small soft white inclusions	
				5	○		
SB-09C (1411)	5-7	18"	20,29 20,19	6	○		
				7	○	trace yellow/orange brick	
SB-09D (1418)	7-9	8"	10,5 11,9	8	○		
				9	○	trace clay	
SB-09E (1422)	9-11	4"	5,4 5,6	10	○	Dark brown slag, moist, clay to fine gravel size (mostly fines), trace metal scraps	
				11	○		
SB-09F (1427)	11-13	4"	9,9	12	○	▼ Fill becomes wet to saturated at approximately 12 feet bgs, trace wood and metal scraps	Cuttings contain a large amount of scrap metal
				13	○		
SB-09G (1431)	13-15	2"	15,19 50/5"	14	○	1" piece of scrap metal	
				15	○		
				16	○	Dolomite bedrock at 15 feet bgs	Approximate boundary between fill material and bedrock
				17	○		
				18	○		
				19	○		
				20	○		

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-6956	<b>Log of Boring SB-10</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/13/95 0730		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/13/95 0855		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: 8 ft. BGS	Depth to Rock: 14.5 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 14.5 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
SB-10A (0757)	1-3	14"	30,20 22,19	1-2		Gray <b>SLAG</b> , dry, fine to coarse gravel size Dark brown slag, dry to moist, silt to coarse gravel size (mostly fines), trace brick debris 3" of limestone fragments at 1.5 feet bgs	
SB-10B (0802)	3-5	18"	19,27 32,50/3"	3-4		trace small soft white inclusions, trace clay  Clay content decreases	
SB-10C (0806)	5-7	14"	4,18 20,22	5-6		trace brick debris	
SB-10D (0812)	7-9	4"	8,9 13,14	7-8		Black slag, wet to saturated, coarse fragments	
SB-10E (0816)	9-11	12"	2,2 6,7	9-10		Dark and light brown <b>SILTY SAND (SM)</b> , saturated, trace wood Black slag, saturated, coarse fragments	
SB-10F (0827)	11-13	20"	4,4 5,4	11-12		Black <b>SILTY CLAY (OL)</b> , soft, wet, some organics Brown/gray <b>CLAYEY SILT (OL)</b> , moist, mottled, some organics Black <b>CLAYEY SILT (OL)</b> , moist, organic-rich	Approximate boundary between fill material and native soil
SB-10G (0831)	13-15	15"	1,2 50/4"	13-14			
				15		Dolomite bedrock at 14.5 feet bgs	
				16			
				17			
				18			
				19			
				20			

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<b>Driller: Rock &amp; Soil Drilling Corp.</b>		<b>Date/Time Started: 12/13/95 0900</b>	
<b>Drill Method: Hollow Stemmed Augers</b>		<b>Date/Time Completed: 12/13/95 1035</b>	
<b>Sample Method: 2-Inch Diameter Split-Spoon</b>		<b>Depth to Water: 9.5 ft. BGS</b>	<b>Depth to Rock: 13 ft. BGS</b>
<b>Borehole Diameter: 6 in.</b>	<b>Total Depth: 13 ft. BGS</b>	<b>Logged By: BAS</b>	<b>Checked By: PEB</b>

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
SB-11A (0910)	1-3	8"	20,50/5"	1		Grass and gray SLAG, dry, fine to coarse gravel size	
				2		Dark brown slag, dry to moist, fine sand to fine gravel size (mostly medium sand size), trace leaves, roots, and metal scraps	
SB-11B (0913)	3-5	3"	14,18 18,17	3			
				4		Sample wet	
SB-11C (0918)	5-7	8"	7,8 50/5"	5			
				6		Slag becomes fine sand to coarse gravel size	
				7			
SB-11D (1005)	7-9	5"	9,10 8,4	8		Approximate boundary between fill material and native soil	
				9	Dark brown SANDY SILT (SM), moist, very fine sand grain		
SB-11E (1010)	9-11	20"	1,4 3,2	10		Green/brown CLAYEY SILT (OH), wet to saturated, some organics	
SB-11F (1025)	11-13	15"	2,19 17,50/4"	11		Black CLAYEY SILT (OL), wet to moist, organic-rich	
				12		Gray/white WEATHERED DOLOMITE, fractured	
				13			
				14		Dolomite bedrock at 13 feet bgs	
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-6958	<b>Log of Boring SB-12</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1
		Job Number: 9238A
		Elevation: NA

<b>Driller: Rock &amp; Soil Drilling Corp.</b>		<b>Date/Time Started: 12/13/95 1120</b>	
<b>Drill Method: Hollow Stemmed Augers</b>		<b>Date/Time Completed: 12/13/95 1220</b>	
<b>Sample Method: 2-Inch Diameter Split-Spoon</b>		<b>Depth to Water: 11 ft. BGS</b>	<b>Depth to Rock: 21 ft. BGS</b>
<b>Borehole Diameter: 8 in.</b>	<b>Total Depth: 21 ft. BGS</b>	<b>Logged By: BAS</b>	<b>Checked By: PEB</b>

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Grass and gray <b>SLAG</b> , dry, fine to coarse gravel size	
SB-12A (1127)	1-3	20"	6,12 8,6	2		Dark brown <b>CLAYEY SILT (ML)</b> , moist, trace fine to coarse gravel, trace organics 3" of fractured limestone	Moved borehole 2X
SB-12B (1131)	3-5	16"	2,8 12,12	3			
				4		trace limestone, fine to coarse gravel size	
SB-12C (1135)	5-7	12"	6,10 8,8	5			
				6		1.5" pieces of black slag 4" of coarse fractured limestone	
SB-12D (1138)	7-9	10"	4,4 9,4	7		Dark brown <b>CLAYEY SILT</b> , moist, trace fine to coarse gravel sized limestone	
				8			
SB-12E (1143)	9-11	8"	4,5 8,8	9			Approximate boundary between fill material and native soil
				10		Black/dark brown <b>CLAY (CL)</b> , soft, moist to wet, trace fine to coarse gravel sized limestone	
SB-12F (1146)	11-13	10"	10,15 11,9	11		Gray/white <b>WEATHERED LIMESTONE</b> , saturated, fractured	
				12			
SB-12G (1150)	13-15	15"	8,21 31,19	13			
				14			
SB-12H (1155)	15-17	14"	4,3 3,2	15		Black <b>CLAYEY SILT (ML)</b> , medium stiff, moist, trace coarse sand	
				16			
SB-12I (1203)	17-19	24"	3,12 17,70/5"	17		Black <b>SILTY CLAY (OL)</b> , soft, moist, organic-rich	
				18			
SB-12J (1207)	19-21	24"	3,12 17,70/5"	19			
				20		Dolomite bedrock at 21 feet bgs	

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		Job Number: 9238A
		Elevation: NA

<b>Driller: Rock &amp; Soil Drilling Corp.</b>		<b>Date/Time Started: 12/13/95 1230</b>	
<b>Drill Method: Hollow Stemmed Augers</b>		<b>Date/Time Completed: 12/13/95 1320</b>	
<b>Sample Method: 2-Inch Diameter Split-Spoon</b>		<b>Depth to Water: NA ft. BGS</b>	<b>Depth to Rock: 12.75 ft. BGS</b>
<b>Borehole Diameter: 8 in.</b>	<b>Total Depth: 12.75 ft. BGS</b>	<b>Logged By: BAS</b>	<b>Checked By: PEB</b>

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
SB-13A (1238)	1-3	10"	18,13 13,28	1-2		Gray <b>SLAG</b> , dry, fine to coarse gravel size Dark brown/dark gray slag, moist, silt to coarse gravel size (mostly coarse)	
SB-13B (1243)	3-5	20"	30,32 4,50/4"	3-4		Dark brown <b>SILT (ML)</b> , moist, some fine to coarse gravel sized slag, trace clay 8" Gray/black silt sized shards, dry, shiny	
SB-13C (1250)	5-7	10"	4,6 2,4	5-6		Dark brown <b>CLAYEY SILT (ML)</b> , moist, trace fine gravel sized slag	
SB-13D (1254)	7-9	10"	4,6 2,4	7-8		Gray/black silt to coarse sand sized material, dry, shiny	Approximate boundary between fill material and native soil
SB-13E (1259)	9-11	10"	3,4 5,6	9-10		Dark brown <b>CLAYEY SILT (ML)</b> , moist, trace fine to coarse gravel sized limestone	
SB-13F (1304)	11-13	14"	4,7 9,50/3"	11-12		Black <b>SILTY CLAY (OL)</b> , moist, organic-rich	
				13		Dolomite bedrock at 12.75 feet bgs	
				14			
				15			
				16			
				17			
				18			
				19			
				20			



<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-6956	<b>Log of Boring SB-14</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/13/95 1325		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/13/95 1425		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: NA ft. BGS	Depth to Rock: 13 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 13 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Gray <b>SLAG</b> , dry, fine to coarse gravel size Black slag, moist, sand to coarse gravel size, trace brick	
SB-14A (1333)	1-3	5"	8,10 12,14	2			
				3		Dark brown slag, moist, silt to coarse gravel size	
SB-14B (1338)	3-5	6"	5,19 11,8	4			
				5		Slag becomes sand to coarse gravel size	
SB-14C (1338)	5-7	12"	5,8 18,3	6			
				7		Yellow, weathered limestone fragments	
SB-14D (1341)	7-9	5"	5,50/5"	8		Dark brown <b>CLAYEY SILT (ML)</b> , moist, trace fine gravel sized slag	
				9			Moved borehole IX
SB-14E	9-11	NR	50/3"	10			
				11			
SB-14F (1407)	11-13	12"	13,17 18,50/2"	12		Dark brown <b>CLAYEY GRAVEL (GC)</b> , saturated, fine to coarse gravel, some silt	Approximate boundary between fill material and native soil
				13		Dark brown <b>SILTY CLAY (OL)</b> , moist to wet, soft, trace organics	
				14			
				15			
				16			
				17			
				18			
				19			
				20			
						Dolomite bedrock at 13 feet bgs	

Carlson Environmental, Inc. 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8858	Log of Boring SB-15 Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1
		Job Number: 9236A
		Elevation: NA

Driller: Rock & Soil Drilling Corp.		Date/Time Started: 12/14/95 0730	
Drill Method: Hollow Stemmed Augers		Date/Time Completed: 12/14/95 0815	
Sample Method: 2-Inch Diameter Split-Spoon		Depth to Water: NA ft. BGS	Depth to Rock: 12 ft. BGS
Borehole Diameter: 8 in.	Total Depth: 12 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Gray SLAG, dry, sand to coarse gravel size (mostly coarse sand size)	
SB-15A (0742)	1-3	10"	28,29	2			
				3			
SB-15B (0747)	3-5	5"	19,20 32,27	4			Slag is mostly fine to coarse gravel size
				5			
SB-15C (0752)	5-7	8"	21,27 32,21	6			Dark gray/brown slag, moist, silt to coarse gravel size
				7			
SB-15D (0758)	7-9	18"	8,8 11,12	8		Yellow/brown WEATHERED LIMESTONE, crushed, moist, sand to coarse gravel size	
				9			Approximate boundary between fill material and native soil
SB-15E (0802)	9-11	10"	8,45 17,12	10		Black CLAYEY SILT (ML), soft, trace fine gravel sized limestone fragments Limestone content increases	
				11		trace coarse white/gray gravel sized limestone, trace organics	
SB-15F (0809)	11-13	6"	8,50	12		Dolomite bedrock at 12 feet bgs	
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			







<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8958	<b>Log of Boring SB-16</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/14/95 0905		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/14/95 0950		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: NA ft. BGS	Depth to Rock: 13.5 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 13.5 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Gray SLAG, moist, silt to coarse gravel size Color change to dark brown, trace metal scraps  trace soft white inclusions, metal scraps  Slag becomes mostly coarse sand to coarse gravel size	
SB-16A (0911)	1-3	20"	21,25 30,30	2			
SB-16B (0915)	3-5	18"	31,24 24,20	3			
SB-16C (0919)	5-7	6"	11,9 4,8	4			
SB-16D (0924)	7-9	5"	8,21 24,20	5			
SB-16E (0928)	9-11	4"	6,8 10,17	6			
SB-16F (0932)	11-13	5"	6,8 5,4	7			
SB-16G (0938)	13-15	3"	50/5"	8			
				9			
				10			
				11			
				12			
				13			
				14	Dolomite bedrock at 13.5 feet bgs	Approximate boundary between fill material and bedrock	
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60608 Phone (312) 346-2140 Fax (312) 346-8858	<b>Log of Boring SB-17</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/14/95 1000		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/14/95 1015		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: NA ft. BGS	Depth to Rock: 5 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 5 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Gray SLAG, moist, silt to coarse gravel size	
SB-17A (1005)	1-3	20"	20,24 24,10	2		Dark brown slag, moist, silt to coarse gravel size (mostly fines)	
				3		Light brown CLAYEY SILT (ML), moist, some fine gravel	Approximate boundary between fill material and native soil
SB-17B (1010)	3-5	20"	4,18 21,20	4		Light brown SILT (ML), moist, trace coarse sand, fine gravel	
				5		Dark brown SILT (ML), moist, trace fine gravel and clay	
				6		Dolomite bedrock at 5 feet bgs	
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8958	<b>Log of Boring SB-18</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9238A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/14/95 1025		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/14/95 1050		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: NA ft. BGS	Depth to Rock: 5.75 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 5.75 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1	●●●●	Gray <b>SLAG</b> , moist, silt to coarse gravel size	
SB-18A (1035)	1-3	18"	8,11 12,12	2	●●●●	Dark brown <b>CLAYEY SILT (ML)</b> , moist, trace fine gravel, organics	Approximate boundary between fill material and native soil
				3	●●●●	<b>WEATHERED LIMESTONE</b> , fractured, fine to coarse gravel size	
SB-18B (1038)	3-5	6"	10,20 18,14	4	●●●●	Dark brown <b>CLAYEY SILT (ML)</b> , moist, trace fine gravel, organics	
				5	●●●●	White/gray <b>WEATHERED DOLOMITE</b> , fractured, coarse gravel size	
SB-18C (1042)	5-7	4"	30,50/3"	6	●●●●	<b>Dolomite bedrock</b> at 5.75 feet bgs	
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8858			<b>Log of Boring SB-19</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois			Sheet 1 of 1 <hr/> Job Number: 9238A <hr/> Elevation: NA	
Driller: Rock & Soil Drilling Corp.				Date/Time Started: 12/14/95 1130			
Drill Method: Hollow Stemmed Augers				Date/Time Completed: 12/14/95 1205			
Sample Method: 2-Inch Diameter Split-Spoon			Depth to Water: NA ft. BGS		Depth to Rock: 9 ft. BGS		
Borehole Diameter: 6 in.		Total Depth: 9 ft. BGS		Logged By: BAS	Checked By: PEB		
Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Gray SLAG, moist, silt to fine gravel size Dark brown/gray slag, moist, silt to coarse sand size, trace coarse gravel sized slag and limestone  trace brick debris	
SB-18A (1135)	1-3	20"	19,18 18,26	2			
SB-18B (1138)	3-5	8"	14,28 18,13	3			
SB-18C (1142)	5-7	10"	4,5 12,15	4			
SB-18D (1153)	7-9	10"	32,57 27,15	5			
				6			
				7			
				8			
				9	Black SILTY CLAY (CL), moist, trace limestone White/gray WEATHERED DOLOMITE, fractured	Approximate boundary between fill material and native soil	
				10	Dolomite bedrock at 9 feet bgs		
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8858	<b>Log of Boring SB-20</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois		Sheet 1 of 1
			Job Number: 9236A
			Elevation: NA

<b>Driller:</b> Rock & Soil Drilling Corp.		<b>Date/Time Started:</b> 12/14/95 1208	
<b>Drill Method:</b> Hollow Stemmed Augers		<b>Date/Time Completed:</b> 12/14/95 1313	
<b>Sample Method:</b> 2-Inch Diameter Split-Spoon		<b>Depth to Water:</b> NA ft. BGS	<b>Depth to Rock:</b> 12 ft. BGS
<b>Borehole Diameter:</b> 6 in.	<b>Total Depth:</b> 12 ft. BGS	<b>Logged By:</b> BAS	<b>Checked By:</b> PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks	
				1		Gray SLAG, moist, silt to coarse gravel size Dark brown slag, moist, silt to fine gravel size (mostly fines)		
SB-20A (1232)	1-3	14"	24,58 48,-	2				
SB-20B (1237)	3-5	7"	13,27 28,27	3				
				4				
				5				
SB-20C (1242)	5-7	1"	18,17 50/3"	6			Large chunk of black slag	
				7				
SB-20D (1248)	7-9	10"	10,18 60,45	8			trace gray/black slag with mettalic luster, wood	
				9				
SB-20E (1255)	9-11	5"	7,9 8,20	10			Black slag, wet, fine to coarse gravel size, trace wood	
				11				
SB-20F	11-13	6"	9,9 50/2"	12		White/gray WEATHERED DOLOMITE, fractured, moist	Approximate boundary between fill material and bedrock	
				13		Dolomite bedrock at 12 feet bgs		
				14				
				15				
				16				
				17				
				18				
				19				
				20				

Carlson Environmental, Inc. 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8958				Log of Boring SB-21 Robertson-Ceco Corporation New Avenue Lemont, Illinois			Sheet 1 of 1	
Driller: Rock & Soil Drilling Corp.				Date/Time Started: 12/14/95 1323				
Drill Method: Hollow Stemmed Augers				Date/Time Completed: 12/14/95 1415				
Sample Method: 2-Inch Diameter Split-Spoon				Depth to Water: 12 ft. BGS		Depth to Rock: 12.5 ft. BGS		
Borehole Diameter: 6 in.		Total Depth: 12.5 ft. BGS		Logged By: BAS		Checked By: PEB		
Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks	
				1		Gray SLAB, moist, silt to coarse gravel size		
SB-21A (1330)	1-3	7"	13,8 10,18	2		Dark brown CLAYEY SILT (ML), moist, trace slag and wood	Mothball-like odor detected	
SB-21B (1340)	3-5	18"	4,8 8,9	3		Dark brown CLAY (CL), moist, medium stiff, some silt, trace fine to coarse gravel sized limestone	Approximate boundary between fill material and native soil	
SB-21C (1346)	5-7	15"	6,6 5,11	4				
SB-21D (1353)	7-9	12"	5,5 7,11	5		Brown SANDY GRAVEL (GP), sand is poorly sorted, fine to coarse, gravel is fine to coarse, trace shale		
				6		trace wood debris		
SB-21E (1355)	9-11	8"	5,10 4,18	7		Black SILTY CLAY (CL), moist, soft, trace coarse limestone		
SB-21F (1400)	11-13	15"	10,15 50/5"	8		White/gray WEATHERED DOLOMITE, fractured		
				9		Black CLAY (OL), moist, stiff, green streaks, some organics	Petroleum odor detected	
				10		White/gray WEATHERED DOLOMITE, fractured, saturated	Sheen on soil water	
				11		Dolomite bedrock at 12.5 feet bgs		
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				



Carlson Environmental, Inc. 312 West Randolph Street Suite 300 Chicago, IL 60608 Phone (312) 348-2140 Fax (312) 348-6958	Log of Boring SB-22 Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1
		Job Number: 9236A
		Elevation: NA

Driller: Rock & Soil Drilling Corp.		Date/Time Started: 12/15/95 0725	
Drill Method: Hollow Stemmed Augers		Date/Time Completed: 12/15/95 0755	
Sample Method: 2-Inch Diameter Split-Spoon		Depth to Water: 9 ft. BGS	Depth to Rock: 9.5 ft. BGS
Borehole Diameter: 6 in.	Total Depth: 9.5 ft. BGS	Logged By: PAH	Checked By: BAS

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Gray SLAG, dry, silt to coarse gravel size	
SB-22A (0738)	1-3	12"	35,20 25,14	2		Brown SILT (ML), moist, trace medium sand and slag material	
SB-22B (0743)	3-5	15"	4,5 10,14	3		White/gray crushed WEATHERED LIMESTONE, and slag	
				4		Brown SILTY CLAY (CL), moist, some slag material	
SB-22C	5-7	NR	30/1"	5			
				6			
SB-22D (0751)	7-9	8"	5,5 5,4	7		White/gray crushed WEATHERED LIMESTONE, and slag	
				8		Brown SILTY CLAY (CL), moist, medium stiff, fine fill fragments	
SB-22E (0755)	9-11	6"	30/1"	9		Dark brown SILTY CLAY (CL), wet, soft, trace limestone fragments	
				10		Dolomite bedrock at 9.5 feet bgs	Approximate boundary between fill material and native soil
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-6958	<b>Log of Boring SB-23</b> <b>Robertson-Ceco Corporation</b> New Avenue Lemont, Illinois	Sheet 1 of 1
		Job Number: 9236A
		Elevation: NA

<b>Driller: Rock &amp; Soil Drilling Corp.</b>		<b>Date/Time Started: 12/15/95 0835</b>	
<b>Drill Method: Hollow Stemmed Augers</b>		<b>Date/Time Completed: 12/15/95 0855</b>	
<b>Sample Method: 2-Inch Diameter Split-Spoon</b>		<b>Depth to Water: NA ft. BGS</b>	<b>Depth to Rock: 9 ft. BGS</b>
<b>Borehole Diameter: 6 in.</b>	<b>Total Depth: 9 ft. BGS</b>	<b>Logged By: PAH</b>	<b>Checked By: BAS</b>

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		Gray SLAG, dry, silt to coarse gravel size	
SB-23A (0845)	1-3	10"	15,41 32,28	2		Dark Brown SILTY CLAY (CL), moist, some slag, trace limestone and broken glass	
				3		Some coarse gravel sized slag	
SB-23B (0848)	3-5	6"	32,42 12,15	4			
				5			
SB-23C (0851)	5-7	4"	8,12 13,16	6		Dark brown SILT (ML), moist, some coarse gravel sized slag	
				7			
SB-23D	7-9	NR	40/2"	8			
				9			
				10		Dolomite bedrock at 9 feet bgs	Approximate boundary between fill material and bedrock
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			




<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8858	<b>Log of Boring SB-24</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/15/95 0920		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/15/95 0950		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: NA ft. BGS	Depth to Rock: 9 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 9 ft. BGS	Logged By: PAH	Checked By: BAS

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1	0.0 0.0 0.0	Gray SLAG, dry, silt to coarse gravel size	
SB-24A (0925)	1-3	18"	28,25 17,18	2		Brown SILT (ML) with fine to coarse gravel sized slag and limestone	
SB-24B (0929)	3-5	18"	27,25 22,25	3			
SB-24C (0934)	5-7	18"	18,21 31,22	4			
				5			
SB-24D	7-9	NR	39,22 27,50/3"	6			
				7			
				8			
				9			
				10		Dolomite bedrock at 9 feet bgs	Approximate boundary between fill material and bedrock
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-6958	<b>Log of Boring SB-25</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1
		Job Number: 9236A
		Elevation: NA

Driller: Rock & Soil Drilling Corp.		Date/Time Started: 12/15/95 1025	
Drill Method: Hollow Stemmed Augers		Date/Time Completed: 12/15/95 1040	
Sample Method: 2-Inch Diameter Split-Spoon		Depth to Water: NA ft. BGS	Depth to Rock: 5.5 ft. BGS
Borehole Diameter: 6 in.	Total Depth: 5.5 ft. BGS	Logged By: PAH	Checked By: BAS

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		GRASS/TOPSOIL	
SB-25A (1026)	1-3	10"	8,6 8,6	2		Brown SILTY CLAY (CL), moist, very stiff, trace fine gravel sized slag, limestone	
SB-25B (1029)	3-5	5"	2,5 5,4	4		White/gray WEATHERED DOLOMITE, fractured	Approximate boundary between fill material and native soil
SB-25C (1032)	5-7	4"	50/4"	5		Brown SILTY CLAY (CL) with dolomite fragments, moist	
				6		Dolomite bedrock at 5.5 feet bgs	
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 348-2140 Fax (312) 348-8958	<b>Log of Boring SB-28</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1 <hr/> Job Number: 9236A <hr/> Elevation: NA
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Driller: Rock & Soil Drilling Corp.	Date/Time Started: 12/15/95 1035		
Drill Method: Hollow Stemmed Augers	Date/Time Completed: 12/15/95 1050		
Sample Method: 2-Inch Diameter Split-Spoon	Depth to Water: NA ft. BGS	Depth to Rock: 5.5 ft. BGS	
Borehole Diameter: 6 in.	Total Depth: 5.5 ft. BGS	Logged By: PAH	Checked By: BAS

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1	T T T T T	GRASS/TOPSOIL	
SB-26A (1041)	1-3	8"	5,4 7,8	2	T T T T T	Brown SILTY CLAY (CL), moist, med. stiff, trace fine to medium gravel sized limestone	
SB-26B (1045)	3-5	8"	8,9 7,13	3	T T T T T		
				4	T T T T T		
				5	T T T T T	Clay becomes soft	
SB-26C (1049)	5-7	2"	50/4"	6	T T T T T	Dolomite bedrock at 5.5 feet bgs	
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

<b>Carlson Environmental, Inc.</b> 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-8858	<b>Log of Boring SB-27</b> Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1
		Job Number: 9236A
		Elevation: NA

<b>Driller: Rock &amp; Soil Drilling Corp.</b>		<b>Date/Time Started: 12/20/95 0800</b>	
<b>Drill Method: Hollow Stemmed Augers</b>		<b>Date/Time Completed: 12/20/95 0850</b>	
<b>Sample Method: 2-Inch Diameter Split-Spoon</b>		<b>Depth to Water: NA ft. BGS</b>	<b>Depth to Rock: 16.5 ft. BGS</b>
<b>Borehole Diameter: 6 in.</b>	<b>Total Depth: 16.5 ft. BGS</b>	<b>Logged By: BAS</b>	<b>Checked By: PEB</b>

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		<b>GRAVEL AND SLAG</b> , dry, sand to coarse gravel size	
SB-27A (0812)	1-3	18"	8,4 8,10	2		Dark brown <b>GRAVELLY SILT (GM)</b> , dry to moist, trace coarse sand to fine gravel sized slag, trace clay	
SB-27B (0817)	3-5	20"	9,19 25,28	4		Dark brown <b>CLAYEY SILT (ML)</b> , moist, trace fine gravel sized slag, trace organic	
SB-27C (0821)	5-7	8"	7,12 12,10	5		Dark brown <b>CLAY (CL)</b> , moist, medium stiff, some silt, trace coarse gravel sized limestone	Approximate boundary between fill material and native soil
SB-27D (0825)	7-9	20"	6,7 9,9	8		Black <b>CLAY (OL)</b> , moist, very stiff, organic-rich, trace silt, sand to coarse gravel sized limestone	
SB-27E (0828)	9-11	15"	2,4 6,8	10		Clay becomes medium stiff	
SB-27F (0833)	11-13	20"	3,4 4,5	12			
SB-27G (0835)	13-15	20"	2,2 3,4	14			
SB-27H (0840)	15-17	15"	3,4 50/5"	16		Organic content decreases to trace	
				16		White/gray <b>WEATHERED DOLOMITE</b> , fractured	
				17		Dolomite bedrock at 16.5 feet bgs	
				18			
				19			
				20			

Carlson Environmental, Inc. 312 West Randolph Street Suite 300 Chicago, IL 60606 Phone (312) 346-2140 Fax (312) 346-8958	Log of Boring SB-28 Robertson-Ceco Corporation New Avenue Lemont, Illinois	Sheet 1 of 1
		Job Number: 9236A
		Elevation: NA

Driller: Rock & Soil Drilling Corp.		Date/Time Started: 12/20/95 0855	
Drill Method: Hollow Stemmed Augers		Date/Time Completed: 12/20/95 0945	
Sample Method: 2-Inch Diameter Split-Spoon		Depth to Water: NA ft. BGS	Depth to Rock: 16.5 ft. BGS
Borehole Diameter: 6 in.	Total Depth: 16.5 ft. BGS	Logged By: BAS	Checked By: PEB

Sample No. (time)	Interval (feet)	Recovery (inches)	Blow Counts	Depth (feet)	Graphic Log	Materials Description	Remarks
				1		GRAVEL AND SLAG, dry, sand to coarse gravel size	
SB-28A (0904)	1-3	18"	21,18 16,15	2		Dark brown SILT (ML), dry to moist, trace coarse sand to coarse gravel sized slag and limestone, trace clay	
SB-28B (0907)	3-5	18"	10,10 7,8	3			
				4			
SB-28C (0910)	5-7	6"	2,3 3,5	5		Dark brown CLAY (CL), moist, stiff to very stiff, some silt, trace coarse gravel	
				6			
				7			
SB-28D (0918)	7-9	10"	3,5 3,3	8		trace large pieces of slag and metal	
				9			
SB-28E (0919)	9-11	12"	5,2 8,11	10		Black CLAY (CL), moist to wet, stiff, trace sand to gravel sized limestone, trace organics	Approximate boundary between fill material and native soil
				11		White/gray WEATHERED DOLOMITE, fractured	
SB-28F (0924)	11-13	20"	6,10 10,4	12		Black SILTY CLAY (CL), moist, stiff, trace limestone	
				13			
SB-28G (0927)	13-15	10"	3,3 6,18	14		WEATHERED DOLOMITE, fractured	
				15			
SB-28H (0931)	15-17	20"	8,15 15,50/2"	16			
				17		Dolomite bedrock at 16.5 feet bgs	
				18			
				19			
				20			

ATTACHMENT C



**ATTACHMENT C**  
**MONITORING WELL PERMEABILITY DATA**

### SLUG TEST METHOD FOR UNCONFINED AQUIFERS

**REFERENCE:** Bouwer, H. and R. C. Rice, 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells, *Water Resources Research*, vol. 12, no. 3, pp. 423-428.

**SOLUTION:**

$$\ln s_0 - \ln s_t = \frac{2 K L t}{r_c^2 \ln(r_e/r_w)}$$

where:

$s_0$  = initial drawdown in well due to instantaneous removal of water from well [L]

$s_t$  = drawdown in well at time  $t$  [L]

$L$  = length of well screen [L]

$r_c$  = radius of well casing [L]

$\ln(r_e/r_w)$  = empirical "shape factor" determined from tables provided in Bouwer and Rice (1976)

$r_e$  = equivalent radius over which head loss occurs [L]

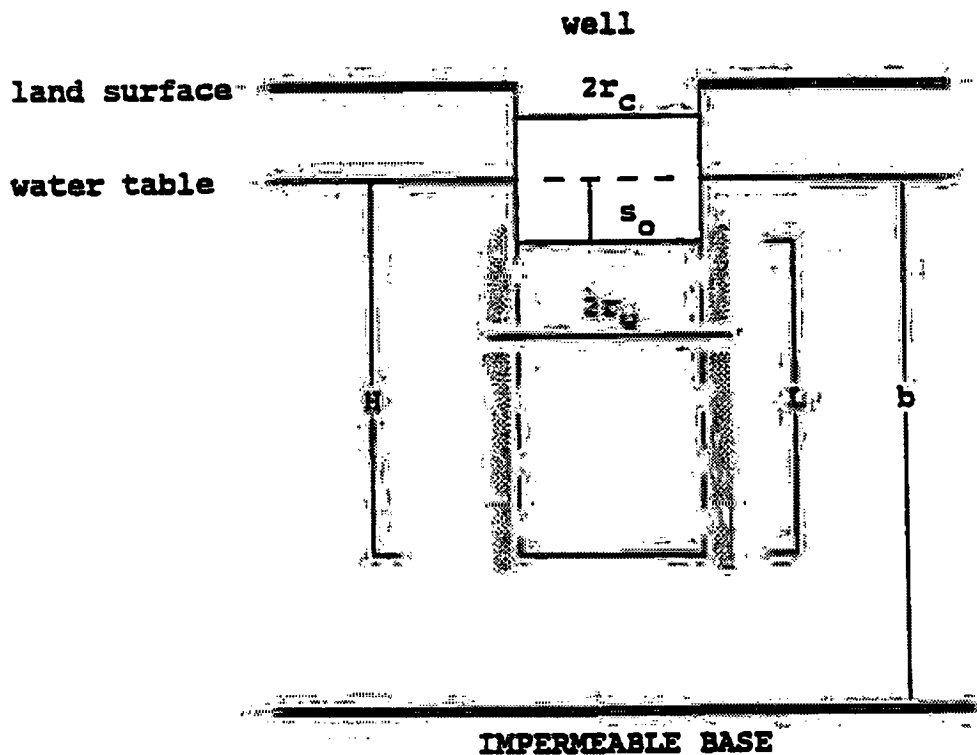
$r_w$  = radius of well (including gravel pack) [L]

$H$  = static height of water in well [L]

$b$  = saturated thickness of aquifer

**SLUG TEST METHOD FOR UNCONFINED AQUIFERS**  
(continued)

**DEFINITION OF TERMS:**



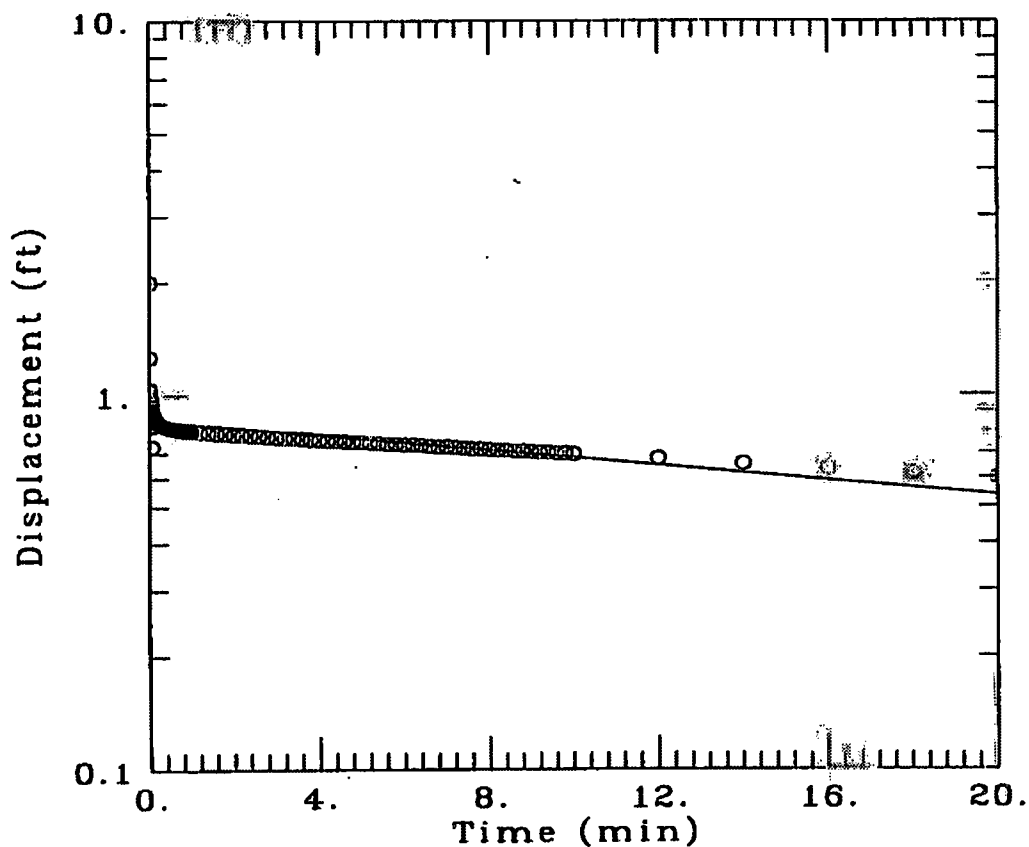
CARLSON ENVIRONMENTAL, INC.

Client: Robertson - CECO

Project No.: 9236A

Location: Lemont, Illinois

### MW-D1 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

MW D1. AGT

12/21/95

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

12-20-95

**TEST WELL:**

MW D1

**ESTIMATED PARAMETERS:**

$K = 2.083E-05$  ft/min

$y_0 = 0.8591$  ft

**TEST DATA:**

$H_0 = 2.0$  ft

$r_c = 0.083$  ft

$r_w = 0.33$  ft

$L = 10.0$  ft

$b = 10.0$  ft

$H = 10.0$  ft

$K = 1.05 \times 10^{-5}$  cm/sec

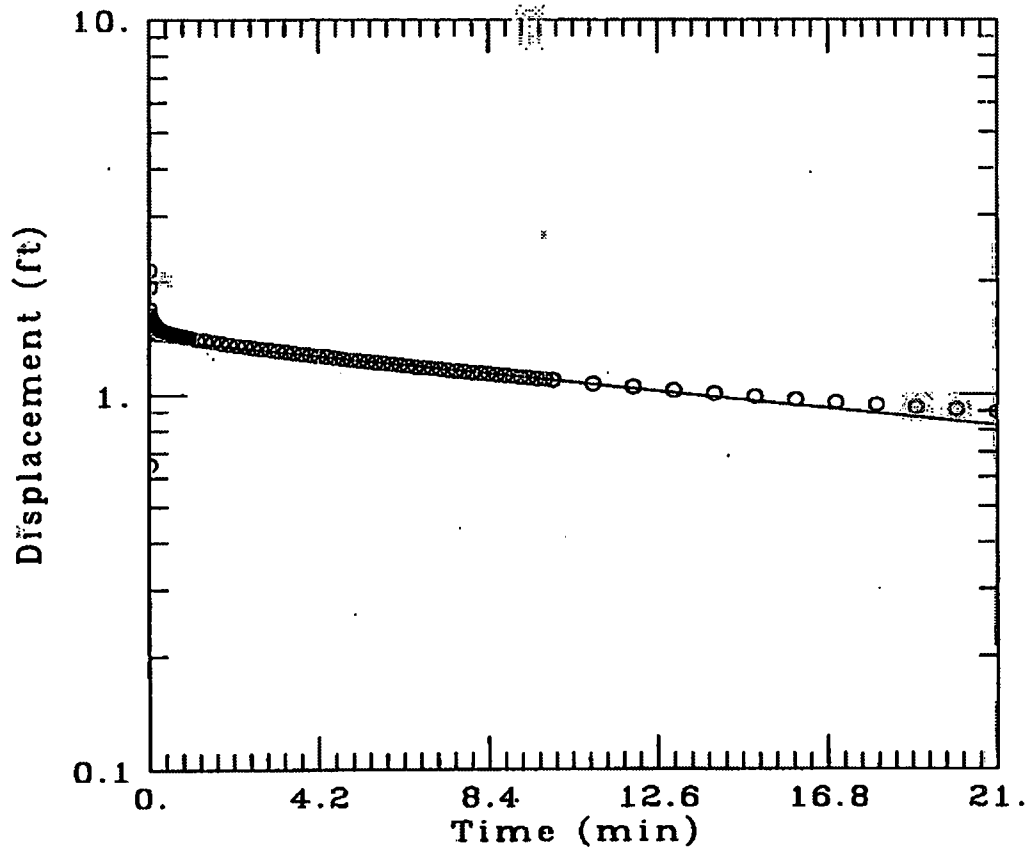
CARLSON ENVIRONMENTAL, INC.

Client: Robertson - CECO

Project No.: 9236A

Location: Lemont, Illinois

### MW-D2 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

mw d2.dat

12/21/85

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

12-20-85

**TEST WELL:**

MW D2

**ESTIMATED PARAMETERS:**

$K = 2.2852E-05$  ft/min

$y_0 = 1.489$  ft

**TEST DATA:**

$H_0 = 1.7$  ft

$r_c = 0.062$  ft

$r_w = 0.33$  ft

$L = 10$  ft

$b = 10$  ft

$H = 10$  ft

$K = 1.15 \times 10^{-5}$  cm/sec

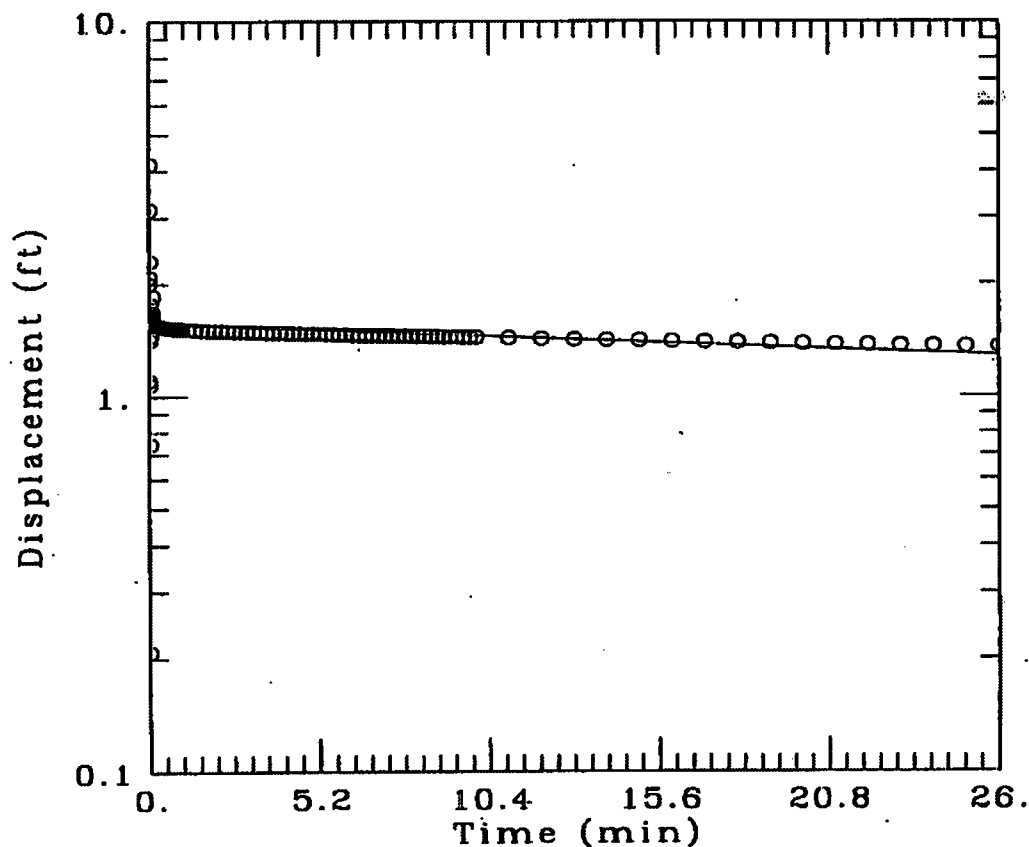
CARLSON ENVIRONMENTAL, INC.

Client: Robertson - CECO

Project No.: 9236A

Location: Lemont, Illinois

### MW-D3 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

MW D3, DAT

12/21/85

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bower-Rice

**TEST DATE:**

12-20-85

**TEST WELL:**

MW D3

**ESTIMATED PARAMETERS:**

K = 6.8167E-06 1/2 min

y0 = 1.573 ft

**TEST DATA:**

H0 = 2 ft

rc = 0.083 ft

rw = 0.33 ft

L = 10 ft

b = 10 ft

H = 10 ft

**K = 3.4 x 10<sup>-6</sup> cm/sec**

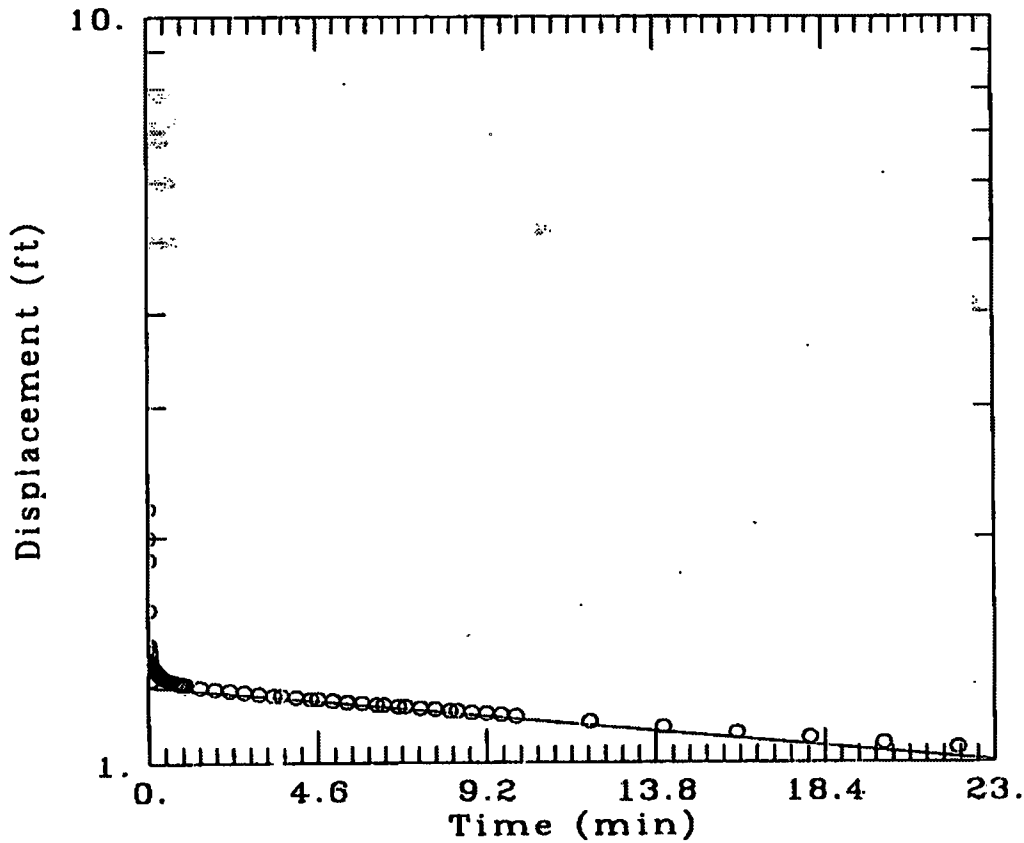
CARLSON ENVIRONMENTAL, INC.

Client: Robertson - CECO

Project No.: 9236A

Location: Lemont, Illinois

### MW-D4 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

MW D4.DAT

12/21/95

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

12-20-95

**TEST WELL:**

MW D4

**ESTIMATED PARAMETERS:**

$K = 8.0359E-06$  ft/min

$y_0 = 1.284$  ft

**TEST DATA:**

$H_0 = 2.0$  ft

$r_c = 0.083$  ft

$r_w = 0.33$  ft

$L = 10.0$  ft

$b = 10.0$  ft

$H = 10.0$  ft

$K = 4.4 \times 10^{-8}$  cm/sec

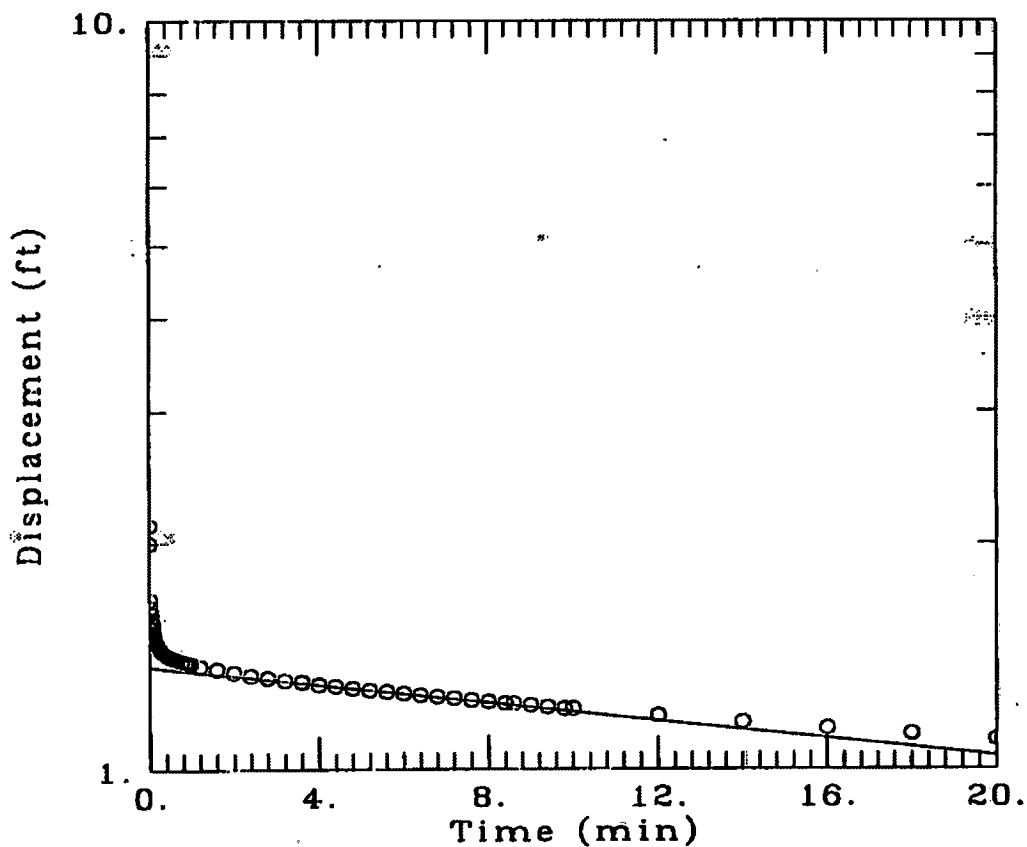
CARLSON ENVIRONMENTAL, INC.

Client: Robertson CECO

Project No.: 9236A

Location: Lemont, Illinois

### MW-D5 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

mw-d5.dat

12/21/95

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bauer-Rice

**TEST DATE:**

12-28-95

**TEST WELL:**

MW05

**ESTIMATED PARAMETERS:**

$K = 1.2042E-05$  ft/min

$y_0 = 1.367$  ft

**TEST DATA:**

$H_0 = 2$  ft

$r_c = 0.883$  ft

$r_w = 0.33$  ft

$L = 10$  ft

$b = 10$  ft

$H = 10$  ft

$K = 6.1 \times 10^{-6}$  cm/sec



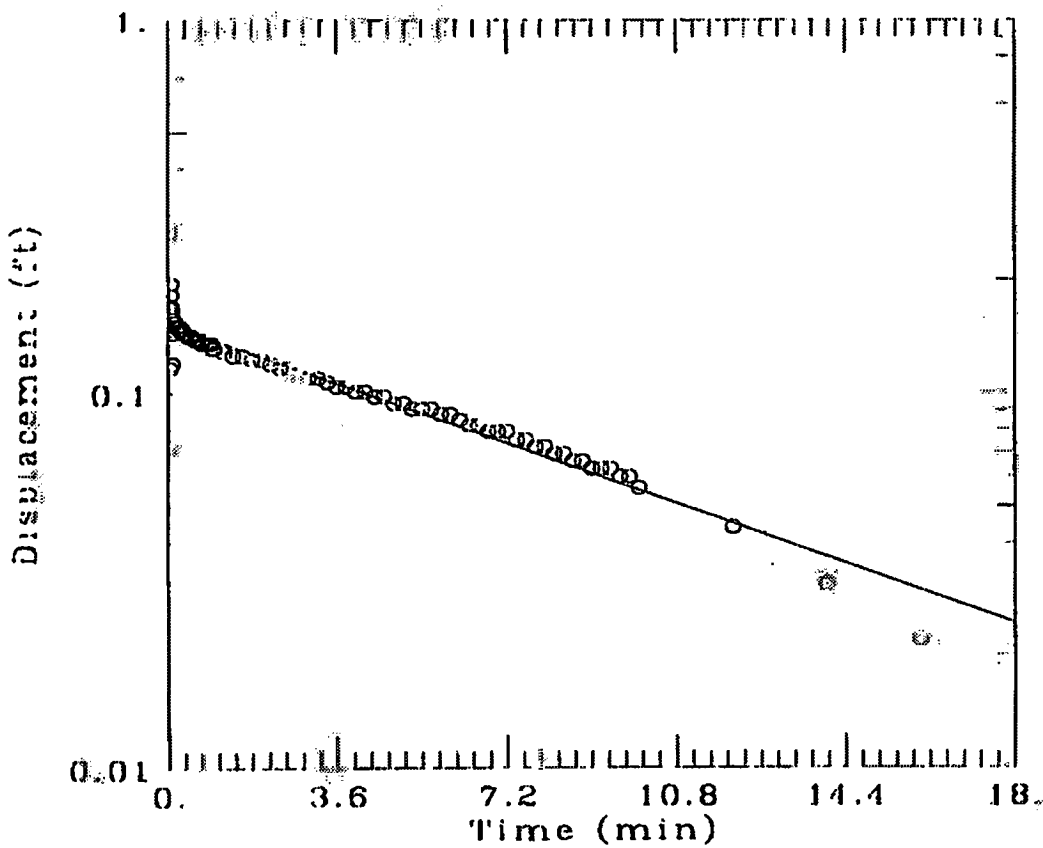
TRISON ENVIRONMENTAL, INC.

Client: Robertson - Ceca

Project No.: 9236A

Location: Lemont, Illinois

### OW #1 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

ow-1 del

01/19/88

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bower-Rice

**TEST DATE:**

1-17-88

**TEST WELL:**

OW 1

**ESTIMATED PARAMETERS:**

$K = 9.750E-05$  ft/min

$y_0 = 0.1538$  ft

**TEST DATA:**

$H_0 = 2$  ft

$r_c = 0.187$  ft

$r_w = 0.417$  ft

$L = 50$  ft

$b = 50$  ft

$H = 45$  ft

$K = 4.95 \times 10^{-5}$  cm/sec

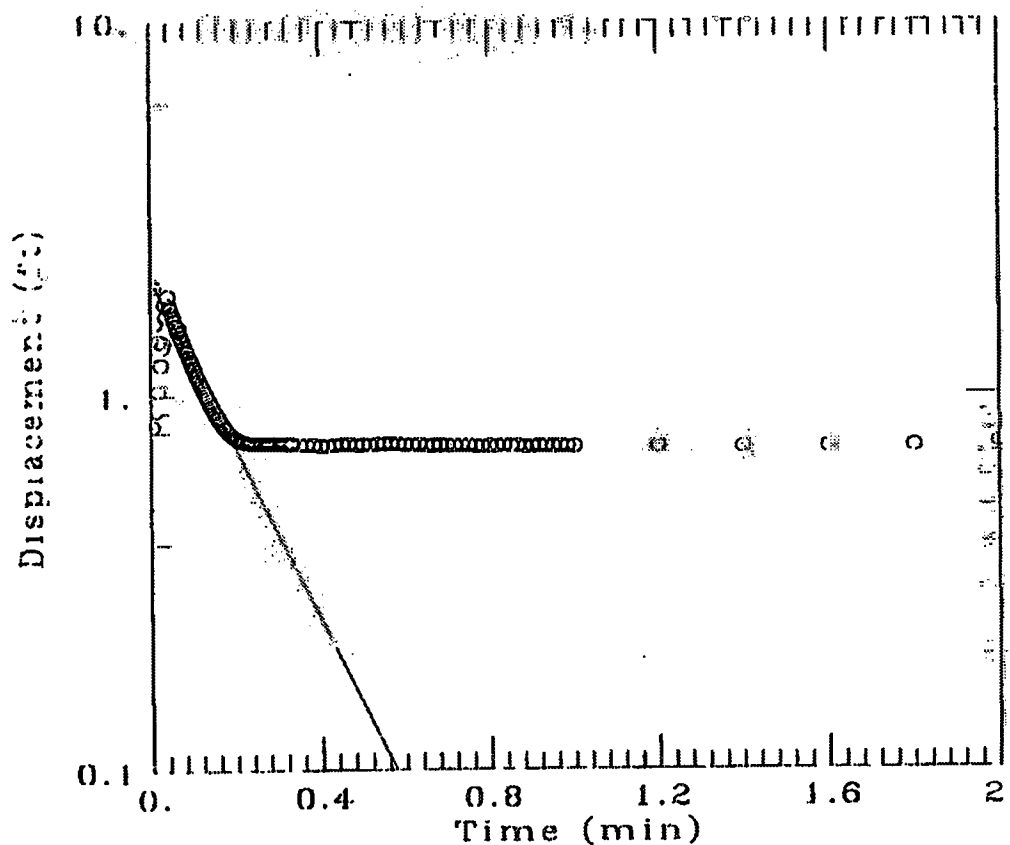
ENVIRONMENTAL, INC.

Client: Robertson - Ceco

Project No 9236A

Location: Lemont, Illinois

### OW #2 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

ow-2 dat

01/19/96

**AQUIFER TYPE**

Unconfined

**SOLUTION METHOD:**

Bouwer - Rice

**TEST DATE:**

1-17-96

**TEST WELL:**

OW 2

**ESTIMATED PARAMETERS.**

$K = 0.005013$  ft/min

$y_0 = 2.05$  ft

**TEST DATA:**

$H_0 = 2$  ft

$r_c = 0.167$  ft

$r_w = 0.417$  ft

$L = 50$  ft

$b = 50$  ft

$H = 45$  ft

$K = 2.55 \times 10^{-3}$  cm/sec

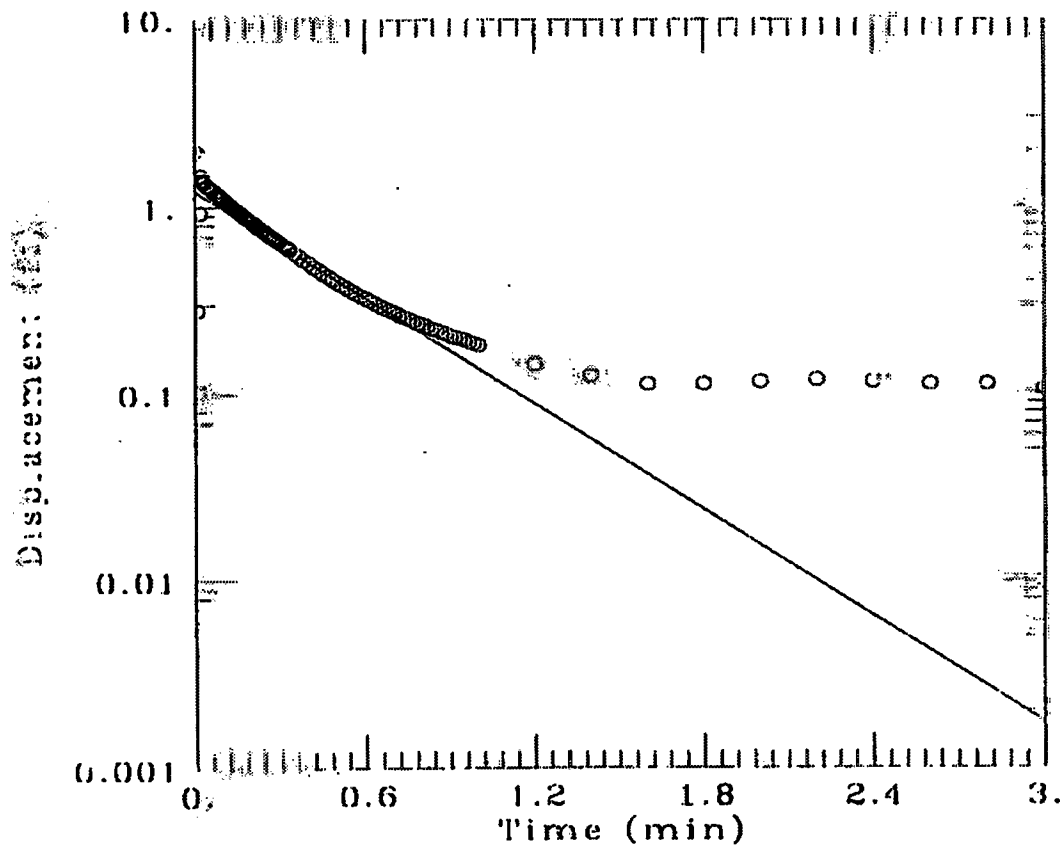
BRUNSON ENVIRONMENTAL, INC.

Client: Robertson - Cero

Project No: 9236A

Location: Lemont, Illinois

### OW #3 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

ow-3 dat

01/19/96

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

1-17-96

**TEST WELL:**

OW 3

**ESTIMATED PARAMETERS:**

$K = 0.002085$  ft/min

$y_0 = 1.213$  ft

**TEST DATA**

$H_0 = 2$  ft

$r_c = 0.187$  ft

$r_w = 0.417$  ft

$L = 50$  ft

$b = 50$  ft

$H = 45$  ft

$K = 1.06 \times 10^{-3}$  cm/sec

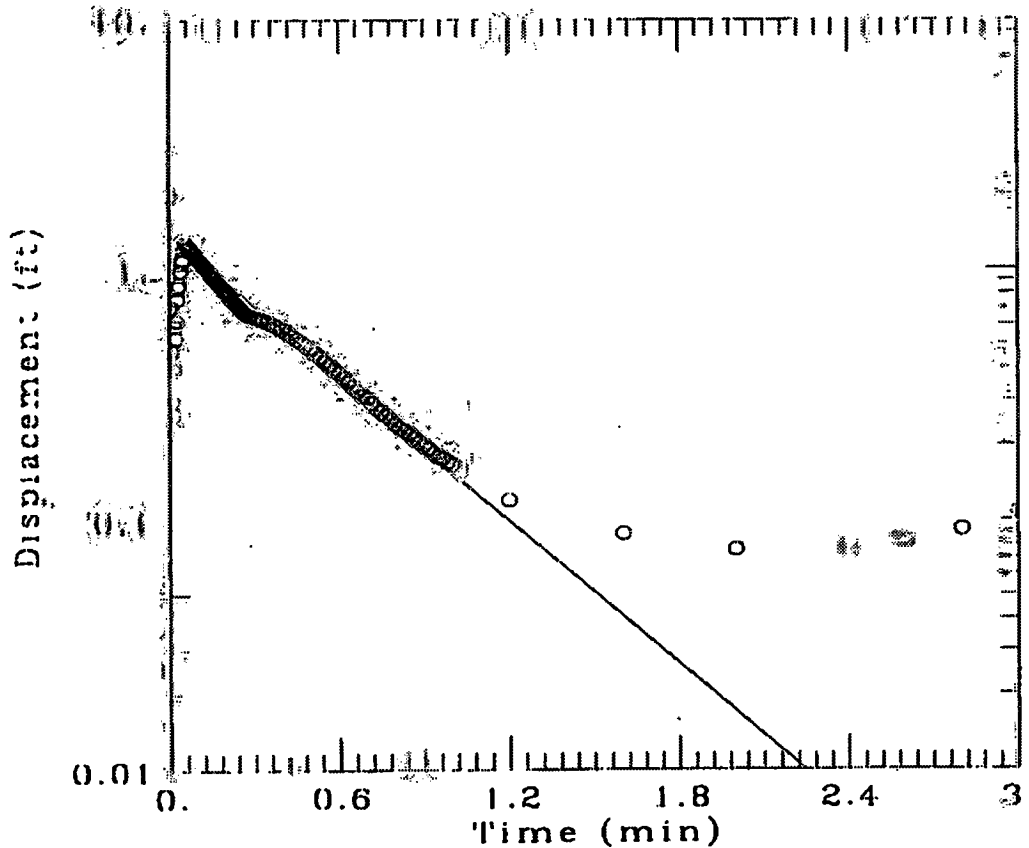
ROBERTSON ENVIRONMENTAL, INC.

Client: Robertson Cocco

Project No.: 9236A

Location: Lemont, Illinois

### OW #4 RISING-HEAD PERMEABILITY TEST



**DATA SET:**

OW 4, DAT

01/19/86

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

1-17-86

**TEST WELL:**

OW 4

**ESTIMATED PARAMETERS:**

$K = 0.002099 \text{ ft/min}$

$y_0 = 1.386 \text{ ft}$

**TEST DATA:**

$H_0 = 2. \text{ ft}$

$r_c = 0.167 \text{ ft}$

$r_w = 0.417 \text{ ft}$

$L = 50. \text{ ft}$

$b = 50. \text{ ft}$

$H = 45. \text{ ft}$

$K = 1.07 \times 10^{-3} \text{ cm/sec}$

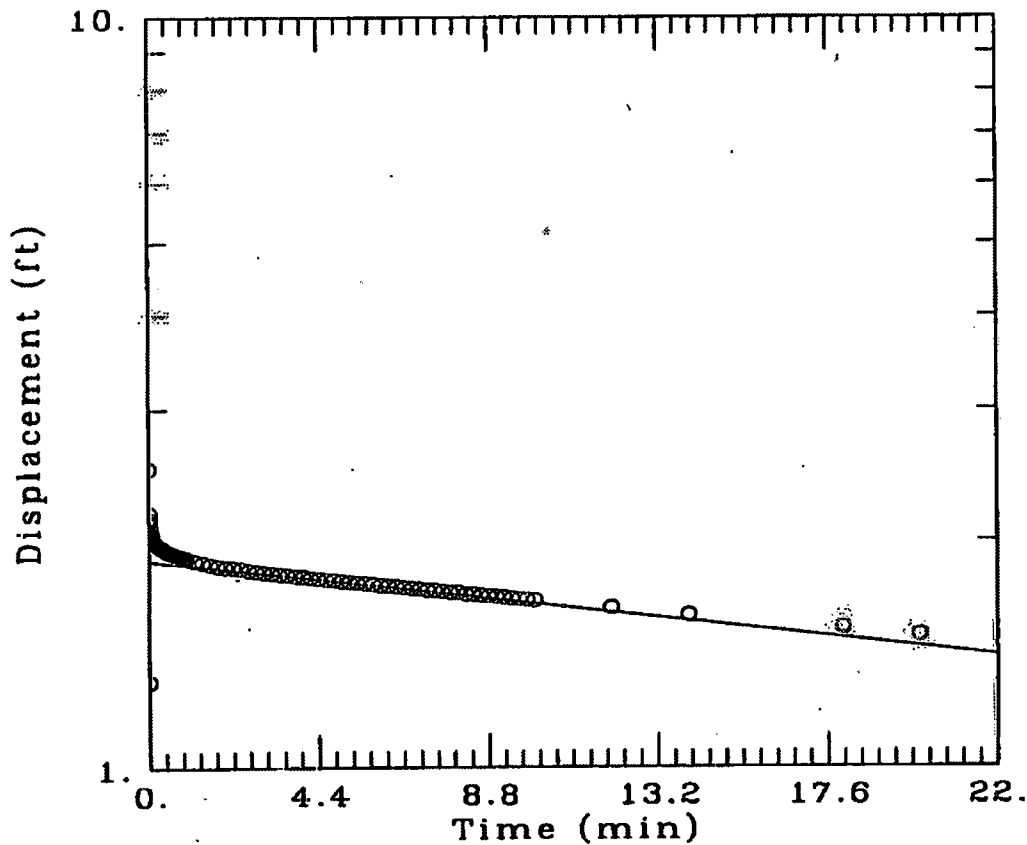
CARLSON ENVIRONMENTAL, INC.

Client: Robertson - CECO

Project No.: 9236A

Location: Lemont, Illinois

### WELL-B RISING-HEAD PERMEABILITY TEST



**DATA SET:**

wel1 - b, dat

12/23/95

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer - Rice

**TEST DATE:**

12-20-85

**TEST WELL:**

Well - B

**ESTIMATED PARAMETERS:**

$K = 1.1722E-05$  ft/min

$y0 = 1.682$  ft

**TEST DATA:**

$H0 = 2.1$  ft

$rc = 0.083$  ft

$rw = 0.33$  ft

$L = 10.1$  ft

$b = 10.1$  ft

$H = 10.1$  ft

$K = 5.9 \times 10^{-8}$  cm/sec

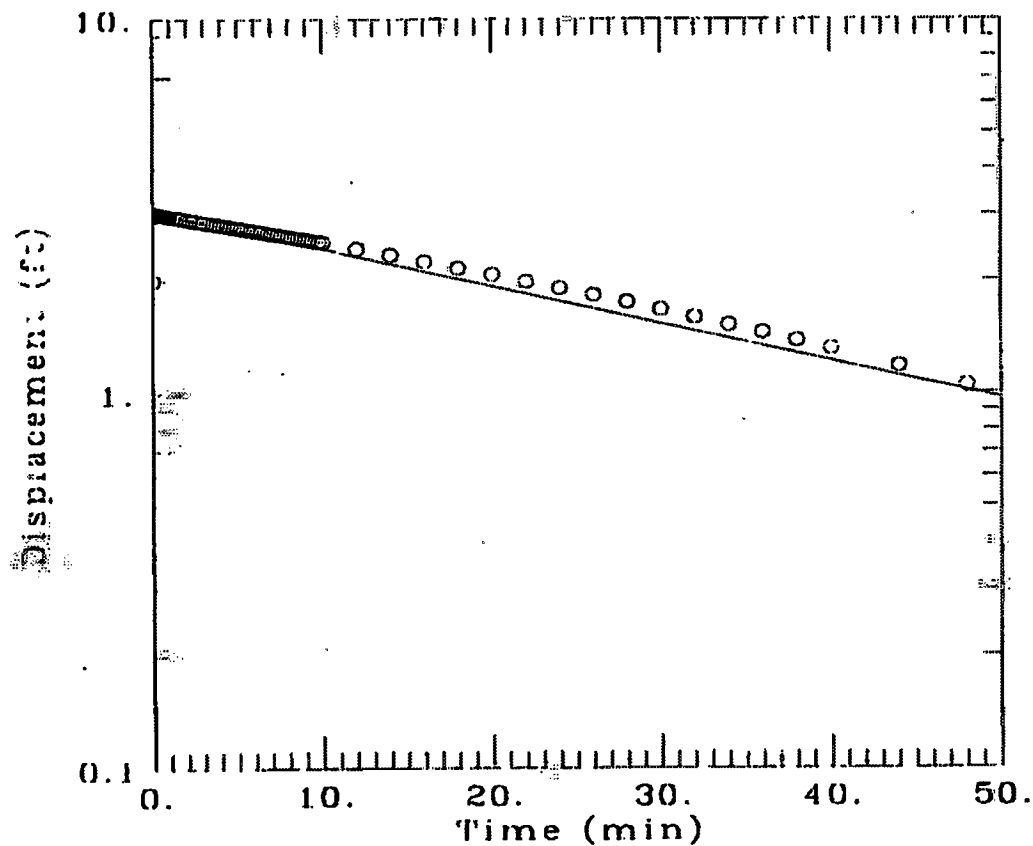
CHRISTENSEN ENVIRONMENTAL, INC.

Client: Robertson -- Ceco

Project No.: 9236A

Location: Lemont, Illinois

### WELL-C RISING-HEAD PERMEABILITY TEST



**DATA SET:**

WELL-C.DAT

01/19/86

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

1-17-86

**TEST WELL:**

WELL-C

**ESTIMATED PARAMETERS:**

$K = 3.3231E-05$  ft/min

$y_0 = 3.05$  ft

**TEST DATA:**

$MD = 2$  ft

$rs = 0.083$  ft

$rwy = 0.33$  ft

$L = 5$  ft

$b = 20$  ft

$H = 15$  ft

$K = 1.68 \times 10^{-5}$  cm/sec

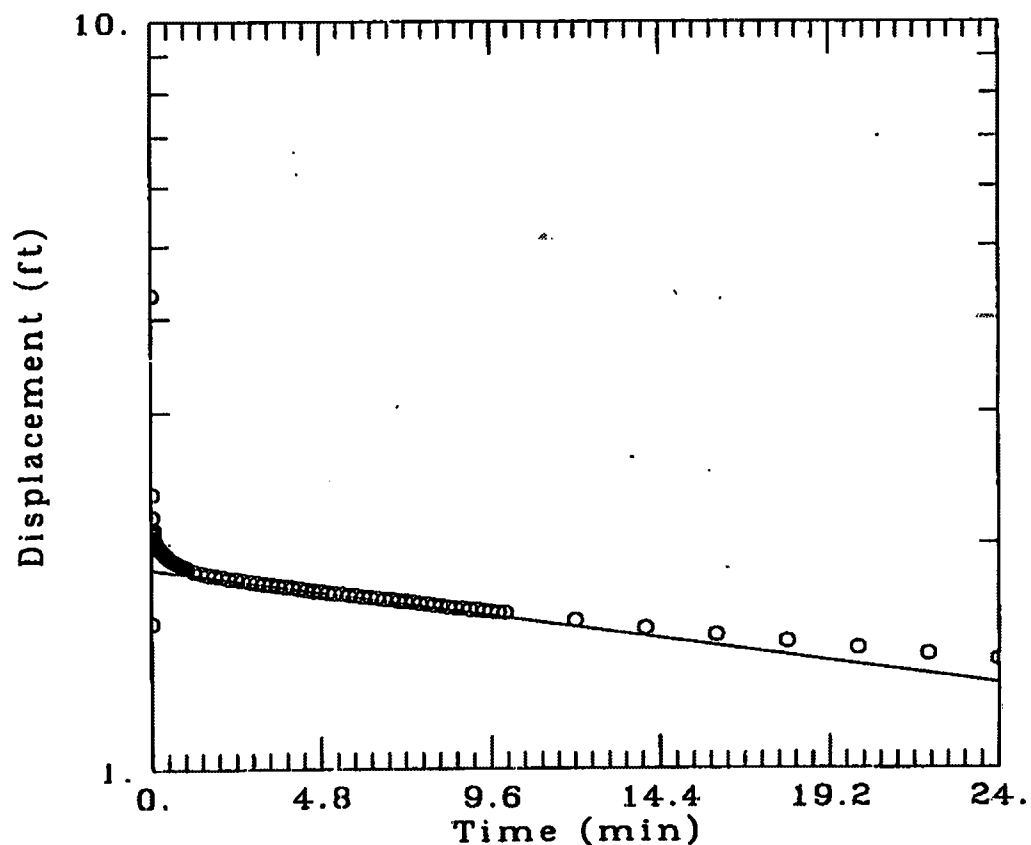
CARLSON ENVIRONMENTAL, INC.

Client: Robertson - CECO

Project No.: 9236A

Location: Lemont, Illinois

### WELL-D RISING-HEAD PERMEABILITY TEST



**DATA SET:**

well-d.dat

12/22/95

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

12-20-95

**TEST WELL:**

Well-D

**ESTIMATED PARAMETERS:**

K = 1.3056E-05 ft/min

y0 = 1.646 ft

**TEST DATA:**

H0 = 2. ft

rc = 0.083 ft

rw = 0.33 ft

L = 10. ft

b = 10. ft

H = 10. ft

**K = 6.6 x 10<sup>-5</sup> cm/sec**

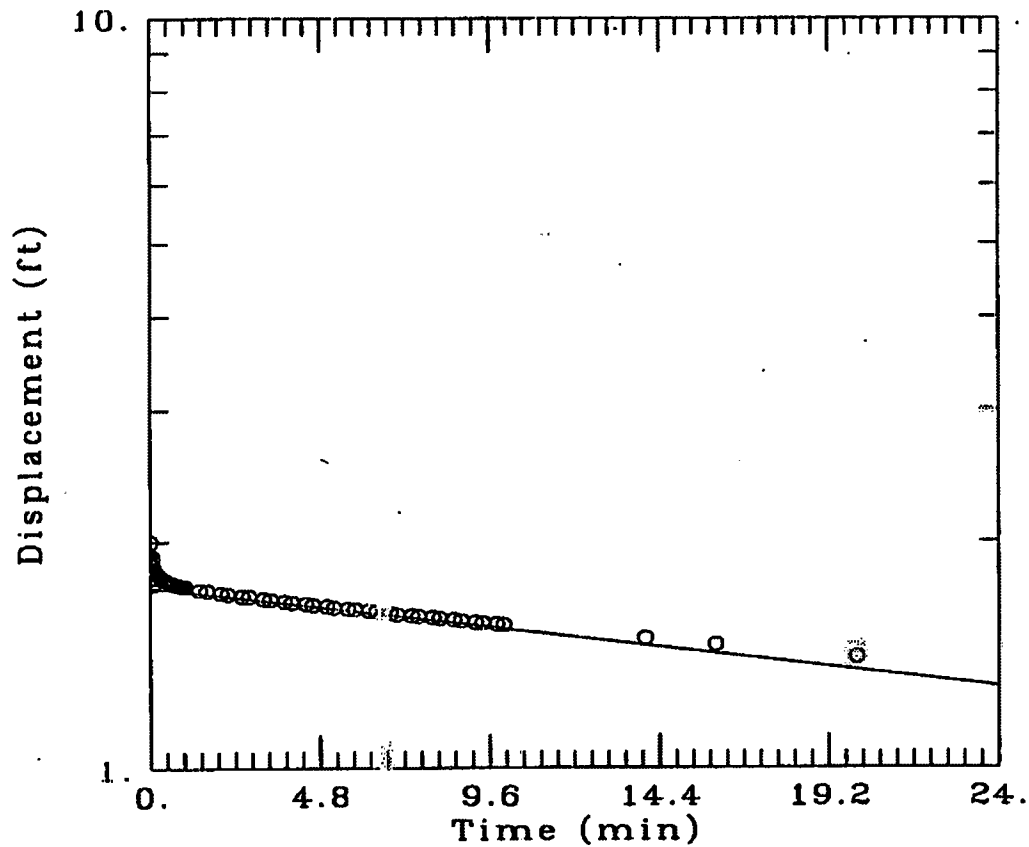
CARLSON ENVIRONMENTAL, INC.

Client: Robertson - CECO

Project No.: 9236A

Location: Lemont, Illinois

### WELL-J RISING-HEAD PERMEABILITY TEST



**DATA SET:**

WELL-J.DAT

12/22/95

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

12-20-95

**TEST WELL:**

WELL-J

**ESTIMATED PARAMETERS:**

$K = 1.1282E-05$  ft/min

$y_0 = 1.738$  ft

**TEST DATA:**

$H_0 = 2$  ft

$r_c = 0.053$  ft

$r_w = 0.33$  ft

$L = 10$  ft

$b = 10$  ft

$H = 10$  ft

$K = 5.7 \times 10^{-4}$  cm/sec



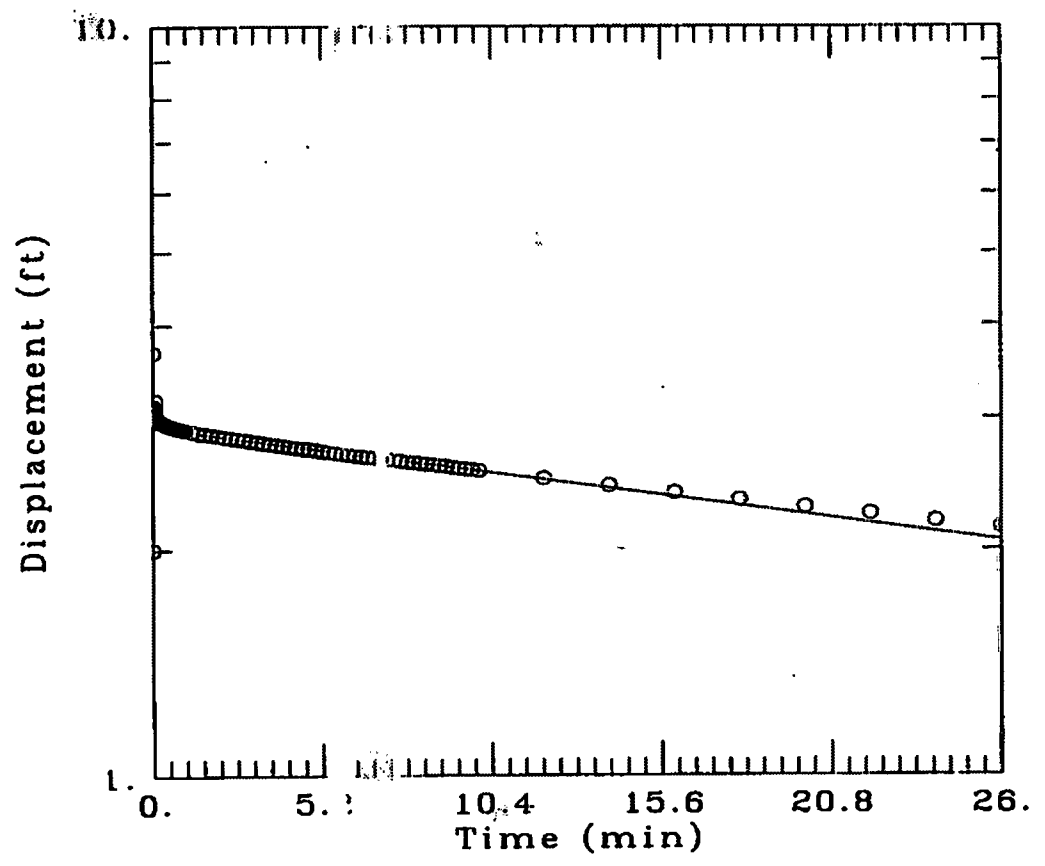
CARLSON ENVIRONMENTAL, INC.

Client: Robertson - CECO

Project No.: 9236A

Location: Lemont, Illinois

### WELL-J-DUP RISING-HEAD PERMEABILITY TEST



**DATA SET:**

WELL-JDUP.DAT  
12/22/95

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

12-20-95

**TEST WELL:**

WELL-J DUP.

**ESTIMATED PARAMETERS:**

K = 1.2007E-05 ft/min  
y0 = 2.921 ft

**TEST DATA:**

H0 = 2. ft  
rc = 0.083 ft  
rw = 0.33 ft  
L = 10. ft  
b = 10. ft  
H = 10. ft

**K = 6.0 x 10<sup>-8</sup> cm/sec**

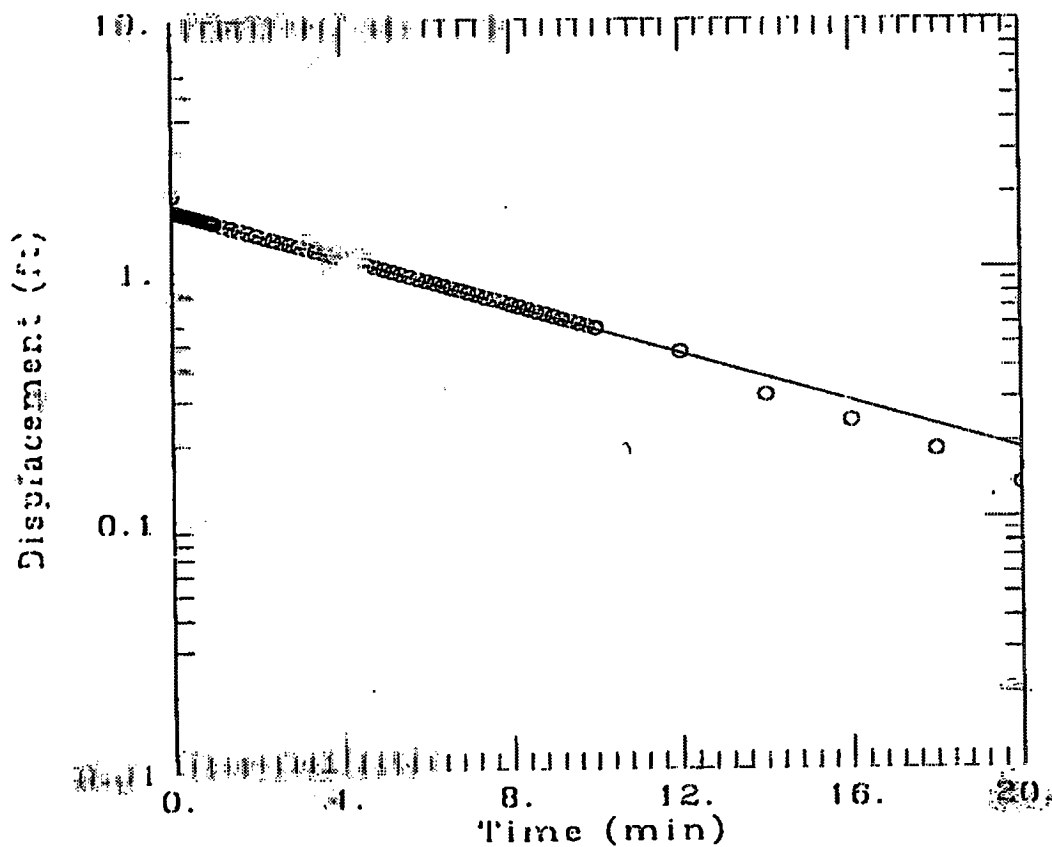
C. R. RISON ENVIRONMENTAL, INC.

Client: Robertson - Ceco

Project No.: 9236A

Location: Lemont, Illinois

### WELL-1. RISING-HEAD PERMEABILITY TEST



**DATA SET:**

WELL-K.DAT

01/19/96

**AQUIFER TYPE:**

Unconfined

**SOLUTION METHOD:**

Bouwer-Rice

**TEST DATE:**

1-17-96

**TEST WELL:**

WELL-K

**ESTIMATED PARAMETERS:**

$K = 0.0001805 \text{ ft/min}$

$y_0 = 1.732 \text{ ft}$

**TEST DATA:**

$H_0 = 2. \text{ ft}$

$r_c = 0.053 \text{ ft}$

$r_w = 0.33 \text{ ft}$

$L = 5. \text{ ft}$

$b = 20. \text{ ft}$

$H = 15. \text{ ft}$

$K = 8.15 \times 10^{-5} \text{ cm/sec}$

ATTACHMENT D

**ATTACHMENT D**  
**LABORATORY ANALYTICAL REPORTS**

**SOIL / SEDIMENT SAMPLE**

**LABORATORY REPORTS**



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: December 18, 1995

Robertson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Project: #9236A, Robertsson-Ceco

Enclosed are the results from 12 soil samples received at Great Lakes Analytical on December 11, 1995. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
5120998	Soil: SB-01A	12/11/95	Total Metals, Long List
5120999	Soil: SB-01B	12/11/95	Total Metals, Short List
5121000	Soil: SB-01C	12/11/95	Total Metals, Short List
5121003	Soil: SB-02A	12/11/95	Total Metals, Long List
5121004	Soil: SB-02B	12/11/95	Total Metals, Short List
5121005	Soil: SB-02D	12/11/95	Total Metals, Short List
5121007	Soil: SB-03A	12/11/95	Total Metals, Short List
5121008	Soil: SB-03B	12/11/95	Total Metals, Short List
5121009	Soil: SB-03C	12/11/95	Total Metals, Long List
5121016	Soil: SB-04B	12/11/95	Total Metals, Short List
5121017	Soil: SB-04C	12/11/95	Total Metals, Long List
5121019	Soil: SB-04F	12/11/95	Total Metals, Short List

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

5120998.CAR &lt;1&gt;



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: December 19, 1995

ison Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Project: 9236A, Robertson Ceco - Lemont, IL

Enclosed are the results from 24 soil samples and 2 water samples received at Great Lakes Analytical on December 12, 1995. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
5121120	Soil: SB-05D	12/12/95	Total Metals, Short List
5121122	Soil: SB-05F	12/12/95	Total Metals, Short List
5121123	Soil: SB-05G	12/12/95	Total Metals, Long List
5121124	Soil: SB-06A	12/12/95	Total Metals, Short List
5121125	Soil: SB-06B	12/12/95	Total Metals, Long List
5121126	Soil: PS-01	12/12/95	Total Metals, Long List
5121127	Soil: PS-02	12/12/95	Total Metals, Long List
5121128	Soil: PS-03	12/12/95	Total Metals, Long List
5121129	Soil: PS-04	12/12/95	Total Metals, Long List
5121130	Soil: SB-7A	12/12/95	Total Metals, Short List
5121131	Soil: SB-7B	12/12/95	Total Metals, Long List
5121132	Soil: SB-7C	12/12/95	Total Metals, Short List
5121135	Water: WS-02	12/12/95	Total Metals, Long List
5121136	Water: WS-05	12/12/95	Total Metals, Long List
5121139	Soil: SB-09C	12/12/95	Total Metals, Short List
5121140	Soil: SB-09D	12/12/95	Total Metals, Short List
5121141	Soil: SB-09E	12/12/95	Total Metals, Long List
5121142	Soil: SS-01	12/12/95	Total Metals, Long List

<b>SAMPLE#</b>	<b>SAMPLE DESCRIPTION</b>	<b>DATE OF COLLECTION</b>	<b>TEST METHOD</b>
5121143	Soil: SS-02	12/12/95	Total Metals, Long List
5121144	Soil: SS-03	12/12/95	Total Metals, Long List
5121145	Soil: SS-04	12/12/95	Total Metals, Long List
5121146	Soil: SS-05	12/12/95	Total Metals, Long List
5121147	Soil: SS-06	12/12/95	Total Metals, Long List
5121149	Soil: SB-08C	12/12/95	Total Metals, Short List
5121150	Soil: SB-08D	12/12/95	Total Metals, Short List
5121151	Soil: SB-08F	12/12/95	Total Metals, Long List

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

**GREAT LAKES ANALYTICAL**



Kevin W. Keeley  
Laboratory Director





1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: December 20, 1995

Carlson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Project: 9235A, Robertson Ceco - Lemont, IL

Enclosed are the results from 18 soil samples received at Great Lakes Analytical on December 13, 1995. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
5121222	Soil: SB-10B	12/13/95	Total Metals, Long List
5121223	Soil: SB-10C	12/13/95	Total Metals, Short List
5121224	Soil: SB-10E	12/13/95	Total Metals, Short List
5121227	Soil: Dup - 1B	12/13/95	Total Metals, Long List
5121228	Soil: Dup - 1C	12/13/95	Total Metals, Short List
5121229	Soil: Dup - 1E	12/13/95	Total Metals, Short List
5121230	Soil: SB - 11A	12/13/95	Total Metals, Short List
5121232	Soil: SB - 11C	12/13/95	Total Metals, Long List
5121233	Soil: SB - 11D	12/13/95	Total Metals, Short List
5121236	Soil: SB - 12A	12/13/95	Total Metals, Short List
5121237	Soil: SB - 12B	12/13/95	Total Metals, Long List
5121238	Soil: SB - 12C	12/13/95	Total Metals, Short List
5121246	Soil: SB - 13B	12/13/95	Total Metals, Short List
5121247	Soil: SB - 13C	12/13/95	Total Metals, Long List
5121248	Soil: SB - 13D	12/13/95	Total Metals, Short List
5121252	Soil: SB - 14B	12/12/95	Total Metals, Short List
5121253	Soil: SB - 14C	12/12/95	Total Metals, Short List
5121254	Soil: SB - 14D	12/12/95	Total Metals, Long List

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

**GREAT LAKES ANALYTICAL**



Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: December 21, 1995

Jason Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Project: #9235A, Robertson-Coco

Enclosed are the results from 22 soil samples received at Great Lakes Analytical on December 14, 1995. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
5121283	Soil: SB-15A	12/14/95	Total Metals, Short List
5121285	Soil: SB-15C	12/14/95	Total Metals, Long List
5121286	Soil: SB-15D	12/14/95	Total Metals, Short List
5121289	Soil: Dup-2C	12/14/95	Total Metals, Long List
5121290	Soil: Dup-2A	12/14/95	Total Metals, Short List
5121291	Soil: Dup-2D	12/14/95	Total Metals, Short List
5121292	Soil: SB-16A	12/14/95	Total Metals, Short List
5121293	Soil: SB-16B	12/14/95	Total Metals, Long List
5121294	Soil: SB-16C	12/14/95	Total Metals, Short List
5121297	Soil: SB-17A	12/14/95	Total Metals, Short List
5121298	Soil: SB-17B	12/14/95	Total Metals, Long List
5121299	Soil: SB-18A	12/14/95	Total Metals, Long List
5121300	Soil: SB-18B	12/14/95	Total Metals, Short List
5121301	Soil: SB-19A	12/14/95	Total Metals, Long List
5121302	Soil: SB-19B	12/14/95	Total Metals, Short List
5121303	Soil: SB-19C	12/14/95	Total Metals, Short List
5121305	Soil: SB-20A	12/14/95	Total Metals, Long List
5121306	Soil: SB-20B	12/14/95	Total Metals, Short List

<b>SAMPLE#</b>	<b>SAMPLE DESCRIPTION</b>	<b>DATE OF COLLECTION</b>	<b>TEST METHOD</b>
5121307	Soil: SB-20D	12/14/95	Total Metals, Short List
5121308	Soil: SB-21A	12/14/95	Total Metals, Short List
5121309	Soil: SB-21B	12/14/95	Total Metals, Long List
5121310	Soil: SB-21C	12/14/95	Total Metals, Short List

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

y truly yours,

**GREAT LAKES ANALYTICAL**



Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: December 22, 1995

Carlson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Project: 9236A, Robertson-CECO-Lamont, IL

Enclosed are the results from 21 soil samples received at Great Lakes Analytical on December 15, 1995. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
5121317	Soil: SB-22A	12/15/95	Total Metals, Short List
5121318	Soil: SB-22B	12/15/95	Total Metals, Long List
5121319	Soil: SB-22D	12/15/95	Total Metals, Short List
5121321	Soil: SB-23A	12/15/95	Total Metals, Long List
5121322	Soil: SB-23B	12/15/95	Total Metals, Short List
5121323	Soil: SB-23C	12/15/95	Total Metals, Short List
5121324	Soil: SB-24A	12/15/95	Total Metals, Short List
5121325	Soil: SB-24B	12/15/95	Total Metals, Short List
5121326	Soil: SB-24C	12/15/95	Total Metals, Long List
5121327	Soil: SB-25A	12/15/95	Total Metals, Long List
5121328	Soil: SB-25B	12/15/95	Total Metals, Short List
5121329	Soil: SB-25C	12/15/95	Total Metals, Short List
5121330	Soil: SB-26A	12/15/95	Total Metals, Long List
5121331	Soil: SB-26B	12/15/95	Total Metals, Short List
5121332	Soil: SB-26C	12/15/95	Total Metals, Short List
5121333	Soil: Dup 3A	12/15/95	Total Metals, Short List
5121334	Soil: Dup 3B	12/15/95	Total Metals, Long List
5121335	Soil: Dup 3D	12/15/95	Total Metals, Short List
5121336	Soil: Dup 4A	12/15/95	Total Metals, Short List

<b>SAMPLE#</b>	<b>SAMPLE DESCRIPTION</b>	<b>DATE OF COLLECTION</b>	<b>TEST METHOD</b>
5121337	Soil: Dup 4B	12/15/95	Total Metals, Short List
5121338	Soil: Dup 4C	12/15/95	Total Metals, Long List

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

**GREAT LAKES ANALYTICAL**



J. W. Keeley  
Laboratory Director





1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: April 1, 1996

son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Project: 9236A, Robertson, CECO Corp.

Enclosed are the results from 4 soil samples and 4 water samples received at Great Lakes Analytical on Mar 25, 1996. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
6031599	Soil: SS-7	3/25/96	Total Metals
6031600	Water: WS-7	3/25/96	Total Metals
6031601	Soil: SS-8	3/25/96	Total Metals
6031602	Soil: SS-9	3/25/96	Total Metals
6031603	Water: WS-8	3/25/96	Total Metals
6031604	Water: WS-9	3/25/96	Total Metals
6031605	Water: WS-10	3/25/96	Total Metals
6031606	Soil: SS-10	3/25/96	Total Metals

The Soil Lead and the Water Silver Matrix QC was outside established Control Limits. Recoveries are reported on pages 9-12.

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

J. W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766, FAX (708) 808-7772

Date: December 27, 1995

Olson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Project: 9236A, Robertson - Ceco

Enclosed are the results from 6 soil samples received at Great Lakes Analytical on December 20, 1995. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
5121693	Soil: SB-27A	12/20/95	Total Metals, Short List
5121694	Soil: SB-27B	12/20/95	Total Metals, Long List
5121695	Soil: SB-27C	12/20/95	Total Metals, Short List
5121701	Soil: SB-28A	12/20/95	Total Metals, Long List
5121702	Soil: SB-28B	12/20/95	Total Metals, Short List
5121704	Soil: SB-28D	12/20/95	Total Metals, Short List

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director





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ison Environmental, Inc.  
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Attention: Ed Garske

Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soil: SB-01A  
Lab Number: 512-0998

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 14-15, 1995  
Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	6.0
Barium	3050/6010	25	310
Beryllium	3050/6010	0.50	0.62
Cadmium	3050/6010	0.50	1.7
Chromium	3050/6010	0.50	1.300
Lead	3050/7421	5.0	220
Mercury	7471	0.040	0.16
Nickel	3050/6010	2.5	36
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	0.50	210
Zinc	3050/6010	25	580

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soil: SB-01B  
Lab Number: 512-0999

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 12-15, 1995  
Reported: Dec 18, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	2.4
Hexavalent Chromium	7196	2.0	N.D.
Lead	3050/6010	5.0	95

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soil: SB-01C  
Lab Number: 512-1000

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 12-15, 1995  
Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	14
Hexavalent Chromium	7196	2.0	N.D.
Lead	3050/6010	5.0	330

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

  
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Client Project ID: #9235A, Robertsson-Ceco  
Sample Descript: Soil: SB-02A  
Lab Number: 512-1003

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 14-15, 1995  
Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	N.D.
Barium	3050/6010	25	390
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	1.4
Chromium	3050/6010	0.50	2,300
Lead	3050/7421	5.0	46
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	34
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	0.50	330
Zinc	3050/6010	25	1,400

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soil: SB-02B  
Lab Number: 512-1004

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 12-15, 1995  
Reported: Dec 18, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.50	0.98
Hexavalent Chromium.....	7196	2.0	N.D.
Lead.....	3050/6010	5.0	42

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soll: SB-02D  
Lab Number: 512-1005

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 12-15, 1995  
Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.50	N.D.
Hexavalent Chromium.....	7196	2.0	N.D.
<b>Lead.....</b>	<b>3050/6010</b>	<b>5.0</b>	<b>19</b>

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soil: SB-03A  
Lab Number: 512-1007

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 12-15, 1995  
Reported: Dec 18, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.20	36
Hexavalent Chromium.....	7196	2.0	N.D.
Lead.....	3050/6010	5.0	1,200

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soil: SB-03B  
Lab Number: 512-1008

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 12-15, 1995  
Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.20	11
Hexavalent Chromium	7196	2.0	N.D.
Lead	3050/6010	5.0	340

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: #9236A, Robertson-Ceco  
 Sample Descript: Soil: SB-03C  
 Lab Number: 512-1009

Sampled: Dec 11, 1995  
 Received: Dec 11, 1995  
 Analyzed: Dec 14-15, 1995  
 Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.5	3.6
Barium	3050/6010	25	680
Beryllium	3050/6010	0.50	1.0
Cadmium	3050/6010	0.50	7.2
Chromium	3050/6010	0.50	1,300
Lead	3050/7421	5.0	280
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	34
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	0.50	190
Zinc	3050/6010	25	1,400

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

*[Signature]*  
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Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soil: SB-04B  
Lab Number: 512-1016

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 12-15, 1995  
Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.20	7.9
Hexavalent Chromium.....	7196	2.0	N.D.
Lead.....	3050/6010	5.0	170

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

  
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Client Project ID: #9236A, Robertson-Ceco  
Sample Descript: Soil, SB-04C  
Lab Number: 512-1017

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 14-15, 1995  
Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.5	4.4
Barium	3050/6010	25	100
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	1.7
Chromium	3050/6010	0.50	2,200
Lead	3050/7421	5.0	84
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	18
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	0.50	84
Zinc	3050/6010	25	560

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: #9236A, Robertsson-Ceco  
Sample Descript: Soil: SB-04F  
Lab Number: 512-1019

Sampled: Dec 11, 1995  
Received: Dec 11, 1995  
Analyzed: Dec 12-15, 1995  
Reported: Dec 18, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.20	1.8
Hexavalent Chromium	7196	2.0	3.8
Lead	3050/6010	5.0	61

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil: SB-05D  
Lab Number: 512-1120

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	53
Hexavalent Chromium	7197	2.0	N.D.
Lead	3050/8010	5.0	2,800

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Watson Environmental, Inc.  
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Client Project ID: 9236A, Robertson Caco - Lemont, IL  
 Sample Descript: Soil: SB-05F  
 Lab Number: 512-1122

Sampled: Dec 12, 1995  
 Received: Dec 12, 1995  
 Analyzed: Dec 13, 1995  
 Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	17
Hexavalent Chromium	7197	2.0	N.D.
Lead	3050/6010	5.0	990

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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2 W. Randolph Street  
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Client Project ID: 9236A, Robertson Caco - Lemont, IL  
Sample Descript: Soil: SB-05G  
Lab Number: 512-1123

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.5	5.0
Barium	3050/6010	25	170
Beryllium	3050/6010	0.50	0.63
Cadmium	3050/6010	0.50	10
Chromium	3050/6010	0.50	51
Lead	3080/6010	5.0	450
Mercury	7471	0.040	0.15
Nickel	3050/6010	2.5	27
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	25
Zinc	3050/6010	25	1,600

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
 Sample Descript: Sol: SB-06A  
 Lab Number: 512-1124

Sampled: Dec 12, 1995  
 Received: Dec 12, 1995  
 Analyzed: Dec 13, 1995  
 Reported: Dec 19, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	4.5
Hexavalent Chromium	7197	2.0	2.2
Lead	3050/8010	5.0	1,200

GREAT LAKES ANALYTICAL

  
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Client Project ID: 9236A, Robertson Caco - Lamont, IL  
Sample Descript: Soil: SB-06B  
Lab Number: 512-1125

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3030/6010	5.0	N.D.
Arsenic	3050/7080	2.5	5.7
Barium	3050/6010	25	480
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	0.7
Chromium	3050/6010	0.50	55
Lead	3050/6010	5.0	950
Mercury	7471	0.040	0.23
Nickel	3050/6010	2.5	44
Selenium	3020/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	250
Zinc	3050/6010	25	1,200

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: 9236A; Robertson Ceco - Lemont, IL  
Sample Descript: Soil: SB-7A  
Lab Number: 512-1130

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.50	19
Hexavalent Chromium.....	7197	2.0	N.D.
Lead.....	3050/6010	5.0	1100

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

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Client Project ID: 9236A, Robertson Caco - Lamont, IL  
Sample Descript: Soil: SB-7B

Lab Number: 512-1131

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	18
Barium	3050/6010	25	110
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.30	0.5
Chromium	3050/6010	0.30	110
Lead	3050/6010	5.0	1100
Mercury	7473	0.040	0.75
Nickel	3050/6010	2.5	130
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	25
Zinc	3050/6010	25	1700

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil: SB-7C  
Lab Number: 512-1132

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.50	9.0
Hexavalent Chromium.....	7197	2.0	N.D.
Lead.....	3050/6010	5.0	850

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

  
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Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil: SB-08C  
Lab Number: 512-1149

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.50	2.1
Hexavalent Chromium.....	7197	2.0	N.D.
Lead.....	3050/6010	5.0	110

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

  
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Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil: SB-08D  
Lab Number: 512-1150

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.50	5.0
Hexavalent Chromium.....	7197	2.0	N.D.
Lead.....	3050/6010	5.0	340

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil: SB-08F  
Lab Number: 512-1151

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	17
Barium	3050/6010	25	280
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	10
Chromium	3050/6010	0.50	72
Lead	3050/6010	5.0	1,200
Mercury	711	0.040	0.7
Nickel	3050/6010	2.5	61
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	18
Zinc	3050/6010	25	1,509

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Client Project ID: 9236A, Robertson Ceco - Lamont, IL  
Sample Descript: Soil: SB-09C  
Lab Number: 512-1139

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	0.59
Hexavalent Chromium	7197	2.0	3.7
Lead	3050/8010	5.0	59

GREAT LAKES ANALYTICAL



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Laboratory Director





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Ison Environmental, Inc.  
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 Attention: Ed Garske

Client Project ID: 9236A, Robertson Cadd - Lemont, IL  
 Sample Descript: Soil: SB-09D  
 Lab Number: 512-1140

Sampled: Dec 12, 1995  
 Received: Dec 12, 1995  
 Analyzed: Dec 13, 1995  
 Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	4.9
Hexavalent Chromium	7197	2.0	N.D.
Lead	3050/6010	5.0	360

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Roberson Caco - Lemont, IL  
 Sample Descript: Soil: SB-09E  
 Lab Number: 512-1141

Sampled: Dec 12, 1995  
 Received: Dec 12, 1995  
 Analyzed: Dec 13, 1995  
 Reported: Dec 19, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7050	2.5	5.3
Barium	3050/6010	25	500
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	11
Chromium	3050/6010	0.50	450
Lead	3050/6010	5.0	2,200
Mercury	7471	0.040	1.9
Nickel	3050/6010	2.5	61
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	180
Zinc	3050/6010	25	4,400

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Robertson Caco - Lemont, IL  
Sample Descript: Soil: SB-10B  
Lab Number: 512-1222

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Arsimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.5	N.D.
Barium	3050/6010	20	160
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	80
Chromium	3050/6010	0.50	1,100
Lead	3050/6010	5.0	1,800
Mercury	7471	0.40	N.D.
Nickel	3050/6010	5.0	45
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	2.8
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	130
Zinc	3050/6010	25	6,500

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Robertson Caco - Lamont, IL  
Sample Descript.: Soil: SB-10C  
Lab Number: 512-1223

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	ND
Hexavalent Chromium	7161	1.0	ND
Lead	3050/8010	5.0	1.300

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Client Project ID: 9236A; Roberson Caco - Lamont, IL  
Sample Descript: Soil: SB-10E  
Lab Number: 512-1224

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.80	13
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	320

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Roberson Caco - Lemont, IL  
Sample Descript: Soil: SB - 11A  
Lab Number: 512-1230

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	3.3
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	130

Analytes reported as N.D. were not present above the stated limit of detection.

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Jeon Environmental, Inc.  
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 Attention: Ed Garakei

Client Project ID: 8236A, Robertson Coca - Lemont, IL  
 Sample Description: Soil: SB - 11C  
 Lab Number: 512-1232

Sampled: Dec 13, 1995  
 Received: Dec 13, 1995  
 Digated: Dec 14, 1995  
 Analyzed: Dec 15-20, 1995  
 Reported: Dec 20, 1995

## LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3060/7000	2.5	18
Barium	3050/6010	25	120
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.20	2.3
Chromium	3050/6010	0.30	1,300
Lead	3050/6010	5.0	75
Mercury	7471	0.30	N.D.
Nickel	3050/6010	5.0	130
Selenium	3050/7740	0.50	1.0
Silver	3050/6010	2.5	5.4
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	450
Zinc	3050/6010	25	250

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A Robertson Ceco - Lamont, IL  
Sample Descript: Soil: SB-11D  
Lab Number: 512-1233

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 14, 1995  
Reported: Dec 20, 1995

## LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	3050/6010	0.50	0.50
Hexavalent Chromium	7197	4.0	N.D.
Cadmium	3050/5010	5.0	5.0

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Robertson Caca - Lemont, IL  
Sample Descript: Soil: SB - 12A  
Lab Number: 512-1235

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.80	3.3
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	320

Analytes reported as N.D. were not present above the stated limit of detection.

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ison Environmental, Inc. 312 W. Randolph Street Chicago, IL 60606 Attention: Ed Garske	Client Project ID: 9236A, Robertson Caco - Lemont, IL Sample Descript: Soil: SB - 12B Lab Number: 512-1237	Sampled: Dec 13, 1995 Received: Dec 13, 1995 Digested: Dec 14, 1995 Analyzed: Dec 15-20, 1995 Reported: Dec 20, 1995
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**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7090	2.5	7.9
Barium	3050/6010	25	140
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	18
Chromium	3050/6010	0.90	770
Lead	3050/6010	5.0	730
Mercury	7471	0.40	N.D.
Nickel	3050/6010	5.0	25
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	170
Zinc	3050/6010	25	2,500

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
 Sample Descript: Soil: SB - 12C  
 Lab Number: 512-1238

Sampled: Dec 13, 1995  
 Received: Dec 13, 1995  
 Digested: Dec 14, 1995  
 Analyzed: Dec 15-20, 1995  
 Reported: Dec 20, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	4.8
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	180

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9238A, Robertson Caco - Lemont, IL  
 Sample Descript: Soil: SB - 13B  
 Lab Number: 512-1246

Sampled: Dec 13, 1995  
 Received: Dec 13, 1995  
 Digested: Dec 14, 1995  
 Analyzed: Dec 15-20, 1995  
 Reported: Dec 20, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	0.26
Hexavalent Chromium	7197	4.0	6.3
Lead	3050/6010	5.0	13

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Client Project ID: 9236A, Robertson Caco - Lamont, IL  
Sample Descript: Soil: SB - 13C  
Lab Number: 512-1247

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.0	2.8
Barium	3050/8010	25	27
Beryllium	3050/8010	0.50	N.D.
Cadmium	3050/8010	0.20	1
Chromium	3066/8010	0.80	1.70
Copper	3050/8010	1.0	2
Mercury	7471	0.40	N.D.
Nickel	3050/8010	5.0	25
Selenium	3050/7740	0.50	N.D.
Silver	3050/8010	2.5	2.0
Thallium	3050/8010	25	N.D.
Vanadium	3050/8010	5.0	210
Zinc	3050/8010	25	200

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil, SB - 13D  
Lab Number: 512-1248

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	8060/8010	0.50	2.6
Hexavalent Chromium	7197	1.0	4.1
Lead	8060/8010	5.0	5.1

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Client Project ID: 9236A, Robertson Case • Lamont, IL  
Sample Descript: Soil: SB - 14B  
Lab Number: 512-1252

Sampled: Dec 12, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	54
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/7421	5.0	3,500

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Roberson Ceco - Lemont, IL  
Sample Descript: Soil: SS - 14C  
Lab Number: 512-1253

Sampled: Dec 12, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	2.4
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	140

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9236A, Robertson Caco - Lemont, IL  
Sample Descript: Soil - SB - 14D  
Lab Number: 512-1254

Sampled: Dec 12, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

## LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.0	7.0
Barium	3050/6010	25	270
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	47
Chromium	3050/6010	0.50	880
Lead	3050/6010	5.0	2,400
Mercury	7471	0.40	0.61
Nickel	3050/6010	5.0	48
Selenium	3050/7740	0.50	5.6
Silver	3050/6010	2.5	5.3
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	150
Zinc	3050/6010	25	8,700

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Client Project ID: #B236A, Robertson-Casco  
Sample Descript: Soil: SB-15A  
Lab Number: 512-1203

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chloride	8050/8113	0.100	1.4
Fluoride	7167	4.0	4.5
Cadmium	8050/8010	5.0	2.0

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Client Project ID: #9236A, Robertson-Coco  
Sample Descript: Soil: SB-15D  
Lab Number: 512-1286

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/5010	0.050	0.97
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/5010	5.0	85

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: #9236A, Robertson-Ceco  
Sample Descript: Soil: Dup-2A  
Lab Number: 512-1290

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.050	4.8
Hexavalent Chromium	7197	4.0	N.D.
Copper	3050/8010	5.0	180

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Client Project ID: #9236A, Robertson-Ceco  
 Sample Descript: Soil: Dup-2D  
 Lab Number: 512-1291

Sampled: Dec 14, 1995  
 Received: Dec 14, 1995  
 Extracted: Dec 15, 1995  
 Analyzed: Dec 15-21, 1995  
 Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.050	N.D.
Hexavalent Chromium .....	7197	4.0	N.D.
Lead.....	3050/6010	5.0	28

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: #9236A, Robertson-Ceco  
Sample Descript: Soil SB-16A  
Lab Number: 512-1292

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	8050/8010	0.050	1.8
Hexavalent Chromium	7197	4.0	N.D.
Lead	8060/8010	5.0	87

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Client Project ID: #9236A, Robertson-Caco  
 Sample Descript: Soil: SB-16C  
 Lab Number: 512-1294

Sampled: Dec 14, 1995  
 Received: Dec 14, 1995  
 Extracted: Dec 15, 1995  
 Analyzed: Dec 15-21, 1995  
 Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.080	0.94
Hexavalent Chromium	7197	4.0	N.D.
Lead	1063/6010	5.0	140

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: #9236A, Robertson-Ceco  
 Sample Descript: Soil: SB-17A  
 Lab Number: 512-1297

Sampled: Dec 14, 1995  
 Received: Dec 14, 1995  
 Extracted: Dec 15, 1995  
 Analyzed: Dec 15-21, 1995  
 Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	3050/6010	0.050	5.0
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	780

Analytes reported as N.D. were not present above the stated limit of detection.

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 Laboratory Director





1300 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7765 FAX (708) 808-7772

Iron Environmental, Inc.  
512 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garsko

Client Project ID: #9236A, Robatson-Ceco  
Sample Describe: Soil: SB-18B  
Lab Number: 512-1300

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Hexavalent Chromium	7197	1.0	N.D.
	3053/0118	5.0	

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Wilson Environmental, Inc.  
12 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garake

Client Project ID: #9238A, Robertson-Ceco  
Sample Descript: Sol: SB-18B  
Lab Number: 512-1302

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	905/6016	0.040	N.D.
Hexavalent Chromium	7197	4.0	N.D.
Lead	905/6010	0.05	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director



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Robtson Environmental, Inc.  
 2 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garske

Client Project ID: #9236A, Robtson-Ceco  
 Sample Descript: Soil: SB-19C  
 Lab Number: 512-1303

Sampled: Dec 14, 1995  
 Received: Dec 14, 1995  
 Extracted: Dec 15, 1995  
 Analyzed: Dec 15-21, 1995  
 Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	3050/6010	0.050	1.4
Hexavalent Chromium	7197	4.0	N.D.
Lead	3080/6010	5.0	130

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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 Laboratory Director



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ison Environmental, Inc.  
12 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: #9236A, Robertson-Ceco  
Sample Descript: Soil: SB-20B  
Lab Number: 512-1306

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.050	13
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	360

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
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Trison Environmental, Inc.  
 112 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garske

Client Project ID: #9236A, Robertson-Coco  
 Sample Descript: Soil: SB-20D  
 Lab Number: 512-1307

Sampled: Dec 14, 1995  
 Received: Dec 14, 1995  
 Extracted: Dec 15, 1995  
 Analyzed: Dec 15-21, 1995  
 Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	8210/8010	0.050	2.7
Hexavalent Chromium	7197	4.0	N.D.
Lead	8060/8010	5.0	205

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Tison Environmental, Inc. 2 W. Randolph Street Chicago, IL 60606 Attention: Ed Garske	Client Project ID: #9236A, Robertson-Ceco Sample Descript: Soil: SB-21A Lab Number: 512-1308	Sampled: Dec 14, 1995 Received: Dec 14, 1995 Extracted: Dec 15, 1995 Analyzed: Dec 15-21, 1995 Reported: Dec 21, 1995
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**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3045/8010	0.050	12
Hexavalent Chromium	7197	4.0	N.D.
Lead	3045/8010	5.0	100

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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son Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: #9236A, Robertson-Ceco  
Sample Descript: Soil: SB-21C  
Lab Number: 512-1310

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.050	3.1
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	136

Analytes reported as N.D. were not present above the stated limit of detection.

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1801 Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garska

Client Project ID: #9236A, Robertson-Ceco  
Sample Descript: Soil: SB-15C  
Lab Number: 512-1285

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	0.50	N.D.
Boron	3050/6010	25	400
Beryllium	3050/6010	0.50	N.D.
Calcium	3050/6010	0.10	6.85
Chromium	3050/6010	0.10	1.800
Lead	3050/6010	5.0	34
Mercury	7471	0.40	N.D.
Nickel	3050/6010	2.5	37
Selenium	3050/7240	0.50	6.5
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	230
Zinc	3050/6010	25	210

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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ison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 79236A, Hobartson-Caco  
Sample Descript: Soil: Dup-2C  
Lab Number: 512-1289

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	10150/7090	0.50	3.7
Barium	1050/6010	25	470
Beryllium	1050/6010	0.50	0.85
Cadmium	2050/6010	0.10	0.65
Chromium	10150/6010	0.10	1300
Cobalt	1000/6010	5.0	15
Mercury	7471	0.40	N.D.
Manganese	3050/6010	2.5	52
Selenium	3050/7741	0.50	2.5
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	270
Zinc	10150/6010	25	260

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Iron Environmental, Inc.  
512 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garska

Client Project ID: #9226A, Robertson-Coco  
Sample Descript: Sol: SB-16B  
Lab Number: 512-1293

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

## LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	0.50	N.D.
Boron	3050/8010	25	50
Cadmium	3050/6010	0.50	3.2
Chromium	3050/6010	0.50	2.1
Chromium	3050/6010	0.50	1.000
Copper	3050/6010	5.0	10
Mercury	7471	0.40	N.D.
Nickel	3050/6010	2.5	3
Selenium	3050/7741	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	170
Zinc	3050/6010	25	180

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Laboratory Director



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erson Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garaka

Client Project ID: #9236A, Robertson-Ceco  
Sample Descrip: Soil SB-17B  
Lab Number: 512-1288

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	0.50	5.7
Barium	3050/6010	25	25
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	N.D.
Chromium	3050/6010	0.50	10
Cobalt	3050/6010	5.0	30
Mercury	7471	0.40	N.D.
Nickel	3050/6010	2.5	0.8
Selenium	3050/7741	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	11
Zinc	3050/6010	25	57

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



**GREAT LAKES ANALYTICAL**

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(708) 808-7766 FAX (708) 808-7772

Robinson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: #9236A, Robinson-Ceco  
Sample Descript: Sol. SB-18A  
Lab Number: 512-1299

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3080/6010	5.0	N.D.
Arsenic	3050/7050	0.50	N.D.
Barium	3050/6010	25	530
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	3.1
Chromium	3080/6010	0.50	290
Cobalt	3050/6010	5.0	570
Mercury	7471	0.50	0.85
Nickel	3060/6010	2.5	25
Selenium	3080/7141	0.50	1.3
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	2.5	N.D.
Vanadium	3080/6010	5.0	160
Zinc	3050/6010	25	500

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director



1300 Busch Parkway • Buffalo Grove, Illinois 60089

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ison Environmental, Inc.  
12 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Ganske

Client Project ID: #9236A, Robertson-Coco  
Sample Descript: Soil: SB-19A  
Lab Number: 512-1301

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15/21, 1995  
Reported: Dec 21, 1995

## LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	0.50	N.D.
Boron	3050/6010	25	500
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.40	4.8
Chromium	3050/6010	0.40	1,500
Cobalt	3050/6010	5.0	580
Mercury	7471	0.40	N.D.
Nickel	3050/6010	0.5	82
Selenium	3050/7243	0.50	0.75
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	180
Zinc	3050/6010	25	900

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Laboratory Director



1360 Busch Parkway • Buffalo Grove, Illinois 60089

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Wilson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: #9236A, Robertson-Ceco  
Sample Descript: Soil: SB-20A  
Lab Number: 512-1305

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7090	0.50	0.7
Barium	3050/8010	25	210
Beryllium	3050/8010	0.50	0.53
Cadmium	3050/8010	0.50	110
Chromium	3050/8010	0.50	180
Cobalt	3050/8010	5.0	3.00
Mercury	7473	0.10	0.55
Nickel	3050/8010	2.5	45
Selenium	3050/7741	0.50	23
Silver	3050/6010	25	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/8010	5.0	500
Zinc	3050/6010	25	13,000

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Laboratory Director



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Isop Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: #9236A, Roberson-Ceco  
Sample Descript: Soil SB-218  
Lab Number: 512-1309

Sampled: Dec 14, 1995  
Received: Dec 14, 1995  
Extracted: Dec 15, 1995  
Analyzed: Dec 15-21, 1995  
Reported: Dec 21, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7050	0.50	4.3
Boron	3050/6010	20	70
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	3.7
Chromium	3050/6010	0.50	86
Lead	3050/6010	5.0	180
Mercury	7471	0.40	N.D.
Nickel	3050/6010	2.5	27
Selenium	3050/7741	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	38
Zinc	3050/6010	25	720

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director



1980 Bosch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7786 FAX (708) 808-7772

Ison Environmental, Inc.  
 572 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garska

Client Project ID: 923EA, Roberson-CECO-Lamont, IL  
 Sample Descript: Soil: SB-22A  
 Lab Number: 512-1317

Sampled: Dec 15, 1995  
 Received: Dec 15, 1995  
 Digested: Dec 18-19, 1995  
 Analyzed: Dec 18-22, 1995  
 Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	8050/8010	0.50	12
Hexavalent Chromium	7197	4.0	N.D.
Cadmium	9050/8010	5.0	1150

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

*[Signature]*  
 Kevin W. Keeley  
 Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.





1980 Busch Parkway • Buffalo Grove, Illinois 60089

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ison Environmental, Inc. 312 W. Randolph Street Chicago, IL 60606 Attention: Ed Garske	Client Project ID: 9236A Robertson-CECO-Lemont, IL Sample Descript: Soil, SB-22B Lab Number: 512-1918	Sampled: Dec 15, 1995 Received: Dec 15, 1995 Digested: Dec 18-19, 1995 Analyzed: Dec 18-22, 1995 Reported: Dec 22, 1995
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## LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/70	2.5	33
Barium	3050/6010	25	110
Beryllium	3050/6010	0.50	0.71
Cadmium	3050/6010	0.50	1.8
Chromium	3050/6010	0.50	61
Lead	3050/6010	5.0	57
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	22
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	41
Zinc	3050/6010	25	150

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL



Kevin W. Keeley  
Laboratory Director

5121317.CAR &lt;2&gt;



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7760 FAX (708) 808-7772

ison Environmental, Inc.  
912 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Roberson-CECO-Lemont, IL  
Sample Descript: Sol. SB-22D  
Lab Number: 512-1319

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.00	3.3
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	210

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

*Kevin W. Keeley*  
Kevin W. Keeley  
Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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Iscon Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A Robertson-CECO-Lemont, IL  
Sample Descript: Soil: SB-23A  
Lab Number: 512-1321

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 18-22, 1995  
Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7090	2.5	5.9
Boron	3050/6010	25	320
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	73
Chromium	3050/6010	0.50	140
Cobalt	3050/6010	5.0	530
Mercury	7473	0.040	1.7
Nickel	3050/6010	2.5	23
Selenium	3050/7240	0.50	0.59
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	250
Zinc	3050/6010	25	1,400

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



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son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO-Lemont, IL  
Sample Descript: Soil: SB-23B  
Lab Number: 512-1322

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.80	ND
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	1.350

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

*Kevin W. Keeley*  
Kevin W. Keeley  
Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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(708) 808-7766 FAX (708) 808-7772

Jon Environmental, Inc. 312 W. Randolph Street Chicago, IL 60606 Attention: Ed Garske	Client Project ID: 9236A, Robertson-CECO-Lemont, IL Sample Descript: Soil: SB-23C  Lab Number: 512-1323	Sampled: Dec 15, 1995 Received: Dec 15, 1995 Digested: Dec 16-19, 1995 Analyzed: Dec 16-22, 1995 Reported: Dec 22, 1995
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**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	37
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	1.300

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

*[Signature]*  
Kevin W. Keeley  
Laboratory Director

Please Note:  
One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO-Lemont, IL  
Sample Descript: Soil: SB-24A  
Lab Number: 512-1324

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	ND
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	ND

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

Please Note:  
One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



1380 Busch Parkway • Buffalo Grove, Illinois 60089 (708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A Robertson-CECO Lamont, IL  
Sample Descript: Sol: SB-24B  
Lab Number: 512-1325

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3060/8510	0.80	1.4
Hexavalent Chromium	7197	4.0	N.D.
Lead	3060/8510	4.0	4.5

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

*[Signature]*  
Kevin W. Keeley  
Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO Lemont, IL  
Sample Descript: Soil: SB-24C  
Lab Number: 512-1326

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	N.D.
Barium	3050/6010	25	280
Beryllium	3050/6010	0.50	0.84
Cadmium	3050/6010	0.50	1.2
Chromium	3050/6010	0.50	580
Lead	3050/6010	5.0	53
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	22
Selenium	3050/7740	0.50	0.68
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	360
Zinc	3050/6010	25	220

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director

5121317.CAR &lt;9&gt;





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son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO-Lemont, IL  
Sample Descript: Soil: SB-25A  
Lab Number: 512-1327

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	25	40
Barium	3050/6010	25	40
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	N.D.
Chromium	3050/6010	0.50	0.3
Lead	3050/6010	5.0	18
Mercury	7473	0.040	0.048
Nickel	3050/6010	25	0.1
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	25	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	11
Zinc	3050/6010	25	78

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



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son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9238A, Robertson-CECO-Lamont, IL  
Sample Descript: Soil: SB-25B  
Lab Number: 512-1328

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/6010	0.50	N.D.
Hexavalent Chromium.....	7197	4.0	N.D.
<b>Lead.....</b>	<b>3050/6010</b>	<b>5.0</b>	<b>11</b>

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

*[Signature]*  
Kevin W. Keeley  
Laboratory Director

Please Note:  
One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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(708) 808-7755 FAX (708) 808-7772

son Environmental, Inc.	Client Project ID: 9236A, Robertson-CECO-Lemont, IL	Sampled: Dec 15, 1995
312 W. Randolph Street	Sample Descript: Soil: SB-25C	Received: Dec 15, 1995
Chicago, IL 60605		Digested: Dec 18-19, 1995
Attention: Ed Garske	Lab Number: 512-1329	Analyzed: Dec 16-22, 1995
		Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	0.63
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	12

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

Kevin W. Keeley  
Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 8236A, Robertson-CECO-Lamont, IL  
Sample Descript: Soil: SB-26A  
Lab Number: 512-1330

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

## LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7000	2.5	36
Barium	3050/6010	25	60
Beryllium	3050/6010	0.50	1.6
Cadmium	3050/6010	0.50	1.3
Chromium	3050/6010	0.50	7.2
Lead	3050/6010	5.0	71
Mercury	7471	0.040	0.51
Nickel	3050/6010	2.5	6.8
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	8.3
Zinc	3050/6010	25	270

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Keith W. Keeley  
Laboratory Director



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son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO-Lemont, IL  
Sample Descript: Soil: SB-26B  
Lab Number: 512-1331

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	0.57
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	40

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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 Chicago, IL 60606  
 Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO-Lamont, IL  
 Sample Descript: Soil: SB-26C  
 Lab Number: 512-1332

Sampled: Dec 15, 1995  
 Received: Dec 15, 1995  
 Digested: Dec 18-19, 1995  
 Analyzed: Dec 16-22, 1995  
 Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.80	0.80
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	44

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

  
 Kevin W. Keeley  
 Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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son Environmental, Inc.  
 2 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garske

Client Project ID: 9236A, Robertson Ceco - Lamont, IL  
 Sample Descript: Soil: Dup - 1B  
 Lab Number: 512-1227

Sampled: Dec 13, 1995  
 Received: Dec 13, 1995  
 Digested: Dec 14, 1995  
 Analyzed: Dec 15-20, 1995  
 Reported: Dec 20, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.5	5.1
Barium	3050/6010	25	180
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.30	55
Chromium	3050/6010	0.80	1,050
Lead	3050/6010	5.0	1,200
Mercury	7471	0.40	N.D.
Nickel	3050/6010	5.0	55
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	40
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	250
Zinc	3050/6010	25	5,800

Analytes reported as N.D. were not present above the stated limit of detection.

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Kevin W. Keeley  
 Laboratory Director



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Olson Environmental, Inc.  
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Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson Caco - Lemont, IL  
Sample Descript: Soil - Dup - 1C  
Lab Number: 512-1228

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	40
Hexavalent Chromium	7197	4.0	5.0
Lead	3050/8010	5.0	1200

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Laboratory Director





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son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil: Dup - 1E  
Lab Number: 512-1229

Sampled: Dec 13, 1995  
Received: Dec 13, 1995  
Digested: Dec 14, 1995  
Analyzed: Dec 15-20, 1995  
Reported: Dec 20, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	30
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	450

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL  
*[Signature]*

Kevin W. Keeley  
Laboratory Director



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Labon Environmental, Inc.  
 612 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garska

Client Project ID: 9236A Robertson-CECO Lemont, IL  
 Sample Descript: Soil: Dup 3A  
 Lab Number: 512-1333

Sampled: Dec 15, 1995  
 Received: Dec 15, 1995  
 Digested: Dec 16-19, 1995  
 Analyzed: Dec 16-22, 1995  
 Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.50	13
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	1700

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
 Laboratory Director

Please Note:  
 One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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ison Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO-Lamont, IL  
Sample Descript: Soil, Dup 3B  
Lab Number: 512-1934

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7090	2.5	17
Barium	3050/6010	25	340
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	5.4
Chromium	3050/6010	0.50	740
Lead	3050/6010	5.0	440
Mercury	7471	0.040	0.16
Nickel	3050/6010	2.5	100
Selenium	3050/7740	0.50	0.85
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	250
Zinc	3050/6010	25	1,100

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



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ison Environmental, Inc. 312 W. Randolph Street Chicago, IL 60606 Attention: Ed Garske	Client Project ID: 9236A, Robertson-CECO-Lemont, IL Sample Descript: Soil: Dup 3D Lab Number: 512-1335	Sampled: Dec 15, 1995 Received: Dec 15, 1995 Digested: Dec 16-19, 1995 Analyzed: Dec 16-22, 1995 Reported: Dec 22, 1995
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**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	3050/8010	0.80	0.99
Hexavalent Chromium.....	7197	4.0	N.D.
Lead.....	3050/8010	5.0	57

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

Kevin W. Keeley  
Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO-Lemont, IL  
Sample Descript: Soil: Dup 4A  
Lab Number: 512-1336

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.80	0.74
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/8010	5.0	17

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

Please Note

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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Ison Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson-CECO-Lemont, IL  
Sample Descript: Soil: Dup 4B  
Lab Number: 512-1337

Sampled: Dec 15, 1995  
Received: Dec 15, 1995  
Digested: Dec 16-19, 1995  
Analyzed: Dec 16-22, 1995  
Reported: Dec 22, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/6010	0.50	1.5
Hexavalent Chromium	7197	4.0	N.D.
Lead	3050/6010	5.0	84

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

Please Note:

One Hexavalent Chromium Matrix Spike Recovery is outside of established control limits.



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Jason Environmental, Inc. 312 W. Randolph Street Chicago, IL 60606 Attention: Ed Garake	Client Project ID: 9236A, Robertson-CECO Lemont, IL Sample Descript: Soil: Dup 4C Lab Number: 512-1338	Sampled: Dec 15, 1995 Received: Dec 15, 1995 Digested: Dec 18-19, 1995 Analyzed: Dec 16-22, 1995 Reported: Dec 22, 1995
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**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit: mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	N.D.
Barium	3050/6010	28	320
Beryllium	3050/6010	0.50	0.64
Cadmium	3050/6010	0.50	0.52
Chromium	3050/6010	0.50	440
Lead	3050/6010	5.0	18
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	18
Selenium	3050/7740	0.50	0.70
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	200
Zinc	3050/6010	28	84

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL



Kevin W. Keeley  
Laboratory Director

5121317.CAR &lt;21&gt;



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(708) 808-7765 FAX (708) 808-7772

Iscon Environmental, Inc.  
 4 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Gareke

Client Project ID: B236A, Robertson - Cabo  
 Sample Descript: Soil: SB-27A  
 Lab Number: 512-1693

Sampled: Dec 20, 1995  
 Received: Dec 20, 1995  
 Digested: Dec 21, 1995  
 Analyzed: Dec 21-22, 1995  
 Reported: Dec 27, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	8060/8010	5.00	9.2
Hexavalent Chromium	7197	2.0	N.D.
Lead	8060/8010	5.0	7.0

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

*[Signature]*  
 Kevin W. Keeley  
 Laboratory Director





1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 806-7766 FAX (708) 806-7772

ison Environmental, Inc.  
 2 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garske

Client Project ID: 9236A, Robertson - Ceco  
 Sample Descript: Soil: SB-27B  
 Lab Number: 512-1694

Sampled: Dec 20, 1995  
 Received: Dec 20, 1995  
 Digested: Dec 21, 1995  
 Analyzed: Dec 21-27, 1995  
 Reported: Dec 27, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	42
Barium	3050/6010	25	200
Beryllium	3050/6010	0.50	0.45
Calcium	3050/6010	0.50	2.9
Chromium	3050/6010	0.50	450
Cadmium	3050/6010	5.0	210
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	68
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	75
Zinc	3050/6010	25	480

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director

5121693.CAR &lt;2&gt;



1380 Busch Parkway • Buffalo Grove, Illinois, 60089

(708) 808-7768 • FAX (708) 808-7772

ison Environmental, Inc.  
12 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9235A, Robertson - Caco  
Sample Descript: Soil: SB-27C  
Lab Number: 512-1695

Sampled: Dec 20, 1995  
Received: Dec 20, 1995  
Digested: Dec 21, 1995  
Analyzed: Dec 21-22, 1995  
Reported: Dec 27, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	3068/6010	0.50	2.7
Hexavalent Chromium	7197	2.0	N.D.
Lead	3050/6010	5.0	1.0

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director

5121693.CAR &lt;3&gt;



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Trison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson - Ceco  
Sample Descript: Soil: SB-28A  
Lab Number: 512-1701

Sampled: Dec 20, 1995  
Received: Dec 20, 1995  
Digested: Dec 21, 1995  
Analyzed: Dec 21-27, 1995  
Reported: Dec 27, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	42
Barium	3050/6010	25	280
Beryllium	3050/6010	0.50	0.57
Cadmium	3050/6010	0.50	37
Chromium	3050/6010	0.50	410
Lead	3050/6010	5.0	150
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	21
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	59
Zinc	3050/6010	25	520

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director

5121693.CAR &lt;4&gt;



1360 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX: (708) 808-7772

ison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson - Caco  
Sample Descript: Soil: SB-288.  
Lab Number: 512-1702

Sampled: Dec 20, 1995  
Received: Dec 20, 1995  
Digested: Dec 21, 1995  
Analyzed: Dec 21-27, 1995  
Reported: Dec 27, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Chromium	3050/8010	0.50	0.57
Hexavalent Chromium	7197	2.0	N.D.
Cadmium	3050/8010	5.0	21

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

  
Kevin W. Keeley  
Laboratory Director



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son Environmental, Inc.  
 2 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garske

Client Project ID: 9236A, Robertson - Coco  
 Sample Descript: Soil: SB-28D  
 Lab Number: 512-1704

Sampled: Dec 20, 1995  
 Received: Dec 20, 1995  
 Digested: Dec 21, 1995  
 Analyzed: Dec 21-27, 1995  
 Reported: Dec 27, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	3050/8010	0.80	0.70
Hexavalent Chromium	7197	2.0	N.D.
Lead	3050/8010	5.0	25

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**


Kevin W. Keeley  
 Laboratory Director



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ison Environmental, Inc.	Client Project ID: 9236A, Robertson Caco - Lemont, IL	Sampled: Dec 12, 1995
2 W. Randolph Street	Sample Descript: Soil: SS-01	Received: Dec 12, 1995
Chicago, IL 60606	Lab Number: 512-1142	Analyzed: Dec 13, 1995
Attention: Ed Garske		Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.5	5.8
Barium	3050/6010	25	47
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	1.5
Chromium	3050/6010	0.80	19
Lead	3050/6010	5.0	64
Mercury	7471	0.040	0.070
Nickel	3050/6010	2.5	6.8
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	13
Zinc	3050/6010	25	280

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL



Kevin W. Keeley  
Laboratory Director



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Ison Environmental, Inc.  
 312 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garske

Client Project ID: 9236A, Robertson Ceco - Lamont, IL  
 Sample Descript: Soil: SS-02  
 Lab Number: 512-1143

Sampled: Dec 12, 1995  
 Received: Dec 12, 1995  
 Analyzed: Dec 13, 1995  
 Reported: Dec 19, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	N.D.
Barium	3050/6010	25	N.D.
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	0.97
Chromium	3050/6010	0.80	13
Lead	3050/6010	5.0	180
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	2.1
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	25	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	6.2
Zinc	3050/6010	25	140

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
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ison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil: SS-03  
Lab Number: 512-1144

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	5.3
Barium	3050/6010	25	40
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	2.6
Chromium	3050/6010	0.50	23
Lead	3050/6010	5.0	150
Mercury	7471	0.040	0.17
Nickel	3050/6010	2.5	9.7
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	15
Zinc	3050/6010	25	370

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director





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Ison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garska

Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Soil: SS-04  
Lab Number: 512-1145

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	14
Barium	3050/6010	25	72
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.80	3.0
Chromium	3050/6010	0.80	22
Lead	3050/6010	5.0	280
Mercury	7471	0.040	4.6
Nickel	3050/6010	2.5	13
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	18
Zinc	3050/6010	25	1,500

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Laboratory Director



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2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garska

Client Project ID: 9236A, Robertson Caco - Lemont, IL  
Sample Descript: Soil: SS-05  
Lab Number: 512-1146

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	25	83
Barium	3050/6010	25	35
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	N.D.
Chromium	3050/6010	0.90	12
Lead	3050/6010	5.0	22
Mercury	7473	0.040	0.048
Nickel	3050/6010	25	14
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	20
Zinc	3050/6010	25	110

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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Laboratory Director



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ison Environmental, Inc.  
 312 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garske

Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
 Sample Descript: Soil: SS-06  
 Lab Number: 512-1147

Sampled: Dec 12, 1995  
 Received: Dec 12, 1995  
 Analyzed: Dec 13, 1995  
 Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	54
Barium	3050/6010	25	82
Beryllium	3050/6010	0.50	0.57
Cadmium	3050/6010	0.50	1.8
Chromium	3050/6010	0.50	58
Lead	3050/6010	5.0	88
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	20
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	24
Zinc	3050/6010	25	440

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director

5121120.CAR &lt;23&gt;



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(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
 Sample Descript: Soil: SS-7  
 Lab Number: 603-1599

Sampled: Mar 25, 1996  
 Received: Mar 25, 1996  
 Analyzed: Mar 27-29, 1996  
 Reported: Apr 1, 1996

**METALS**

Analyte	EPA Method	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	3.8
Barium	3050/6010	25	83
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	0.53
Chromium	3050/6010	0.50	17
Lead	3050/6010	5.0	26
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	12
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	22
Zinc	3050/6010	25	140

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



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son Environmental, Inc.  
 2 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
 Sample Descript: Soil: SS-8  
 Lab Number: 603-1601

Sampled: Mar 25, 1996  
 Received: Mar 25, 1996  
 Analyzed: Mar 27-29, 1996  
 Reported: Apr 1, 1996

**METALS**

Analyte	EPA Method	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Antimony.....	3050/6010	5.0	N.D.
<b>Arsenic.....</b>	<b>3050/7080</b>	<b>2.5</b>	<b>3.4</b>
Barium.....	3050/6010	25	N.D.
Beryllium.....	3050/6010	0.50	N.D.
Cadmium.....	3050/6010	0.50	N.D.
<b>Chromium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>11</b>
<b>Lead.....</b>	<b>3050/6010</b>	<b>5.0</b>	<b>13</b>
Mercury.....	7471	0.040	N.D.
<b>Nickel.....</b>	<b>3050/6010</b>	<b>2.5</b>	<b>8.8</b>
Selenium.....	3050/7740	0.50	N.D.
Silver.....	3050/6010	2.5	N.D.
Thallium.....	3050/6010	25	N.D.
<b>Vanadium.....</b>	<b>3050/6010</b>	<b>5.0</b>	<b>14</b>
<b>Zinc.....</b>	<b>3050/6010</b>	<b>25</b>	<b>68</b>

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60069

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son Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9235A, Robertson, CECO Corp.  
Sample Descript: Soil, SS-9  
Lab Number: 603-1602

Sampled: Mar 25, 1996  
Received: Mar 25, 1996  
Analyzed: Mar 27-29, 1996  
Reported: Apr 1, 1996

**METALS**

Analyte	EPA Method	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	2.8
Barium	3050/6010	25	130
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	4.6
Chromium	3050/6010	0.50	170
Lead	3050/6010	5.0	170
Mercury	7471	0.040	0.30
Nickel	3050/6010	2.5	18
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	47
Zinc	3050/6010	25	1,000

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



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son Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
 Sample Descript: Soil: SS-10  
 Lab Number: 603-1606

Sampled: Mar 25, 1996  
 Received: Mar 25, 1996  
 Analyzed: Mar 27-29, 1996  
 Reported: Apr 1, 1996

**METALS**

Analyte	EPA Method	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	27
Barium	3050/6010	25	N.D.
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	0.88
Chromium	3050/6010	0.50	7.4
Lead	3050/6010	5.0	57
Mercury	7471	0.040	0.14
Nickel	3050/6010	2.5	6.8
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	5.4
Zinc	3050/6010	25	95

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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 Laboratory Director



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ison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson Caco - Lemont, IL  
Sample Descript: Soil: PS-01  
Lab Number: 512-1126

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7060	2.5	46
Barium	3050/6010	25	200
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.80	51
Chromium	3050/6010	0.50	760
Lead	3050/6010	5.0	510
Mercury	7471	0.040	0.18
Nickel	3050/6010	2.5	27
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	140
Zinc	3050/6010	25	830

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director





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ison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson Ceco - Lamont, IL  
Sample Descript: Soil: PS-02  
Lab Number: 512-1127

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.0	25
Barium	3050/6010	25	37
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	2.0
Chromium	3050/6010	0.50	150
Lead	3050/6010	5.0	160
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	180
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	35
Zinc	3050/6010	25	410

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director

5121120.CAR &lt;7&gt;



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ison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson Caco - Lamont, IL  
Sample Descript: Soil: PS-03  
Lab Number: 512-1128

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 13, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7080	2.5	4.8
Barium	3050/6010	25	180
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.50	3.4
Chromium	3050/6010	0.50	180
Lead	3050/6010	5.0	100
Mercury	7473	0.040	0.33
Nickel	3050/6010	2.5	24
Selenium	3050/7740	0.50	N.D.
Silver	3050/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	57
Zinc	3050/6010	25	670

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
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son Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Ed Garska

Client Project ID: 9236A, Robertson Caco - Lemont, IL  
 Sample Descript: Soil: PS-04  
 Lab Number: 512-1129

Sampled: Dec 12, 1995  
 Received: Dec 12, 1995  
 Analyzed: Dec 13, 1995  
 Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/kg	Sample Results mg/kg
Antimony	3050/6010	5.0	N.D.
Arsenic	3050/7030	2.5	N.D.
Barium	3050/6010	25	80
Beryllium	3050/6010	0.50	N.D.
Cadmium	3050/6010	0.80	1.6
Chromium	3050/6010	0.80	58
Lead	3050/6010	5.0	50
Mercury	7471	0.040	N.D.
Nickel	3050/6010	2.5	8.8
Selenium	3050/7740	0.50	N.D.
Silver	3080/6010	2.5	N.D.
Thallium	3050/6010	25	N.D.
Vanadium	3050/6010	5.0	28
Zinc	3050/6010	25	280

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



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son Environmental, Inc.  
312 W. Randolph Street  
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Attention: Ed Garske

Client Project ID: #9236A, Robertson-Ceco  
Matrx: Soil

QC Sample Group: 5121283-1312

Reported: Jan 5, 1996

### QUALITY CONTROL DATA REPORT

ANALYTE	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium
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Method:	3050/6010	3050/7060	3050/6010	3050/6010	3050/6010	3050/6010	7196
Analyst:	I. Graske	A. Mehrabi	I. Graske	I. Graske	I. Graske	I. Graske	A. Mehrabi
Concentration:	1.0	0.030	1.0	1.0	1.0	1.0	0.050
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

#### LAB. CONTROL SAMPLE DATA

Date Analyzed:	Dec 21, 1995	Dec 18, 1995	Dec 19, 1995	Dec 21, 1995	Dec 19, 1995	Dec 19, 1995	Dec 15, 1995
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	98	112	96	98	102	99	98
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#### MATRIX SPIKE & DUP. DATA

Date Analyzed:	Dec 21, 1995	Dec 21, 1995	Dec 21, 1995	Dec 21, 1995	Dec 21, 1995	Dec 21, 1995	Dec 21, 1995
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	---	90	75	77	89	---	91
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Matrix Spike Duplicate % Recovery:	---	69	122	74	90	---	91
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Relative % Difference:	---	21	48	4.0	1.1	---	0
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Please Note: Matrix Spike & Dup Data are unavailable for Antimony, Chromium, Zinc, and Lead due to high matrix interference.

GREAT LAKES ANALYTICAL

*Kevin W. Keeley*  
Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: #9236A, Robertson-Ceco  
Matrix: Soil

QC Sample Group: 5121283-1312

Reported: Jan 5, 1996

## QUALITY CONTROL DATA REPORT

ANALYTE	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium
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Method:	3050/6010	7471	3050/6010	3050/7741	3050/6010	3050/6010	3050/6010
Analyst:	I. Graska	A. Mehrabi	I. Graska	S. Jankowski	I. Graska	I. Graska	I. Graska
Concentration:	1.0	0.0010	1.0	0.030	1.0	20	1.0
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

LAB. CONTROL  
SAMPLE DATA

Date Analyzed:	Dec 19, 1996	Dec 19, 1996	Dec 21, 1996	Dec 20, 1995	Dec 19, 1995	Dec 21, 1995	Dec 21, 1995
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	100	100	100	106	91	94	104
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MATRIX SPIKE  
& DUP. DATA

Date Analyzed:	Dec 19, 1996	Dec 19, 1996	Dec 21, 1996	Dec 20, 1995	Dec 19, 1995	Dec 21, 1995	Dec 21, 1995
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	94	98	178	92	81	67	85
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Matrix Spike Duplicate % Recovery:	70	95	132	90	75	58	118
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Relative % Difference:	29	3.1	30	0.38	7.7	14	5.7
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GREAT LAKES ANALYTICAL

*Kevin W. Keeley*  
Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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son Environmental, Inc.  
312 W. Randolph Street  
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Attention: Ed Garske

Client Project ID: #9236A, Robertson-Ceco  
Matrix: Soil

QC Sample Group: 5121283-1312

Reported: Jan 5, 1996

### QUALITY CONTROL DATA REPORT

#### ANALYTE

	Zinc	Cadmium	Lead
--	------	---------	------

Method:	3050/6010	3050/6010	3050/6010
Analyst:	I. Graska	I. Graska	I. Graska
Concentration:	1.0	1.0	1.0
Units:	mg/kg	mg/kg	mg/kg

#### LAB. CONTROL SAMPLE DATA

Date Analyzed:	Dec 21, 1995	Dec 19, 1995	Dec 19, 1995
Instrument I.D.#	1	1	1

LCS% Recovery:	101	90	87
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#### MATRIX SPIKE & DUP. DATA

Date Analyzed:	Dec 21, 1995	Dec 19, 1995	Dec 19, 1995
Instrument I.D.#	1	1	1

Matrix Spike % Recovery:	—	77	—
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Matrix Spike Duplicate % Recovery:	—	79	—
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Relative % Difference:	—	2.6	—
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GREAT LAKES ANALYTICAL

*Kevin W. Keeley*  
Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Robertson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Graska

Client Project ID: 9236A, Robertson - Caco  
Matrix: Soil

QC Sample Group: 5121693-95, 1701, 02, 04

Reported: Dec 27, 1995

### QUALITY CONTROL DATA REPORT

ANALYTE	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium
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Method:	3050/6010	3050/7060	3050/6010	3050/6010	3050/6010	3050/6010	7197
Analyst:	I. Graska	A. Mehrabi	I. Graska	I. Graska	I. Graska	I. Graska	S. Jankowski
Concentration:	1.0	0.30	1.0	1.0	1.0	1.0	0.50
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

#### LAB. CONTROL SAMPLE DATA

Date Analyzed:	Dec 22, 1995	Dec 27, 1995	Dec 22, 1995	Dec 22, 1995	Dec 22, 1995	Dec 22, 1995	Dec 21, 1995
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	87	108	93	89	103	99	107
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#### MATRIX SPIKE & DUP. DATA

Date Analyzed:	Dec 22, 1995	Dec 27, 1995	Dec 22, 1995	Dec 22, 1995	Dec 22, 1995	Dec 22, 1995	Dec 21, 1995
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	—	29	34	74	84	—	93
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Matrix Spike Duplicate % Recovery:	—	99	32	76	84	—	94
------------------------------------	---	----	----	----	----	---	----

Relative % Difference:	—	20	6.1	2.7	0	—	1.6
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Please Note: Antimony, Chromium, Lead, Nickel, Vanadium and Zinc Matrix Spike & Dup QC are unavailable due to high matrix interference.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

5121693.CAR &lt;7&gt;



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Robertson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson - Ceco  
Matrx: Soil

QC Sample Group: 5121693-95, 1701, 02, 04

Reported: Dec 27, 1995

**QUALITY CONTROL DATA REPORT**

ANALYTE	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium
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Method:	3050/6010	7471	3050/6010	3050/7740	3050/6010	3050/6010	3050/6010
Analyst:	I. Graska	A. Mehrabi	I. Graska	A. Mehrabi	I. Graska	I. Graska	I. Graska
Concentration:	1.0	0.0010	1.0	0.015	1.0	1.0	1.0
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Dec 22, 1995	Dec 26, 1995	Dec 22, 1995	Dec 27, 1995	Dec 22, 1995	Dec 22, 1995	Dec 22, 1995
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	103	106	88	101	100	96	106
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**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Dec 22, 1995	Dec 26, 1995	Dec 22, 1995	Dec 27, 1995	Dec 22, 1995	Dec 22, 1995	Dec 22, 1995
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	—	107	—	119	69	75	—
--------------------------	---	-----	---	-----	----	----	---

Matrix Spike Duplicate % Recovery:	—	102	—	27	74	55	—
------------------------------------	---	-----	---	----	----	----	---

Relative % Difference:	—	4.1	—	35	7.0	31	—
------------------------	---	-----	---	----	-----	----	---

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$





1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson - Caco  
Matrix: Soil

QC Sample Group: 5121693-95, 1701, 02, 04

Reported: Dec 27, 1995

### QUALITY CONTROL DATA REPORT

#### ANALYTE

Zinc

Method: 3050/6010  
Analyst: I. Garske  
Concentration: 1.0  
Units: mg/kg

#### LAB. CONTROL SAMPLE DATA

Date Analyzed: Dec 22, 1995  
Instrument I.D.# 1

LCS%  
Recovery: 91

#### MATRIX SPIKE & DUP. DATA

Date Analyzed: Dec 22, 1995  
Instrument I.D.# 1

Matrix Spike  
% Recovery: --

Matrix Spike  
Duplicate %  
Recovery: --

Relative %  
Difference: --

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



# CHAIN-OF-CUSTODY RECORD

No. 6936

R 000507

CARLSON ENVIRONMENTAL, INC.      312 W. Randolph St.      Chicago, IL 60606      (312) 346-2140

PROJ. NO. **97036A**      PROJECT NAME **Robertson-Coco Lemont, IL**

SAMPLERS: (Signature) **Bruce A. Shabino**      **BA Shabino**

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)										REMARKS		
								1	2	3	4	5	6	7	8	9	10		11	12
1	SB-15 A	12/14	0742		X	Soil Sample 1-3 P&S	1	X												
2	SB-15 B		0747		X	3-5	1												hold	5121284
3	SB-15 C		0752		X	5-7	1	X												5121285
4	SB-15 D		0758		X	7-9	1	X												5121286
5	SB-15 E		0802		X	9-11	1												hold	5121287
6	SB-15 F		0809		X	11-13	1												hold	5121288
7	Dup-D				X		1	X												5121289
8	Dup-DA				X		1	X												5121290
9	Dup-D				X		1	X												5121291
10	SB-16 A		0811		X	1-3 P&S	1	X												5121292

Relinquished by (Signature) <b>S.A. Paul</b>	Date/Time <b>12/14/95</b>	Received by (Signature) <b>Kim Kell</b>	REMARKS <b>X Please refer to the attached long list and short list of metals</b>  <b>X For results to Ed Garske</b>
Relinquished by (Signature) <b>Kim Kell</b>	Date/Time <b>12/14/95</b>	Received by (Signature) <b>K. Kell 12/14/95 1615</b>	
Relinquished by (Signature)	Date/Time	Received for Laboratory by (Signature)	



# CHAIN-OF-CUSTODY RECORD

No. 6935

R 000508

CARLSON ENVIRONMENTAL, INC. 312 W. Randolph St. Chicago, IL 60606 (312) 346-2140

PROJ. NO. 91036A PROJECT NAME Robinson-Ceco Lemont, IL

SAMPLERS: (Signature) Bruce A. Shubino BA Shubino

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)											REMARKS					
								None listed in sheets 11 sheet list of metals																
1	SB-16B	11/14	915		X	Soil Sample 3-5 bags	1	X															5121293	
2	SB-16C		1024		X	5-7	1	X																5121294
3	SB-16D		1028		X	7-9	1																held	5121295
4	SB-16F		0936		X	11-13	1																held	5121296
5	SB-17A		1005		X	1-3	1	X																5121297
6	SB-17B		1010		X	3-5	1	X																5121298
7	SB-18A		1025		X	1-3	1	X																5121299
8	SB-18B		1034		X	3-5	1	X																5121300
9	SB-19A		1135		X	1-3	1	X																5121301
10	SB-19B		124		X	3-5	1	X																5121302

Relinquished by (Signature) <u>S.H. Bond</u>	Date/Time <u>11/14 1415</u>	Received by (Signature) <u>K. Kell</u>	REMARKS X Please refer to the attached long list and short list of metals.  X For results to Ed Gorsko
Relinquished by (Signature) <u>K. Kell</u>	Date/Time <u>11/14 1615</u>	Received by (Signature) <u>K. Kell 12/14/95 1615</u>	
Relinquished by (Signature)	Date/Time	Received for Laboratory by (Signature)	



# CHAIN-OF-CUSTODY RECORD

No. 6934

R 000509

CARLSON ENVIRONMENTAL, INC.      312 W. Randolph St.      Chicago, IL 60606      (312) 346-2140

PROJ. NO. **9236A**      PROJECT NAME **Robertson-Celo Lemont, IL**

SAMPLERS: (Signature) **Bruce A. Shabino**      *BAS Shabino*

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)										REMARKS					
								<i>long list of metals</i> <i>short list of metals</i>															
1	B-19C	12/14	1142		X	Soil Sample 5-7 bags	1	X														5121303	
2	B-19D		1153		X	7-9 bags	1															held	5121304
3	B-20A		1152		X	1-3	1	X															5121305
4	B-20B		1137		X	3-5	1	X															5121306
5	B-20D		1249		X	7-9	1	X															5121307
6	B-21A		1330		X	1-3	1	X															5121308
7	B-21B		1210		X	3-5	1	X															5121309
8	B-21C		1346		X	3-7	1	X															5121310
9	B-21D		1355		X	2-9	1															held	5121311
10	B-21EF		1355		X	<del>2-9</del> 11-13	1															held	5121312

Relinquished by (signature) <i>Salt Moh</i>	Date/Time 12/14/95	Received by (signature) <i>Neil Peterson</i>	REMARKS * Please refer to the attached long list and short list of metals * Fax results to Ed Garsko
Relinquished by (signature) <i>Neil Peterson</i>	Date/Time 12/14/95	Received by (signature) K Kell 12/14/95 1615	
Relinquished by (signature)	Date/Time	Received for Laboratory by (signature)	



# CHAIN-OF-CUSTODY RECORD

No. 0936

R 000510

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ. NO.  
9236A

PROJECT NAME  
Robertson - Coco Lemont, IL

NUMBER OF CONTAINERS

ANALYSIS DESIRED  
(INDICATE SEPARATE CONTAINERS)

SAMPLERS: (Signature)

Bruce A. Shabino

BA Shabino

Moos list for metals  
"Short list of metals"

TEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	ANALYSIS DESIRED	REMARKS
1	SB-15 A	12/14	0742		X	Soil Sample 1-3 P&S	X	5121283
2	SB-15 B		0747		X	3-5		hold 5121284
3	SB-15 C		0752		X	5-7	X	5121285
4	SB-15 D		0758		X	7-9	X	5121286
5	SB-15 E		0802		X	9-11		hold 5121287
6	SB-15 F		0809		X	11-13		hold 5121288
7	Dup-2C				X		X	5121289
8	Dup-2A				X		X	5121290
9	Dup-2D				X		X	5121291
10	SB-16A		0811		X	1-3 P&S	X	5121292

Relinquished by (Signature)  
S.A. Bond

Date/Time  
12/14/95

Received by (Signature)  
K. Kell

Relinquished by (Signature)  
S.A. Bond

Date/Time  
12/14/95

Received by (Signature)  
K. Kell 12/14/95 1615

Relinquished by (Signature)

Date/Time

Received for Laboratory by (Signature)

REMARKS  
\* Please refer to the attached long list and short list of metals  
\* Fax results to Ed Garske



# CHAIN-OF-CUSTODY RECORD

No. 6935

R 000511

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ. NO. 98-36A

PROJECT NAME Robertson-Ceco Lemont, IL

SAMPLERS: (Signature)

Bruce A. Shabino BA Shabino

NUMBER OF CONTAINERS

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)

long list of elements  
short list of metals

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED	REMARKS
1	SB-16B	12/14	1415		X	Soil Sample 3-5 1695	1	X	5121293
2	SB-16C		0914		X	5-7	1	X	5121294
3	SB-16D		0928		X	7-9	1		held 5121295
4	SB-16F		0938		X	11-13	1		held 5121296
5	SB-17 A		1005		X	1-3	1	X	5121297
6	SB-17 B		1010		X	3-5	1	X	5121298
7	SB-18 A		1025		X	1-3	1	X	5121299
8	SB-18B		1034		X	3-5	1	X	5121300
9	SB-19A		1135		X	1-3	1	X	5121301
10	SB-19B		1134		X	3-5	1	X	5121302

Requested by (Signature) SA T. Bond

Date/Time 12/14/95

Received by (Signature) K. KOL

Requested by (Signature) K. KOL

Date/Time 12/14/95

Received by (Signature) K. KOL 12/14/95 1615

Requested by (Signature)

Date/Time

Received for Laboratory by (Signature)

REMARKS X Please refer to the attached long list and short list of metals.

X Fax results to Ed Gorsko



# CHAIN-OF-CUSTODY RECORD

No. 6934

R 000512

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ. NO.  
9236A

PROJECT NAME  
Robertson-Celo Lement, IL

NUMBER OF CONTAINERS

ANALYSIS DESIRED  
(INDICATE SEPARATE CONTAINERS)

SAMPLERS: (Signature)

Bruce A. Shabino *BAS Shabino*

*Long list of metals*  
*Short list of metals*

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	ANALYSIS DESIRED	REMARKS
1	B-19C	12/14	1142		X	Soil Sample 5-7 bags	X	5121303
2	B-19D		1153		X	7-9 bags		held 5121304
3	B-20A		1222		X	1-3	X	5121305
4	B-20B		1337		X	3-5	X	5121306
5	B-20D		1244		X	7-9	X	5121307
6	B-21A		1330		X	1-3	X	5121308
7	B-21B		740		X	3-5	X	5121309
8	B-21C		746		X	3-7	X	5121310
9	B-21D		1355		X	7-9		held 5121311
10	B-21E/F		1355		X	<del>7-9</del> 11-13		held 5121312

Relinquished by (Signature)  
*Salt. Paul*

Date/Time  
12/14 11:21

Received by (Signature)  
*Fox*

Relinquished by (Signature)  
*MIR*

Date/Time  
12/14 1615

Received by (Signature)  
K. Kell 12/14/95 1615

Relinquished by (Signature)

Date/Time

Received for Laboratory by (Signature)

REMARKS  
\* Please refer to the attached long list and short list of metals  
\* Fax results to Ed Garske



# CHAIN-OF-CUSTODY RECORD

No. 6919

R 000513

CARLSON ENVIRONMENTAL, INC. 312 W. Randolph St. Chicago, IL 60606 (312) 346-2140

PROJ. NO. 9236A PROJECT NAME *Robinson - Cecc*

SAMPLERS: (Signature) *BA Shabino* BA Shabino

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)				REMARKS	
								LONG	SHORT	OTHER	OTHER		
1	SB-27A	2-20-75	8:12		X	Soil Sample 1-3'	1	X				5121693	
2	SB-27B		8:17		X	3-5'	1	X				5121694	
3	SB-27C		8:21		X	5-7'	1	X				5121695	
4	SB-27D		8:25		X	7-9'	1					5121696	Hold
5	SB-27E		8:28		X	9-11'	1					5121697	Hold
6	SB-27F		8:33		X	11-13'	1					5121698	Hold
7	SB-27G		8:35		X	13-15'	1					5121699	Hold
8	SB-27H		8:40		X	15-16.5'	1					5121700	Hold
9													
10													

Relinquished by (Signature) <i>BA Shabino</i>	Date/Time 2-20-75 11:30	Received by (Signature) <i>JAR Robinson</i>	REMARKS Please refer to attached Long and short Lists for laboratory analyses. Fax results to Ed Garske.  Received ON ICE
Relinquished by (Signature) <i>JAR Robinson</i>	Date/Time 2/20 11:30	Received by (Signature) <i>Howell Arnold</i>	
Relinquished by (Signature)	Date/Time	Received for Laboratory by (Signature)	





# CHAIN-OF-CUSTODY RECORD

No. 6908

R 000514

CARLSON ENVIRONMENTAL, INC.      312 W. Randolph St.      Chicago, IL 60606      (312) 346-2140

PROJ NO. 9236A	PROJECT NAME Robertson - CECO	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) <i>Lead Metals List</i> <i>Sheet Metals List</i>
SAMPLERS. <i>BASH</i>	(Signature) BA. Shabino		

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)	REMARKS
1	SB-27A	12/20/95	9:04		X	Soil Sample 1-3'	1	X	5121701
2	SB-27B		9:07		X	3-5'	1	X	5121702
3	SB-27C		9:10		X	5-7'	1		5121703 Held
4	SB-27D		9:16		X	7-9'	1	X	5121704
5	SB-27E		9:19		X	9-11'	1		5121705 Held
6	SB-27F		9:24		X	11-13'	1		5121706 Held
7									
8									
9									
10									

Retinquished by (Signature) <i>BASH</i>	Date/Time 12-20-95 13:45	Received by (Signature) <i>[Signature]</i>	REMARKS Please refer to attached Log + Sheet Lists For Laboratory Analyses  Fix results to Ed Gorske  Received ON ICE
Retinquished by (Signature) <i>[Signature]</i>	Date/Time 12-20-95 14:00	Received by (Signature) Howell Quinn	
Retinquished by (Signature)	Date/Time	Received for Laboratory by (Signature)	

**GROUND WATER / SURFACE WATER  
LABORATORY REPORTS**



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Water: WS-02  
Lab Number: 512-1135

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 15, 1995  
Reported: Dec 19, 1995

**LABORATORY ANALYSIS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
<b>Lead.....</b>	<b>3015/7421</b>	<b>0.0080</b>	<b>0.036</b>
Mercury.....	7471	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

ison Environmental, Inc.  
2 W. Randolph Street  
Chicago, IL 60606  
Attention: Ed Garske

Client Project ID: 9236A, Robertson Ceco - Lemont, IL  
Sample Descript: Water: WS-05  
Lab Number: 512-1136

Sampled: Dec 12, 1995  
Received: Dec 12, 1995  
Analyzed: Dec 15, 1995  
Reported: Dec 19, 1995

### LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7471	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
Sample Descript: Water: WS-7  
Lab Number: 603-1600

Sampled: Mar 25, 1996  
Received: Mar 25, 1996  
Analyzed: Mar 27-29, 1996  
Reported: Apr 1, 1996

**METALS**

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
<b>Lead.....</b>	<b>3015/7421</b>	<b>0.0050</b>	<b>0.0057</b>
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.50	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Kealey  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
Sample Descript: Water: WS-8  
Lab Number: 603-1603

Sampled: Mar 25, 1996  
Received: Mar 25, 1996  
Analyzed: Mar 27-29, 1996  
Reported: Apr 1, 1996

**METALS**

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
<b>Lead.....</b>	<b>3015/7421</b>	<b>0.0050</b>	<b>0.0070</b>
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.50	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carbon Environmental, Inc.  
3 V. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
Sample Descript: Water: WS-9

Sampled: Mar 25, 1996  
Received: Mar 25, 1996

Lab Number: 603-1604

Analyzed: Mar 27-29, 1996  
Reported: Apr 1, 1996

**METALS**

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
<b>Chromium.....</b>	<b>3015/6010</b>	<b>0.010</b>	<b>0.038</b>
<b>Lead.....</b>	<b>3015/7421</b>	<b>0.0050</b>	<b>0.037</b>
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.50	N.D.
<b>Vanadium.....</b>	<b>3015/6010</b>	<b>0.10</b>	<b>0.17</b>
Zinc.....	3015/6010	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director

6031599.CAR &lt;7&gt;



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
 Sample Descript: Water: WS-10  
 Lab Number: 603-1605

Sampled: Mar 25, 1996  
 Received: Mar 25, 1996  
 Analyzed: Mar 27-29, 1996  
 Reported: Apr 1, 1996

**METALS**

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
<b>Lead.....</b>	<b>3015/7421</b>	<b>0.0050</b>	<b>0.013</b>
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.50	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director





1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
Matrix: Soil  
Method: Metals  
QC Sample Group: 6031599, 1601-1602, 1606

Reported: Apr 1, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead
---------	----------	---------	--------	-----------	---------	----------	------

Method:	3050/6010	3050/7060	3050/6010	3050/6010	3050/6010	3050/6010	3050/6010
Analyst:	I. Graska	A. Mehrabi	I. Graska	I. Graska	I. Graska	I. Graska	I. Graska
Concentration:	1.0	0.030	1.0	1.0	1.0	1.0	1.0
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Mar 27, 1996	Mar 28, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	92	89	98	99	99	101	99
Control Limits:	80-120	80-120	80-120	80-120	80-120	80-120	80-120

**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Mar 27, 1996	Mar 28, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	7.5	100	90	86	91	79	75
--------------------------	-----	-----	----	----	----	----	----

Matrix Spike Duplicate % Recovery:	8.4	93	89	84	88	78	74
------------------------------------	-----	----	----	----	----	----	----

Relative % Difference:	11	2.8	1.1	2.4	3.4	1.3	1.3
------------------------	----	-----	-----	-----	-----	-----	-----

Control Limits:	74-116	64-117	64-114	76-101	75-95	78-106	75-99
-----------------	--------	--------	--------	--------	-------	--------	-------

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
Matrix: Soil  
Method: Metals  
QC Sample Group: 6031599, 1601-1602, 1606

Reported: Apr 1, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
---------	---------	--------	----------	--------	----------	----------	------

Method:	7471	3015/6010	3015/7740	3015/6010	3015/6010	3015/6010	3015/6010
Analyst:	A. Mehrabi	I. Graska	A. Mehrabi	I. Graska	I. Graska	I. Graska	I. Graska
Concentration:	0.0010	1.0	0.030	1.0	2.0	1.0	1.0
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Mar 29, 1996	Mar 27, 1996	Mar 28, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	95	97	96	90	94	101	100
Control Limits:	80-120	80-120	80-120	80-120	80-120	80-120	80-120

**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Mar 29, 1996	Mar 27, 1996	Mar 28, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	91	75	62	58	72	92	84
--------------------------	----	----	----	----	----	----	----

Matrix Spike Duplicate % Recovery:	95	74	67	61	67	89	80
------------------------------------	----	----	----	----	----	----	----

Relative % Difference:	2.7	1.3	7.1	5.0	7.2	3.3	4.9
------------------------	-----	-----	-----	-----	-----	-----	-----

Control Limits:	90-109	65-104	59-125	50-110	63-135	75-125	80-102
-----------------	--------	--------	--------	--------	--------	--------	--------

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

son Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.  
Matrix: Water  
Method: Metals  
QC Sample Group: 6031600, 1603-1605

Reported: Apr 1, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead
---------	----------	---------	--------	-----------	---------	----------	------

Method:	3015/6010	3015/7060	3015/6010	3015/6010	3015/6010	3015/6010	3015/7421
Analyst:	I. Graska	A. Mehrabi	I. Graska	I. Graska	I. Graska	I. Graska	A. Mehrabi
Concentration:	1.0	0.030	1.0	1.0	1.0	1.0	0.030
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	100	101	102	100	103	104	107
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Control Limits:	80-120	80-120	80-120	80-120	80-120	80-120	80-120
-----------------	--------	--------	--------	--------	--------	--------	--------

**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	103	104	102	99	100	98	97
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Matrix Spike Duplicate % Recovery:	105	102	104	99	100	96	98
------------------------------------	-----	-----	-----	----	-----	----	----

Relative % Difference:	1.9	1.2	1.9	0	0	2.1	0.49
------------------------	-----	-----	-----	---	---	-----	------

Control Limits:	80-107	75-107	65-99	79-117	82-98	75-96	79-101
-----------------	--------	--------	-------	--------	-------	-------	--------

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Wilson Environmental, Inc.  
312 W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson, CECO Corp.

Matrix: Water

Method: Metals

QC Sample Group: 6031600, 1603-1605

Reported: Apr 1, 1996

## QUALITY CONTROL DATA REPORT

ANALYTE	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
---------	---------	--------	----------	--------	----------	----------	------

Method:	7470	3015/6010	3015/7740	3015/6010	3015/6010	3015/6010	3015/6010
Analyst:	A. Mehrabi	I. Graska	A. Mehrabi	I. Graska	I. Graska	I. Graska	I. Graska
Concentration:	0.0010	1.0	0.030	1.0	2.0	1.0	1.0
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

LAB. CONTROL  
SAMPLE DATA

Date Analyzed:	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	100	103	107	99	102	103	103
Control Limits:	80-120	80-120	80-120	80-120	80-120	80-120	80-120

MATRIX SPIKE  
& DUP. DATA

Date Analyzed:	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996	Mar 27, 1996
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	102	92	99	12	92	102	106
--------------------------	-----	----	----	----	----	-----	-----

Matrix Spike Duplicate % Recovery:	106	92	98	16	87	103	108
------------------------------------	-----	----	----	----	----	-----	-----

Relative % Difference:	3.8	0	1.4	29	5.6	0.98	1.9
------------------------	-----	---	-----	----	-----	------	-----

Control Limits:	84-107	84-109	33-117	68-98	71-129	75-125	53-145
-----------------	--------	--------	--------	-------	--------	--------	--------

GREAT LAKES ANALYTICAL

*[Signature]*  
Kevin W. Keeley  
Laboratory Director

$$\% \text{ Recovery} = \frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference} = \frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$$



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: January 23, 1996

ison Environmental, Inc.  
 372 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Project: #9236A

Enclosed are the results from 5 water samples received at Great Lakes Analytical on January 17, 1996. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
6011107	Water: Old Well #1	1/16/96	Total Metals Dissolved Metals
6011108	Water: Old Well #2	1/16/96	Total Metals Dissolved Metals
6011109	Water: Old Well #3	1/16/96	Total Metals Dissolved Metals
6011110	Water: Old Well #4	1/16/96	Total Metals Dissolved Metals
6011111	Water: MW-K	1/16/96	Total Metals Dissolved Metals

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: January 24, 1996

son Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Project: 9236A, Robertson-Ceco Lemont Site

Enclosed are the results from 6 water samples received at Great Lakes Analytical on January 18, 1996. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
6011181	Water: MW-J	1/17/96	Dissolved Metals Total Metals
6011182	Water: MW-B	1/17/96	Dissolved Metals Total Metals
6011183	Water: MW-C	1/17/96	Dissolved Metals Total Metals
6011184	Water: MW-D	1/17/96	Dissolved Metals Total Metals
6011185	Water: Dup-1	1/17/96	Dissolved Metals Total Metals
6011186	Water: FB-1	1/17/96	Dissolved Metals Total Metals

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: Old Well #1  
 Lab Number: 601-1107

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996  
 Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic .....	3015/7060	0.050	N.D.
Barium .....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium .....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead .....	3015/7421	0.0050	N.D.
Mercury .....	7470	0.0020	N.D.
Nickel .....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

  
 Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 170 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: Old Well #2

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996

Lab Number: 601-1108

Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic .....	3015/7060	0.050	N.D.
Barium .....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium .....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead .....	3015/7421	0.0050	N.D.
Mercury .....	7470	0.0020	N.D.
Nickel .....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director





1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 100 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: Old Well #3  
 Lab Number: 601-1109

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996  
 Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic .....	3015/7060	0.050	N.D.
Barium .....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium .....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead .....	3015/7421	0.0050	N.D.
Mercury .....	7470	0.0020	N.D.
Nickel .....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 217 W. Randolph Street  
 Jago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: Old Well #4  
 Lab Number: 601-1110

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996  
 Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic .....	3015/7060	0.050	N.D.
Barium .....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium .....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead .....	3015/7421	0.0050	N.D.
Mercury .....	7470	0.0020	N.D.
Nickel .....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



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(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 1 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: MW-K  
 Lab Number: 601-1111

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996  
 Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic .....	3015/7060	0.050	N.D.
Barium .....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium .....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead .....	3015/7421	0.0050	N.D.
Mercury .....	7470	0.0020	N.D.
Nickel .....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

*Kevin W. Keeley*  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: Old Well #1

Lab Number: 601-1107

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996

Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: Old Well #2

Lab Number: 601-1108

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996

Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

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Carlson Environmental, Inc.  
100 W. Randolph Street  
Chicago, IL 60606  
Attention: Sam Bodine

Client Project ID: #9236A  
Sample Descript: Water: Old Well #3  
Lab Number: 601-1109

Sampled: Jan 16, 1996  
Received: Jan 17, 1996  
Analyzed: Jan 18-23, 1996  
Reported: Jan 23, 1996

**DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Laboratory Director



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Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: Old Well #4

Lab Number: 601-1110

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996

Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
 Laboratory Director



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Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: #9236A  
 Sample Descript: Water: MW-K  
 Lab Number: 601-1111

Sampled: Jan 16, 1996  
 Received: Jan 17, 1996  
 Analyzed: Jan 18-23, 1996  
 Reported: Jan 23, 1996

**DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



son Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

 Client Project ID: #9236A  
 Matrix: Water

QC Sample Group: 6011107-1111

Reported: Jan 23, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead
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Method:	3015/6010	3015/7060	3015/6010	3015/6010	3015/6010	3015/6010	3015/7421
Analyst:	I. Graska	S. Jankowski	I. Graska	I. Graska	I. Graska	I. Graska	A. Mehrabi
Concentration:	2.0	0.030	1.0	1.0	0.50	1.0	0.030
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Jan 23, 1996	Jan 19, 1996	Jan 22, 1996	Jan 23, 1996	Jan 22, 1996	Jan 22, 1996	Jan 19, 1996
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	96	103	102	99	103	105	100
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**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Jan 23, 1996	Jan 19, 1996	Jan 22, 1996	Jan 23, 1996	Jan 22, 1996	Jan 22, 1996	Jan 19, 1996
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	97	108	102	96	98	95	108
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Matrix Spike Duplicate % Recovery:	96	103	99	96	99	96	104
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Relative % Difference:	1.0	4.7	3.0	0	1.0	1.0	3.3
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**GREAT LAKES ANALYTICAL**

 Kevin W. Keeley  
 Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Environmental, Inc.  
5... W. Randolph Street  
Chicago, IL 60606  
Attention: Sam Bodine

Client Project ID: #9236A  
Matrix: Water

QC Sample Group: 6011107-1111

Reported: Jan 23, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
---------	---------	--------	----------	--------	----------	----------	------

<b>Method:</b>	7470	3015/6010	3015/7740	3015/6010	3015/6010	3015/6010	3015/6010
<b>Analyst:</b>	A. Mahrabi	I. Graska	S. Jankowski	I. Graska	I. Graska	I. Graska	I. Graska
<b>Concentration:</b>	0.0010	1.0	0.030	0.50	2.0	1.0	1.0
<b>Units:</b>	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

**LAB. CONTROL SAMPLE DATA**

<b>Date Analyzed:</b>	Jan 18, 1996	Jan 23, 1996	Jan 20, 1996	Jan 22, 1996	Jan 23, 1996	Jan 23, 1996	Jan 23, 1996
<b>Instrument I.D.#</b>	1	1	1	1	1	1	1

<b>LCS% Recovery:</b>	91	99	105	106	96	104	99
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**MATRIX SPIKE & DUP. DATA**

<b>Date Analyzed:</b>	Jan 18, 1996	Jan 23, 1996	Jan 20, 1996	Jan 22, 1996	Jan 23, 1996	Jan 23, 1996	Jan 23, 1996
<b>Instrument I.D.#</b>	1	1	1	1	1	1	1

<b>Matrix Spike % Recovery:</b>	98	88	99	3.4	90	101	98
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<b>Matrix Spike Duplicate % Recovery:</b>	97	85	97	3.8	62	98	97
---	----	----	----	-----	----	----	----

<b>Relative % Difference:</b>	1.0	3.5	1.7	11	37	3.0	1.0
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GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

<b>% Recovery:</b>	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
<b>Relative % Difference:</b>	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



# CHAIN-OF-CUSTODY RECORD

No. 6024

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ. NO. 4236A	PROJECT NAME Robertson-Ceco Site/Leasit	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) Total Metals * Dissolved Metals ** Please Filter
SAMPLERS: (Signature) Samuel T. Bodine <i>Sam T. Bodine</i>			

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	ANALYSIS DESIRED	REMARKS
1	old well #1	4/16			L	ground water sample	X +	6011107
2	old well #2				L		+ +	6011108
3	old well #3				L		+ +	6011109
4	old well #4				L		+ +	6011110
5	MW-K				L		+ +	6011111
6								
7								
8								
9								
10								

Relinquished by (Signature) <i>Sam T. Bodine</i>	Date/Time 4/17/96	Received by (Signature) <i>MR. [Signature]</i>	REMARKS Please Fax results to Peter Barrys @ 312/346-6956 * Please note the attached list of metals. Also please filter the unfiltered samples for dissolved metals. 5 day TAT
Relinquished by (Signature) <i>MR. [Signature]</i>	Date/Time 4/17/96	Received by (Signature) K. Knell 4/17/96	
Relinquished by (Signature)	Date/Time	Received for Laboratory by (Signature)	



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lemont Site  
Sample Descript: Water: MW-B  
Lab Number: 601-1182

Sampled: Jan 17, 1996  
Received: Jan 18, 1996  
Analyzed: Jan 19-23, 1996  
Reported: Jan 24, 1996

**LABORATORY ANALYSIS: DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carson Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson-Cecco Lemont Site  
Sample Descript: Water: MW-C  
Lab Number: 601-1183

Sampled: Jan 17, 1996  
Received: Jan 18, 1996  
Analyzed: Jan 19-23, 1996  
Reported: Jan 24, 1996

LABORATORY ANALYSIS: DISSOLVED METALS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
N. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lemont Site  
Sample Descript: Water: MW-D

Sampled: Jan 17, 1996  
Received: Jan 18, 1996

Lab Number: 601-1184

Analyzed: Jan 19-23, 1996  
Reported: Jan 24, 1996

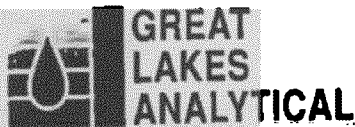
### LABORATORY ANALYSIS: DISSOLVED METALS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium .....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury .....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
N. Randolph Street  
Chicago, IL 60606

Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lamont Site  
Sample Descript: Water: MW-J

Lab Number: 601-1181

Sampled: Jan 17, 1996  
Received: Jan 18, 1996

Analyzed: Jan 19-23, 1996  
Reported: Jan 24, 1996

**LABORATORY ANALYSIS: DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 170 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-J  
 Lab Number: 601-1181

Sampled: Jan 17, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 24, 1996

**LABORATORY ANALYSIS: TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director





1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-B  
 Lab Number: 601-1182

Sampled: Jan 17, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 24, 1996

**LABORATORY ANALYSIS: TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
 Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

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Carlson Environmental, Inc.  
 100 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson-Caco Lemont Site  
 Sample Descript: Water: MW-C  
 Lab Number: 601-1183

Sampled: Jan 17, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 24, 1996

**LABORATORY ANALYSIS: TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium .....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury .....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lemont Site  
Sample Descript: Water: MW-D  
Lab Number: 601-1184

Sampled: Jan 17, 1996  
Received: Jan 18, 1996  
Analyzed: Jan 19-23, 1996  
Reported: Jan 24, 1996

LABORATORY ANALYSIS: TOTAL METALS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lemont Site  
Sample Descript: Water: Dup-1  
Lab Number: 601-1185

Sampled: Jan 17, 1996  
Received: Jan 18, 1996  
Analyzed: Jan 19-23, 1996  
Reported: Jan 24, 1996

**LABORATORY ANALYSIS: DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium .....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury .....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: FB-1  
 Lab Number: 601-1186

Sampled: Jan 17, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 24, 1996

**LABORATORY ANALYSIS: DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Antimony.....	3015/6010	0.10	N.D.
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Beryllium.....	3015/6010	0.010	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3050/6010	0.010	N.D.
Lead.....	3015/7421	0.0050	N.D.
Mercury.....	7470	0.0020	N.D.
Nickel.....	3015/6010	0.050	N.D.
Selenium.....	3015/7740	0.050	N.D.
Silver.....	3015/6010	0.010	N.D.
Thallium.....	3015/6010	0.20	N.D.
Vanadium.....	3015/6010	0.10	N.D.
Zinc.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
 Laboratory Director

Ison Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

 Client Project ID: 9236A, Robertson-Ceco Lemont Site  
 Matrix: Water

QC Sample Group: 6011181-1186

Reported: Jan 24, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead
---------	----------	---------	--------	-----------	---------	----------	------

Method:	3015/6010	3015/7050	3015/6010	3015/6010	3015/6010	3015/6010	3015/7421
Analyst:	I. Graske	S. Jankowski	I. Graske	I. Graske	I. Graske	I. Graske	S. Jankowski
Concentration:	2.0	0.030	1.0	1.0	0.50	1.0	0.030
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Jan 23, 1996	Jan 19, 1996	Jan 22, 1996	Jan 23, 1996	Jan 22, 1996	Jan 22, 1996	Jan 19, 1996
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	97	100	99	98	100	100	100
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**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Jan 23, 1996	Jan 19, 1996	Jan 22, 1996	Jan 23, 1996	Jan 22, 1996	Jan 22, 1996	Jan 19, 1996
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	96	111	100	98	99	97	103
--------------------------	----	-----	-----	----	----	----	-----

Matrix Spike Duplicate % Recovery:	95	108	102	99	101	100	104
------------------------------------	----	-----	-----	----	-----	-----	-----

Relative % Difference:	0.37	3.2	2.0	1.0	2.7	3.0	1.2
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GREAT LAKES ANALYTICAL


 Kevin W. Keeley  
 Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Ison Environmental, Inc.  
 2 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Peter Barys

Client Project ID: 9236A, Robertson-Ceco Lemont Site  
 Matrix: Water

QC Sample Group: 6011181-1186

Reported: Jan 24, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
---------	---------	--------	----------	--------	----------	----------	------

<b>Method:</b>	7470	3015/6010	3015/7740	3015/6010	3015/6010	3015/6010	3015/6010
<b>Analyst:</b>	A. Mehrabi	I. Graska	S. Jankowski	I. Graska	I. Graska	I. Graska	I. Graska
<b>Concentration:</b>	0.0010	1.0	0.030	0.50	2.0	1.0	1.0
<b>Units:</b>	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

**LAB. CONTROL  
 SAMPLE DATA**

<b>Date Analyzed:</b>	Jan 22, 1996	Jan 23, 1996	Jan 19, 1996	Jan 22, 1996	Jan 23, 1996	Jan 23, 1996	Jan 23, 1996
<b>Instrument I.D.#</b>	1	1	1	1	1	1	1

<b>LCS% Recovery:</b>	100	97	99	103	92	104	100
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**MATRIX SPIKE  
 & DUP. DATA**

<b>Date Analyzed:</b>	Jan 22, 1996	Jan 23, 1996	Jan 19, 1996	Jan 22, 1996	Jan 23, 1996	Jan 23, 1996	Jan 23, 1996
<b>Instrument I.D.#</b>	1	1	1	1	1	1	1

<b>Matrix Spike % Recovery:</b>	100	96	98	9.5	96	102	98
---------------------------------	-----	----	----	-----	----	-----	----

<b>Matrix Spike Duplicate % Recovery:</b>	100	97	100	15	86	103	99
---	-----	----	-----	----	----	-----	----

<b>Relative % Difference:</b>	0	1.0	1.7	43	12	98	1.0
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GREAT LAKES ANALYTICAL

Kevin W. Keeley  
 Laboratory Director

<b>% Recovery:</b>	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
<b>Relative % Difference:</b>	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



# CHAIN-OF-CUSTODY RECORD

No. 6892

R 00053

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ. NO.  
7036A

PROJECT NAME  
Robertson-Ceco

Lament site

NUMBER OF CONTAINERS

ANALYSIS DESIRED  
(INDICATE SEPARATE CONTAINERS)

Total Metals \*  
Dissolved Metals \*

SAMPLERS: (Signature)  
Samuel T. Budine

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED	REMARKS
1	MW-J	4/7			X	Ground H <sub>2</sub> O Samples	2	X X	6011181
2	MW-B				X		2	X X	6011182
3	MW-C				X		2	X X	6011183
4	MW-D				X		2	X X	6011184
5	Dup-1				X		2	X X	6011185
6	FB-1				X		2	X X	6011186
7									
8									
9									
10									

Relinquished by (Signature) S. A. Budine	Date/Time 4/8/87	Received by (Signature) [Signature]
Relinquished by (Signature) [Signature]	Date/Time 4/8/85	Received by (Signature) Nowell Arnold
Relinquished by (Signature)	Date/Time	Received for Laboratory by (Signature)

REMARKS  
 Please Fax results to Pete Barrys @ 312-346-6956  
 \* Please note the attached list of metals  
 Please Filter the unfiltered samples for dissolved metals  
 5 day TAT Received ON ICE





1380 Busch Parkway - Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Date: January 26, 1996

son Environmental, Inc.  
 512 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Project: 9233A, Robertson-Ceco Lemont Site

Enclosed are the results from 6 water samples received at Great Lakes Analytical on January 18, 1996. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
6011175	Water: MW-D1	1/18/96	Dissolved Metals Total Metals Chloride, EPA 330.3 Organic Carbon, EPA 415.1 pH by EPA 9040 Phenol, EPA 420.4 Specific Conductance Sulfate, EPA 375.2 Total Organic Halogens
6011176	Water: MW-D2	1/18/96	Dissolved Metals Total Metals Chloride, EPA 330.3 Organic Carbon, EPA 415.1 pH by EPA 9040 Phenol, EPA 420.4 Specific Conductance Sulfate, EPA 375.2 Total Organic Halogens
6011177	Water: MW-D3	1/18/96	Dissolved Metals Total Metals Chloride, EPA 330.3 Organic Carbon, EPA 415.1 pH by EPA 9040 Phenol, EPA 420.4 Specific Conductance Sulfate, EPA 375.2 Total Organic Halogens
6011178	Water: MW-D4	1/18/96	Dissolved Metals Total Metals Chloride, EPA 330.3 Organic Carbon, EPA 415.1 pH by EPA 9040 Phenol, EPA 420.4

<b>SAMPLE#</b>	<b>SAMPLE DESCRIPTION</b>	<b>DATE OF COLLECTION</b>	<b>TEST METHOD</b>
6011178	Water: MW-D4	1/18/96	Specific Conductance Sulfate, EPA 375.2 Total Organic Halogens
6011179	Water: MW-D5	1/18/96	Dissolved Metals Total Metals Chloride, EPA 330.3 Organic Carbon, EPA 415.1 pH by EPA 9040 Phenol, EPA 420.4 Specific Conductance Sulfate, EPA 375.2 Total Organic Halogens
6011180	Water: Dup-1	1/18/96	Dissolved Metals Total Metals Chloride, EPA 330.3 Organic Carbon, EPA 415.1 pH by EPA 9040 Phenol, EPA 420.4 Specific Conductance Sulfate, EPA 375.2 Total Organic Halogens

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

**GREAT LAKES ANALYTICAL**

Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Carlson Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
Sample Descript: Water: MW-D1  
Lab Number: 601-1175

Sampled: Jan 18, 1996  
Received: Jan 18, 1996  
Analyzed: Jan 19-23, 1996  
Reported: Jan 26, 1996

**LABORATORY ANALYSIS: DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
<b>Iron.....</b>	<b>3015/6010</b>	<b>0.050</b>	<b>0.98</b>
Lead.....	3015/7421	0.0050	N.D.
Manganese.....	3015/6010	0.10	N.D.
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>35</b>

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

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Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D2  
 Lab Number: 601-1176

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

### LABORATORY ANALYSIS: DISSOLVED METALS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Iron.....	3015/6010	0.050	N.D.
Lead.....	3015/7421	0.0050	N.D.
Manganese.....	3015/6010	0.10	N.D.
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>24</b>

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

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Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D3  
 Lab Number: 601-1177

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

### LABORATORY ANALYSIS: DISSOLVED METALS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
<b>Iron.....</b>	<b>3015/6010</b>	<b>0.050</b>	<b>0.17</b>
Lead.....	3015/7421	0.0050	N.D.
<b>Manganese.....</b>	<b>3015/6010</b>	<b>0.10</b>	<b>0.18</b>
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/8010</b>	<b>0.50</b>	<b>40</b>

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
 Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

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Carlson Environmental, Inc.  
 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D4  
 Lab Number: 601-1178

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

### LABORATORY ANALYSIS: DISSOLVED METALS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
<b>Iron.....</b>	<b>3015/6010</b>	<b>0.050</b>	<b>1.6</b>
Lead.....	3015/7421	0.0050	N.D.
<b>Manganese.....</b>	<b>3015/6010</b>	<b>0.10</b>	<b>0.12</b>
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3080/6010</b>	<b>0.50</b>	<b>30</b>

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

  
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 Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D5  
 Lab Number: 601-1179

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

**LABORATORY ANALYSIS: DISSOLVED METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Iron.....	3015/6010	0.050	N.D.
Lead.....	3015/7421	0.0050	N.D.
Manganese.....	3015/6010	0.10	N.D.
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>38</b>

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: Dup-1  
 Lab Number: 601-1180

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

### LABORATORY ANALYSIS: DISSOLVED METALS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
<b>Iron.....</b>	<b>3015/6010</b>	<b>0.050</b>	<b>2.5</b>
Lead.....	3015/7421	0.0050	N.D.
<b>Manganese.....</b>	<b>3015/6010</b>	<b>0.10</b>	<b>0.12</b>
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>28</b>

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D1  
 Lab Number: 601-1175

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

**LABORATORY ANALYSIS: TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Hexavalent Chromium.....	7197	0.020	N.D.
<b>Iron.....</b>	<b>3015/6010</b>	<b>0.050</b>	<b>1.9</b>
Lead.....	3015/7421	0.0050	N.D.
Manganese.....	3015/6010	0.10	N.D.
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>36</b>

Analytes reported as N.D. were not present above the stated limit of detection.

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Carlson Environmental, Inc.  
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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D2  
 Lab Number: 601-1176

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

**LABORATORY ANALYSIS: TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Hexavalent Chromium.....	7197	0.020	N.D.
Iron.....	3015/6010	0.050	0.15
Lead.....	3015/7421	0.0050	N.D.
Manganese.....	3015/6010	0.10	N.D.
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Sodium.....	3050/6010	0.50	25

Analytes reported as N.D. were not present above the stated limit of detection.

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Carlson Environmental, Inc.  
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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D3  
 Lab Number: 601-1177

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

**LABORATORY ANALYSIS: TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Hexavalent Chromium.....	7197	0.020	N.D.
Iron.....	3015/6010	0.050	1.3
Lead.....	3015/7421	0.0050	N.D.
Manganese.....	3015/6010	0.10	0.18
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
Sodium.....	3050/6010	0.50	49

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D4  
 Lab Number: 601-1178


Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

**LABORATORY ANALYSIS: TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Hexavalent Chromium.....	7197	0.020	N.D.
<b>Iron.....</b>	<b>3015/6010</b>	<b>0.050</b>	<b>6.6</b>
Lead.....	3015/7421	0.0050	N.D.
<b>Manganese.....</b>	<b>3015/6010</b>	<b>0.10</b>	<b>0.14</b>
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>3</b>

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: MW-D5  
 Lab Number: 601-1179

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

### LABORATORY ANALYSIS: TOTAL METALS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Hexavalent Chromium.....	7197	0.020	N.D.
<b>Iron.....</b>	<b>3015/6010</b>	<b>0.050</b>	<b>0.088</b>
Lead.....	3015/7421	0.0050	N.D.
Manganese.....	3015/6010	0.10	N.D.
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>39</b>

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water: Dup-1  
 Lab Number: 601-1180

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19-23, 1996  
 Reported: Jan 26, 1996

**LABORATORY ANALYSIS: TOTAL METALS**

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Arsenic .....	3015/7060	0.050	N.D.
Barium.....	3015/6010	0.050	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	N.D.
Hexavalent Chromium.....	7197	0.020	N.D.
<b>Iron.....</b>	<b>3015/6010</b>	<b>0.050</b>	<b>6.5</b>
Lead.....	3015/7421	0.0050	N.D.
<b>Manganese.....</b>	<b>3015/6010</b>	<b>0.10</b>	<b>0.14</b>
Mercury.....	7470	0.0020	N.D.
Selenium.....	3015/7740	0.010	N.D.
Sliver.....	3015/6010	0.050	N.D.
<b>Sodium.....</b>	<b>3050/6010</b>	<b>0.50</b>	<b>30</b>

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water  
 Analysis for: Chloride, EPA 330.3  
 First Sample #: 601-1175

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 24, 1996  
 Reported: Jan 25, 1996

**LABORATORY ANALYSIS FOR: Chloride, EPA 330.3**

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
601-1175	MW-D1	1.0	30
601-1176	MW-D2	1.0	9.0
601-1177	MW-D3	1.0	44
601-1178	MW-D4	1.0	18
601-1179	MW-D5	1.0	7.8
601-1180	Dup-1	1.0	18

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Carlson Environmental, Inc.  
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 Chicago, IL 60606  
 Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water  
 Analysis for: Non-Purgeable Organic Carbon, EPA 415.1  
 First Sample #: 601-1175

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 23, 1996  
 Reported: Jan 25, 1996

**LABORATORY ANALYSIS FOR: Non-Purgeable Organic Carbon, EPA 415.1**

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
601-1175	MW-D1	1.0	2.1
601-1176	MW-D2	1.0	N.D.
601-1177	MW-D3	1.0	1.3
601-1178	MW-D4	1.0	1.1
601-1179	MW-D5	1.0	1.4
601-1180	Dup-1	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Please Note:

The Organic Carbon analysis was subcontracted to North Creek Analytical in Bothell WA.





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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water  
 Analysis for: pH by EPA 9040  
 First Sample #: 601-1175

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 19, 1996  
 Reported: Jan 25, 1996

**LABORATORY ANALYSIS FOR: pH by EPA 9040**

Sample Number	Sample Description	Sample Result pH units	Temperature °C
601-1175	MW-D1	7.6	13
601-1176	MW-D2	8.8	12
601-1177	MW-D3	7.7	13
601-1178	MW-D4	7.7	16
601-1179	MW-D5	8.2	14
601-1180	Dup-1	7.3	15

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Carlson Environmental, Inc.  
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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water  
 Analysis for: Phenol, EPA 420.4  
 First Sample #: 601-1175

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 18, 1996  
 Reported: Jan 25, 1996

**LABORATORY ANALYSIS FOR: Phenol, EPA 420.4**

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
601-1175	MW-D1	0.030	N.D.
601-1176	MW-D2	0.030	N.D.
601-1177	MW-D3	0.030	N.D.
601-1178	MW-D4	0.030	N.D.
601-1179	MW-D5	0.030	N.D.
601-1180	Dup-1	0.030	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

**GREAT LAKES ANALYTICAL**

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Carlson Environmental, Inc.  
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Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water  
 Analysis for: Specific Conductance, EPA 120.1  
 First Sample #: 601-1175

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 18, 1996  
 Reported: Jan 25, 1996

**LABORATORY ANALYSIS FOR: Specific Conductance, EPA 120.1**

Sample Number	Sample Description	Sample Result mhos/cm
601-1175	MW-D1	1,000
601-1176	MW-D2	600
601-1177	MW-D3	1,000
601-1178	MW-D4	1,100
601-1179	MW-D5	820
601-1180	Dup-1	1,000

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Carlson Environmental, Inc.  
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 Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water  
 Analysis for: Sulfate, EPA 375.2  
 First Sample #: 601-1175

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 24, 1996  
 Reported: Jan 25, 1996

**LABORATORY ANALYSIS FOR: Sulfate, EPA 375.2**

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
601-1175	MW-D1	5.0	280
601-1176	MW-D2	5.0	220
601-1177	MW-D3	5.0	330
601-1178	MW-D4	5.0	330
601-1179	MW-D5	5.0	270
601-1180	Dup-1	5.0	330

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 Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Sample Descript: Water  
 Analysis for: Total Organic Halogens, EPA 9020  
 First Sample #: 601-1175

Sampled: Jan 18, 1996  
 Received: Jan 18, 1996  
 Analyzed: Jan 25, 1996  
 Reported: Jan 25, 1996

**LABORATORY ANALYSIS FOR: Total Organic Halogens, EPA 9020**

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
601-1175	MW-D1	0.010	0.091
601-1176	MW-D2	0.010	0.014
601-1177	MW-D3	0.010	N.D.
601-1178	MW-D4	0.010	N.D.
601-1179	MW-D5	0.010	N.D.
601-1180	Dup-1	0.010	0.086

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

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Environmental, Inc.  
 301 W. Randolph Street  
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 Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Matrix: Water

QC Sample Group: 6011175-1180

Reported: Jan 25, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Arsenic	Barium	Cadmium	Chromium	Hexavalent Chromium	Iron	Lead
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Method:	3015/7060	3015/6010	3015/6010	3015/6010	7196	3015/6010	3015/6010
Analyst:	S. Jankowski	I. Graska	I. Graska	I. Graska	A. Mehrabi	I. Graska	S. Jankowski
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Jan 19, 1996	Jan 22, 1996	Jan 22, 1996	Jan 22, 1996	Jan 19, 1996	Jan 23, 1996	Jan 19, 1996
Instrument I.D.#	1	1	1	1	1	1	1

LCS% Recovery:	100	99	100	100	95	96	100
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**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Jan 19, 1996	Jan 22, 1996	Jan 22, 1996	Jan 22, 1996	Jan 19, 1996	Jan 23, 1996	Jan 19, 1996
Instrument I.D.#	1	1	1	1	1	1	1

Matrix Spike % Recovery:	111	100	99	97	98	94	103
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Matrix Spike Duplicate % Recovery:	108	102	101	100	106	95	104
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Relative % Difference:	3.2	2.0	2.7	3.0	7.9	1.1	1.2
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 Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

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 Attention: Sam Bodine

 Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Matrix: Water

QC Sample Group: 6011175-1180

Reported: Jan 25, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Manganese	Mercury	Selenium	Silver	Sodium
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Method:	3015/6010	7470	3015/7740	3015/6010	3015/6010
Analyst:	I. Graske	A. Mehrabi	S. Jankowski	I. Graske	I. Graske
Concentration:	1.0	0.0010	0.030	0.50	2.0
Units:	mg/L	mg/L	mg/L	mg/L	mg/L

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Jan 23, 1996	Jan 22, 1996	Jan 19, 1996	Jan 22, 1996	Jan 23, 1996
Instrument I.D.#	1	1	1	1	1

LCS% Recovery:	98	100	99	103	82
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**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Jan 23, 1996	Jan 22, 1996	Jan 19, 1996	Jan 22, 1996	Jan 23, 1996
Instrument I.D.#	1	1	1	1	1

Matrix Spike % Recovery:	96	100	98	9.5	81
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Matrix Spike Duplicate % Recovery:	97	100	100	15	82
------------------------------------	----	-----	-----	----	----

Relative % Difference:	1.0	0	1.7	43	2.8
------------------------	-----	---	-----	----	-----

**GREAT LAKES ANALYTICAL**
  
 Kevin W. Keeley  
 Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

on Environmental, Inc.  
 3 W. Randolph Street  
 Chicago, IL 60606  
 Attention: Sam Bodine

 Client Project ID: 9233A, Robertson-Ceco Lemont Site  
 Matrix: Water

QC Sample Group: 6011178-1180

Reported: Jan 25, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Chloride	Phenol	Specific Conductance	Sulfate	Total Organic Halogens
---------	----------	--------	----------------------	---------	------------------------

Method:	330.3	420.4	120.1	375.2	9020
Analyst:	P. Hul	P. Hul	P. Hul	P. Hul	P. Hul
Concentration:	500	0.40	1,408	319	3.0
Units:	mg/L	mg/L	umho/cm	mg/L	mg/L

**LAB. CONTROL SAMPLE DATA**

Date Analyzed:	Jan 24, 1996	Jan 18, 1996	Jan 18, 1996	Jan 24, 1996	Jan 23, 1996
----------------	--------------	--------------	--------------	--------------	--------------

LCS% Recovery:	97	91	105	92	95
----------------	----	----	-----	----	----

**MATRIX SPIKE & DUP. DATA**

Date Analyzed:	Jan 24, 1996	Jan 18, 1996	Jan 18, 1996	Jan 24, 1996	Jan 23, 1996
----------------	--------------	--------------	--------------	--------------	--------------

Matrix Spike % Recovery:	95	108	—	97	85
--------------------------	----	-----	---	----	----

Matrix Spike Duplicate % Recovery:	96	103	—	98	128
------------------------------------	----	-----	---	----	-----

Relative % Difference:	1.0	4.5	—	1.0	52
------------------------	-----	-----	---	-----	----

**GREAT LAKES ANALYTICAL**


 Kevin W. Keeley  
 Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$





1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

ison Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Sam Bodine

Client Project ID: 9233A, Roberson-Ceco Lemont Site  
Matrx: Water

QC Sample Group: 6011175-1180

Reported: Jan 25, 1996

### QUALITY CONTROL DATA REPORT

ANALYTE	Total Organic Carbon
---------	----------------------

EPA Method: 415.1  
Date Analyzed: Jan 23, 1996

#### ACCURACY ASSESSMENT:

LCS Spike Conc. Added: 5.0

LCS Spike Result: 5.2

LCS Spike % Recovery: 104

Upper Control Limit: 107

Lower Control Limit: 97

#### PRECISION ASSESSMENT

Sample #: B601306-01

Original: 2.1

Duplicate: 2.2

Relative % Difference: 4.7

Maximum RPD: 16

GREAT LAKES ANALYTICAL

Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

ison Environmental, Inc.  
W. Randolph Street  
Chicago, IL 60606  
Attention: Sam Bodine

Client Project ID: 9233A, Robertson-Ceco Lemont Site  
Matrix: Water  
Method: pH  
QC Sample Group: 6011175-1180

Reported: Jan 25, 1996

### QUALITY CONTROL DATA REPORT

<b>ANALYTE</b>	pH
----------------	----

Method: 9040  
Analyst: P. Hul  
Units: pH

#### LAB. CONTROL SAMPLE DATA

Date Analyzed: Jan 19, 1996

Buffer pH: 7.0

Measured pH: 7.0

Relative %  
Difference: 0

#### SAMPLE DUP. DATA

Sample pH: 7.6

Sample  
Duplicate pH: 7.6

Relative %  
Difference: 0

GREAT LAKES ANALYTICAL

*Kevin W. Keeley*  
Kevin W. Keeley  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



# CHAIN-OF-CUSTODY RECORD

No. 6030

CARLSON ENVIRONMENTAL, INC.      312 W. Randolph St.      Chicago, IL 60606      (312) 346-2140

PROJ. NO. 92334      PROJECT NAME Robertson-Ceco Levee + Site

SAMPLERS: (Signature) Sam Bodino      Sam Bodino

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)										REMARKS								
								Hg	Chlorides	Dissolved Metals	Total Metals	Aluminum	Iron	Lead	Copper	Ammonia	Calcium		PH	Conductivity						
1	MW-D1	1/18	0750		X	500 mL Plastic - no preservatives	1	X																	6011175	
2					X	500 mL Plastic - no preservatives	1	X																		
3					X	500 mL Plastic w/ Nitric Acid	1		X																	
4					X	1L Amber bottle -> Sulfuric Acid	1			X																
5					X	3x 1L vials w/ HCL	3				X															
6					X	1L Plastic - no preservatives	1					X	X	X												
7																										
8																										
9																										
10																										

Relinquished by (signature): <u>Salt T. Bodino</u>	Date/Time: <u>1/18/1990</u>	Received by (signature): <u>[Signature]</u>	REMARKS 5 day TAT      Received ON ICE *reference invoice # K049 * please filter / dissolved metals  * fax results to Sam Bodino @ 312-346-6956
Relinquished by (signature): <u>[Signature]</u>	Date/Time: <u>1/18/1990</u>	Received by (signature): <u>Nowell Arnold</u>	
Relinquished by (signature):	Date/Time:	Received for Laboratory by (signature):	

R-000580



# CHAIN-OF-CUSTODY RECORD

No. 6031

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ. NO. 9233A		PROJECT NAME Roberts-Ceco Levee Site		NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)							REMARKS		
SAMPLERS: (Signature) Sam Bodine		Signature Sam Bodine			<input checked="" type="checkbox"/> Hex Chrom <input checked="" type="checkbox"/> Dissolved Metals <input checked="" type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Reg. Metals <input checked="" type="checkbox"/> Trace Metals <input checked="" type="checkbox"/> pH & Conductivity									
ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)								
1	MW-102	1/19/95			X	500 ml plastic - no preservatives	1	X						6011176 ↓
2					X	" " " "	1	X						
3					X	500 ml plastic - Nitric Acid	1		X					
4					X	1 L Amber - Sulfuric Acid	1			X				
5					X	40 ml vials - HCL	3				X			
6					X	1 L plastic - no preserv	1				X	X		
7														
8														
9														
10														
Relinquished by (Signature) S.T. Bodine		Date/Time 1/19/95		Received by (Signature) T. Bodine		REMARKS 5 day TAT Received ON ICE * reference invno. # K049 * please filter dissolved metals  * Fax results to Sam Bodine @ 312-346-6956								
Relinquished by (Signature) T. Bodine		Date/Time 1/18/95		Received by (Signature) Nowell Arnold										
Relinquished by (Signature)		Date/Time		Received for Laboratory by (Signature)										

R 000581



# CHAIN-OF-CUSTODY RECORD

No. 6025

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ. NO.  
9233A

PROJECT NAME  
Robertson-Coco Laurent Site

NUMBER OF CONTAINERS

ANALYSIS DESIRED  
(INDICATE SEPARATE CONTAINERS)

SAMPLERS: (Signature)

Sam Berlin

Sam Berlin

Hex Chro  
 Dissolved metals  
 Total metals  
 Metals  
 Non-Ambient  
 Temperature  
 Conductivity  
 pH & Conductivity

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED	REMARKS
1	MW-D3	7/18/05			X	500 ml plastic - no preservative	1	X	6011177
2					X	" " " "	1	X	
3					X	500 ml plastic - nitric acid	1	X	
4					X	1 L Amber - Sulfuric acid	1	X	
5					X	400 ml Vials - HCL	3	X	
6					X	1 L plastic - no preservative	1	X X X	
7									
8									
9									
10									

Relinquished by (Signature)  
Scl T. King

Date/Time  
7/18/05

Received by (Signature)  
Robertson

Relinquished by (Signature)  
MR [Signature]

Date/Time  
7/18/05

Received by (Signature)  
Nowell Arnold

Relinquished by (Signature)

Date/Time

Received for Laboratory by (Signature)

REMARKS  
 \* reference invoice K049  
 \* Filter dissolved metals sample  
 \* Fax results to Sam Berlin @ 312-346-6956 received ON ICE  
 5 day TAT

R 000582



# CHAIN-OF-CUSTODY RECORD

No. 6026

CARLSON ENVIRONMENTAL, INC.      312 W. Randolph St.      Chicago, IL 60606      (312) 346-2140

PROJ. NO. 9733A      PROJECT NAME Robertson - Ceco      Lemont Site

SAMPLERS: (Signature) Sam Bedine      Sam Bedine

NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)
	<input checked="" type="checkbox"/> Heavy Metals
	<input checked="" type="checkbox"/> Dissolved Metals
	<input checked="" type="checkbox"/> Total Metals
	<input checked="" type="checkbox"/> Arsenic
	<input checked="" type="checkbox"/> Inorganic Carbon
	<input checked="" type="checkbox"/> Organics (as to be analyzed)
	<input checked="" type="checkbox"/> PCB's
	<input checked="" type="checkbox"/> DDT's
	<input checked="" type="checkbox"/> Other

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED	REMARKS
1	mm-04	1/18	1100		X	500 ml plastic - no preservative	1	X	6011178 ↓
2					X	" " " "	1	X	
3					X	500 ml plastic - nitric acid	1	X	
4					X	1 L Amber - sulfuric acid	1	X	
5					X	40 ml vials - HCl	3	X	
6					X	1 L plastic - no preservative	1	X X X	
7									
8									
9									
10									

Relinquished by (signature) <u>Salt T. Bedine</u>	Date/Time <u>1/18/85</u>	Received by (signature) <u>P. Peterson</u>	REMARKS * reference invoice # K0115 * filter dissolved metals sample * Fax results to Sam Bedine @ 312-346-6956 Received ON ICE 5 day TAT
Relinquished by (signature) <u>P. Peterson</u>	Date/Time <u>1/18/85</u>	Received by (signature) <u>Howell Arnold</u>	
Relinquished by (signature)	Date/Time	Received for Laboratory by (signature)	

R 000583



# CHAIN-OF-CUSTODY RECORD

No. 6U27

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ. NO.  
9233A

PROJECT NAME  
Roberts-Coco Lemont Site

SAMPLERS: (Signature)

Sam Bodine

Salt. Bodine

NUMBER OF CONTAINERS

ANALYSIS DESIRED  
(INDICATE SEPARATE CONTAINERS)

Hex Chrom  
 Dissolved Metals  
 Total Metals  
 Phenols  
 Nonhalide Oxid. Carbon  
 Fluorides  
 Sulfides (S<sub>2</sub> Cl<sub>2</sub>)  
 pH & Conductivity

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	ANALYSIS DESIRED	REMARKS
1	mw-05	1/18	1230		X	500 ml plastic - no preservatives	<input checked="" type="checkbox"/>	6011179
2					X	" " " "	<input checked="" type="checkbox"/>	
3					X	500 ml plastic - nitric acid	<input checked="" type="checkbox"/>	
4					X	1 L Amber - Sulfuric Acid	<input checked="" type="checkbox"/>	
5					X	400 ml Vials - HCL	<input checked="" type="checkbox"/>	
6					X	1 L plastic - no preservatives	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
7								
8								
9								
10								

Relinquished by (Signature)  
Salt. Bodine

Date/Time  
1/18 1222

Received by (Signature)  
MR. [Signature]

Relinquished by (Signature)  
MR. [Signature]

Date/Time  
1/18 165

Received by (Signature)  
Nowell Arnold

Relinquished by (Signature)

Date/Time

Received for Laboratory by (Signature)

REMARKS

- \* reference in memo K049
- \* Filter dissolved metals sample
- \* For results to Sam Bodine @ 312-346-6956 received ON ICE



# CHAIN-OF-CUODY RECORD

No. 6029

CARLSON ENVIRONMENTAL, INC.

312 W. Randolph St.

Chicago, IL 60606

(312) 346-2140

PROJ NO.  
9235A

PROJECT NAME  
Roberts-Coco

Lament Site

SAMPLES: (Signature)

Sam Bodine

Sam Bodine

NUMBER  
OF CONTAINERS

ANALYSIS DESIRED  
(INDICATE  
SEPARATE  
CONTAINERS)

Hex Chrom  
Dissolved metals  
Total metals  
Metals  
Permeability  
Sulfide  
pH & Conductivity

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED	REMARKS
	Dup-1	1/18			X	500 ml plastic - in presence	1	X	6011180
					X	" " " "	1	X	
					X	500 ml plastic - Nitric Acid	1	X	
					X	1 liter - Sulfuric Acid	1	X	
					X	90 ml vials - HCL	3	X	
					X	1 L plastic - in presence	1	X X	

Requested by (Signature) Satt Bodine	Date/Time 1/18/92	Received by (Signature) Mr. [Signature]
Requested by (Signature) Mr. [Signature]	Date/Time 1/18/92	Received by (Signature) Newell Arnold
Requested by (Signature)	Date/Time	Received for Laboratory by (Signature)

REMARKS  
\* Reference invoice #K049  
\* Filter dissolved metals sample  
\* Fax results to Sam Bodine @  
312-346-6956 Received on ICE

R 000585





# CHAIN OF CUSTODY REPORT

1380 BUSCH PARKWAY  
 BUFFALO GROVE, ILLINOIS 60089-450E  
 (708) 808-7766 FAX (708) 808-7772

Client: <b>GREAT LAKES ANALYTICAL</b>		Bill To:	TAT: 5 DAY <del>4 DAY</del> <u>3 DAY</u> 2 DAY 1 DAY < 24
Address: <b>1380 BUSCH PARKWAY BUFFALO GROVE, IL 60089-4505</b>		Address:	DATE RESULTS NEEDED: <u>1/28/96</u>
Report to: <u>L. Jan kausky</u>	Phone #: ( ) Fax #: ( )	State & Program:	TEMPERATURE UPON RECEIPT: _____
		Phone #: ( ) Fax #: ( )	AIR BILL NO. _____

Project: <u>Carlson</u>		DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	ANALYSIS TYPE	SAMPLE CONTROL			LABORATOR ID NUMBER
Sampler:									CRACKED	PROPERLY SEALED	GOOD CONDITION	
PO/Quote #:		FIELD ID, LOCATION										
1	<u>6011175</u>	<u>1/18</u>		<u>H<sub>2</sub>O</u>	<u>HCL</u>	<u>3</u>	<u>VOA</u>	<u>TOC</u>				
2	<u>6011176</u>	↓		↓	↓	↓	↓	↓				
3	<u>6011177</u>	↓		↓	↓	↓	↓	↓				
4	<u>6011178</u>	↓		↓	↓	↓	↓	↓				
5	<u>6011179</u>	↓		↓	↓	↓	↓	↓				
6	<u>6011180</u>	↓		↓	↓	↓	↓	↓				
7												
8												
9												
10												

RELINQUISHED <u>K. Kuhl</u> DATE: <u>1/18/96</u> TIME: <u>1700</u>	RECEIVED	DATE	RELINQUISHED	DATE	RECEIVED
RELINQUISHED	RECEIVED	DATE	RELINQUISHED	DATE	RECEIVED
TIME		TIME	TIME	TIME	TIME

COMMENTS: \_\_\_\_\_

PAGE \_\_\_\_\_ OF \_\_\_\_\_

R 000596

ATTACHMENT E

**ATTACHMENT E**  
**CERTIFICATIONS**

This statement is to be completed by both a responsible officer of the owner or operator (as defined in 35 IAC 702.126) and a responsible officer (as defined in 35 IAC 702.126) of the laboratory which conducted the chemical analyses required as part of closure activities. The original of this statement shall accompany the original certification statement for closure activities at this site.

Laboratory Certification

Closure Log C-68

The applicable sample collection, handling, preservation, preparation and analysis conducted as part of closure activities at the facility described in this document that the chemical laboratory was responsible for has been conducted in accordance with the specification in the approved workplan. 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.

ILD970785453  
USEPA ID Number

ROBERTSON-CERO CORPORATION SITE  
Facility Name

\_\_\_\_\_  
Signature of Owner/Operator    Date

\_\_\_\_\_  
Name and Title of Owner/  
Operator Representative

Great Lakes Analytical  
Name of Laboratory

[Signature] 2-12-96  
Signature of Laboratory    Date  
Responsible Officer

Kevin W. Kocle - President  
Name and Title of Laboratory  
Responsible Officer  
Mailing Address of Laboratory

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

MH:bjh/sp/382X/7

**ATTACHMENT I**

This statement is to be completed by both the responsible officer and by a registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

**Closure Certification Statement**

**Closure Log C-68**

The hazardous waste management unit at the facility described in this document has been closed in accordance with the specifications in the approved closure plan. 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.

ILD990785453  
USEPA ID Number

Robertson-Ceco Corp. Site  
Facility Name

\_\_\_\_\_  
Signature of Owner/Operator      Date

\_\_\_\_\_  
Name and Title

*Kenneth W. James*      5-29-96  
Signature of Registered P.E.      Date

Kenneth W. James, P.E. #062-036808  
Name of Registered P.E. and Illinois Registration Number

Kenneth W. James, P.E.

Carlson Environmental, Inc.

< P.E. Seal >

312 W. Randolph St., Suite 300

Chicago, IL 60606  
Address of Illinois Registered P.E.

ECB:MAH:bjh/sp/382X/6

11  
J. I.  
312 W. Randolph St.  
Chicago, IL 60606  
Tel: (312) 312-3123

# **EXHIBIT B**

24C

R 000592

## MEMORANDUM

**Date** 4/11/2022  
**To:** BOL File Room  
**From:** Pamela Ketchum  
**Re:** LPC# 1978030005 - Will County  
RCH Newco II LLC  
Subpart F 24C

The RCRA-2021 Annual Groundwater Monitoring Report for the above referenced facility was dated 4/8/2022 and was received by the Agency on 4/11/2022. A copy is attached.

cc:

EPA - DIVISION OF RECORDS MANAGEMENT  
RELEASABLE  
JUN 15 2022  
REVIEWER KAJ



**RECEIVED**  
APR 11 2022  
IEPA-BOL  
PERMIT SECTION

**RCRA - 2021 ANNUAL  
GROUNDWATER  
MONITORING REPORT**

**RCH Newco II LLC  
EPA ID No. ILD990785453**

*Prepared For*  
**RCH Newco II LLC**

*Prepared By*  
**Carlson Environmental, Inc.**

**65 E. Wacker Place  
Suite 2210  
Chicago, IL 60601  
(P) 312-346-2140  
(F) 312-346-6956  
[www.carlsonenv.com](http://www.carlsonenv.com)**

**Project No. 100.01  
April 8, 2022**

**Bruce A. Shabino, P.G.  
Senior Project Manager**

**Edward E. Garske  
President**





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**1.0 INTRODUCTION..... 1**

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**3.1 Monitoring Well Network..... 2**

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**3.3 Groundwater Analyses ..... 4**

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**4.0 POST-CLOSURE COST ESTIMATE ..... 6**

**5.0 CONCLUSIONS..... 6**

**ATTACHMENTS**

- ATTACHMENT A - Figures**
- ATTACHMENT B - Tables**
- ATTACHMENT C - Laboratory Analytical Reports**
- ATTACHMENT D - Certification Statement**



RCH Newco II LLC  
ILD990785453

April 8, 2022

## 1.0 INTRODUCTION

This Annual Groundwater Monitoring Report summarizes the activities associated with the closed RCRA Hazardous Waste Management Unit (Closure Unit) at the former Robertson-Ceco Corporation Property (currently owned by RCH Newco II LLC) in accordance with 35 IAC 725.175, for the period of 2021. The report details the laboratory analytical results and the statistical analysis for the data collected in the twenty-eighth year of post-closure groundwater monitoring for the Closure Unit. This report was completed on behalf of our client, RCH Newco II LLC.

## 2.0 BACKGROUND

The RCH Newco II LLC property is located on New Avenue in Lemont, Will County, Illinois (Figure 1, Attachment A) and is approximately two-acres in size (Figure 2, Attachment A). The Closure Unit contains approximately 2,500 cubic yards of emission control dust (EAF dust) from off-site electric arc furnaces ("listed" hazardous waste K061 by the United States Environmental Protection Agency under RCRA) and approximately 29,500 cubic yards of miscellaneous non-hazardous steel plant by-products, primarily slag, which was co-excavated with the EAF dust. These materials, altogether comprising a volume of 32,000 cubic yards, were placed in a RCRA Interim-Status Closure Unit (landfill) constructed in accordance with an IEPA-approved Closure Plan. The hazardous waste management unit is completely enclosed within a 10-foot-high locking chain-link fence that was in good condition at the time of the recently completed sampling events.

Construction of the Closure Unit was completed in accordance with the IEPA-approved design in 1988. Since the completion of the construction of the Closure Unit, no hazardous waste management activity has occurred at the site other than the groundwater monitoring and inspection activities associated with the Closure Unit.

In April 1993, Halliburton NUS Corporation (NUS) installed five RCRA post-closure groundwater monitoring wells at the Closure Unit. Two wells were installed hydraulically



**RCH Newco II LLC  
ILD990785453**

**April 8, 2022**

up-gradient and three wells were located hydraulically down-gradient. The post-closure groundwater monitoring wells were installed in the uppermost aquifer, which is partly within the upper portion of the bedrock unit.

### **3.0 GROUNDWATER MONITORING**

#### **3.1 Monitoring Well Network**

The groundwater monitoring well system, surrounding the Closure Unit, was designed to comply with applicable state regulations. The well network consists of five wells (Figure 3, Attachment A). Monitoring wells MWD-1 and MWD-5 are located hydraulically upgradient from the Closure Unit for the purpose of monitoring the "background" groundwater concentrations. Monitoring wells MWD-2, MWD-3, and MWD-4 are located hydraulically downgradient from the Closure Unit. The downgradient wells were installed at the limit of the waste management area to ensure the immediate detection of any hazardous constituent. The placement of the wells was designed based on the northeastern potentiometric groundwater flow in the uppermost aquifer as reported by NUS in previous reports.

#### **3.2 Groundwater Sampling**

A quarterly groundwater sampling program was started by NUS in April 1993 for the Closure Unit well network. Carlson began sampling the groundwater beginning with Round 9. The completion of Sample Round 12 marked the end of the quarterly groundwater monitoring and the start of a semi-annual sampling event pursuant to IEPA's February 7, 1996 correspondence reducing sampling frequency. The objective of the groundwater sampling is to collect data that would help determine whether the Closure Unit is impacting the groundwater.

On June 165 (Round 61), and December 1 (Round 62), 2021, Carlson visually inspected and measured the standing water levels in the five groundwater monitoring wells previously installed at the site for the Closure Unit. Inspection of the monitoring well indicated that the stickup well-head protective covers were in good condition and were locked securely in

**Page 2 of 7**



**RCH Newco II LLC  
ILD990785453**

**April 8, 2022**

**place.**

**During Rounds 61 and 62, groundwater samples were collected from each of the five wells (MWD-1 through MWD-5), using a United States Environmental Protection Agency (USEPA) accepted low flow groundwater sampling method. The low flow sampling method was designed to obtain a representative sample from the well without requiring filtering of the sample. The objective is to collect a groundwater sample by eliminating turbidity that is common to bailing methods.**

**The well sampling procedures were as follows:**

- 1) The static water level was measured and recorded to 0.01 feet with an electric water level indicator (Solinst model 101). The probe was carefully lowered into the well to minimize disturbance of the water column. Water level measurements are shown in Table 1, Attachment B.**
- 2) If necessary, the required length of teflon tubing was calculated, measured and marked for attachment to a peristaltic pump, so that the intake was located at the mid-point of the saturated screen interval. A minimal length of tubing was used to minimize the temperature change from the collection point to the discharge point.**
- 3) If not already present, the tubing was inserted slowly to the measured depth and secured to the well casing to minimize disturbance to the water column. The tubing was dedicated to each well, secured to the cap, and left inside the protective casing to minimize disturbance to the water column during subsequent sampling events.**
- 4) The monitoring instruments were calibrated and assembled. The tubing was connected to the pump and a flow-through chamber in which the instrument probes were located.**

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ILD990785453

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- 5) The water level was measured and recorded on a data sheet and compared to the previous static water level.
- 6) The pump was started at the minimum continuous flow rate attainable by the pump, between 0.02 to 0.05 liters per minute. A full round of measurements was recorded every five minutes including time, temperature, specific conductance, pH, turbidity and dissolved oxygen. All data and changes were recorded on the data sheets.
- 7) After field parameters stabilized, groundwater samples were collected. Stabilization was defined by readings within a range of ten percent for three consecutive five-minute intervals.
- 8) After stabilization was achieved, the flow-through chamber was disconnected and the sample was collected directly from the tubing.
- 9) The samples were maintained at a temperature of approximately 4°C in an insulated container. Upon completion of the site sampling, the samples were sent to Microbac Laboratories, Inc. (Microbac) for laboratory analysis. The samples were maintained under standard chain-of-custody procedures/documents.

### 3.3 Groundwater Analyses

In 2009, the sampling plan for the site was modified pursuant to IEPA's approval letter dated June 2, 2009. The sampling plan frequency and parameters to be analyzed are now as follows:

#### Samples Collected During the Quarter of the Calendar Year

Second Quarter

#### Parameters to be Sampled

Groundwater Quality Parameters  
Groundwater Contamination Parameters

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#### Fourth Quarter

#### Groundwater Contamination Parameters

For Sample Rounds 61 & 62, four separate groundwater samples were collected from each of the five wells and analyzed for the indicators of groundwater contamination as listed below.

Groundwater collected during Sample Round 61 was also analyzed for the indicators of groundwater quality as listed below. A duplicate sample was collected from monitoring well MWD-2 during Round 61 and analyzed for all the parameters listed below. Laboratory analytical methods are indicated on Table 2, Attachment B.

Groundwater samples were analyzed at Microbac in accordance with IEPA and USEPA (SW-846 - Third Edition) methods. The groundwater samples were analyzed for the parameters establishing groundwater contamination (pH, specific conductance, non-purgeable organic carbon (TOC), total organic halogens (TOX)), and groundwater quality (chloride, iron, manganese, phenols, sodium and sulfate), as specified in applicable state regulations, the IEPA approved closure plan and IEPA correspondence.

#### 3.4 Groundwater Analytical Results

Groundwater concentrations from the five monitoring wells were compared to the standards for the above referenced parameters as referenced in 35 IAC 725, Appendix C, *USEPA Interim Primary Drinking Water Standards* as shown in Tables 4 and 5 of Attachment B, for Rounds 61 and 62, respectively. The laboratory analytical reports for Rounds 61 and 62 are included in Attachment C.

The "background" concentrations from the upgradient wells, calculated during the first year of sampling activities, were compared to groundwater concentrations collected from the downgradient and upgradient wells to determine whether a statistically significant increase (or decrease in the case of pH) in the parameter concentration was present.



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Table 3 in Attachment B summarizes the "background" groundwater concentrations from the first year of groundwater monitoring. Carlson compared the sample means and variances of the indicator parameters for the upgradient and downgradient wells to the "background" concentrations using the Student's T-Test at the 0.01 level of significance in accordance with 35 IAC 725.193(b). The statistical evaluation of the upgradient and downgradient wells for Round 61 of RCRA post-closure groundwater sampling is contained in Tables 6 and 7, respectively. Tables 8 and 9, respectively, contain the statistical evaluation of the upgradient and downgradient wells for Round 62.

#### **4.0 POST-CLOSURE COST ESTIMATE**

The Closure Unit was closed in 1988 and groundwater monitoring began in 1993. The original cost to conduct 30 years of post-closure groundwater monitoring at the Closure Unit was estimated at \$376,973. This cost was based on 120 quarterly sampling events at the present value of money. To date, 60 separate sampling events have been conducted, and the Illinois Environmental Protection Agency has changed the frequency of the required sampling to semi-annually. With the new sampling plan, approved by the IEPA in a letter dated June 2, 2009, the project cost for the remaining 2 years through 2023 is estimated at \$33,200. This estimate is based on the current average yearly cost multiplied by the 2 remaining years of sampling events, not the present value of money.

#### **5.0 CONCLUSIONS**

Based on the analytical data for both sampling events in 2021, groundwater at the Closure Unit did not exceed the drinking water standards as referenced in 35 IAC 725, Appendix C, *USEPA Interim Primary Drinking Water Standards*, for the parameters identified in Section 3.3. For each indicator parameter, the arithmetic mean and variance were calculated for each well based on the groundwater analytical data collected during each sampling event in 2021. The arithmetic mean and variance were compared to the initial "background" arithmetic mean concentrations, as determined in the first year of post-closure.

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groundwater monitoring, using the Student's T-Test at the 0.01 level of significance.

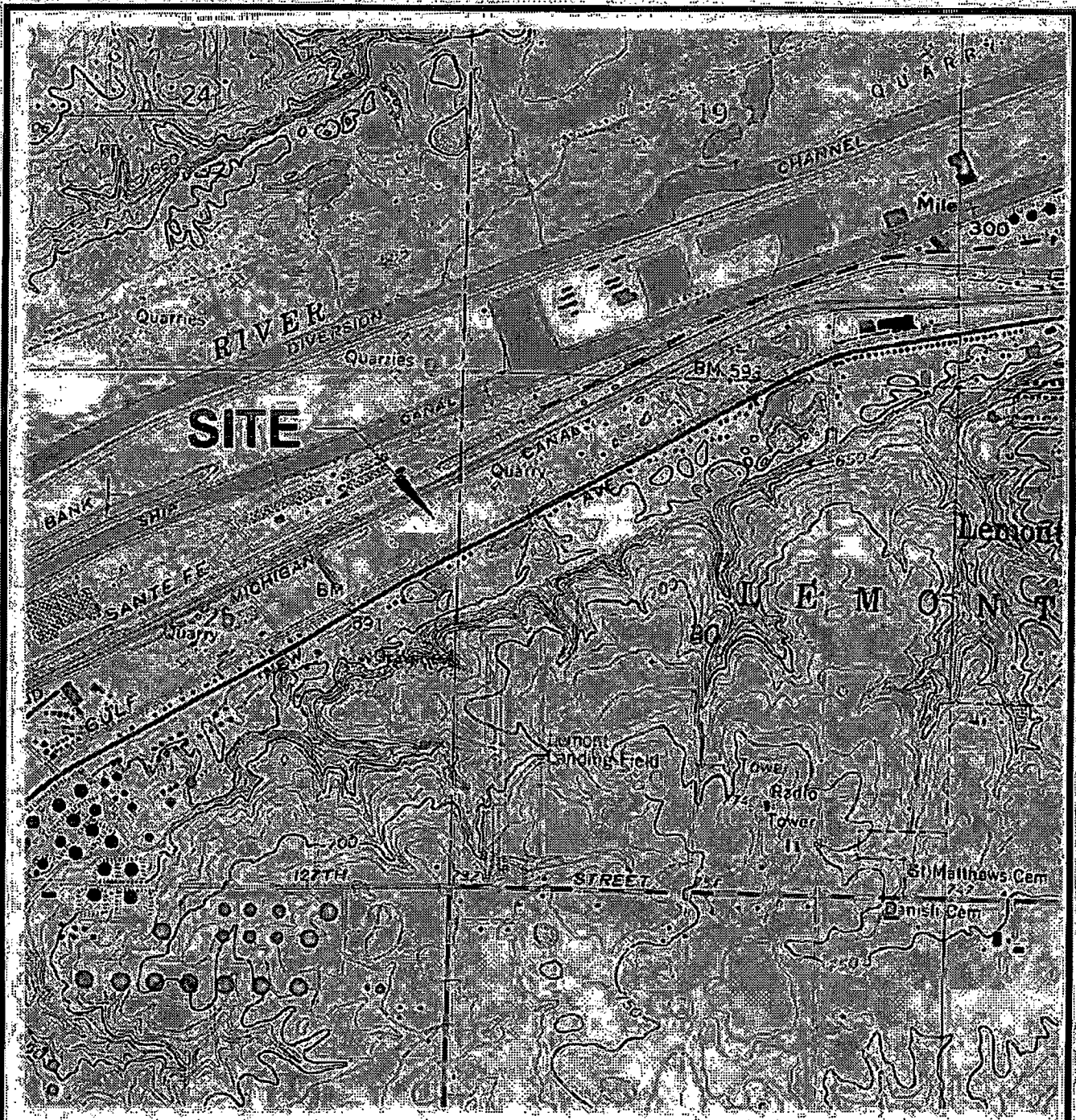
The analysis revealed that groundwater in downgradient monitoring well MWD-2 had a statistically significant decrease in pH (initial background arithmetic mean of 7.36) during Sample Round 61. In Sample Round 62, there was a statistically significant decrease in pH in downgradient monitoring wells MWD-2 and MWD-4, as well as upgradient monitoring wells MWD-1 and MWD-5. In addition, groundwater in upgradient monitoring well MWD-5 was found to have a statistically significant increase in specific conductance beyond the background mean of 1334 umho/cm during Sample Round 62.

Based on the statistically significant changes in groundwater for pH in both downgradient and upgradient monitoring wells and for specific conductance in upgradient monitoring well MWD-5, Carlson believes that the changes are naturally occurring or coming from some offsite source. If any single groundwater contamination parameter in subsequent groundwater monitoring events is elevated (or reduced in the case of pH) at a statistically significant level beyond "background" values in more than one downgradient well, without being elevated (or reduced in the case of pH) in an upgradient well, then an additional investigation will be initiated. Such an investigation to determine the extent and rate of migration of the regulated substance of concern would be conducted in accordance with applicable state regulations. No additional action is planned at this time.





**ATTACHMENT A**  
*Figures*

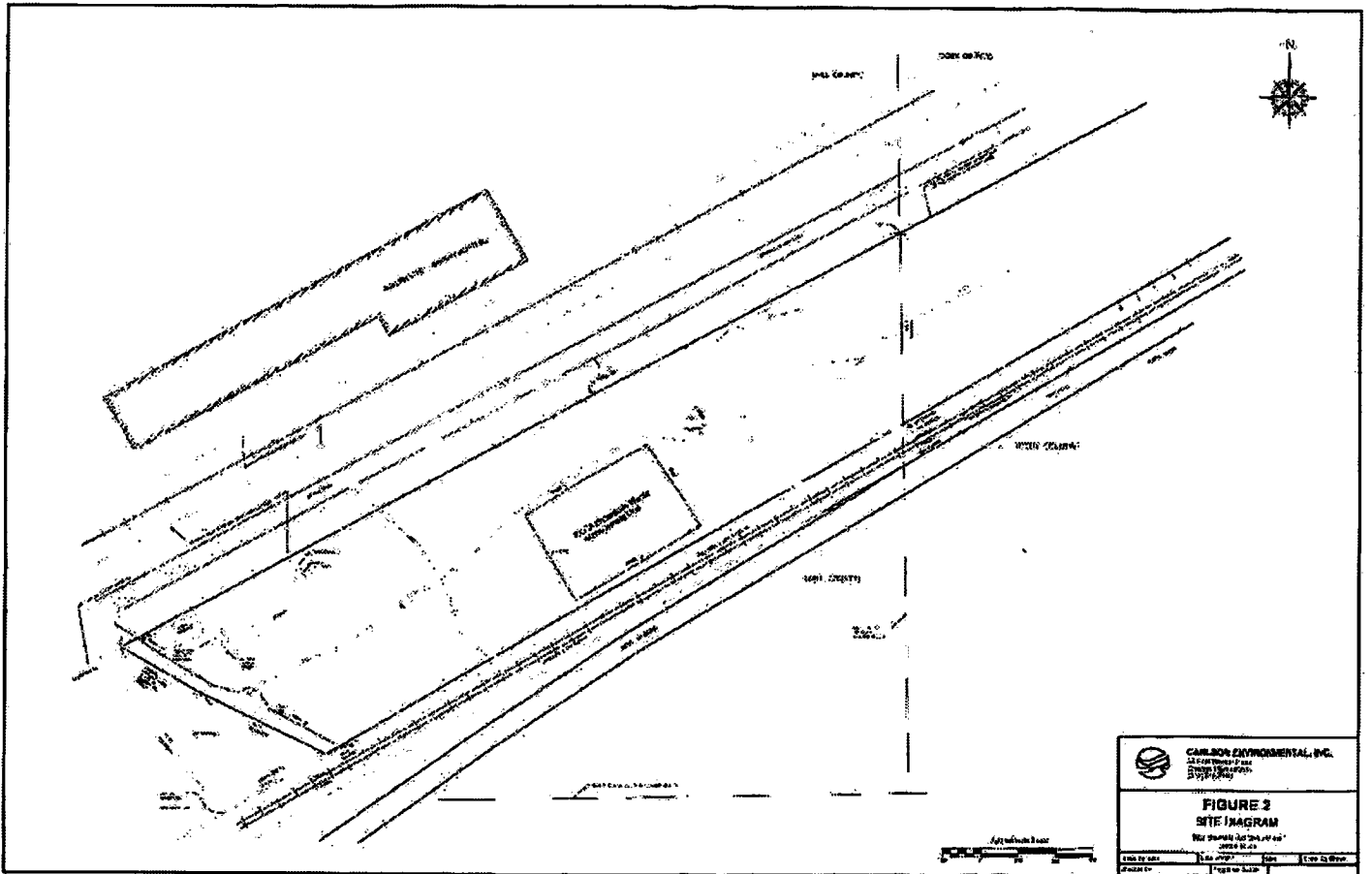


**CARLSON ENVIRONMENTAL, INC.**  
 65 East Wacker Place  
 Chicago, Illinois 60601  
 (312) 546-2140

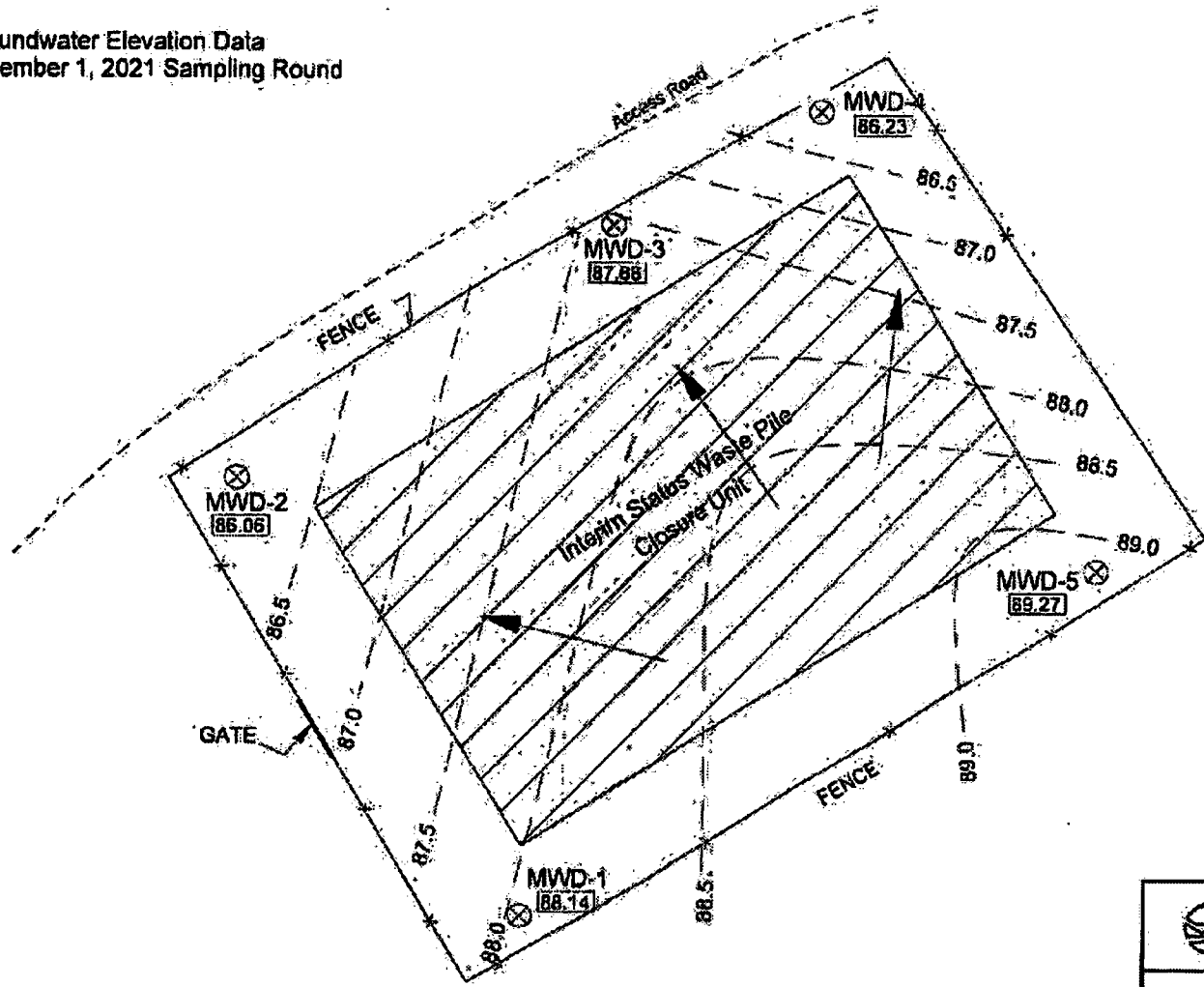
PROJECT NO.	82354
DATE	
REVISION	
DATE	
REVISION	
DATE	

**FIGURE 1**  
**SITE MAP**  
 RC-1 Newco II LLC Closure Unit  
 Lemont, Illinois

Drawn No.  
 1



Groundwater Elevation Data  
December 1, 2021 Sampling Round



Approximate Scale  
(Feet)



**CARLSON ENVIRONMENTAL, INC.**  
60 East Walnut Place  
Chicago, Illinois 60611  
(312) 762-1143

**FIGURE 3**  
GROUNDWATER MONITORING WELL LOCATIONS  
GROUNDWATER FLOW DIRECTION  
RCH Nevada II LLC Closure Unit  
Largest Scale

Drawn by: SBR	Date: 1/22/22	Scale: As Shown
Checked by:	Project No. 18-016	File No.

R 000605



**ATTACHMENT B**  
*Tables*

**TABLE 1: Water Level Measurements**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 2021 Annual Report

<b>DESCRIPTION</b>	<b>MW-D1</b>	<b>MW-D2</b>	<b>MW-D3</b>	<b>MW-D4</b>	<b>MW-D5</b>
<i>Diameter of Casing</i>	2 in.	2 in.	2 in.	2 in.	2 in.
<i>Total Length of Casing</i>	31.72 ft.	28.60 ft.	27.91 ft.	26.94 ft.	27.99 ft.
<i>Static Water Level - June 15, 2021</i>	-	-	-	-	-
<i>Static Water Level - December 1, 2021</i>	-11.86	-14.45	-12.96	-14.95	-12.95
<i>Surveyed Elevation from Top of Casing</i>	100.00	100.51	100.65	101.18	102.22
<i>Relative Elevation - June 15, 2021</i>	-	-	-	-	-
<i>Relative Elevation - December 1, 2021</i>	88.14	86.06	87.69	86.23	89.27
<i>Distance from Top of Casing to Ground Surface<sup>1</sup></i>	1.65 ft.	2.42 ft.	1.70 ft.	2.00 ft.	2.25 ft.
<i>Distance Between Top of Casing and Top of Riser<sup>1</sup></i>	0.10 ft.	0.27 ft.	0.20 ft.	0.30 ft.	0.40 ft.

- No reading due to instrument error

<sup>1</sup> Measure by Halliburton NUS on August 3, 1993

**TABLE 2: Summary of Analytical Methods**  
**RCH Newco II LLC**  
**Lemont, Illinois**

<b>PARAMETER</b>	<b>EPA METHOD</b>	<b>DETECTION LIMIT</b>
Arsenic	SW7060A	0.01 mg/L
Barium	SW6010A	0.01 mg/L
Cadmium	SW6010A	0.001 mg/L
Chromium, total	SW6010A	0.01 mg/L
Chromium, hexavalent	SW7196A	0.005 mg/L
Iron	SW6010A	0.05 mg/L
Lead	SW7421	0.005 mg/L
Manganese	SW6010A	0.01 mg/L
Mercury	SW7470A	0.0002 mg/L
Selenium	3015/7740	0.005 mg/L
Silver	SW6010A	0.01 mg/L
Sodium	SW6010A	2.0 mg/L
Phenols	SW9066	0.01 mg/L
Sulfate	E375.4	10.0 mg/L
Chloride	M 4500-CL B	1.0 mg/L
Total Organic Halogens	SW9020	0.01 mg/L
Non-Purgeable Organic Carbon	E415.2	1.0 mg/L
pH	E150.1	0.02 pH units
Specific Conductance	E120.1	10 umhos/cm

mg/L = milligrams per liter

**Table 3**  
**Established Background Concentrations**  
**RCH Newco II LLC ILD990785453**  
**Lemont, Illinois**

<b>Parameter</b>	<b>Background Concentration<sup>1</sup> (Arithmetic Mean)</b>
<b>Total Organic Carbon (TOC)</b>	<b>2.766</b>
<b>Total Organic Halogens (TOX)</b>	<b>0.017</b>
<b>pH</b>	<b>7.363</b>
<b>Specific Conductance</b>	<b>1334.375</b>
<b>Arsenic</b>	<b>0.100</b>
<b>Barium</b>	<b>0.039</b>
<b>Cadmium</b>	<b>0.005</b>
<b>Chromium</b>	<b>0.019</b>
<b>Hexavalent Chromium</b>	<b>0.013</b>
<b>Lead</b>	<b>0.050</b>
<b>Mercury</b>	<b>0.0002</b>
<b>Selenium</b>	<b>0.100</b>
<b>Silver</b>	<b>0.010</b>
<b>Chloride</b>	<b>33.852</b>
<b>Iron</b>	<b>0.913</b>
<b>Manganese</b>	<b>0.196</b>
<b>Phenolics</b>	<b>0.009</b>
<b>Sodium</b>	<b>50.333</b>
<b>Sulfate</b>	<b>309.048</b>

<sup>1</sup> Concentrations are in milligrams per liter (mg/L), except for Specific Conductance (umhos/cm) and pH (pH units)



**TABLE 4: Round 61 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 June 15, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D1A	MW-D1B	MW-D1C	MW-D1D
			Location	upgradient	upgradient	upgradient	upgradient
			Date	6/15/2021	6/15/2021	6/15/2021	6/15/2021
Iron	mg/L	---		1.9	NA	NA	NA
Manganese	mg/L	---		0.05	NA	NA	NA
Sodium	mg/L	---		33	NA	NA	NA
Phenol	mg/L	---		<0.01	NA	NA	NA
Sulfate	mg/L	---		220	NA	NA	NA
Chloride	mg/L	---		49	NA	NA	NA
Total Organic Halogens	mg/L	---		<0.01	<0.01	<0.01	0.013
Non-Purgeable Organic Carbon	mg/L	---		2.73	2.90	2.80	2.64
pH	---	6.5 - 9		7.34	7.34	7.25	7.30
Specific Conductance	umho/cm	---		1280	1270	1280	1280

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

--- = not established

ND = not detected above laboratory detection limits

NA = not applicable

**TABLE 4: Round 61 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 June 15, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D2A	MW-D2B	MW-D2C	MW-D2D
			Location	downgradient	downgradient	downgradient	downgradient
			Date	6/15/2021	6/15/2021	6/15/2021	6/15/2021
Iron	mg/L	---		0.87	0.86	NA	NA
Manganese	mg/L	---		0.098	0.1	NA	NA
Sodium	mg/L	---		16	16	NA	NA
Phenol	mg/L	---		<0.01	<0.01	NA	NA
Sulfate	mg/L	---		150	160	NA	NA
Chloride	mg/L	---		21	22	NA	NA
Total Organic Halogens	mg/L	---		<0.01	<0.01	<0.01	<0.01
Non-Purgeable Organic Carbon	mg/L	---		2.01	2.31	2.31	2.08
pH	---	6.5 - 9		7.20	7.20	7.17	7.16
Specific Conductance	umho/cm	---		796	808	827	854

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

--- = not established

ND = not detected above laboratory detection limits

NA = not applicable

**TABLE 4: Round 61 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 June 15, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D3A	MW-D3B	MW-D3C	MW-D3D
			Location	downgradient	downgradient	downgradient	downgradient
			Date	6/15/2021	6/15/2021	6/15/2021	6/15/2021
Iron	mg/L	---		0.07	NA	NA	NA
Manganese	mg/L	---		0.012	NA	NA	NA
Sodium	mg/L	---		34	NA	NA	NA
Phenol	mg/L	---		<0.01	NA	NA	NA
Sulfate	mg/L	---		310	NA	NA	NA
Chloride	mg/L	---		34	NA	NA	NA
Total Organic Halogens	mg/L	---		<0.01	<0.01	0.014	<0.01
Non-Purgeable Organic Carbon	mg/L	---		1.90	1.73	1.79	1.88
pH	---	6.5 - 9		7.37	7.45	7.43	NR
Specific Conductance	umho/cm	---		1300	1270	1160	1250

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

--- = not established

ND = not detected above laboratory detection limits

NA = not applicable

NR = not reported due to laboratory error

**TABLE 4: Round 61 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 June 15, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D4A	MW-D4B	MW-D4C	MW-D4D
			Location	downgradient	downgradient	downgradient	downgradient
			Date	6/15/2021	6/15/2021	6/15/2021	6/15/2021
Iron	mg/L	---		0.12	NA	NA	NA
Manganese	mg/L	---		0.0097	NA	NA	NA
Sodium	mg/L	---		27	NA	NA	NA
Phenol	mg/L	---		<0.01	NA	NA	NA
Sulfate	mg/L	---		350	NA	NA	NA
Chloride	mg/L	---		5.0	NA	NA	NA
Total Organic Halogens	mg/L	---		<0.01	<0.01	<0.01	<0.01
Non-Purgeable Organic Carbon	mg/L	---		1.61	1.66	1.75	1.66
pH	---	6.5 - 9		7.36	7.23	7.22	7.37
Specific Conductance	umho/cm	---		1210	1290	1240	1220

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

--- = not established

ND = not detected above laboratory detection limits

NA = not applicable

**TABLE 4: Round 61 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 June 15, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D5A	MW-D5B	MW-D5C	MW-D5D
			Location	upgradient	upgradient	upgradient	upgradient
			Date	6/15/2021	6/15/2021	6/15/2021	6/15/2021
Iron	mg/L	--		<0.05	NA	NA	NA
Manganese	mg/L	--		<0.002	NA	NA	NA
Sodium	mg/L	--		22	NA	NA	NA
Phenol	mg/L	--		<0.01	NA	NA	NA
Sulfate	mg/L	--		360	NA	NA	NA
Chloride	mg/L	--		4.5	NA	NA	NA
Total Organic Halogens	mg/L	--		<0.01	<0.01	<0.01	<0.01
Non-Purgeable Organic Carbon	mg/L	--		1.50	1.74	1.31	1.25
pH	--	6.5 - 9		7.37	7.38	7.38	7.36
Specific Conductance	umho/cm	--		1260	1270	1280	1260

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

-- = not established

ND = not detected above laboratory detection limits

NA = not applicable

**TABLE 5: Round 62 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 December 1, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D1A	MW-D1B	MW-D1C	MW-D1D
			Location	upgradient	upgradient	upgradient	upgradient
			Date	12/1/2021	12/1/2021	12/1/2021	12/1/2021
Total Organic Halogens	mg/L	---		< 0.01	0.011	0.014	0.02
Non-Purgeable Organic Carbon	mg/L	---		15	3.92	41.6	3.98
pH	—	6.5 - 9		7.03	7.05	7.06	7.05
Specific Conductance	umho/cm	---		1320	1300	1310	1320

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

--- = not established

ND = not detected above laboratory detection limits

NA = not applicable

**TABLE 5: Round 62 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 December 1, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D2A	MW-D2B	MW-D2C	MW-D2D
			Location	downgradient	downgradient	downgradient	downgradient
			Date	12/1/2021	12/1/2021	12/1/2021	12/1/2021
Total Organic Halogens	mg/L	—		< 0.01	< 0.01	< 0.01	< 0.01
Non-Purgeable Organic Carbon	mg/L	—		6.77	3.76	2.98	3.54
pH	—	6.5 - 9		7.19	7.21	7.19	7.21
Specific Conductance	umho/cm	—		958	985	983	995

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

— = not established

ND = not detected above laboratory detection limits

NA = not applicable

**TABLE 5: Round 62 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 December 1, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D3A	MW-D3B	MW-D3C	MW-D3D
			Location	downgradient	downgradient	downgradient	downgradient
			Date	12/1/2021	12/1/2021	12/1/2021	12/1/2021
Total Organic Halogens	mg/L	—		0.024	0.023	0.014	<0.01
Non-Purgeable Organic Carbon	mg/L	—		6.58	2.74	3.58	3.26
pH	—	6.5 - 9		7.39	7.42	7.23	7.21
Specific Conductance	umho/cm	—		1220	1230	1330	1340

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

— = not established

ND = not detected above laboratory detection limits

NA = not applicable



**TABLE 5: Round 62 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 December 1, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D4A	MW-D4B	MW-D4C	MW-D4D
			Location	downgradient	downgradient	downgradient	downgradient
			Date	12/1/2021	12/1/2021	12/1/2021	12/1/2021
Total Organic Halogens	mg/L	—		< 0.01	< 0.01	< 0.01	0.01
Non-Purgeable Organic Carbon	mg/L	—		14.8	5.62	2.72	< 2
pH	—	6.5 - 9		7.05	7.11	7.08	7.1
Specific Conductance	umho/cm	—		1330	1320	1330	1350

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

— = not established

ND = not detected above laboratory detection limits

NA = not applicable

**TABLE 5: Round 62 Analytical Results**  
**RCH Newco II LLC**  
 Lemont, Illinois  
 December 1, 2021

Analyte	Units	USEPA Primary Drinking Water Standards	Well ID	MW-D5A	MW-D5B	MW-D5C	MW-D5D
			Location	upgradient	upgradient	upgradient	upgradient
			Date	12/1/2021	12/1/2021	12/1/2021	12/1/2021
Total Organic Halogens	mg/L	—		<0.01	<0.01	<0.01	<0.01
Non-Purgeable Organic Carbon	mg/L	—		5.08	15.9	< 2	2.3
pH	—	6.5 - 9		7.3	7.21	7.22	7.19
Specific Conductance	umho/cm	—		1370	1350	1350	1360

mg/L = milligrams per liter

umho/cm = micro mhos per centimeter

— = not established

ND = not detected above laboratory detection limits

NA = not applicable

**Table 6**  
**Statistical Evaluation of Upgradient Wells**  
**RCH Newco II LLC ILD990785453**  
**Lemont, Illinois**  
**Round 61 June 2021**

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Upgradient Concentration <sup>1</sup> (Arithmetic Mean)	Upgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D1	TOX	0.017	0.097	0.007	0.00002	4.541	-5.0	N
	TOC	2.766	2.484	2.77	0.012	4.541	0.036	N
	pH	7.363	0.112	7.31	0.002	4.541/4.541	-2.56	N
	Spec. Cond.	1334.375	15,231.855	1275	166.67	4.541	-9.13	N

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Upgradient Concentration <sup>1</sup> (Arithmetic Mean)	Upgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D5	TOX	0.017	0.097	0.005	0	4.541	<0**	N
	TOC	2.766	2.484	1.45	0.049	4.541	-12.0	N
	pH	7.363	0.112	7.37	0.00008	4.541/4.541	2.0	N
	Spec. Cond.	1334.375	15,231.855	1267.5	91.67	4.541	-13.97	N

<sup>1</sup> Concentrations are in milligrams per liter (mg/L), except Specific Conductance (umho/cm) and pH (pH units).

t\* = critical value of t at the 99% level of significance.

t<sub>calc</sub> = calculated value of t.

<0\*\* = t<sub>calc</sub> cannot be determined precisely due to the sample variance equaling zero. Since the sample mean is less than the background mean, t<sub>calc</sub> would be less than zero.

**Bolded area indicates a statistically significant change in concentration.**

**Table 7**  
**Statistical Evaluation of Downgradient Wells**  
 RCH Newco II LLC ILD990785453  
 Lemont, Illinois  
 Round 61 June 2021

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Downgradient Concentration <sup>1</sup> (Arithmetic Mean)	Downgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D2	TOX	0.017	0.097	0.005	0	4.541	<0**	N
	TOC	2.766	2.484	2.18	0.024	4.541	-2.37	N
	pH	7.363	0.112	7.18	0.0004	4.541/-4.541	-16.36	Y
	Spec. Cond.	1334.375	15,231.855	821.25	639	4.541	-99.03	N

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Downgradient Concentration <sup>1</sup> (Arithmetic Mean)	Downgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D3	TOX	0.017	0.097	0.007	0.00002	4.541	-5	N
	TOC	2.766	2.484	1.82	0.006	4.541	-25.33	N
	pH	7.363	0.112	7.42	0.002	5.841/-5.841	2.50	N
	Spec. Cond.	1334.375	15,231.855	1245	3633	4.541	-2.95	N

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Downgradient Concentration <sup>1</sup> (Arithmetic Mean)	Downgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D4	TOX	0.017	0.097	0.005	0	4.541	<0**	N
	TOC	2.766	2.484	1.67	0.0034	4.541	-37.93	N
	pH	7.363	0.112	7.30	0.007	4.541/-4.541	-1.66	N
	Spec. Cond.	1334.375	15,231.855	1240	1266	4.541	-5.28	N

<sup>1</sup> Concentrations are in milligrams per liter (mg/L), except Specific Conductance (umho/cm) and pH (pH units).

t\* = critical value of t at the 99% level of significance.

t<sub>calc</sub> = calculated value of t.

<0\*\* = t<sub>calc</sub> cannot be determined precisely due to the sample variance equaling zero. Since the sample mean is less than the background mean, t<sub>calc</sub> would be less than zero.

Bolded area indicates a statistically significant change in concentration.

**Table 8**  
**Statistical Evaluation of Upgradient Wells**  
 RCH Newco II LLC ILD990785453  
 Lemont, Illinois  
 Round 62 December 2021

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Upgradient Concentration <sup>1</sup> (Arithmetic Mean)	Upgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D1	TOX	<b>0.017</b>	<b>0.097</b>	<b>0.013</b>	<b>0.00004</b>	<b>4.541</b>	<b>-0.15</b>	<b>N</b>
	TOC	<b>2.766</b>	<b>2.484</b>	<b>16.13</b>	<b>316</b>	<b>4.541</b>	<b>1.5</b>	<b>N</b>
	pH	<b>7.363</b>	<b>0.112</b>	<b>7.05</b>	<b>0.0002</b>	<b>4.541/-4.541</b>	<b>-47.69</b>	<b>Y</b>
	Spec. Cond.	<b>1334.375</b>	<b>15,231.855</b>	<b>1312.5</b>	<b>91.67</b>	<b>4.541</b>	<b>-4.57</b>	<b>N</b>

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Upgradient Concentration <sup>1</sup> (Arithmetic Mean)	Upgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D5	TOX	<b>0.017</b>	<b>0.097</b>	<b>0.005</b>	<b>0</b>	<b>4.541</b>	<b>&lt;0**</b>	<b>N</b>
	TOC	<b>2.766</b>	<b>2.484</b>	<b>6.07</b>	<b>45.84</b>	<b>4.541</b>	<b>0.97</b>	<b>N</b>
	pH	<b>7.363</b>	<b>0.112</b>	<b>7.23</b>	<b>0.002</b>	<b>4.541/-4.541</b>	<b>-5.42</b>	<b>Y</b>
	Spec. Cond.	<b>1334.375</b>	<b>15,231.855</b>	<b>1357.5</b>	<b>91.67</b>	<b>4.541</b>	<b>4.82</b>	<b>Y</b>

<sup>1</sup> Concentrations are in milligrams per liter (mg/L), except Specific Conductance (umho/cm) and pH (pH units).

t\* = critical value of t at the 99% level of significance.

t<sub>calc</sub> = calculated value of t.

<0\*\* = t<sub>calc</sub> cannot be determined precisely due to the sample variance equaling zero. Since the sample mean is less than the background mean, t<sub>calc</sub> would be less than zero.

Bolded area indicates a statistically significant change in concentration.

**Table 9**  
**Statistical Evaluation of Downgradient Wells**  
**RCH Newco II LLC ILD990785453**  
 Lemont, Illinois  
 Round 62 December 2021

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Downgradient Concentration <sup>1</sup> (Arithmetic Mean)	Downgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D2	TOX	0.017	0.097	0.005	0	4.541	<0**	N
	TOC	2.766	2.484	4.26	2.90	4.541	1.76	N
	pH	7.363	0.112	7.20	0.0001	4.541/-4.541	-27.67	Y
	Spec. Cond.	1334.375	15,231.855	975.25	284	4.541	-42.60	N

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Downgradient Concentration <sup>1</sup> (Arithmetic Mean)	Downgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D3	TOX	0.017	0.097	0.0165	0.00008	4.541	-0.11	N
	TOC	2.766	2.484	4.04	2.99	4.541	1.46	N
	pH	7.363	0.112	7.31	0.012	4.541/-4.541	-0.91	N
	Spec. Cond.	1334.375	15,231.855	1280	4067	4.541	-1.69	N

Monitoring Well Number	Parameter	Background Concentration <sup>1</sup> (Arithmetic Mean)	Background Concentration <sup>1</sup> (Variance)	Downgradient Concentration <sup>1</sup> (Arithmetic Mean)	Downgradient Concentration <sup>1</sup> (Variance)	t*	t <sub>calc</sub>	Significant Change at 99% Level?
MW-D4	TOX	0.017	0.097	0.006	0.000006	4.541	-0.88	N
	TOC	2.766	2.484	6.04	37.78	4.541	1.06	N
	pH	7.363	0.112	7.09	0.0007	4.541/-4.541	-21.38	Y
	Spec. Cond.	1334.375	15,231.855	1332.5	158	4.541	-0.30	N

<sup>1</sup> Concentrations are in milligrams per liter (mg/L), except Specific Conductance (umho/cm) and pH (pH units).  
 t\* = critical value of t at the 99% level of significance.  
 t<sub>calc</sub> = calculated value of t.  
 <0\*\* = t<sub>calc</sub> cannot be determined precisely due to the sample variance equating zero. Since the sample mean is less than the background mean, t<sub>calc</sub> would be less than zero.  
 Bolded area indicates a statistically significant change in concentration.



**ATTACHMENT C**  
***Laboratory Analytical Reports***



**Microbac Laboratories, Inc. - Chicagoland**

**CERTIFICATE OF ANALYSIS**

**21F1298**

**Project Description**

**Ceco - Lemont, IL**

**For:**

**Bruce Shabino**

**Carlson Environmental, Inc.**

**65 East Wacker Place, Suite 2210**

**Chicago, IL 60601-**

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**Ron Misiunas**

**Lab Director**

**Tuesday, July 6, 2021**

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc. - Chicagoland. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

**Microbac Laboratories, Inc.**

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21F1298

Carlson Environmental, Inc.

Project Name: Caco - Lemont, IL

Bruce Shabino  
65 East Wacker Place, Suite 2210  
Chicago, IL 60601-

Project / PO Number: N/A  
Received: 06/17/2021  
Reported: 07/06/2021

## Case Narrative

## TOX Analysis:

The TOX sample in this work order was submitted to Keystone Labs, Newton IA for analysis. Their results are attached to this report.

## TOC Analysis:

Samples requiring TOC analysis were submitted to Microbac Laboratories Ohio Valley Division in Marietta, OH. Their results are incorporated into this report.

## Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
MWD-1A	21F1298-01	Aqueous			06/15/21 09:30	06/17/21 16:00
MWD-1B	21F1298-02	Aqueous			06/15/21 09:30	06/17/21 16:00
MWD-1C	21F1298-03	Aqueous			06/15/21 09:30	06/17/21 16:00
MWD-1D	21F1298-04	Aqueous			06/15/21 09:30	06/17/21 16:00
MWD-2A	21F1298-05	Aqueous			06/15/21 14:30	06/17/21 16:00
MWD-2B	21F1298-06	Aqueous			06/15/21 14:30	06/17/21 16:00
MWD-2C	21F1298-07	Aqueous			06/15/21 14:30	06/17/21 16:00
MWD-2D	21F1298-08	Aqueous			06/15/21 14:30	06/17/21 16:00
MWD-3A	21F1298-09	Aqueous			06/15/21 13:15	06/17/21 16:00
MWD-3B	21F1298-10	Aqueous			06/15/21 13:15	06/17/21 16:00
MWD-3C	21F1298-11	Aqueous			06/15/21 13:15	06/17/21 16:00
MWD-3D	21F1298-12	Aqueous			06/15/21 13:15	06/17/21 16:00
MWD-4A	21F1298-13	Aqueous			06/15/21 12:00	06/17/21 16:00
MWD-4B	21F1298-14	Aqueous			06/15/21 12:00	06/17/21 16:00
MWD-4C	21F1298-15	Aqueous			06/15/21 12:00	06/17/21 16:00
MWD-4D	21F1298-16	Aqueous			06/15/21 12:00	06/17/21 16:00
MWD-5A	21F1298-17	Aqueous			06/15/21 10:30	06/17/21 16:00
MWD-5B	21F1298-18	Aqueous			06/15/21 10:30	06/17/21 16:00
MWD-5C	21F1298-19	Aqueous			06/15/21 10:30	06/17/21 16:00
MWD-5D	21F1298-20	Aqueous			06/15/21 10:30	06/17/21 16:00



Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21F1298

## Analytical Testing Parameters

Client Sample ID:	MWD-1A	Collection Date:	08/15/2021 9:30
Sample Matrix:	Aqueous		
Lab Sample ID:	21F1298-01		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.73	1.00	mg/L	1		08/21/21 1103	08/22/21 0552	DIH

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW-846 9038/EPA 9038								
Sulfate	220	10	mg/L	1		08/28/21 1004	08/29/21 1154	ABG
EPA 9066								
Phenolics, Total Recoverable	<0.010	0.010	mg/L	1		08/22/21 0953	08/22/21 1515	ABG
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1290	2.00	umhos/cm	1			08/21/21 1609	ABG
SM 2550 B-2010								
Temperature	13		°C	1			08/21/21 1121	WEH
SM 4500-Cl B-2011/SM 4500-Cl B-2011								
Chloride	49	1.0	mg/L	1			08/28/21 1732	AMR
SM 4500-H+ B-2011								
pH	7.34	2.00	S.U.	1	H4		08/21/21 1121	WEH

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW846 3005A/EPA 8010C								
Iron	1.9	0.050	mg/L	1		08/18/21 1213	08/23/21 1951	KMD
Manganese	0.050	0.0020	mg/L	1		08/18/21 1213	08/23/21 1951	KMD
Sodium	33	0.50	mg/L	1		08/18/21 1213	08/23/21 1951	KMD

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## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID:	MWD-1B	Collection Date:	06/15/2021 9:30
Sample Matrix:	Aqueous		
Lab Sample ID:	21F1298-02		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.90	1.00	mg/L	1		06/21/21 1103	06/22/21 0635	DIH

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1270	2.00	umhos/cm	1			08/21/21 1609	ABG
SM 2550 B-2010								
Temperature	12		°C	1			08/21/21 1123	WEH
SM 4500-H+ B-2011								
pH	7.34	2.00	S.U.	1	H4		08/21/21 1123	WEH

Client Sample ID:	MWD-1C	Collection Date:	06/15/2021 9:30
Sample Matrix:	Aqueous		
Lab Sample ID:	21F1298-03		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.80	1.00	mg/L	1		06/21/21 1103	06/22/21 0657	DIH

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1280	2.00	umhos/cm	1			06/21/21 1609	ABG
SM 2550 B-2010								
Temperature	13		°C	1			06/21/21 1124	WEH
SM 4500-H+ B-2011								
pH	7.25	2.00	S.U.	1	H4		06/21/21 1124	WEH

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## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID: MWD-1D  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21F1298-04

Collection Date: 08/15/2021 9:30

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.64	1.00	mg/L	1		08/21/21 1103	08/22/21 0719	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1260	2.00	umhos/cm	1			08/21/21 1609	ABG
SM 2550 B-2010								
Temperature	13		°C	1			08/21/21 1127	WEH
SM 4500-H+ B-2011								
pH	7.30	2.00	S.U.	1	H4		08/21/21 1127	WEH

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## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID:	MWD-2A	Collection Date:	06/15/2021 14:30
Sample Matrix:	Aqueous		
Lab Sample ID:	21F1298-05		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.01	1.00	mg/L	1		08/21/21 1103	06/22/21 0741	DIH

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW-846 9038/EPA 9038								
Sulfate	150	10	mg/L	1		06/28/21 1004	06/28/21 1158	ABG
EPA 9068								
Phenolics, Total Recoverable	<0.010	0.010	mg/L	1		06/22/21 0953	06/22/21 1517	ABG
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	796	2.00	umhos/cm	1			06/21/21 1609	ABG
SM 2550 B-2010								
Temperature	12		°C	1			06/21/21 1129	WEH
SM 4500-Cl B-2011/SM 4500-Cl B-2011								
Chloride	21	1.0	mg/L	1			06/29/21 1732	AMR
SM 4500-H+ B-2011								
pH	7.20	2.00	S.U.	1	H4		06/21/21 1129	WEH

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW846 3005A/EPA 6010C								
Iron	0.87	0.050	mg/L	1		06/18/21 1213	06/23/21 2005	KMD
Manganese	0.096	0.0020	mg/L	1		06/18/21 1213	06/23/21 2005	KMD
Sodium	16	0.50	mg/L	1		06/18/21 1213	06/23/21 2005	KMD

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## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID: MWD-2B  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21F1298-06

Collection Date: 08/15/2021 14:30

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.31	1.00	mg/L	1		06/21/21 1103	06/22/21 0803	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW-846 9038/EPA 9038								
Sulfate	160	10	mg/L	1		08/28/21 1004	06/28/21 1159	ABG
EPA 9068								
Phenolics, Total Recoverable	<0.010	0.010	mg/L	1		08/22/21 0953	06/22/21 1519	ABG
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	808	2.00	umhos/cm	1			06/21/21 1809	ABG
SM 2550 B-2010								
Temperature	13		°C	1			06/21/21 1131	WEH
SM 4500-Cl B-2011/SM 4500-Cl B-2011								
Chloride	22	1.0	mg/L	1			06/28/21 1732	AMR
SM 4500-H+ B-2011								
pH	7.20	2.00	S.U.	1	H4		06/21/21 1131	WEH

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW846 3005A/EPA 6010C								
Iron	0.88	0.050	mg/L	1		06/18/21 1213	06/23/21 2010	KMD
Manganese	0.10	0.0020	mg/L	1		06/18/21 1213	06/23/21 2010	KMD
Sodium	16	0.50	mg/L	1		06/18/21 1213	06/23/21 2010	KMD

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## CERTIFICATE OF ANALYSIS

21F1298

<b>Client Sample ID:</b>	MWD-2C	<b>Collection Date:</b>	06/15/2021 14:30
<b>Sample Matrix:</b>	Aqueous		
<b>Lab Sample ID:</b>	21F1298-07		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.31	1.00	mg/L	1		06/21/21 1103	06/22/21 0824	DIH

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	827	2.00	umhos/cm	1			06/21/21 1609	ABG
SM 2550 B-2010								
Temperature	15		°C	1			06/21/21 1133	WEH
SM 4500-H+ B-2011								
pH	7.17	2.00	S.U.	1	H4		06/21/21 1133	WEH

<b>Client Sample ID:</b>	MWD-2D	<b>Collection Date:</b>	06/15/2021 14:30
<b>Sample Matrix:</b>	Aqueous		
<b>Lab Sample ID:</b>	21F1298-08		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.08	1.00	mg/L	1		06/21/21 1103	06/22/21 0845	DIH

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	654	2.00	umhos/cm	1			06/21/21 1609	ABG
SM 2550 B-2010								
Temperature	13		°C	1			06/21/21 1135	WEH
SM 4500-H+ B-2011								
pH	7.16	2.00	S.U.	1	H4		06/21/21 1135	WEH

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## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID: MWD-3A  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21F1298-09

Collection Date: 08/15/2021 13:15

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.90	1.00	mg/L	1		06/21/21 1103	06/22/21 0907	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW-846 9038/EPA 9038								
Sulfate	310	50	mg/L	5		08/28/21 1004	06/28/21 1223	ABG
EPA 9068								
Phenolics, Total Recoverable	<0.010	0.010	mg/L	1		08/22/21 0953	06/22/21 1520	ABG
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1300	2.00	umhos/cm	1			06/21/21 1609	ABG
SM 2550 B-2010								
Temperature	14		°C	1			08/21/21 1136	WEH
SM 4500-Cl B-2011/SM 4500-Cl B-2011								
Chloride	34	1.0	mg/L	1			06/29/21 1732	AMR
SM 4500-H+ B-2011								
pH	7.37	2.00	S.U.	1	H4		06/21/21 1136	WEH
Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW846 3005A/EPA 6010C								
Iron	0.070	0.050	mg/L	1		06/18/21 1213	06/23/21 2015	KMD
Manganese	0.012	0.0020	mg/L	1		06/18/21 1213	06/23/21 2015	KMD
Sodium	34	0.50	mg/L	1		06/18/21 1213	06/23/21 2015	KMD

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID: MWD-3B	Collection Date: 06/15/2021 13:15
Sample Matrix: Aqueous	
Lab Sample ID: 21F1298-10	

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.73	1.00	mg/L	1		06/21/21 1103	06/22/21 0928	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1270	2.00	umhos/cm	1			08/21/21 1609	ABG
SM 2550 B-2010								
Temperature	13		°C	1			08/21/21 1138	WEH
SM 4500-H+ B-2011								
pH	7.45	2.00	S.U.	1	H4		08/21/21 1138	WEH

Client Sample ID: MWD-3C	Collection Date: 06/15/2021 13:15
Sample Matrix: Aqueous	
Lab Sample ID: 21F1298-11	

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.78	1.00	mg/L	1		06/21/21 1103	06/22/21 0949	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1160	2.00	umhos/cm	1			08/24/21 1600	ABG
SM 2550 B-2010								
Temperature	14		°C	1			08/21/21 1151	WEH
SM 4500-H+ B-2011								
pH	7.43	2.00	S.U.	1	H4		08/21/21 1151	WEH

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID: MWD-3D  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21F1298-12

Collection Date: 06/15/2021 13:15

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.86	1.00	mg/L	1		06/21/21 1103	06/22/21 1032	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1250	2.00	umhos/cm	1			06/24/21 1600	ABG
SM 2550 B-2010								
Temperature	14		°C	1			06/21/21 1153	WEH
SM 4500-H+ B-2011								
pH	14.3	2.00	S.U.	1	H4		06/21/21 1153	WEH

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID:	MWD-4A	Collection Date:	06/15/2021 12:00
Sample Matrix:	Aqueous		
Lab Sample ID:	21F1298-13		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.61	1.00	mg/L	1		06/21/21 1103	06/22/21 1053	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW-846 9038/EPA 9038								
Sulfate	350	50	mg/L	5		06/28/21 1004	06/28/21 1225	ABG
EPA 9086								
Phenolics, Total Recoverable	<0.010	0.010	mg/L	1		08/22/21 0953	08/22/21 1528	ABG
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1210	2.00	umhos/cm	1			06/24/21 1600	ABG
SM 2550 B-2010								
Temperature	15		°C	1			06/21/21 1155	WEH
SM 4500-Cl B-2011/SM 4500-Cl B-2011								
Chloride	5.0	1.0	mg/L	1			08/29/21 1732	AMR
SM 4500-H+ B-2011								
pH	7.38	2.00	S.U.	1	H4		08/21/21 1155	WEH

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW846 3005A/EPA 6010C								
Iron	0.12	0.050	mg/L	1		06/18/21 1213	06/23/21 2020	KMD
Manganese	0.0097	0.0020	mg/L	1		06/18/21 1213	06/23/21 2020	KMD
Sodium	27	0.50	mg/L	1		06/18/21 1213	06/23/21 2020	KMD

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID: MWD-4B	Collection Date: 06/15/2021 12:00
Sample Matrix: Aqueous	
Lab Sample ID: 21F1298-14	

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.66	1.00	mg/L	1		06/21/21 1103	06/22/21 1114	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1290	2.00	umhos/cm	1			06/24/21 1600	ABG
SM 2550 B-2010								
Temperature	16		°C	1			06/21/21 1158	WEH
SM 4500-H+ B-2011								
pH	7.23	2.00	S.U.	1	H4		06/21/21 1158	WEH

Client Sample ID: MWD-4C	Collection Date: 06/15/2021 12:00
Sample Matrix: Aqueous	
Lab Sample ID: 21F1298-15	

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.75	1.00	mg/L	1		06/21/21 1103	06/22/21 1135	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1240	2.00	umhos/cm	1			06/24/21 1600	ABG
SM 2550 B-2010								
Temperature	15		°C	1			06/21/21 1200	WEH
SM 4500-H+ B-2011								
pH	7.22	2.00	S.U.	1	H4		06/21/21 1200	WEH

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## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID: MWD-4D  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21F1298-16

Collection Date: 06/15/2021 12:00

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.66	1.00	mg/L	1		06/21/21 1103	06/22/21 1157	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1220	2.00	umhos/cm	1			06/24/21 1600	ABG
SM 2550 B-2010								
Temperature	15		°C	1			06/21/21 1202	WEH
SM 4500-H+ B-2011								
pH	7.37	2.00	S.U.	1	H4		06/21/21 1202	WEH

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## CERTIFICATE OF ANALYSIS

21F1298

Client Sample ID:	MWD-5A	Collection Date:	08/15/2021 10:30
Sample Matrix:	Aqueous		
Lab Sample ID:	21F1298-17		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 8310 C-2011								
Total Organic Carbon - TOC	1.50	1.00	mg/L	1		06/21/21 1103	08/22/21 1218	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW-846 9038/EPA 9038								
Sulfate	380	50	mg/L	5		06/29/21 1004	08/28/21 1228	ABG
EPA 9066								
Phenolics, Total Recoverable	<0.010	0.010	mg/L	1		06/22/21 0953	08/22/21 1527	ABG
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1280	2.00	umhos/cm	1			08/24/21 1800	ABG
SM 2550 B-2010								
Temperature	14		°C	1			08/21/21 1203	WEH
SM 4500-Cl B-2011/SM 4500-Cl B-2011								
Chloride	4.5	1.0	mg/L	1			08/29/21 1732	AMR
SM 4500-H+ B-2011								
pH	7.37	2.00	S.U.	1	H4		08/21/21 1203	WEH

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW846 3005A/EPA 8010C								
Iron	<0.050	0.050	mg/L	1		06/18/21 1213	08/23/21 2025	KMD
Manganese	<0.0020	0.0020	mg/L	1		06/18/21 1213	08/23/21 2025	KMD
Sodium	22	0.50	mg/L	1		08/18/21 1213	08/23/21 2025	KMD

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## CERTIFICATE OF ANALYSIS

21F1298

<b>Client Sample ID:</b>	MWD-5B	<b>Collection Date:</b>	06/15/2021 10:30
<b>Sample Matrix:</b>	Aqueous		
<b>Lab Sample ID:</b>	21F1298-18		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.74	1.00	mg/L	1		08/21/21 1103	08/22/21 1239	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1270	2.00	umhos/cm	1			06/24/21 1600	ABG
SM 2550 B-2010								
Temperature	15		°C	1			06/21/21 1205	WEH
SM 4500-H+ B-2011								
pH	7.38	2.00	S.U.	1	H4		08/21/21 1205	WEH

<b>Client Sample ID:</b>	MWD-5C	<b>Collection Date:</b>	08/15/2021 10:30
<b>Sample Matrix:</b>	Aqueous		
<b>Lab Sample ID:</b>	21F1298-19		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.31	1.00	mg/L	1		08/21/21 1103	08/22/21 1300	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1280	2.00	umhos/cm	1			06/24/21 1600	ABG
SM 2550 B-2010								
Temperature	15		°C	1			06/21/21 1209	WEH
SM 4500-H+ B-2011								
pH	7.38	2.00	S.U.	1	H4		06/21/21 1209	WEH

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**CERTIFICATE OF ANALYSIS**

**21F1298**

<b>Client Sample ID:</b> MWD-5D	<b>Collection Date:</b> 06/15/2021 10:30
<b>Sample Matrix:</b> Aqueous	
<b>Lab Sample ID:</b> 21F1298-20	

**Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH**

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	1.25	1.00	mg/L	1		06/21/21 1103	05/22/21 1321	DIH

**Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland**

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1280	2.00	umhos/cm	1			06/24/21 1600	ABG
SM 2550 B-2010								
Temperature	16		°C	1			08/21/21 1211	WEH
SM 4500-H+ B-2011								
pH	7.36	2.00	S.U.	1	H4		06/21/21 1211	WEH

**Definitions**

- °C: Degrees Celsius
- DF: Dilution Factor representing the amount the sample was diluted during analysis and may not represent preparation factors.
- H4: The test was performed outside of the EPA recommended holding time of 15 minutes.
- MDL: Minimum Detection Limit
- mg/L: Milligrams per Liter
- RL: Reporting Limit
- S.U.: Standard Units
- umhos/cm: Umhos per Centimeter

**Cooler Receipt Log**

<b>Cooler ID:</b> Default Cooler	<b>Temp:</b> 5.4°C	<b>Cooler ID:</b> New Cooler	<b>Temp:</b> 5.7°C
----------------------------------	--------------------	------------------------------	--------------------

**Cooler Inspection Checklist**

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time)?	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes		

**Project Requested Certification(s)**

Microbac Laboratories Inc., - Marietta, OH  
004319

Illinois Environmental Protection Agency

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CERTIFICATE OF ANALYSIS

21F1298

**Report Comments**

*Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.*

*The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.*

Reviewed and Approved By:

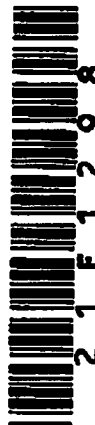
Ron Mislunas  
Lab Director  
ron.mislunas@microbac.com  
07/06/2021 10:58

**CHAIN-OF-CUSTODY RECORD**

No. 18651

Page 1 of 1

PROJECT NO.: 100.01		PROJECT NAME: Former Robertson-Ceco					ANALYSIS DESIRED				TURNAROUND REQUESTED	
SAMPLERS: (Initials) Bruce Shabino		[Signature]					Max Leadable Analytes TOX PCB Spillable Constituents Pesticides Chloride Fe, Mn, Ni Poles				Standard/AI	
REPORT TO: B. Shabino		PHONE: [Blank]									REMARKS: 21F1298	
EMAIL: bshabino@carlsonenv.com												
CLIENT SAMPLE NUMBER/DESCRIPTION	DATE TAKEN	TIME TAKEN	MATRIX	CONC.	GRAB	NO. OF CONTAINERS						
MWD-1A	6-15-21	130	G.W		X	7	X	X	X	X	X	-01
MWD-1B		↓				4	X	X	X	X		-02
MWD-1C		↓				4	X	X	X	X		-03
MWD-1D		↓				4	X	X	X	X		-04
MWD-2A		1430				7	X	X	X	X	X	-05
MWD-2B		↓				7	X	X	X	X	X	-06
MWD-2C		↓				4	X	X	X	X		-07
MWD-2D		↓				4	X	X	X	X		-08
MWD-3A		1315				7	X	X	X	X	X	-09
MWD-3B		↓				4	X	X	X	X		-10
MWD-3C		↓				4	X	X	X	X		-11
MWD-3D		↓				4	X	X	X	X		-12
MWD-4A		1200				7	X	X	X	X	X	-13
MWD-4B		↓				4	X	X	X	X		-14
MWD-4C		↓				4	X	X	X	X		-15
MWD-4D		↓				4	X	X	X	X		-16
MWD-5A		1130				7	X	X	X	X	X	-17
MWD-5B		↓				4	X	X	X	X		-18
MWD-5C		↓				4	X	X	X	X		-19
MWD-5D		↓				4	X	X	X	X		-20
Retrieved by (Name)		Date/Time		COMMENTS:  5.7-0.3 = 5.4 / 6.0-0.3 = 5.7% of								
Retrieved by (Name)		Date/Time										
Retrieved by (Name)		Date/Time										
Retrieved by (Name)		Date/Time										
Retrieved by (Name)		Date/Time										
RESULTS NEEDED:		/ / AM / PM										



Carlson - Chicago, IL  
PH: Kristen Gehlbach

R 000643

**Microbac Laboratories,  
Inc. - Chicagoland**



**SUBCONTRACT ORDER**

**21F1298**

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**SENDING LABORATORY:**

Microbac Laboratories, Inc. - Chicagoland  
250 West 84th Drive  
Merrillville, IN 46410  
Phone: 219.769.8378  
Lab Manager: Kristen Gehlbach  
Email: kristen.gehlbach@microbac.com

**RECEIVING LABORATORY:**

Microbac - OVD  
158 Starlite Dr.  
Marietta, OH 45750-  
Phone: (800) 373-4071

**Project Info:**

Project Name: Ceco - Lemont, IL  
Project No: Ceco - Lemont, IL

**Client:**

Project Type: ENV-Remediation  
Project Location: Illinois

Carlson - Chicago, IL

Report TAT: 5  
Due: 06/24/2021 23:59

**Sample ID: 21F1298-01**

**Sampled: 06/15/2021 00:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 00:00</b>	<b>\$ 62.40</b>

Containers Supplied:  
F: 40ml-Vial Amber-H2SO4

G: 40ml-Vial Amber-H2SO4

**Sample ID: 21F1298-02**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 09:30</b>	<b>\$ 62.40</b>

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21F1298-03**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 09:30</b>	<b>\$ 62.40</b>

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21F1298-04**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 09:30</b>	<b>\$ 62.40</b>

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Microbac Laboratories,  
Inc. - Chicagoland



SUBCONTRACT ORDER  
21F1298



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Sample ID: 21F1298-05

Sampled: 06/15/2021 14:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 14:30	\$ 62.40

Containers Supplied:  
F: 40ml-Vial Amber-H2SO4

G: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-06

Sampled: 06/15/2021 14:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 14:30	\$ 62.40

Containers Supplied:  
F: 40ml-Vial Amber-H2SO4

G: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-07

Sampled: 06/15/2021 14:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 14:30	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-08

Sampled: 06/15/2021 14:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 14:30	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-09

Sampled: 06/15/2021 13:15

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 13:15	\$ 62.40

Containers Supplied:  
F: 40ml-Vial Amber-H2SO4

G: 40ml-Vial Amber-H2SO4

Microbac Laboratories,  
Inc. - Chicagoland



SUBCONTRACT ORDER  
21F1298

Sample ID: 21F1298-10

Sampled: 06/15/2021 13:15

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 13:15	\$ 62.40

Containers Supplied:

C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-11

Sampled: 06/15/2021 13:15

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 13:15	\$ 62.40

Containers Supplied:

C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-12

Sampled: 06/15/2021 13:15

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 13:15	\$ 62.40

Containers Supplied:

C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-13

Sampled: 06/15/2021 12:00

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 12:00	\$ 62.40

Containers Supplied:

F: 40ml-Vial Amber-H2SO4

G: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-14

Sampled: 06/15/2021 12:00

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 12:00	\$ 62.40

Containers Supplied:

C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

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SUBCONTRACT ORDER  
21F1298

Sample ID: 21F1298-15

Sampled: 06/15/2021 12:00

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>08/24/2021 23:59</b>	<b>07/13/2021 12:00</b>	<b>\$ 62.40</b>

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-16

Sampled: 06/15/2021 12:00

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>08/24/2021 23:59</b>	<b>07/13/2021 12:00</b>	<b>\$ 62.40</b>

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-17

Sampled: 06/15/2021 10:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>08/24/2021 23:59</b>	<b>07/13/2021 10:30</b>	<b>\$ 62.40</b>

Containers Supplied:  
F: 40ml-Vial Amber-H2SO4

G: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-18

Sampled: 06/15/2021 10:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>08/24/2021 23:59</b>	<b>07/13/2021 10:30</b>	<b>\$ 62.40</b>

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Sample ID: 21F1298-19

Sampled: 06/15/2021 10:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
<b>TOTAL ORGANIC CARBON-KTL</b> Carbon, Total Organic	<b>SM 5310 C-2011</b> 0.5 mg/L	<b>08/24/2021 23:59</b>	<b>07/13/2021 10:30</b>	<b>\$ 62.40</b>

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

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SUBCONTRACT ORDER  
21F1298

Sample ID: 21F1298-20

Sampled: 06/15/2021 10:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires	Network \$
TOTAL ORGANIC CARBON-KTL Carbon, Total Organic	SM 5310 C-2011 0.5 mg/L	06/24/2021 23:59	07/13/2021 10:30	\$ 62.40

Containers Supplied:

C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Ref:  
Dep:

Date: 18 Jun 21  
Wgt: 51.65 LBS

DV:

From: PRIORITY OVERNIGHT  
TRACK: 8006 6721 5620

SHIPPING:	47.88
SPECIAL:	52.35
HANDLING:	0.00
TOTAL:	100.23


6/18/2021
1500
FedEx

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Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

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Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_





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**SUBCONTRACT ORDER  
21F1298**

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**SENDING LABORATORY:**

Microbac Laboratories, Inc. - Chicagoland  
250 West 84th Drive  
Merrillville, IN 46410  
Phone: 219.769.8378  
Lab Manager: Kristen Gehlbach  
Email: kristen.gehlbach@microbac.com

**RECEIVING LABORATORY:**

Keystone Laboratories, Inc.  
600 East 17th Street South  
Newton, IA 50208  
Phone: (800) 858-5227

**Project Info:**

Project Type: ENV-Remediation      Report TAT: 5  
Project Location: Illinois      Due: 06/24/2021 23:59

**Sample ID: 21F1298-01**

**Sampled: 06/15/2021 00:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 00:00

Containers Supplied:  
E: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-02**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 09:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-03**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 09:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-04**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 09:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

Ref:  
Dep:

Date: 21 Jun 21  
Wgt: 47.10 LBS

DV:

SHIPPING:	78.62
SPECIAL:	10.21
HANDLING:	0.00
TOTAL:	88.83

STY: PRIORITY OVERNIGHT  
TRK: 6006 6721 3704

**Microbac Laboratories,  
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**SUBCONTRACT ORDER  
21F1298**



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**Sample ID: 21F1298-05**

**Sampled: 06/15/2021 14:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 14:30</b>
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-06**

**Sampled: 06/15/2021 14:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 14:30</b>
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-07**

**Sampled: 06/15/2021 14:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 14:30</b>
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-08**

**Sampled: 06/15/2021 14:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 14:30</b>
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-09**

**Sampled: 06/15/2021 13:15**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 13:15</b>
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4			

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Inc. - Chicagoland**



**SUBCONTRACT ORDER  
21F1298**

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**Sample ID: 21F1298-10**

**Sampled: 06/15/2021 13:15**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 13:15</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-11**

**Sampled: 06/15/2021 13:15**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 13:15</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-12**

**Sampled: 06/15/2021 13:15**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 13:15</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-13**

**Sampled: 06/15/2021 12:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 12:00</b>
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-14**

**Sampled: 06/15/2021 12:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 12:00</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

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**SUBCONTRACT ORDER  
21F1298**

**Sample ID: 21F1298-15**

**Sampled: 06/15/2021 12:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 12:00</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-16**

**Sampled: 06/15/2021 12:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 12:00</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-17**

**Sampled: 06/15/2021 10:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 10:30</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-18**

**Sampled: 06/15/2021 10:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 10:30</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

**Sample ID: 21F1298-19**

**Sampled: 06/15/2021 10:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
<b>TOX_SUB</b> Total Organic Halides (TOX)	<b>EPA 9020</b> mg/L	<b>06/24/2021 23:59</b>	<b>07/13/2021 10:30</b>
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4			

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SUBCONTRACT ORDER  
21F1298

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Sample ID: 21F1298-20

Sampled: 06/15/2021 10:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 10:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4


06/15/21 1600


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Released By Date Received By Date

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Released By Date Received By Date



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**SUBCONTRACT ORDER**  
**21F1298**

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**SENDING LABORATORY:**

Microbac Laboratories, Inc. - Chicagoland  
250 West 84th Drive  
Merrillville, IN 46410  
Phone: 219.769.8378  
Lab Manager: Kristen Gehlbach  
Email: kristen.gehlbach@microbac.com

**RECEIVING LABORATORY:**

Keystone Laboratories, Inc.  
800 East 17th Street South  
Newton, IA 50208  
Phone: (800) 858-5227

**Project Info:**

Project Type: ENV-Remediation      Report TAT: 6  
Project Location: Illinois      Due: 06/25/2021 23:59

**Sample ID: 21F1298-01**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 09:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-02**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 09:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-03**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 09:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-04**

**Sampled: 06/15/2021 09:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 09:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

ALREADY SENT

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**SUBCONTRACT ORDER  
21F1298**

**Sample ID: 21F1298-05**

**Sampled: 06/15/2021 14:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 14:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-06**

**Sampled: 06/15/2021 14:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 14:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-07**

**Sampled: 06/15/2021 14:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 14:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-08**

**Sampled: 06/15/2021 14:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 14:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-09**

**Sampled: 06/15/2021 13:15**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 13:15

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

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**SUBCONTRACT ORDER  
21F1298**

**Sample ID: 21F1298-10**

**Sampled: 06/15/2021 13:15**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 13:15

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-11**

**Sampled: 06/15/2021 13:15**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 13:15

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-12**

**Sampled: 06/15/2021 13:15**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 13:15

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-13**

**Sampled: 06/15/2021 12:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 12:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-14**

**Sampled: 06/15/2021 12:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 12:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

ALREADY SENT

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WEATHER STATION MONITOR SYSTEM WATER QUALITY CONTROL SYSTEM

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**SUBCONTRACT ORDER  
21F1298**

**Sample ID: 21F1298-15**

**Sampled: 06/15/2021 12:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 12:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-16**

**Sampled: 06/15/2021 12:00**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 12:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-17**

**Sampled: 06/15/2021 10:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 10:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-18**

**Sampled: 06/15/2021 10:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 10:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21F1298-19**

**Sampled: 06/15/2021 10:30**

**Matrix: Aqueous**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 10:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

ALREADY SENT

Microbac Laboratories,  
Inc. - Chicagoland



R 000660



**SUBCONTRACT ORDER**  
**21F1298**

Page 36 of 68

Sample ID: 21F1298-20

Sampled: 06/16/2021 10:30

Matrix: Aqueous

Sampler:

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	06/25/2021 23:59	07/13/2021 10:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

ALREADY SENT

Ref:  
Dept:

Date: 22.Jun.21  
Wgt: 6.60 LBS  
GV:  
Srv: PRIORITY OVERNIGHT  
TRC: 6803 6781 3701

SHIPPING: 28.81  
SPECIAL: 5.78  
HANDLING: 0.00  
TOTAL: 38.40

Released By \_\_\_\_\_ Date 6/22/2021 1450 Received By Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_





June 25 2021

Kristen Gehlbach  
 Microbac Laboratories, Inc  
 250 W 84th Dr  
 Merrillville, IN 46410

RE: Subcontract-KG  
 21F1298

Enclosed are the results of analyses for samples received by the laboratory on 06/22/21 11:15. If you have any questions concerning this report, please feel free to contact me at 1-800-858-5227.

### ANALYTICAL REPORT FOR SAMPLES

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
21F1298-01	1EF2017-01	Water	06/15/21 00:00	06/22/21 11:15
21F1298-02	1EF2017-02	Water	06/15/21 09:30	06/22/21 11:15
21F1298-03	1EF2017-03	Water	06/15/21 09:30	06/22/21 11:15
21F1298-04	1EF2017-04	Water	06/15/21 09:30	06/22/21 11:15
21F1298-05	1EF2017-05	Water	06/15/21 14:30	06/22/21 11:15
21F1298-06	1EF2017-06	Water	06/15/21 14:30	06/22/21 11:15
21F1298-07	1EF2017-07	Water	06/15/21 14:30	06/22/21 11:15
21F1298-08	1EF2017-08	Water	06/15/21 14:30	06/22/21 11:15
21F1298-09	1EF2017-09	Water	06/15/21 13:15	06/22/21 11:15
21F1298-10	1EF2017-10	Water	06/15/21 13:15	06/22/21 11:15
21F1298-11	1EF2017-11	Water	06/15/21 13:15	06/22/21 11:15
21F1298-12	1EF2017-12	Water	06/15/21 13:15	06/22/21 11:15
21F1298-13	1EF2017-13	Water	06/15/21 12:00	06/22/21 11:15
21F1298-14	1EF2017-14	Water	06/15/21 12:00	06/22/21 11:15
21F1298-15	1EF2017-15	Water	06/15/21 12:00	06/22/21 11:15
21F1298-16	1EF2017-16	Water	06/15/21 12:00	06/22/21 11:15

*The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.*

Page 1 of 31

# Keystone

LABORATORIES, INC.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-17	1EF2017-17	Water	06/15/21 10:30	06/22/21 11:15
21F1298-18	1EF2017-18	Water	06/15/21 10:30	06/22/21 11:15
21F1298-19	1EF2017-19	Water	06/15/21 10:30	06/22/21 11:15
21F1298-20	1EF2017-20	Water	06/15/21 10:30	06/22/21 11:15

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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Microbac Laboratories,  
Inc. - Chicagoland

**MICROBAC<sup>+</sup>**  
SUBCONTRACT ORDER  
21F1298



1EF2017

**SENDING LABORATORY:**

Microbac Laboratories, Inc. - Chicagoland  
250 West 84th Drive  
Merrillville, IN 46410  
Phone: 219.788.8378  
Lab Manager: Kristen Gehlbach  
Email: kristen.gehlabach@microbac.com

**RECEIVING LABORATORY:**

Keystone Laboratories, Inc.  
600 East 17th Street South  
Newton, IA 50208  
Phone: (800) 858-5227

Temp 1.1

**Project Info:**

Project Type: ENV-Remediation  
Project Location: Illinois  
Report TAT: 5  
Due: 06/24/2021 23:59

Sample ID: 21F1298-01  
Matrix: Aqueous

Sampled: 06/15/2021 00:00  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 00:00	01
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-02  
Matrix: Aqueous

Sampled: 06/15/2021 09:30  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 09:30	02
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-03  
Matrix: Aqueous

Sampled: 06/15/2021 09:30  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 09:30	03
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-04  
Matrix: Aqueous

Sampled: 06/15/2021 09:30  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 09:30	04
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4				

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc  
250 W 84th Dr  
Memilville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

Microbac Laboratories,  
Inc. - Chicagoland

**MICROBAC<sup>+</sup>**  
SUBCONTRACT ORDER  
21F1298



1EF2017  
Temp 1.1

Sample ID: 21F1298-05  
Matrix: Aqueous

Sampled: 06/15/2021 14:30  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 8020 mg/L	06/24/2021 23:59	07/13/2021 14:30	05
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-06  
Matrix: Aqueous

Sampled: 06/15/2021 14:30  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 8020 mg/L	06/24/2021 23:59	07/13/2021 14:30	06
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-07  
Matrix: Aqueous

Sampled: 06/15/2021 14:30  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 8020 mg/L	06/24/2021 23:59	07/13/2021 14:30	07
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-08  
Matrix: Aqueous

Sampled: 06/15/2021 14:30  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 8020 mg/L	06/24/2021 23:59	07/13/2021 14:30	08
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-09  
Matrix: Aqueous

Sampled: 06/15/2021 13:15  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 8020 mg/L	06/24/2021 23:59	07/13/2021 13:15	09
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4				

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.





Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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Microbac Laboratories,  
Inc. - Chicagoland

**MICROBAC\***  
SUBCONTRACT ORDER  
21F1298



IEF2017  
Temp 1.1

Sample ID: 21F1298-10  
Matrix: Aqueous

Sampled: 06/15/2021 13:15  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 13:15	10
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-11  
Matrix: Aqueous

Sampled: 06/15/2021 13:15  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 13:15	11
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-12  
Matrix: Aqueous

Sampled: 06/15/2021 13:15  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 13:15	12
Containers Supplied: B: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-13  
Matrix: Aqueous

Sampled: 06/15/2021 12:00  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 12:00	13
Containers Supplied: E: 250ml-Bottle Glass Amber-H2SO4				

Sample ID: 21F1298-14  
Matrix: Aqueous

Sampled: 06/15/2021 12:00  
Sampler:

Analysis	Method	Analysis Due	Expires	
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 12:00	14
Containers Supplied: D: 250ml-Bottle Glass Amber-H2SO4				

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc  
250 W 84th Dr  
Merrillville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

Microbac Laboratories,  
Inc. - Chicagoland

**MICROBAC**<sup>®</sup>  
SUBCONTRACT ORDER  
21F1298



IEF2017  
Temp 1.1

Sample ID: 21F1298-15  
Matrix: Aqueous

Sampled: 06/15/2021 12:00  
Sampler:

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 12:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

Sample ID: 21F1298-16  
Matrix: Aqueous

Sampled: 06/16/2021 12:00  
Sampler:

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 12:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

Sample ID: 21F1298-17  
Matrix: Aqueous

Sampled: 06/15/2021 10:30  
Sampler:

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 10:30

Containers Supplied:  
E: 250ml-Bottle Glass Amber-H2SO4

Sample ID: 21F1298-18  
Matrix: Aqueous

Sampled: 06/15/2021 10:30  
Sampler:

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 10:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

Sample ID: 21F1298-19  
Matrix: Aqueous

Sampled: 06/16/2021 10:30  
Sampler:

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOX)	EPA 9020 mg/L	06/24/2021 23:59	07/13/2021 10:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/23/21 13:18
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Microbac Laboratories, Inc. - Chicagoland

**MICROBAC**  
SUBCONTRACT ORDER  
21F1298



1EF2017  
Temp 1.1

Sample ID: 21F1298-20  
Matrix: Aqueous

Sampled: 08/15/2021 10:30  
Sampler:

Analysis	Method	Analysis Due	Expires
TOX_SUB Total Organic Halides (TOH)	EPA 8020 mg/L	06/24/2021 23:59	07/13/2021 10:30

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

<u>[Signature]</u> Released By	<u>6/23/21</u> Date	<u>1600</u> Date	<u>F. [Signature]</u> Received By	<u>        </u> Date
<u>        </u> Released By	<u>        </u> Date	<u>        </u> Date	<u>[Signature]</u> Received By	<u>6-23-2021</u> Date

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc  
250 W 84th Dr  
Merrillville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

21F1298-01

1EF2017-01 (Water)

Date Sampled: 6/15/2021 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

**Determination of Conventional Chemistry Parameters**

Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1121	06/23/21	06/23/21 10:51	EPA 9020	
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The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

Page 8 of 31



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-02

1EF2017-02 (Water)

Date Sampled: 6/15/2021 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1121	06/23/21	06/23/21 10:51	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-03

1EF2017-03 (Water)

Date Sampled: 6/15/2021 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	I	1EF1121	06/23/21	06/23/21 10:51	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-04

1EF2017-04 (Water)

Date Sampled: 6/15/2021 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	0.013	0.010	mg/L	I	1EF1121	06/23/21	06/23/21 10:51	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-05

1EF2017-05 (Water)

Date Sampled: 6/15/2021 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	I	1EF1121	06/23/21	06/23/21 10:31	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.





Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-06

1EF2017-06 (Water)

Date Sampled: 6/15/2021 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1121	06/23/21	06/23/21 13:57	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-07

1EF2017-07 (Water)

Date Sampled: 6/15/2021 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1121	06/23/21	06/23/21 13:37	EPA 9020	
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The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 230 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-08

1EF2017-08 (Water)

Date Sampled: 6/15/2021 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

**Determination of Conventional Chemistry Parameters**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1121	06/23/21	06/23/21 15:37	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-09

1EF2017-09 (Water)

Date Sampled: 6/15/2021 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1121	06/23/21	06/23/21 15:57	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/23/21 13:18
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21F1298-10

1EF2017-10 (Water)

Date Sampled: 6/15/2021 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1246	06/24/21	06/24/21 16:40	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc  
250 W 84th Dr  
Merrillville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

21F1298-11

1EF2017-11 (Water)

Date Sampled: 6/15/2021 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Total Organic Halogens (TOX)	0.014	0.010	mg/L	1	1EF1121	06/23/21	06/23/21 15:57	EPA 9020	
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The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-12

1EF2017-12 (Water)

Date Sampled: 6/15/2021 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1246	06/24/21	06/24/21 13:57	EPA 9020	
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The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-13

1EF2017-13 (Water)

Date Sampled: 6/15/2021 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

**Determination of Conventional Chemistry Parameters**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1246	06/24/21	06/24/21 13:57	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.





Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
---	---	----------------------------

21F1298-14

1EF2017-14 (Water)

Date Sampled: 6/15/2021 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1246	06/24/21	06/24/21 13:57	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/23/21 13:18
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21F1298-15

1EF2017-15 (Water)

Date Sampled: 6/15/2021 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1246	06/24/21	06/24/21 13:57	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-16

IEF2017-16 (Water)

Date Sampled: 6/15/2021 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	IEF1246	06/24/21	06/24/21 13:57	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc  
250 W 84th Dr  
Memilville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

21F1298-17

1EF2017-17 (Water)

Date Sampled: 6/15/2021 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1246	06/24/21	06/24/21 16:40	EPA 9020	
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# Keystone

LABORATORIES, INC.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-18

IEF2017-18 (Water)

Date Sampled: 6/15/2021 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

**Determination of Conventional Chemistry Parameters**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	IEF1246	06/24/21	06/24/21 16:10	EPA 9020	

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Microbac Laboratories, Inc  
250 W 84th Dr  
Merrillville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

21F1298-19

IEF2017-19 (Water)

Date Sampled: 6/15/2021 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Total Organic Halogens (TOX)	ND	0.010	mg/L	1	IEF1246	06/24/21	06/24/21 16:40	EPA 9020	
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The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.



Microbac Laboratories, Inc 250 W 84th Dr Merrillville, IN 46410	Project: Subcontract-KG Project Number: 21F1298 Project Manager: Kristen Gehlbach	Reported 06/25/21 13:18
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21F1298-20

1EF2017-20 (Water)

Date Sampled: 6/15/2021 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Organic Halogens (TOX)	ND	0.010	mg/L	1	1EF1246	06/24/21	06/24/21 16:40	EPA 9020	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

# Keystone

LABORATORIES, INC.



Microbac Laboratories, Inc  
250 W 84th Dr  
Merrillville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

## Determination of Conventional Chemistry Parameters - Quality Control

### Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1EF1121 - TOX/TX/EOX</b>										
<b>Blank (1EF1121-BLK1)</b>										
Prepared & Analyzed: 06/23/21										
Total Organic Halogens (TOX)	ND	0.010	mg/L							
<b>LCS (1EF1121-BS1)</b>										
Prepared & Analyzed: 06/23/21										
Total Organic Halogens (TOX)	0.1074	0.010	mg/L	0.109170		98.4	66-122			QM-23
<b>LCS Dup (1EF1121-BSD1)</b>										
Prepared & Analyzed: 06/23/21										
Total Organic Halogens (TOX)	0.1073	0.010	mg/L	0.109170		98.3	66-122	0.121	19	QM-23
<b>Reference (1EF1121-SRM1)</b>										
Prepared & Analyzed: 06/23/21										
Total Organic Halogens (TOX)	0.1069	0.010	mg/L	0.103570		103	90-110			
<b>Reference (1EF1121-SRM2)</b>										
Prepared & Analyzed: 06/23/21										
Total Organic Halogens (TOX)	0.1063	0.010	mg/L	0.103570		103	90-110			
<b>Reference (1EF1121-SRM3)</b>										
Prepared & Analyzed: 06/23/21										
Total Organic Halogens (TOX)	0.1117	0.010	mg/L	0.103570		108	90-110			
<b>Batch 1EF1246 - TOX/TX/EOX</b>										
<b>Blank (1EF1246-BLK1)</b>										
Prepared & Analyzed: 06/24/21										
Total Organic Halogens (TOX)	ND	0.010	mg/L							
<b>LCS (1EF1246-BS1)</b>										
Prepared & Analyzed: 06/24/21										
Total Organic Halogens (TOX)	0.1118	0.010	mg/L	0.109170		102	66-122			QM-23
<b>LCS Dup (1EF1246-BSD1)</b>										
Prepared & Analyzed: 06/24/21										
Total Organic Halogens (TOX)	0.1015	0.010	mg/L	0.109170		93.0	66-122	9.66	19	QM-23

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

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# Keystone

LABORATORIES, INC.



MEMBER  
ACIL

Microbac Laboratories, Inc  
250 W 84th Dr  
Merrillville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

**Determination of Conventional Chemistry Parameters - Quality Control**  
**Keystone Laboratories, Inc. - Newton**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1EF1246 - TOX/TX/EOX**

**Reference (1EF1246-SRM1)**

Prepared & Analyzed: 06/24/21

Total Organic Halogens (TOX)	0.1136	0.010	mg/L	0.103570		110	90-110			
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**Reference (1EF1246-SRM2)**

Prepared & Analyzed: 06/24/21

Total Organic Halogens (TOX)	0.1121	0.010	mg/L	0.103570		108	90-110			
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**Reference (1EF1246-SRM3)**

Prepared & Analyzed: 06/24/21

Total Organic Halogens (TOX)	0.1003	0.010	mg/L	0.103570		96.9	90-110			
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**Certified Analyses Included in This Report**

Method/Matrix	Analyte	Certifications
EPA 9020 In Water	Total Organic Halogens (TOX)	KS-NT,SIA1X

Code	Certifying Authority	Certificate Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2022
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2021
MO-KC	Missouri Department of Natural Resources	140	04/30/2022
SIA1X	Iowa Department of Natural Resources	95	02/01/2021

This results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

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Microbac Laboratories, Inc  
250 W 84th Dr  
Merrillville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

**Notes and Definitions**

QM-23 LCS/LCSD were analyzed in place of MS/MSD due to limited sample volume.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RFD Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.*

# Keystone

LABORATORIES, INC.



Microbac Laboratories, Inc  
250 W 84th Dr  
Merrillville, IN 46410

Project: Subcontract-KG  
Project Number: 21F1298  
Project Manager: Kristen Gehlbach

Reported  
06/25/21 13:18

*Sue Thompson*

Sue Thompson  
Client Services Manager



Microbac Laboratories, Inc. - Chicagoland

**CERTIFICATE OF ANALYSIS**

**21L0164**

**Project Description**

**100.01 / Ceco - Lemont, IL**

**For:**

**Bruce Shabno**

**Carlson Environmental, Inc.**

**65 E Wacker PL STE 2210**

**Chicago, IL 60601**

---

**Kristen Gehlbach**

**Senior Project Manager**

**Saturday, December 11, 2021**

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc. - Chicagoland. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

**Microbac Laboratories, Inc.**

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Microbac Laboratories, Inc. - Chicagoland  
**CERTIFICATE OF ANALYSIS**

21L0164

Carlson Environmental, Inc.

Project Name: 100.01 / Cecco - Lemont, IL

Bruce Shabino  
 65 E Wacker PL STE 2210  
 Chicago, IL 60601

Project / PO Number: N/A  
 Received: 12/02/2021  
 Reported: 12/11/2021

**Sample Summary Report**

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
MWD-1A	21L0164-01	Aqueous			12/01/21 15:20	12/02/21 11:00
MWD-1B	21L0164-02	Aqueous			12/01/21 15:20	12/02/21 11:00
MWD-1C	21L0164-03	Aqueous			12/01/21 15:20	12/02/21 11:00
MWD-1D	21L0164-04	Aqueous			12/01/21 15:20	12/02/21 11:00
MWD-2A	21L0164-05	Aqueous			12/01/21 10:20	12/02/21 11:00
MWD-2B	21L0164-06	Aqueous			12/01/21 10:20	12/02/21 11:00
MWD-2C	21L0164-07	Aqueous			12/01/21 10:20	12/02/21 11:00
MWD-2D	21L0164-08	Aqueous			12/01/21 10:20	12/02/21 11:00
MWD-3A	21L0164-09	Aqueous			12/01/21 11:30	12/02/21 11:00
MWD-3B	21L0164-10	Aqueous			12/01/21 11:30	12/02/21 11:00
MWD-3C	21L0164-11	Aqueous			12/01/21 11:30	12/02/21 11:00
MWD-3D	21L0164-12	Aqueous			12/01/21 11:30	12/02/21 11:00
MWD-4A	21L0164-13	Aqueous			12/01/21 13:00	12/02/21 11:00
MWD-4B	21L0164-14	Aqueous			12/01/21 13:00	12/02/21 11:00
MWD-4C	21L0164-15	Aqueous			12/01/21 13:00	12/02/21 11:00
MWD-4D	21L0164-16	Aqueous			12/01/21 13:00	12/02/21 11:00
MWD-5A	21L0164-17	Aqueous			12/01/21 14:00	12/02/21 11:00
MWD-5B	21L0164-18	Aqueous			12/01/21 14:00	12/02/21 11:00
MWD-5C	21L0164-19	Aqueous			12/01/21 14:00	12/02/21 11:00
MWD-5D	21L0164-20	Aqueous			12/01/21 14:00	12/02/21 11:00



Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21L0164

## Analytical Testing Parameters

Client Sample ID:	MWD-1A	Collection Date:	12/01/2021 15:20
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-01		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	15.0	3.00	mg/L	3		12/07/21 1108	12/08/21 1109	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1320	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.03	2.00	S.U.	1	H4	12/06/21 0925	12/08/21 1001	BSB
Temperature	7.2		°C	1		12/06/21 0925	12/08/21 1001	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1520	12/07/21 0000	

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID:	MWD-1B	Collection Date:	12/01/2021 15:20
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-02		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	3.92	3.00	mg/L	3		12/07/21 1103	12/08/21 1130	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1300	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.05	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1003	BSB
Temperature	6.4		°C	1		12/08/21 0925	12/08/21 1003	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	0.011	0.01	mg/L	1		12/01/21 1520	12/07/21 0000	

Client Sample ID:	MWD-1C	Collection Date:	12/01/2021 15:20
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-03		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	41.6	3.00	mg/L	3		12/07/21 1103	12/08/21 1151	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1310	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.06	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1005	BSB
Temperature	7.3		°C	1		12/08/21 0925	12/08/21 1005	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	0.014	0.01	mg/L	1		12/01/21 1520	12/07/21 0000	

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID: MWD-1D  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21L0164-04

Collection Date: 12/01/2021 15:20

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	3.98	3.00	mg/L	3		12/07/21 1108	12/08/21 1212	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1320	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.05	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1006	BSB
Temperature	6.8		°C	1		12/08/21 0925	12/08/21 1006	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	0.02	0.01	mg/L	1		12/01/21 1520	12/07/21 0000	

Client Sample ID: MWD-2A  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21L0164-05

Collection Date: 12/01/2021 10:20

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	6.77	1.00	mg/L	1		12/07/21 1108	12/07/21 1652	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	958	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.19	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1007	BSB
Temperature	6.5		°C	1		12/08/21 0925	12/08/21 1007	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1020	12/07/21 0000	

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID:	MWD-2B	Collection Date:	12/01/2021 10:20
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-06		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	3.76	2.00	mg/L	2		12/07/21 1108	12/07/21 1804	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	985	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.21	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1010	BSB
Temperature	6.8		°C	1		12/08/21 0925	12/08/21 1010	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1020	12/07/21 0000	

Client Sample ID:	MWD-2C	Collection Date:	12/01/2021 10:20
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-07		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.98	2.00	mg/L	2		12/07/21 1108	12/07/21 1827	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	993	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.19	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1011	BSB
Temperature	6.8		°C	1		12/08/21 0925	12/08/21 1011	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1020	12/07/21 0000	

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Microbac Laboratories, Inc. - Chicagoland

## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID: MWD-2D  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21L0164-08

Collection Date: 12/01/2021 10:20

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	3.54	2.00	mg/L	2		12/07/21 1108	12/07/21 1849	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	995	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.21	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1013	BSB
Temperature	7.2		°C	1		12/08/21 0925	12/08/21 1013	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1020	12/08/21 0000	

Client Sample ID: MWD-3A  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21L0164-09

Collection Date: 12/01/2021 11:30

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	6.58	2.00	mg/L	2		12/07/21 1108	12/07/21 1911	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1220	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.39	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1014	BSB
Temperature	7.3		°C	1		12/08/21 0925	12/08/21 1014	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	0.024	0.01	mg/L	1		12/01/21 1130	12/08/21 0000	

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## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID:	MWD-3B	Collection Date:	12/01/2021 11:30
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-10		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.74	2.00	mg/L	2		12/07/21 1108	12/07/21 1933	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1230	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.42	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1016	BSB
Temperature	6.9		°C	1		12/08/21 0925	12/08/21 1016	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	0.023	0.01	mg/L	1		12/01/21 1130	12/08/21 0000	

Client Sample ID:	MWD-3C	Collection Date:	12/01/2021 11:30
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-11		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	3.58	2.00	mg/L	2		12/07/21 1108	12/07/21 1955	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1330	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.23	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1017	BSB
Temperature	6.8		°C	1		12/08/21 0925	12/08/21 1017	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	0.014	0.01	mg/L	1		12/01/21 1130	12/08/21 0000	

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CERTIFICATE OF ANALYSIS

21L0164

<b>Client Sample ID:</b> MWD-3D	
<b>Sample Matrix:</b> Aqueous	
<b>Lab Sample ID:</b> 21L0164-12	<b>Collection Date:</b> 12/01/2021 11:30

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	3.26	2.00	mg/L	2		12/07/21 1108	12/07/21 2016	DIH

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1340	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.21	2.00	S.U.	1	H4	12/06/21 0925	12/06/21 1018	BSB
Temperature	7.0		°C	1		12/06/21 0925	12/06/21 1018	BSB

Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1130	12/08/21 0000	

<b>Client Sample ID:</b> MWD-4A	
<b>Sample Matrix:</b> Aqueous	
<b>Lab Sample ID:</b> 21L0164-13	<b>Collection Date:</b> 12/01/2021 13:00

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	14.8	2.00	mg/L	2		12/07/21 1108	12/07/21 2038	DIH

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1330	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.05	2.00	S.U.	1	H4	12/06/21 0925	12/06/21 1020	BSB
Temperature	7.7		°C	1		12/06/21 0925	12/06/21 1020	BSB

Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1300	12/08/21 0000	

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## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID:	MWD-4B	Collection Date:	12/01/2021 13:00
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-14		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	5.62	2.00	mg/L	2		12/07/21 1108	12/07/21 2100	DIM

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1320	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.11	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1021	BSB
Temperature	7.9		°C	1		12/08/21 0925	12/08/21 1021	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1300	12/08/21 0000	

Client Sample ID:	MWD-4C	Collection Date:	12/01/2021 13:00
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-15		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.72	2.00	mg/L	2		12/07/21 1108	12/07/21 2122	DIM

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1330	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.08	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1022	BSB
Temperature	7.6		°C	1		12/08/21 0925	12/08/21 1022	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1300	12/08/21 0000	

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## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID: MWD-4D  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21L0164-16

Collection Date: 12/01/2021 13:00

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	<2.00	2.00	mg/L	2		12/07/21 1108	12/07/21 2204	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1350	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.10	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1025	BSB
Temperature	6.9		°C	1		12/08/21 0925	12/08/21 1025	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	0.01	0.01	mg/L	1		12/01/21 1300	12/08/21 0000	

Client Sample ID: MWD-SA  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21L0164-17

Collection Date: 12/01/2021 14:00

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	5.08	2.00	mg/L	2		12/07/21 1108	12/07/21 2225	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1370	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.30	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1027	BSB
Temperature	8.4		°C	1		12/08/21 0925	12/08/21 1027	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1400	12/08/21 0000	

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## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID:	MWD-5B	Collection Date:	12/01/2021 14:00
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-18		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	15.9	2.00	mg/L	2		12/07/21 1108	12/07/21 2247	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1350	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.21	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1028	BSB
Temperature	9.0		°C	1		12/08/21 0925	12/08/21 1028	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1400	12/09/21 0000	

Client Sample ID:	MWD-5C	Collection Date:	12/01/2021 14:00
Sample Matrix:	Aqueous		
Lab Sample ID:	21L0164-19		

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	<2.00	2.00	mg/L	2		12/07/21 1111	12/08/21 0151	DIH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1350	2.00	umhos/cm	1			12/08/21 2120	EF
SM 4500-H+ B-2011								
pH	7.22	2.00	S.U.	1	H4	12/09/21 0925	12/08/21 1029	BSB
Temperature	9.1		°C	1		12/09/21 0925	12/08/21 1029	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1400	12/09/21 0000	

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## CERTIFICATE OF ANALYSIS

21L0164

Client Sample ID: MWD-5D  
 Sample Matrix: Aqueous  
 Lab Sample ID: 21L0164-20

Collection Date: 12/01/2021 14:00

## Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 5310 C-2011								
Total Organic Carbon - TOC	2.30	2.00	mg/L	2		12/07/21 1111	12/09/21 0212	DH

## Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2510 B-2011/SM 2510 B-2011								
Specific Conductance	1380	2.00	umhos/cm	1			12/09/21 2120	EF
SM 4500-H+ B-2011								
pH	7.19	2.00	S.U.	1	H4	12/08/21 0925	12/08/21 1030	BSB
Temperature	8.5		°C	1		12/08/21 0925	12/08/21 1030	BSB

## Analyses Performed by: Keystone Laboratories, Inc.

n-Hexane Extractable Material by Gravimetric	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9020								
Total Organic Halides (TOX)	<0.01	0.01	mg/L	1		12/01/21 1400	12/09/21 0000	

## Definitions

°C:	Degrees Celsius
DF:	Dilution Factor representing the amount the sample was diluted during analysis and may not represent preparation factors.
H4:	The test was performed outside of the EPA recommended holding time of 15 minutes.
MDL:	Minimum Detection Limit
mg/L:	Milligrams per Liter
RL:	Reporting Limit
S.U.:	Standard Units
umhos/cm:	Umhos per Centimeter

## Cooler Receipt Log

Cooler ID: Default Cooler Temp: 4.1°C

## Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes		

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CERTIFICATE OF ANALYSIS

21L0164

Project Requested Certification(s)

Microbac Laboratories Inc., - Marietta, OH

004319

E-10290

Illinois Environmental Protection Agency

Kansas Department of Health and Environment

Report Comments

*Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.*

*The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <http://www.microbac.com/standard-terms-conditions>.*

Reviewed and Approved By:

Kristen Gehlbach  
Senior Project Manager  
kristen.gehlabach@microbac.com  
12/11/2021 12:20

Microbac Laboratories, Inc.

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**Microbac Laboratories, Inc. - Chicagoland**



**SUBCONTRACT ORDER  
21L0164**

**SENDING LABORATORY:**

Microbac Laboratories, Inc. - Chicagoland  
250 West 84th Drive  
Merrillville, IN 46410  
Phone: 219.769.8378  
Lab Manager: Kristen Gehlbach  
Email: kristen.gehlbach@microbac.com

**RECEIVING LABORATORY:**

Keystone Laboratories, Inc.  
600 E 17th ST S  
Newton, IA 50208  
Phone: (800) 858-5227

**Project Info:**

Project Type: ENV-Remediation      Report TAT: 8  
Project Location: Illinois      Due: 12/09/2021 23:59

**Sample ID: 21L0164-01**

**Sampled: 12/01/2021 15:20      Sampler:**

**Matrix: Aqueous**

**Description: MWD-1A**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 15:20

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-02**

**Sampled: 12/01/2021 15:20      Sampler:**

**Matrix: Aqueous**

**Description: MWD-1B**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 15:20

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-03**

**Sampled: 12/01/2021 15:20      Sampler:**

**Matrix: Aqueous**

**Description: MWD-1C**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 15:20

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-04**

**Sampled: 12/01/2021 15:20      Sampler:**

**Matrix: Aqueous**

**Description: MWD-1D**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 15:20

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Microbac Laboratories,  
Inc. - Chicagoland**



**SUBCONTRACT ORDER  
21L0164**

**Sample ID: 21L0164-05**

**Matrix: Aqueous**

**Sampled: 12/01/2021 10:20**

**Description: MWD-2A**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 10:20

Containers Supplied:

B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-06**

**Matrix: Aqueous**

**Sampled: 12/01/2021 10:20**

**Description: MWD-2B**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 10:20

Containers Supplied:

B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-07**

**Matrix: Aqueous**

**Sampled: 12/01/2021 10:20**

**Description: MWD-2C**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 10:20

Containers Supplied:

B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-08**

**Matrix: Aqueous**

**Sampled: 12/01/2021 10:20**

**Description: MWD-2D**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 10:20

Containers Supplied:

B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-09**

**Matrix: Aqueous**

**Sampled: 12/01/2021 11:30**

**Description: MWD-3A**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 11:30

Containers Supplied:

B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-10**

**Matrix: Aqueous**

**Sampled: 12/01/2021 11:30**

**Description: MWD-3B**

**Sampler:**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 11:30

Containers Supplied:

B: 250ml-Bottle Glass Amber-H2SO4

**Microbac Laboratories,  
Inc. - Chicagoland**



**SUBCONTRACT ORDER  
21L0164**

**Sample ID: 21L0164-11**

**Sampled: 12/01/2021 11:30**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-3C**

<b>Analysis</b>	<b>Method</b>	<b>Analysis Due</b>	<b>Expires</b>
<b>TOX_SUB</b>	<b>EPA 9020</b>	<b>12/09/2021 23:59</b>	<b>12/29/2021 11:30</b>

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-12**

**Sampled: 12/01/2021 11:30**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-3D**

<b>Analysis</b>	<b>Method</b>	<b>Analysis Due</b>	<b>Expires</b>
<b>TOX_SUB</b>	<b>EPA 9020</b>	<b>12/09/2021 23:59</b>	<b>12/29/2021 11:30</b>

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-13**

**Sampled: 12/01/2021 13:00**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-4A**

<b>Analysis</b>	<b>Method</b>	<b>Analysis Due</b>	<b>Expires</b>
<b>TOX_SUB</b>	<b>EPA 9020</b>	<b>12/09/2021 23:59</b>	<b>12/29/2021 13:00</b>

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-14**

**Sampled: 12/01/2021 13:00**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-4B**

<b>Analysis</b>	<b>Method</b>	<b>Analysis Due</b>	<b>Expires</b>
<b>TOX_SUB</b>	<b>EPA 9020</b>	<b>12/09/2021 23:59</b>	<b>12/29/2021 13:00</b>

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-15**

**Sampled: 12/01/2021 13:00**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-4C**

<b>Analysis</b>	<b>Method</b>	<b>Analysis Due</b>	<b>Expires</b>
<b>TOX_SUB</b>	<b>EPA 9020</b>	<b>12/09/2021 23:59</b>	<b>12/29/2021 13:00</b>

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-16**

**Sampled: 12/01/2021 13:00**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-4D**

<b>Analysis</b>	<b>Method</b>	<b>Analysis Due</b>	<b>Expires</b>
<b>TOX_SUB</b>	<b>EPA 9020</b>	<b>12/09/2021 23:59</b>	<b>12/29/2021 13:00</b>

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Microbac Laboratories,  
Inc. - Chicagoland**



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**SUBCONTRACT ORDER  
21L0164**

**Sample ID: 21L0164-17**

**Sampled: 12/01/2021 14:00**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-5A**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 14:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-18**

**Sampled: 12/01/2021 14:00**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-5B**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 14:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-19**

**Sampled: 12/01/2021 14:00**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-5C**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 14:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

**Sample ID: 21L0164-20**

**Sampled: 12/01/2021 14:00**

**Sampler:**

**Matrix: Aqueous**

**Description: MWD-5D**

Analysis	Method	Analysis Due	Expires
TOX_SUB	EPA 9020	12/09/2021 23:59	12/29/2021 14:00

Containers Supplied:  
B: 250ml-Bottle Glass Amber-H2SO4

Ref:  
Cap:  
SERIAL

Date: 02Dec21  
Wgt: 48.65 LBS

OV:

SHIPPING:	65.10
SPECIAL:	18.05
HANDLING:	0.00
TOTAL:	110.15

Over: PRIORITY OVERNIGHT  
TRACK: 6800 6723 6925


12/2/2021 1700


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Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

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Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

**CARLSON ENVIRONMENTAL**  
 65 East Wacker Place • Suite 2210 • Chicago, IL 60601  
 Phone (312) 348-2140 • Fax (312) 348-8856

**CHAIN-OF-CUSTODY RECORD**

No. 18444

Page 1 of 1

PROJECT NO.: 1001.01 PROJECT NAME: Former Celco Site  
 CLIENTS: BASF PHONE: 312-952-2532  
 REPORT TO: Bruce Shabino EMAIL:

ANALYSIS DESIRED: As specified in the IRL  
 TURNAROUND REQUESTED: Standard VFA  
 REMARKS: 21L0164

CLIENT SAMPLE NUMBER/DESCRIPTION	DATE TAKEN	TIME TAKEN	MATRIX	CONTR	GLAS	NO. OF CONTAINERS
MWD-1A	12-1-21	15:20	GW	X		4
MWD-1B						
MWD-1C						
MWD-1D						
MWD-2A		10:20				
MWD-2B						
MWD-2C						
MWD-2D						
MWD-3A		11:30				
MWD-3B						
MWD-3C						
MWD-3D						
MWD-4A		13:00				
MWD-4B						
MWD-4C						
MWD-4D						
MWD-5A		14:00				
MWD-5B						
MWD-5C						
MWD-5D						



Carlson - Chicago, IL  
 PM: Kristen Gehlach

COMMENTS: 3.9 to 3 = 4.1 cSt

Checked by: [Signature] Date: 12/29/11  
 Recycled by: [Signature] Date: 1/2/12  
 Recycled by: [Signature] Date: 1/10/12  
 Recycled by: [Signature] Date: 1/10/12



**SUBCONTRACT ORDER  
21L0164**

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**SENDING LABORATORY:**

Microbac Laboratories, Inc. - Chicagoland  
250 West 84th Drive  
Merrillville, IN 46410  
Phone: 219.769.8378  
Lab Manager: Kristen Gehlbach  
Email: kristen.gehlbach@microbac.com

**RECEIVING LABORATORY:**

Microbac - OVD  
158 Starfite DR  
Marietta, OH 45750  
Phone: (800) 373-4071

**Project Info:** Client Name: Ceco - Lemont, IL  
Project Name: Ceco - Lemont, IL  
Project Type: ENV-Remediation  
Project Location: Illinois  
Report TAT: 5  
Due: 12/09/2021 23:59

**Sample ID: 21L0164-01**      **Sampled: 12/01/2021 15:20**      **Sampler:**  
**Matrix: Aqueous**      **Description: MWD-1A**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 15:20	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4      D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-02**      **Sampled: 12/01/2021 15:20**      **Sampler:**  
**Matrix: Aqueous**      **Description: MWD-1B**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 15:20	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4      D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-03**      **Sampled: 12/01/2021 15:20**      **Sampler:**  
**Matrix: Aqueous**      **Description: MWD-1C**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 15:20	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4      D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-04**      **Sampled: 12/01/2021 15:20**      **Sampler:**  
**Matrix: Aqueous**      **Description: MWD-1D**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 15:20	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4      D: 40ml-Vial Amber-H2SO4

Microbac Laboratories,  
Inc. - Chicagoland



**SUBCONTRACT ORDER**  
**21L0164**

**Sample ID: 21L0164-05**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 10:20**  
**Description: MWD-2A**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 10:20	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-06**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 10:20**  
**Description: MWD-2B**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 10:20	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-07**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 10:20**  
**Description: MWD-2C**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 10:20	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-08**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 10:20**  
**Description: MWD-2D**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 10:20	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-09**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 11:30**  
**Description: MWD-3A**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 11:30	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-10**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 11:30**  
**Description: MWD-3B**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 11:30	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4





**SUBCONTRACT ORDER**  
**21L0164**

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**Sample ID: 21L0164-11**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 11:30**      **Sampler:**  
**Description: MWD-3C**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 11:30	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-12**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 11:30**      **Sampler:**  
**Description: MWD-3D**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 11:30	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-13**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 13:00**      **Sampler:**  
**Description: MWD-4A**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 13:00	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-14**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 13:00**      **Sampler:**  
**Description: MWD-4B**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 13:00	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-15**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 13:00**      **Sampler:**  
**Description: MWD-4C**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 13:00	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-16**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 13:00**      **Sampler:**  
**Description: MWD-4D**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 13:00	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

Microbac Laboratories,  
Inc. - Chicagoland



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**SUBCONTRACT ORDER**  
**21L0164**

**Sample ID: 21L0164-17**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 14:00**  
**Description: MWD-5A**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM6310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 14:00	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-18**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 14:00**  
**Description: MWD-5B**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 14:00	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-19**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 14:00**  
**Description: MWD-5C**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 14:00	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4

**Sample ID: 21L0164-20**  
**Matrix: Aqueous**

**Sampled: 12/01/2021 14:00**  
**Description: MWD-5D**

**Sampler:**

Analysis	Method	Analysis Due	Expires	Network \$
TOC SM5310	SM 5310 C-2011	12/09/2021 23:59	12/29/2021 14:00	\$ 62.40

Containers Supplied:  
C: 40ml-Vial Amber-H2SO4

D: 40ml-Vial Amber-H2SO4


12/3/2021
FEG

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Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

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Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



**ATTACHMENT D**  
*Certification Statement*

**Certification Statement**

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.

ILD990785453

USEPA ID Number

RCH Newco II LLC

Site Name

1978030005

IEPA Number

RCH Newco II LLC

Site Owner/Operator

Kevin J. Shady 4/1/22  
Signature of Owner/Operator Date  
Representative

Kevin J. Shady, V.P.  
Name and Title of Owner/Operator  
Representative

# EXHIBIT C

MARY ANN STUKEL

12P

Will County Recorder

Will County

**PREPARED BY:**

**Name:** Clifton A. Lake  
**Address:** McBride Baker & Coles  
500 W. Madison Street, 40<sup>th</sup> Floor  
Chicago, IL 60661-2511

R 2000018584

Page 1 of 12

LAK Date 02/17/2000

Time 14:21:53

Recording Fees:

23.00

**RETURN TO:**

**Name:** Clifton A. Lake  
**Address:** McBride Baker & Coles  
500 W. Madison Street, 40<sup>th</sup> Floor  
Chicago, IL 60661-2511

**THE ABOVE SPACE FOR RECORDER'S OFFICE**

**Deed Restriction**

**Site Identification**

See Exhibit I for legal description of Property and Real Estate Tax Index Numbers of the Property

1978030005-Will County  
IEPA No. ILD9907895453

**Site Name:** Robertson-Ceco Corporation Property  
Lemont, Illinois

**Site Address:** N/A

**County:** Cook County and Will County, Illinois

WHEREAS, Robertson-Ceco Corporation is the Owner of certain real estate described above, known as The Robertson-Ceco Corporation Property in Will and Cook Counties, Illinois, and,

WHEREAS, the Illinois Environmental Protection Agency has approved closure of the Robertson-Ceco Corporation Property under RCRA subject to certain conditions,

1812

R2000018584

**NOW, THEREFORE, Robertson-Ceco Corporation hereby covenants to the State of Illinois that the use of the property shall forever be limited to industrial use, unless permission for an alternative use is granted by the Illinois Environmental Protection Agency, that a Site Safety Program meeting the requirements of 29 C.F.R. will be developed and implemented during any activity whereby workers will come into direct contact with the slag material, and that any slag material removed from the area in the future will be managed in accordance with the provisions of 35 ILL. ADM. CODE, Subtitle G: Waste Disposal.**

**Robertson-Ceco Corporation has filed this Deed Restriction to comply with §2 of the December 20, 1999, letter issued by the Illinois Environmental Protection Agency, attached hereto as Exhibit II.**

**This Deed Restriction shall be considered a restrictive covenant running with the land, and shall be binding upon Robertson-Ceco Corporation, its successors and assigns, and on subsequent owners**

IN WITNESS WHEREOF, the Owner has hereunder caused this instrument to be executed pursuant to authority of its Board of Directors.

By Ronald D. Stevens

Its EXECUTIVE V.P. & CFO

ATTEST:

Deed A. Glass

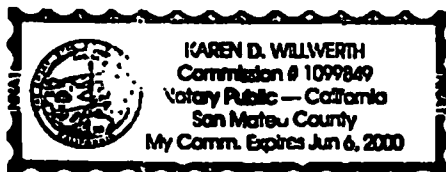
State of California )  
County of CONTRA COSTA

The undersigned, a Notary Public in and for the County and State aforesaid, do hereby certify that RONALD D. STEVENS and DEDE A. GLASS, personally known to me to be the CFO + EXEC. V.P. and Attester of said corporation respectively, whose names are subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that as such officers they signed and delivered the foregoing instrument as their free and voluntary act and as the free and voluntary act and deed of said corporation for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14<sup>th</sup> day of FEBRUARY, 2000.

Karen D. Willwerth  
Notary Public

11073797.v 1





**COOK COUNTY PROPERTY LEGAL DESCRIPTION**  
**(Real Estate Property LD. # 22-30-100-012)**

**Lots 21, 26, 28, 41 and 43 in County Clerk's Division in Section 30, Township 37 North, Range 11 East of the Third Principal Meridian; excepting therefrom that part of Lots 21, 26, 28, 41 and 43 in County Clerk's Division in Section 30, Township 37 North, Range 11 East of the Third Principal Meridian, taken as a tract and described as follows: Beginning at a point on the Southerly line of said tract at a point 2310 feet Northeasterly of the Southwesterly corner thereof; thence Northwesterly at 90 degrees to the Southerly line thereof a distance of 200 feet; thence Northeasterly at 90 degrees to last described course a distance of 120 feet; thence Southeasterly at 90 degrees to last described course a distance of 200 feet to the Southerly line of said tract; thence Southwesterly a distance of 120 feet to the point of beginning; in Cook County, Illinois.**

**EXHIBIT I**

4

**WILL COUNTY PROPERTY LEGAL DESCRIPTION  
(Real Estate Property LD. # 12-02-25-200-016)**

That part of the East half of Section 25 in Township 37 North, Range 10 East of the Third Principal Meridian, in DuPage Township, Will County, Illinois, as hereinafter described:

Beginning at a point in the East line of said Section 25 at its point of intersection with the Southerly 90 foot reserve line of the Illinois and Michigan Canal, extending in a Northeasterly and Southwesterly direction through the said East half of said Section, thence South along the East line of said Section 531.5 feet to a point in the Northerly right of way line of the Gulf, Mobile and Ohio Railroad (Alton Railroad), extending in a Northeasterly and Southwesterly direction through the East half of said Section, aforesaid, thence Southwesterly along the said Northerly right of way line of said Railroad 2123.75 feet to a point, thence Northwesterly along a direct line 541.5 feet to a point in the said Southerly 90 feet reserve line of the said Illinois and Michigan Canal that is 2454.13 feet Southwesterly (measured along the said Southerly 90 foot reserve line of said canal) from the point of beginning, thence Northeasterly 2454.13 feet to the point of beginning, excepting therefrom that property conveyed by deed recorded January 19, 1982 as Document Number R8202168, described as follows:

That part of the East 1/2 of Section 25, Township 37 North, and in Range 10 East of the Third Principal Meridian, described as follows:

Commencing at a point in the East line of said Section 25 at its point of intersection with the Southerly 90 foot Reserve Line, of the Illinois and Michigan Canal, extending in a Northeasterly and Southwesterly direction through the East 1/2 of said Section; thence South along the East line of said Section, 531.5 feet to a point in the Northerly right of way line of the Gulf, Mobile and Ohio Railroad (Alton Railroad) extending in a Northeasterly and Southwesterly direction through the East 1/2 of said Section; thence Southwesterly along the said Northerly right of way line of said railroad, 2123.75 feet to the point of beginning; thence North 35 degrees 53 minutes 29 seconds West along a direct line, 541.50 feet to a point in the said Southerly 90 foot Reserve line of said Illinois and Michigan Canal that is 2454.13 feet Southwesterly (measured along the said Southerly 90 foot Reserve Line of said Canal) from the Point of Commencement; thence North 62 degrees 42 minutes 44 seconds East, along said Southerly Reserve Line, 60.89 feet; thence Southeasterly along a curve line, concave Northeasterly, having a radius of 1187.78 feet and whose chord bears South 56 degrees 29 minutes 00 seconds East for an arc distance of 263.95 feet to a point of tangency; thence South 62 degrees 50 minutes 57 seconds East, 363.10 feet to said Northerly right of way line of said railroad; thence South 60 degrees 54 minutes 19 seconds East along the last described line, 319.69 feet to said point of beginning, Will County, Illinois.

Also excepting therefrom and reserving unto the Grantor the following described property:

That part of the East half of Section 25, in Township 37 North, and in Range 10 East of the Third Principal Meridian, described as follows: Commencing at a point in the East line of said Section 25 at its point of intersection with the Southerly

90 foot reserve line of the Illinois and Michigan Canal, extending in a northeasterly and southwesterly direction through the said East half of said Section; thence South along the East line of said Section, 531.5 feet to a point in the Northerly right of way line of the Gulf, Mobile, and Ohio Railroad (Alton Railroad) extending in a Northeasterly and Southwesterly direction through the East half of said Section; thence Southwesterly along the said Northerly right of way line of said railroad 618.83 feet to the point of beginning, thence continuing South 60°18'07" West 387.91 feet, thence North 29°56' West 305.20 feet, thence North 60°46'27" East 387.94 feet, thence South 29°56" East 305.20 feet, thence North 60°46'27" East 387.94 feet, thence South 29°56' East 302.00 feet, to the point of beginning, all in Will County, Illinois, containing 2.704 acres more or less.



**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217/524-3300

December 20, 1999

**CERTIFIED MAIL**  
P 344 335 466

Mr. Ronald D. Stevens, Executive Vice President  
and Chief Financial Officer  
Robertson-Ceco Corporation  
5000 Executive Parkway, Suite 425  
San Ramon, California 94583

Re: 1978030005 -- Will County  
Robertson-Ceco Corporation  
ILD9907895453  
Log No. C-68-M-8  
RCRA Closure

Dear Mr. Stevens:

This is in response to several submittals made on your behalf regarding RCRA closure and RCRA corrective action activities at the above-referenced facility. As you should know, Robertson-Ceco created a two-acre on-site hazardous waste landfill at the above-referenced facility in accordance with an Illinois EPA approved RCRA interim status closure plan and is currently providing post-closure care for this landfill. In addition, Robertson-Ceco has been conducting combined RCRA closure and RCRA corrective action activities within the remainder of the subject twenty-five acre facility where mainly iron and steel waste materials (i.e., slag) are present. A more detailed discussion of previous RCRA closure and corrective action activities completed to date is attached.

The submittals being responded to in this letter and a brief description of their contents is as follows:

1. An August 27, 1998 letter from Mr. Bruce A. Shabino, Carlson Environmental, Inc. which contained the results of additional groundwater monitoring efforts required by Illinois EPA's June 24, 1998 letter;
2. A September 24, 1998 letter from Mr. Clifton A. Lake, McBride, Baker & Coles which contained additional information in response to Illinois EPA's June 24, 1998 letter and also provided a brief description of how a potential purchaser of the subject facility desires to use material present there;
3. A November 11, 1998 letter from Mr. Lake which contained certification meeting the requirements of 35 Ill. Adm. Code 702.126 for the information being responded to in this letter and which also discussed in general the applicability of 35 Ill. Adm. Code 817 to the subject facility.

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Mr. Ronald D. Stevens  
 C-68-M-8  
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These submittals were reviewed as requests to modify the approved RCRA closure plan for the above-referenced facility and are hereby approved subject to the following conditions and modifications:

1. Post-closure care of the 2-acre hazardous waste landfill at this facility must continue to be carried out in accordance with Illinois EPA's letters dated February 7, 1996 (Log No. C-68-M-4) and other previously approved plans. The applicable requirements of 35 Ill. Adm. Code 725 must also be met for this facility.
2. Illinois EPA has determined that no further action is necessary for the slag fill area at the subject facility evaluated during the RCRA closure and RCRA corrective action activities completed to date provided the following conditions are met:
  - a. A Site Safety Plan meeting the requirements of 29 CFR is developed and implemented during any activity whereby workers will come into direct contact with the slag material;
  - b. Any slag material removed from the area in the future is managed in accordance with the provisions of 35 Ill. Adm. Code, Subtitle G: Waste Disposal;
  - c. The use of the facility remains industrial in the future;
  - d. A deed restriction or restrictive covenant meeting the requirements of 35 Ill. Adm. Code 742, Subpart J is established and complied with in the future to ensure the above requirements are met. Draft guidance regarding these two types of institutional controls is attached.
3. The required deed restriction or restrictive covenant identified in Condition 2.d above must be:
  - a. Attached to the deed to the subject property, or on some other instrument which is normally examined during title search, which will in perpetuity notify any potential purchaser of the requirements set forth in Condition 2 above.
  - b. Submitted to the County Recorder, any local zoning authority and any other authority over local land use.
4. The determination set forth in Condition 2 above is based upon compliance with 35 Ill. Adm. Code 817.101(e). Illinois EPA does not however agree at this time that the slag material present at the facility meets the definition of beneficially usable waste in 35 Ill. Adm. Code 817, as the MALC for lead and chromium was exceeded in one of the four samples analyzed to determine if the material met this definition.

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Mr. Ronald D. Stevens

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5. Due to the fact that there has been some changes in ownership at this facility, a revised RCRA Part A application must be completed, in total, and submitted to Illinois EPA. A copy of this application form is enclosed. The facility drawing required by Item XVI of the form must be an accurate drawing with a scale of one inch equal to no more than 200' and contain all of the information identified in the instructions for such a drawing. It must be noted that an updated application must be submitted if any portion of the facility is sold to another entity.
6. The proposed institutional control required by Condition 2.d above and the revised Part A application for this facility should be submitted to Illinois EPA by February 1, 2000.
7. At no time may this property be used in a manner inconsistent with the restrictions set forth herein unless further investigation or remedial action has been conducted documenting other remedial objectives meeting the requirements of 35 Ill. Adm. Code 742 have been achieved at the facility. The results of such additional investigation or remediation action must be reviewed and approved by Illinois EPA.
8. Violation of the terms of the restrictions set forth herein shall be grounds for voidance of the restriction and the instrument memorializing Illinois EPA's no further remediation determination for the remedial project described in the restriction.
9. Any deed restriction or restrictive covenant approved by Illinois EPA must be recorded in the Office of the Recorder or Registrar of Titles of the county in which the site is located together with the instrument memorializing Illinois EPA's no further remediation determination for the project with 45 days after receipt of that determination. These documents shall form a permanent part of the chain of title for this site.
10. An approved institutional control will not become effective until officially recorded in accordance with Condition 9 above. A copy of the institutional control demonstrating that it has been officially recorded must be submitted to Illinois EPA within 30 days of its recording.
11. In accordance with 35 Ill. Adm. Code 703.121, this facility must eventually obtain a RCRA post-closure permit.
12. The attached form entitled RCRA Interim Status Closure and Post-Closure Plans General Form (LPC-PA18) must be completed and accompany all information submitted to the Agency associated with the activities described in this letter. As noted on the form, two copies must accompany the original of all submittals, so that the information can be distributed to the appropriate Agency personnel, including regional offices.

Within 35 days of the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to

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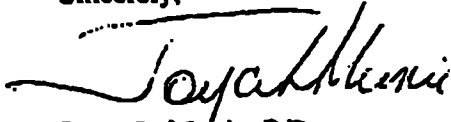
Mr. Ronald D. Stevens  
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exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding this matter, please contact William T. Sinnott, II at 217/524-3310.

Sincerely,



Joyce L. Mynie, P.E.  
Manager, Permit Section  
Bureau of Land

JLM:JKM:mis\990221S.WPD

Attachments: Overview of RCRA Activities  
JKM 5A<sup>o</sup>

Enclosures: Guidance Regarding Deed Restrictions or Restrictive Covenants as Institutional Controls in Developing Remediation Objectives for RCRA Projects (11/99; draft)  
RCRA Part A Permit Application (EPA Form 8700-23; Rev. 10/01/96)  
LPC PA-18

cc: Donna Shehane, Will County Waste Services Division

R20000018584

**Overview of RCRA Activities  
Robertson-Ceco Corporation  
1978030005/ILD990785453  
December 1999**

1. The Robertson-Ceco facility, which encompasses approximately 25 acres, is a former shallow limestone quarry. Slag and mill scale from a nearby steel mill has subsequently been placed in this area. In addition, electric arc furnace dust (a listed hazardous waste) was previously deposited in certain portions of this area.
2. A closure plan for a hazardous waste pile within this area which consisted of electric arc furnace dust was initially approved by Illinois EPA on June 13, 1985. In letters dated June 12, 1986 and September 11, 1986, Illinois EPA indicated that these closure activities must be expanded to the entire 25-acre facility. Robertson-CECO subsequently appealed this requirement to the Illinois Pollution Control Board, the Illinois Appellate Court and the Illinois Supreme Court; each of these entities upheld Illinois EPA's requirement. Robertson Ceco filed a variance request from these requirements with the Illinois Pollution Control Board in 1992; this request was also denied.
3. During the 1980s, Robertson-Ceco took steps towards removing the electric arc furnace dust from the facility. While it was challenging Illinois EPA's closure requirements in the mid-1980s (to no avail), it placed some of this dust and associated contaminated media in an on-site hazardous waste landfill. As a result of creating this landfill, the facility must eventually obtain a RCRA permit for post-closure care of this unit. In addition, it must also eventually conduct corrective action, as necessary, at any solid waste management unit at the facility. ~~Closure and post-closure care activities for this unit must continue in accordance with the Illinois EPA's September 11, 1986 approval letter, which includes requirements for continued groundwater monitoring.~~
4. During 1994, Robertson-Ceco and Illinois EPA reached an agreement whereby both closure (in accordance with Illinois EPA's September 11, 1986 letter) and RCRA corrective action at this facility could be completed in conjunction with one another.
5. Robertson-Ceco submitted a draft Phase I workplan in October 1994 for conducting closure/corrective action investigations at the facility and Illinois EPA provided comments regarding the workplan on January 30, 1995. A revised final workplan was submitted by Robertson-Ceco in March 1995 and was approved with conditions and modifications by Illinois EPA on September 12, 1995. Two important conditions from this letter are:
  - a. [Condition 1] The goal of this investigation is to: (1) determine if all deposits of electric arc furnace dust and associated contaminated materials have been removed from those portions of the site which CECO wishes not to include in the areas which receive formal RCRA closure and post-closure care and (2) obtain data to evaluate the impact which the entire 25-acre facility has had or may have on human health or the environment.

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Overview of RCRA Activities  
Robertson-Ceco (12/99)  
Page 2

- b. [Condition 2] As indicated in the Agency's May 10, 1994 letter, once the investigation is completed, it will still be necessary to: (1) evaluate the need for corrective actions and (2) conduct corrective action as necessary.
6. Robertson-CECO submitted a report containing the results of the approved Phase I workplan in May 1996. This report was approved by Illinois EPA with conditions and modifications on August 26, 1996. Important conditions from this approval letter are as follows (the first two statements below are direct quotes while the last three paraphrase other conditions):
- a. [Condition 1.a] No electric arc furnace dust was apparently encountered while conducting the approved investigation effort over the 25 acre site. Thus, the conclusion can be reached that Robertson-Ceco does not need to provide closure and post-closure care for the entire facility in accordance with 35 IAC 725, Subpart G and/or 35 IAC 724, Subpart G.
- b. [Condition 1.b] Robertson-Ceco must still provide post-closure care of the closed hazardous waste landfill in accordance with 35 IAC 725, Subpart G. In addition, as required by 35 IAC 703.121(b), [Robertson-Ceco] must also eventually obtain a post-closure permit for the facility. Finally, as a result of needing this final permit, the facility is also subject to the corrective action requirements of Section 3004(a) of the Resource Conservation and Recovery Action (sic, Act) and 35 IAC 724.201).
- c. Relatively high levels of lead, arsenic and chromium were detected throughout the facility and needed to be further evaluated. (See Condition 4)
- d. Additional groundwater investigative efforts were necessary, including continued quarterly groundwater monitoring. (See Conditions 3, 5, 6 and 7)
- e. The requirements of 35 Ill. Adm. 807-817 must be met at the facility. (See Conditions 1.d and 3)
- f. A workplan addressing the issues set forth above was to be developed and submitted to Illinois EPA by December 1, 1996. (See Condition 8)
7. A supplemental RFI Phase I workplan addressing the concerns raised in Illinois EPA's August 1996 letter was submitted in December 1996; additional information regarding this workplan was subsequently submitted in May 1997. Illinois EPA approved these submittals, with conditions and modifications, on August 7, 1997.
8. On June 24, 1998, Illinois EPA issued a letter indicating it could not approve a Supplemental RFI report submitted by Robertson-Ceco, nor could it agree with a recommendation that no further action was necessary at the slag fill area.