

# EXHIBIT B.6



**WASTE MANAGEMENT**

Environmental Legacy Management Group  
720 East Butterfield Road, Suite 400  
Lombard, IL 60148  
630.218.1914

**Sent via UPS**

**1Z28W70A0296291602**

November 27, 2019

Kenneth E. Smith, P.E.  
Manager, Permit Section  
Illinois EPA Bureau of Land  
1021 North Grand Avenue East  
Springfield, Illinois 62702

**RE: 0310390001 – Cook County  
CID Recycling and Disposal Facility  
ILD010284248  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application  
Updated Post-Closure Care Cost Estimates**

Dear Mr. Smith:

Waste Management of Illinois, Inc., as the permitted owner and operator of the CID Recycling and Disposal Facility (CID RDF), in accordance with 35 IAC 703.281, hereby submits this Class 1\* Permit Modification application to update the facility's post-closure care cost estimate.

The post-closure care cost estimates have been reviewed and/or adjusted for inflation pursuant to permit condition V.34.a of the RCRA Part B permit, and the period for post-closure care has been reduced by one year. Also, the cost estimates in permit condition IV.F.1 for conducting corrective action has been updated to reflect the corrective action program approved in Log. No. B-27R-CA-7. Applicable information required by Sections 703.181 through 703.185, 703.201 through 703.207, 703.221 through 703.225, and 703.230 can be found in the facility's approved permit application and the permit log identified above. A 39(i) certification form is provided in Attachment 1. A completed LPC-PA23 form is provided in Attachment 2.

**Changes to the RCRA Part B Permit Application**

Upon approval of this permit modification, please replace the current Table I-4, Table I-5 and Table I-6 in Attachment 3 with the revised tables provided in Attachment 4.

November 27, 2019  
CID Recycling and Disposal Facility  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application  
Updated Post-Closure Care Cost Estimates  
Page 2

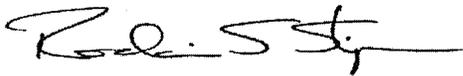
Changes to the RCRA Part B Permit

Upon approval of this permit modification, please update permit conditions I.G.1, I.G.2, and IV.F.1 with the updated cost estimate totals.

In accordance with 35 IAC 703.281(a)(2), WMIL will provide a written notification of this permit modification to all recipients on the facility's mailing list within 90 days of approval by the Agency.

Please contact me at [rstipe@wm.com](mailto:rstipe@wm.com), or at (630) 218-1914, with any questions on this submittal.

Sincerely,  
WASTE MANAGEMENT OF ILLINOIS, INC.



Roderic S. Stipe, CHMM, QEP  
District Manager  
Environmental Legacy Management Group

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 ensure 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. [35 IAC 702.126(d)]

cc: Kelly Huser, Illinois EPA BOL Permit Section (*via email*)

File: Permit Repository  
Agency Correspondence

*November 27, 2019  
CID Recycling and Disposal Facility  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application  
Updated Post-Closure Care Cost Estimates*

***Attachment 1  
39(i) Certification***



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## 39(i) Certification for Operating a Waste Management Facility

Pursuant to 415 ILCS 5/39(i), prior to issuing any RCRA permit, or any permit for a waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, waste incinerator, clean construction or demolition debris fill operation, or used tire storage site, the Illinois EPA must conduct an evaluation of the prospective owner's or operator's prior experience in waste management operations, clean construction or demolition debris fill operations, and tire storage site management. As part of that evaluation please complete and submit this form with your permit application.

This form may be completed online and saved locally before printing, signing and submitting it to the Illinois EPA at the address below. If the form is completed manually, please type or print clearly.

Illinois Environmental Protection Agency  
Division of Land Pollution Control - #33  
39(i) Certification  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

### I. Applicant Information

Site Name CID Recycling and Disposal Facility

IEPA BOL No.: 0310390001

Site Address 138th and Interstate 94

City: Calumet City

State: IL

Zip Code: 60409

Permit Numbers (if applicable): B-27R

### Owner

Owner Name: Waste Management of Illinois, Inc.

Street Address: 720 East Butterfield Road, Suite 400

City: Lombard State: IL Zip: 60148

### Operator

Operator Name: Waste Management of Illinois, Inc.

Street Address: 138th and Interstate 94

City: Calumet City State: IL Zip: 60409

Is this 39(i) certification for the owner or the operator?

Owner

Operator

Owner and operator are the same entity

### II. Officers and Employees with Site Responsibility

Unless the owner and operator are the same entity, a separate 39(i) form must be submitted for both the owner and operator. Persons operating under the authority of the owner should be listed on the owner's 39(i) form and persons operating under authority of the operator should be listed on the operator's 39(i) form.

A. Officers: List the name and title of all officers of the owner or operator that will have personal involvement or active participation in the operation or management of the site or facility for which the application is submitted.

Name	Title

B. Employees: List the name and title of each employee of the owner or operator that will have personal involvement or active participation in the overall operation or management of the site or facility for which the application is submitted (e.g. site managers, site engineers, and other persons who direct or control the overall day-to-day management of the operation, but not persons whose duties are exclusively limited to equipment operation, labor, or similar non-managerial functions).

Name	Title
Roderic S. Stipe	District Manager, Environmental Legacy Management Group
James C. Forney	Area Director, Environmental Legacy Management Group

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified under Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and include a copy of each final administrative or judicial determination that required an affirmative response. If the information for each owner, operator, officer, and employee has not changed since the applicant's last submission of a 39(i) certification, the applicant can skip to Section III(C), below.

- 1) Has there been a finding that any person named in Section II violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites?  Yes  
 No
- 2) Has any person named in Section II ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted 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?  Yes  
 No
- 3) Has there been a finding against any person named in Section II of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill?  Yes  
 No

B. Pending Proceedings

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified in Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and provide information identified in Attachment A regarding the pending proceeding.

- 1. Is there any proceeding currently pending against any person named in Section II that could result in a conviction or finding described in subsection A, above?  Yes  
 No
- 2. Is there any proceeding currently pending against any person named in Section II that could result in the reversal of a conviction or finding described in subsection A, above?  Yes  
 No

C. Prior Application Information

If (i) the applicant has previously submitted the Attachments required pursuant to subsections A and B above and (ii) the Attachments previously submitted are still complete, true, and correct, then the applicant does not need to include Attachments with this submission if the following box is checked:

By checking this box, I affirm that the Attachments previously submitted are still complete, true, and correct and wish to incorporate them into this Certification.

If the above box is checked, identify the application that contains the previously submitted Attachments that are complete, true, and correct.

## Authorization for Release of Information

This Certification must be signed by an officer of the applicant.

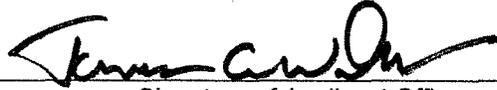
The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon request of the bearer. The undersigned authorizes a review of and full disclosure of all records, or any part thereof, concerning the applicant's criminal records by and to a duly authorized agent of the Illinois Environmental Protection Agency, whether the records are of public, private, or confidential nature. The intent of this authorization is to give consent for full and complete disclosure of the applicant's criminal records.

The undersigned fully understands that any information which is developed directly or indirectly, in whole or in part, as a result of this authorization will be considered in determining whether a permit shall be issued by the Illinois Environmental Protection Agency under the Environmental Protection Act [415 ILCS 5]. The undersigned further agrees to release the Illinois State Police and the Illinois Environmental Protection Agency, its agents and designees under this release, from any and all liability which may be incurred as a result of compliance with this authorization for release of information.

## Certification Statements

I certify under penalty of law that the information submitted, including information on any Attachments submitted as part of or incorporated into this Certification, 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.

*Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))*



Signature of Applicant Officer

A.

James Wilson

Printed Name

11-20-19

Date

Vice President, Waste Management of Illinois, Inc.

Title

*November 27, 2019  
CID Recycling and Disposal Facility  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application  
Updated Post-Closure Care Cost Estimates*

***Attachment 2  
PA23 Form***



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

**Note:** Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

### I. Site Identification

Site # (Illinois EPA): 0310390001 USEPA ID Number: ILD010284248

Site Name: CID Recycling and Disposal Facility

Physical Site Location (street, road, etc.): 138th and Interstate 94

City: Calumet City Zip Code: 60409 County: Cook

Existing RCRA Permit (if applicable): ILD010284248, RCRA Log B-27R2

### II. Owner/Operator Identification

#### Owner Information

Name: Waste Management of Illinois, Inc.

Mailing Address:

720 East Butterfield Road, Suite 400

Contact Name: Roderic S. Stipe

Phone #: 630-218-1914

Email: rstipe@wm.com

#### Operator Information

Name: Waste Management of Illinois, Inc.

Mailing Address:

720 East Butterfield Road, Suite 400

Contact Name: Roderic S. Stipe

Phone #: 630-218-1914

Email: rstipe@wm.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

### III. Permit Application Identification

Application Type

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> New Part B Permit     | <input type="checkbox"/> Class 1 Modification  | <input type="checkbox"/> Remedial Action Plan Permit (RAPP) |
| <input type="checkbox"/> Part B Permit Renewal | <input checked="" type="checkbox"/> Class 1* (prior approval required) Modification              | <input type="checkbox"/> Sig RAPP Modification              |
|  | <input type="checkbox"/> Class 2 Modification  | <input type="checkbox"/> Non Sig RAPP Modification          |
|  | <input type="checkbox"/> Class 3 Modification  | <input type="checkbox"/> Major UIC Modification             |
|  | <input type="checkbox"/> Additional information to supplement UIC Class I application Log Number | <input type="checkbox"/> Minor UIC Modification             |

This Application Involves

- |                                      |  |  |                                       |
|--------------------------------------|--|--|---------------------------------------|
| <input type="checkbox"/> Storage     | <input type="checkbox"/> Treatment         | <input checked="" type="checkbox"/> Disposal | <input type="checkbox"/> Incineration |
| <input type="checkbox"/> Groundwater | <input type="checkbox"/> Corrective Action | <input type="checkbox"/> UIC Class I         | <input type="checkbox"/> UIC Class V  |

Description of This Permit Request: (Include a brief narrative description here.)

Update of post-closure care and corrective action cost estimates.

### IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

**Owner**

- 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 that 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.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

- Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information 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.

Owner Name (Printed or Typed): Waste Management of Illinois, Inc.

Owner Signature:  Date: 11-20-19

Title: Vice President, Waste Management of Illinois, Inc

**Operator**

I certify under penalty of law that this document and all attachment 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 that 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.

Operator Name (Printed or Typed): Waste Management of Illinois, Inc.

Operator Signature: *James A. Wilson* Date: 11-20-19  
James A. Wilson

Title: Vice President

**Notary** (Required for both owner and operator signatures)

Subscribed and Sworn before me this 20<sup>th</sup> day of November 2019.

Notary Signature: *Cynthia Schultz*



My commission expires on: 9-23-22

**Engineer**

I certify under penalty of law that this document and all attachment 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 that 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.

Engineer Name (Print or Type): Edward Doyle

Engineer Signature: *Edward Doyle*

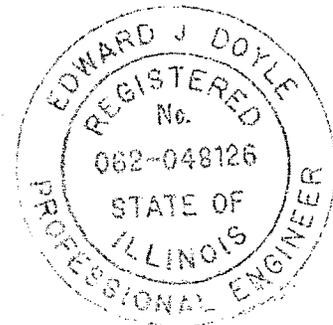
Illinois License No.: 062-0048126

Expiration Date of License: 11/30/2021

Engineer Phone No. 630-254-9388

Email: edoyle@EILLLC.com

Engineer Address:  
534 Duane St.  
Glen Ellyn, IL 60137-4676



Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

*November 27, 2019  
CID Recycling and Disposal Facility  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application  
Updated Post-Closure Care Cost Estimates*

***Attachment 3  
Revised 2018 Post-Closure Cost Estimate Tables***

TABLE I-4  
 CID RDF POST-CLOSURE COST ESTIMATE  
 AREA 3 LANDFILL

NOTE: Area 3 landfill was certified closed on October 10, 2008. Post-closure activities for the Area 3 Landfill commenced in 2008

TASK	Units	Quantity	#/yr	# yrs	Unit Cost*	COSTS	
Mow and fertilize (if required) cover area (170 acres total)	acre	170	1	<del>2019</del>	62.59	212,793	I
Dress and re-seed 3% of cover area (PC Year 7, 12, 17, 22 and 27)	acre	3% total	1	<del>13</del>	1,907	38,900	I
Landfill cap and surface water management system maintenance	LS	1	1	<del>2019</del>	1,138	22,760	I
Semi-annual Inspection	each	1	2	<del>2019</del>	342	13,668	I
Groundwater monitoring (Sampling & Analysis)							
- Routine Sampling (13 wells)	each	1	2	<del>2019</del>	2,460	98,400	I
- Routine Analyses (13 wells)	each	1	2	<del>2019</del>	3,506	140,240	I
- GMZ Sampling (36 wells)	each	1	4	<del>17</del>	6,015	216,540	I
- GMZ Analyses (36 wells)	each	1	4	<del>17</del>	9,252	333,072	I
- Additional wells after completion of Corrective Action (TBD, not in Permit)	each					0	C
5-Year GMZ Re-evaluation	each	1	1	<del>12</del>	13,950	41,850	I
Groundwater remediation system operation and maintenance	LS	1	1	<del>17</del>	11,000	99,000	I
Groundwater treatment	gal	1,320,000	1	<del>17</del>	0.058	688,672	I
Groundwater Well Survey (Biennial)	each	1	0.5	<del>2019</del>	1,082	10,820	I
Groundwater Data Review, Reporting and Statistics	each	1	1	<del>2019</del>	9,000	180,000	I
Security and fencing maintenance (10,200 lineal feet total)	feet	2% total	1	<del>2019</del>	5.92	24,149	I
Leachate and condensate collection and disposal (average of last 4 yrs)	gal	9,304,836	1	<del>2019</del>	0.058	10,787,841	A, I
Leachate level monitoring and reporting	LS	1	1	<del>2019</del>	1,494	29,879	I
Leachate Sampling & Analysis (35 IAC 724 Appendix I parameters)	LS	1	1	<del>2019</del>	2,973	59,460	I
Leachate/Gas system maintenance	LS	1	1	<del>2019</del>	28,448	568,950	I
Gas flare system maintenance	LS	1	1	<del>2019</del>	9,105	182,104	I
Decommissioning of landfill gas system	LS	1	1	1	68,276	68,276	I
Air monitoring - monthly wellfield monitoring	LS	1	12	<del>2019</del>	569	136,441	I
Air monitoring - annual surface scans	LS	1	1	<del>2019</del>	765	15,300	I
Air monitoring - Flare: Annual gas sampling and Visible Emission (VE) testing	LS	1	1	<del>2019</del>	2,105	42,100	I
Air monitoring - Gas Turbine: semi-annual sulfur analysis	LS	1	2	<del>2019</del>	932	37,280	I
Air monitoring - Gas Turbine: semi-annual sulfur analysis and V.E. testing	LS	1	2	<del>2019</del>	1,527	61,080	I
Post-closure certification report	LS	1	1	1	11,379	11,379	I
Public Access Structures/Facilities maintenance	LS	1	1	<del>2019</del>	2,845	56,891	I
TOTAL						<del>14,177,847</del>	

Reduced by 2 years based on 2018 GMZ Re-eval

Notes: \*Unit costs are rounded to the number of decimal places shown  
 - adjusted by inflation factor (2017 = 1.79%)

\$13,470,901

C - current cost; I - Adjusted by inflation factor (2018 = 2.31)

A - average (2014 = 9,822,874; 2015 = 8,923,136; 2016 = 9,337,738; 2017 = 9,135,595)

TABLE I-5  
 CID RDF POST-CLOSURE COST ESTIMATE  
 AREA 4 LANDFILL

NOTE: Area 4 landfill was certified closed on April 23, 2010. Post-closure activities for the Area 4 Landfill commenced in 2010

TASK	Units	Quantity	#/yr	# yrs	Unit Cost*	COSTS	
Mow and fertilize (if required) cover area (26 acres total)	acre	26	1	<del>2</del> 21	62.59	35,799	I
Dress and re-seed 3% of cover area (PC Year 7, 12, 17, 22 and 27)	acre	3% total	1	4	1,889	5,892	I
Landfill cap and surface water management system maintenance	LS	1	1	<del>2</del> 21	1,138	25,037	I
Semi-annual Inspection	each	1	2	<del>2</del> 21	342	15,035	I
Groundwater Monitoring (9 Dolomite wells and 10 Sand wells)							
- Sampling	each	1	2	<del>2</del> 21	4,025	177,100	I
- Analyses	each	1	2	<del>2</del> 21	5,242	230,648	I
Groundwater Well Survey (Biennial)	each	1	0.5	<del>2</del> 21	838	9,218	I
Groundwater Data Review, Reporting and Statistics	each	1	1	<del>2</del> 21	3,600	79,200	I
Security and fencing maintenance (7,200 lineal feet total)	feet	2% total	1	<del>2</del> 21	5.92	18,751	I
Leachate collection and disposal (average of last 4 yrs)	gal	1,386,931	1	<del>2</del> 21	0.058	1,768,778	A, I
Leachate level monitoring and reporting	LS	1	1	<del>2</del> 21	2,988	65,735	I
Leachate Sampling & Analysis (35 IAC 724 Appendix I parameters)	LS	1	1	<del>2</del> 21	1,063	23,386	I
Leachate system maintenance	LS	1	1	<del>2</del> 21	14,793	325,452	I
Post-closure certification report	LS	1	1	1	14,224	14,224	I
<b>TOTAL</b>						<del>2,701,356</del>	

Notes: \*Unit costs are rounded to the number of decimal places shown.

\* adjusted by inflation factor (2017 = 1.7%)

~~Current cost~~ I - Adjusted by inflation factor (2018 = 2.3%)

A - average (2014 = 1,559,325; 2015 = 1,233,596; 2016 = 1,477,865; 2017 = 1,276,936)

**\$2,720,777**

TABLE I-6

CID RDF - CORRECTIVE ACTION COST ESTIMATE

The approved correction action program for the SWMUs of concern (Area 1 and 2 landfills) consists of the following tasks. Costs are based upon ~~23 years~~, to coincide with the Area 4 landfill post-closure period.

**21 years**

TASK	Cost Per Year	# yrs	COST
Operation and maintenance of a landfill gas management system for each landfill			
Landfill gas monitoring system - monthly checks of the extraction wells	3,805	<del>23</del> 21	83,710 I
Landfill gas monitoring system - semi-annual bar hole probe monitoring and river observations	336	<del>23</del> 21	7,392 I
Operation and maintenance of a leachate management system for each landfill			
Leachate management system - monthly checks of the removal wells and underground storage tank systems.	26,520	<del>23</del> 21	583,440 I
Quarterly groundwater piezometer level measurements for leachate compliance determinations	336	<del>23</del> 21	7,392 I
Inspecting/maintaining the final cover of each landfill			
Landfill cover for Areas 1 and 2 - quarterly checks for settlement, erosion and vegetative stress.			
Area 1 - quarterly checks from Year 5 through Year 30	760	<del>23</del> 21	16,720 I
Area 2 - quarterly checks from Year 5 through Year 30	380	<del>23</del> 21	8,360 I
TOTAL OPERATION AND MAINTENANCE COST			<u>307,014</u>
<del>Regrading/upgrading the final cover of each landfill</del>			<del>\$ 690,417</del>
<del>Regrading and upgrading of the final cover of the Area 1 and Area 2 landfills in accordance with plans and specifications approved by Illinois EPA with conditions and modifications on May 8, 2006, March 16, 2007, July 17, 2007, August 7, 2007, November 13, 2007 and November 30, 2012.</del>			
<del>Area 2 clean soil and vegetative layer placement and seeding (remaining as of 10-23-18)</del>			
	<del>135,300</del>	<del>1</del>	<del>135,300</del>
TOTAL REGRADING/UPGRADING OF FINAL COVER COST			<del>135,300</del>
Corrective Measures as required by B-27R-CA-7, issued October 29, 2013			
Groundwater remediation system operation and maintenance	5,000	<del>23</del> 21	110,000 I
Groundwater remediation system quarterly inspection	7,000	<del>23</del> 21	154,000 I
Extracted groundwater treatment	63,600	<del>23</del> 21	1,399,200 I
Groundwater Management Zone permit applications	7,000	4	28,000 I
Phytoremediation system annual maintenance	3,000	<del>23</del> 21	66,000 I
Phytoremediation system annual inspection and report	1,200	<del>23</del> 21	26,400 I
Leachate level and volume reporting	2,000	<del>23</del> 21	44,000 I
TOTAL CORRECTIVE MEASURES COST			<del>1,827,600</del> \$1,785,966
TOTAL			<del>2,669,914</del> \$2,476,383

Notes:  
 \* Unit costs are rounded to the Number of decimal places shown  
 I - Adjusted by inflation factor (2018 = 2.3%)

*November 27, 2019  
CID Recycling and Disposal Facility  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application  
Updated Post-Closure Care Cost Estimates*

***Attachment 4  
Updated Post-Closure Cost Estimate Tables***

**TABLE I-4**  
**CID RDF POST-CLOSURE COST ESTIMATE**  
**AREA 3 LANDFILL**

NOTE: Area 3 landfill was certified closed on October 10, 2008. Post-closure activities for the Area 3 Landfill commenced in 2008

TASK	Units	Quantity	#/yr	# yrs	Unit Cost*	COSTS	
Mow and fertilize (if required) cover area (170 acres total)	acre	170	1	19	\$64	\$206,720	I
Dress and re-seed 3% of cover area (PC Year 7, 12, 17, 22 and 27)	acre	3% total	1	3	\$1,951	\$29,850	I
Landfill gas monitoring system - semi-annual bar hole probe monitoring and river observations	LS	1	1	19	\$1,164	\$22,116	I
Semi-annual Inspection	each	1	2	19	\$350	\$13,300	I
Groundwater monitoring (Sampling & Analysis)							
- Routine Sampling (13 wells)	each	1	2	19	\$2,517	\$95,646	I
- Routine Analyses (13 wells)	each	1	2	19	\$3,587	\$136,306	I
- GMZ Sampling (36 wells)	each	1	4	7	\$6,153	\$172,284	I
- GMZ Analyses (36 wells)	each	1	4	7	\$9,465	\$265,020	I
- Additional wells after completion of Corrective Action (TBD, not in Permit)	each					\$0	C
5-Year GMZ Re-evaluation	each	1	1	2	\$14,271	\$28,542	I
Groundwater remediation system operation and maintenance	LS	1	1	7	\$11,253	\$78,771	I
Groundwater treatment	gal	1,320,000	1	7	\$0.059	\$545,160	I
Groundwater Well Survey (Biennial)	each	1	0.5	19	\$1,107	\$10,517	I
Groundwater Data Review, Reporting and Statistics	each	1	1	19	\$9,207	\$174,933	I
Security and fencing maintenance (10,200 lineal feet total)	feet	2% total	1	19	\$6.06	\$23,473	I
Leachate and condensate collection and disposal (average of last 4 yrs)	gal	9,304,836	1	19	\$0.059	\$10,430,721	A, I
Leachate level monitoring and reporting	LS	1	1	19	\$1,528	\$29,032	I
Leachate Sampling & Analysis (35 IAC 724 Appendix I parameters)	LS	1	1	19	\$3,041	\$57,779	I
Leachate/Gas system maintenance	LS	1	1	19	\$29,102	\$552,938	I
Gas flare system maintenance	LS	1	1	19	\$9,314	\$176,966	I
Decommissioning of landfill gas system	LS	1	1	1	\$69,846	\$69,846	I
Air Monitoring - Monthly wellfield monitoring	LS	1	12	19	\$582	\$132,696	I
Air Monitoring - Annual surface scans	LS	1	1	19	\$783	\$14,877	I
Air Monitoring - Flare: Annual gas sampling and Visible Emission (VE) testing	LS	1	1	19	\$2,153	\$40,907	I
Air Monitoring - Gas Turbine: Semi-annual sulfur analysis	LS	1	2	19	\$953	\$36,214	I
Air monitoring - Gas Turbine: Semi-annual sulfur analysis and V.E. testing	LS	1	2	19	\$1,562	\$59,356	I
Post-closure certification report	LS	1	1	1	\$11,641	\$11,641	I
Public Access Structures/Facilities maintenance	LS	1	1	19	\$2,910	\$55,290	I
<b>TOTAL</b>						<b>\$13,470,901</b>	
Notes:							
*Unit costs are rounded to the number of decimal places shown.							
C - Current cost; I - Adjusted by inflation factor (2018 = 2.3%)							
A - average (2014 = 9,822,874; 2015 = 8,923,136; 2016 = 9,337,738; 2017 = 9,135,595)							

TABLE I-5

## CID RDF POST-CLOSURE COST ESTIMATE

## AREA 4 LANDFILL

NOTE: Area 4 landfill was certified closed on April 23, 2010. Post-closure activities for the Area 4 Landfill commenced in 2010

TASK	Units	Quantity	#/yr	# yrs	Unit Cost*	COSTS	
Mow and fertilize (if required) cover area (26 acres total)	acre	26	1	21	\$ 64.03	\$34,960	I
Dress and re-seed 3% of cover area (PC Year 7, 12, 17, 22 and 27)	acre	3% total	1	4	\$ 1,932	\$6,028	I
Landfill gas monitoring system - semi-annual bar hole probe monitoring and river observations	LS	1	1	21	\$ 1,164	\$24,444	I
Semi-annual Inspection	each	1	2	21	\$ 350	\$14,700	I
Groundwater Monitoring (9 Dolomite wells and 10 Sand wells)							
- Sampling	each	1	2	21	\$ 4,118	\$172,956	I
- Analyses	each	1	2	21	\$ 5,363	\$225,246	I
Groundwater Well Survey (Biennial)	each	1	0.5	21	\$ 857	\$8,999	I
Groundwater Data Review, Reporting and Statistics	each	1	1	21	\$ 3,683	\$77,343	I
Security and fencing maintenance (7,200 lineal feet total)	feet	2% total	1	21	\$ 6.06	\$18,325	I
Leachate collection and disposal (average of last 4 yrs)	gal	1,386,931	1	21	\$ 0.059	\$1,718,408	A, I
Leachate level monitoring and reporting	LS	1	1	21	\$ 3,057	\$64,197	I
Leachate Sampling & Analysis (35 IAC 724 Appendix I parameters)	LS	1	1	21	\$ 1,087	\$22,827	I
Leachate system maintenance	LS	1	1	21	\$ 15,133	\$317,793	I
Post-closure certification report	LS	1	1	1	\$ 14,551	\$14,551	I
<b>TOTAL</b>						<b>\$2,720,777</b>	
Notes:							
*Unit costs are rounded to the number of decimal places shown.							
I - Adjusted by inflation factor (2018 = 2.3%)							
A - average (2014 = 1,559,325; 2015 = 1,233,596; 2016 = 1,477,865; 2017 = 1,276,936)							

TABLE I-6

CID RDF - CORRECTIVE ACTION COST ESTIMATE

The approved correction action program for the SWMUs of concern (Area 1 and 2 landfills) consists of the following tasks. Costs are based upon 21 years, to coincide with the Area 4 landfill post-closure period.

<u>TASK</u>	<u>Cost Per Year*</u>	<u># yrs</u>	<u>COST</u>	
Operation and maintenance of a landfill gas management system for each landfill				
Landfill gas monitoring system - monthly checks of the extraction wells	\$3,893	21	\$81,753	I
Landfill gas monitoring system - semi-annual bar hole probe monitoring and river observations	\$344	21	\$7,224	I
Operation and maintenance of a leachate management system for each landfill				
Leachate management system - monthly checks of the removal wells and underground storage tank systems.	\$27,130	21	\$569,730	I
Quarterly groundwater piezometer level measurements for leachate compliance determinations	\$344	21	\$7,224	I
Inspecting/maintaining the final cover of each landfill				
Landfill cover for Areas 1 and 2 – quarterly checks for settlement, erosion and vegetative stress.				
Area 1 – quarterly checks from Year 5 through Year 30	\$777	21	\$16,317	I
Area 2 – quarterly checks from Year 5 through Year 30	\$389	21	\$8,169	I
<b>TOTAL OPERATION AND MAINTENANCE COST</b>			<b>\$690,417</b>	
Corrective Measures as required by B-27R-CA-7, issued October 29, 2013				
Groundwater remediation system operation and maintenance	\$5,115	21	\$107,415	I
Groundwater remediation system quarterly inspection	\$7,161	21	\$150,381	I
Extracted groundwater treatment	\$65,063	21	\$1,366,323	I
Groundwater Management Zone permit applications	\$7,161	4	\$28,644	I
Phytoremediation system annual maintenance	\$3,069	21	\$64,449	I
Phytoremediation system annual inspection and report	\$1,228	21	\$25,788	I
Leachate level and volume reporting	\$2,046	21	\$42,966	I
<b>TOTAL CORRECTIVE MEASURES COST</b>			<b>\$1,785,966</b>	
<b>TOTAL</b>			<b>\$2,476,383</b>	
Notes:				
*Unit costs are rounded to the number of decimal places shown.				
I - Adjusted by inflation factor (2018 = 2.3%)				



**WASTE MANAGEMENT**

Environmental Legacy Management Group  
720 East Butterfield Road, Suite 400  
Lombard, IL 60148  
630.218.1914

**Sent via UPS**

Tracking #: 1Z28W70A0194844672

February 3, 2020

Kenneth E. Smith, P.E.  
Manager, Permit Section  
Illinois EPA Bureau of Land  
1021 North Grand Avenue East  
Springfield, Illinois 62702

**RE: 0310390001 – Cook County  
CID Recycling and Disposal Facility  
ILD010284248  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application  
Updated Post-Closure Care Cost Estimates  
Addendum No. 1 - Additional Information**

Dear Mr. Smith:

Waste Management of Illinois, Inc. (WMIL), as the permitted owner and operator of the CID Recycling and Disposal Facility (CID RDF), in accordance with 35 IAC 703.281, hereby submits this Addendum to the Class 1\* Permit Modification application submitted November 27, 2019 (Log. No. B-27R-M-96). A completed LPC-PA23 form is provided in Attachment 1. This addendum responds to technical review comments received on December 18, 2019 via email, and updates the facility's post-closure care cost estimate. Each technical review comment is repeated below along with the corresponding additional information.

*1. A 2.3% Inflation factor was given, please explain where this number was obtained.*

This inflation factor was provided by the Illinois EPA (Robert Mathis) on February 22, 2019 via email.

*2. Table I-4, Line 2 – the “# yrs” column should be 4, not 3.*

Concur, this correction has been made.

3. *Table I-4, Line 3 – this entire line description has changed please explain.*

Concur, this change was due to a typographical error. It has been revised to the original description.

4. *Table I-4, Line 5 -- Please provide justification (e.g. invoice) for sampling costs for the GMZ wells. There was a large decrease in sampling costs for GMZ wells at Area 3: in 2014 cost estimate, GMZ wells were \$521 (Sand) and \$558 (Dolomite) per well; in the current cost estimate, GMZ wells average \$170.92 per well.*

In the 2014 cost estimate the sampling and analytical costs for the GMZ wells were combined in a single line item, therefore 2014 costs are not directly comparable to the 2019 costs which are sampling only. The sampling costs provided in the 2019 cost estimate are based on the actual 2018 costs for these tasks. The 2018 costs have been inflated by 2.3% for the 2019 cost estimate. Documentation of the actual 2018 costs will be submitted separately as an addendum to this application. WMIL requests that the cost documentation be treated as confidential business information.

5. *Table I-4, Line 7 – is 1,320,000 gallons an accurate representation of the volume of groundwater at Area 3 treated annually? An average of the volumes treated over the last 4 years should be used (similar to the requirement for leachate and condensate).*

Further evaluation reveals the volume of groundwater extracted is already included in another line item, therefore, this “groundwater treatment” line item has been deleted. Extracted groundwater is pumped directly into the Area 3 leachate collection system and treated at the Biological Liquid Treatment Center, and this cost is accounted for in line 16 of revised Table I-4. The description of line 16 has been revised to clarify that extracted groundwater is included.

6. *Table I-4, Line 10 – the “Costs” column should be \$23,489.*

Concur, this was due to a typographical error. The total cost has been updated to reflect the correct cost.

7. *Table I-4, Line 11 – the leachate amounts should be averaged over the last four years. Please revise.*

The leachate volumes have been revised to reflect the average calculated from the preceding four years.

8. Table I-5, Line 3, same comment as No. 3 above.

Concur, this change was due to a typographical error. It has been revised to the original description.

9. Table I-5, Line 9, same comment as No. 7 above.

The leachate volume has been revised to reflect the average volume calculated from the preceding four years.

Also, the cost estimates in permit condition IV.F.1 for conducting corrective action has been updated to reflect the corrective action program approved in Log. No. B-27R-CA-7. Applicable information required by Sections 703.181 through 703.185, 703.201 through 703.207, 703.221 through 703.225, and 703.230 can be found in the facility's approved permit application and the permit log identified above.

#### Changes to the RCRA Part B Permit Application

Upon approval of this permit modification, please replace the current Table I-4, Table I-5 and Table I-6 in Attachment 2 with the revised tables provided in Attachment 3.

#### Changes to the RCRA Part B Permit

Upon approval of this permit modification, please update permit conditions I.G.1, I.G.2, and IV.F.1 with the updated cost estimate totals.

In accordance with 35 IAC 703.281(a)(2), WMIL will provide a written notification of this permit modification to all recipients on the facility's mailing list within 90 days of approval by the Agency.

Please contact me at [rstipe@wm.com](mailto:rstipe@wm.com), or at (630) 218-1914, with any questions on this submittal.

Sincerely,  
WASTE MANAGEMENT OF ILLINOIS, INC.



Roderic S. Stipe, CHMM, QEP  
District Manager  
Environmental Legacy Management Group

February 3, 2020  
CID Recycling and Disposal Facility  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application – Addendum No. 1  
Updated Post-Closure Care Cost Estimates  
Page 4

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. [35 IAC 702.126(d)]

Attachment 1 – PA23 Form

Attachment 2 – Revised 2018 Post-Closure Cost Estimate Tables

Attachment 3 – Updated Post-Closure Cost Estimate Tables

cc: Kelly Huser, Illinois EPA BOL Permit Section (*via email*)

File: Permit Repository  
Agency Correspondence

*February 3, 2020  
CID Recycling and Disposal Facility  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application – Addendum No. 1  
Updated Post-Closure Care Cost Estimates*

***Attachment 1  
PA23 Form***



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

**Note:** Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

### I. Site Identification

Site # (Illinois EPA): 0310390001 USEPA ID Number: ILD010284248

Site Name: CID Recycling and Disposal Facility

Physical Site Location (street, road, etc.): 138th and Interstate 94

City: Calumet City Zip Code: 60409 County: Cook

Existing RCRA Permit (if applicable): B-27R

### II. Owner/Operator Identification

#### Owner Information

Name: Waste Management of Illinois, Inc.

Mailing Address:

720 East Butterfield Road, Suite 400  
Lombard, IL 60148

Contact Name: Roderic S. Stipe

Phone #: 630-218-1914

Email: rstipe@wm.com

#### Operator Information

Name: Waste Management of Illinois, Inc.

Mailing Address:

720 East Butterfield Road, Suite 400  
Lombard, IL 60148

Contact Name: Roderic S. Stipe

Phone #: 630-218-1914

Email: rstipe@wm.com

- A 39(i) certification must be submitted with information concerning the following persons or entities:
- the owner of the business entity applying for the permit;
  - the operator of the business entity applying for the permit;
  - each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
  - any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

### III. Permit Application Identification

#### Application Type

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> New Part B Permit     | <input type="checkbox"/> Class 1 Modification  | <input type="checkbox"/> Remedial Action Plan Permit (RAPP) |
| <input type="checkbox"/> Part B Permit Renewal | <input checked="" type="checkbox"/> Class 1* (prior approval required) Modification              | <input type="checkbox"/> Sig RAPP Modification              |
|  | <input type="checkbox"/> Class 2 Modification  | <input type="checkbox"/> Non Sig RAPP Modification          |
|  | <input type="checkbox"/> Class 3 Modification  | <input type="checkbox"/> Major UIC Modification             |
|  | <input type="checkbox"/> Additional information to supplement UIC Class I application Log Number | <input type="checkbox"/> Minor UIC Modification             |

#### This Application Involves

- |                                      |  |  |                                       |
|--------------------------------------|--|--|---------------------------------------|
| <input type="checkbox"/> Storage     | <input type="checkbox"/> Treatment         | <input checked="" type="checkbox"/> Disposal | <input type="checkbox"/> Incineration |
| <input type="checkbox"/> Groundwater | <input type="checkbox"/> Corrective Action | <input type="checkbox"/> UIC Class I         | <input type="checkbox"/> UIC Class V  |

Description of This Permit Request: (Include a brief narrative description here.)

Addendum #1 to update of post-closure and corrective action cost estimates.

### IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

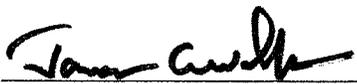
#### Owner

- 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 that 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.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

- Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information 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.

Owner Name (Printed or Typed): Waste Management of Illinois, Inc.

Owner Signature: 

Date: \_\_\_\_\_

Title: James A. Wilson, Vice President, Waste Management of Illinois

**Operator**

I certify under penalty of law that this document and all attachment 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 that 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.

Operator Name (Printed or Typed): Same

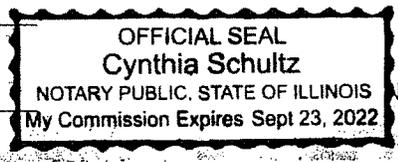
Operator Signature: *Tamara* Date: 1-24-2020

Title: Same

**Notary** (Required for both owner and operator signatures)

Subscribed and Sworn before me this 24<sup>th</sup> day of January 20 20.

Notary Signature: *Cynthia Schultz*



My commission expires on: \_\_\_\_\_ Notary Seal

**Engineer**

I certify under penalty of law that this document and all attachment 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 that 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.

Engineer Name (Print or Type): Edward Doyle

Engineer Signature: *Edward Doyle*

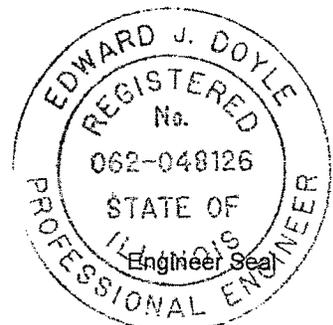
Illinois License No.: 062-0048126

Expiration Date of License: 11/30/2021

Engineer Phone No. 630-254-9388

Email: edoyle@EILLLC.com

Engineer Address:  
534 Duane Street  
Glen Ellyn, IL 60137-4676



All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

## Instructions for RCRA Permit Application Form LPC-PA23

The following instructions are designed to aid in the completion of the RCRA Permit Application Form LPCPA23. If you have additional questions regarding the form, or the informational requirements, please contact the Illinois EPA Bureau of Land (BOL) Permit Section at 217-524-3300.

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. If an application has already been submitted to the Agency, a completed RCRA Permit Application Form must accompany all additional information that is submitted to the agency for that application. An example of "additional information" would be a response to verbal or written comments from the Agency. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

### **I. Site Identification**

Enter all of the required information in the space provided. If you do not have an Illinois or USEPA identification number, call the Illinois EPA BOL Waste Reduction and Compliance Section at 217-785-8604 to obtain these numbers prior to completing the form.

### **II. Owner/Operator Identification**

The terms "owner" and "operator" are defined at 35 IAC 720.110 and 702.110. If the facility has the same owner and operator, you may type in "same" under operator information. Also, if the contact person for an application is different from the owner or operator (i.e. the consultant), please indicate this in the cover letter for the application.

### **III. Permit Application Identification**

Indicate both the type of application and the kind of waste management involved. For instance, if the application involves more than one type of waste management, check all applicable options.

### **IV. Signatures**

The signatory requirements for permit applicants are identified at 35 IAC 702.126 and 702.151. If the facility has the same owner and operator, you may type in "same" under operator information.

**Notary Public:** A notary public's signature and stamp are required for both the owner and operator signatures on the form.

**Engineer Certification:** A professional engineer that is licensed in the State of Illinois must certify all technical information provided in a permit application. 35 IAC 703.182 describes the types of information that must be certified by a professional engineer.

*February 3, 2020*  
*CID Recycling and Disposal Facility*  
*RCRA Log No. B-27R*  
*Class 1\* Permit Modification Application – Addendum No. 1*  
*Updated Post-Closure Care Cost Estimates*

***Attachment 2***  
***Revised 2018 Post-Closure Cost Estimate Tables***

TABLE I-4  
**CID RDF POST-CLOSURE COST ESTIMATE**  
**AREA 3 LANDFILL**

NOTE: Area 3 landfill was certified closed on October 10, 2008. Post-closure activities for the Area 3 Landfill commenced in 2008

#	TASK	Units	Quantity	#/yr	# yrs	Unit Cost*	COSTS	
1	Mow and fertilize (if required) cover area (170 acres total)	acre	170	1	<del>20</del> 19	62.59	212,793	I
2	Dress and re-seed 3% of cover area (PC Year 7, 12, 17, 22 and 27)	acre	3% total	1	4	1,907	38,900	I
3	Landfill cap and surface water management system maintenance	LS	1	1	<del>20</del> 19	1,138	22,760	I
4	Semi-annual Inspection	each	1	2	<del>20</del> 19	342	13,668	I
5	Groundwater monitoring (Sampling & Analysis)				19			
6	- Routine Sampling (13 wells)	each	1	2	<del>20</del> 19	2,460	98,400	I
7	- Routine Analyses (13 wells)	each	1	2	<del>20</del> 19	3,506	140,240	I
8	- GMZ Sampling (36 wells)	each	1	4	<del>9</del> 7	6,015	216,540	I
9	- GMZ Analyses (36 wells)	each	1	4	<del>9</del> 7	9,252	333,072	I
10	- Additional wells after completion of Corrective Action (TBD, not in Permit)	each					0	C
11	5-Year GMZ Re-evaluation	each	1	1	<del>3</del> 4	13,950	41,850	I
12	Groundwater remediation system operation and maintenance	LS	1	1	<del>9</del> 7	11,000	99,000	I
<del>12</del>	<del>Groundwater treatment</del>	gal	<del>1,320,000</del>	<del>1</del>	<del>9</del>	<del>0.058</del>	<del>688,672</del>	
13	Groundwater Well Survey (Biennial)	each	1	0.5	<del>20</del>	1,082	10,820	I
14	Groundwater Data Review, Reporting and Statistics	each	1	1	<del>20</del>	9,000	180,000	I
15	Security and fencing maintenance (10,200 lineal feet total)	feet	2% total	1	<del>20</del>	5.92	24,149	I
	Leachate and condensate collection and disposal (average of last 4 yrs)	gal	<del>9,304,836</del>	1	<del>20</del>	0.058	10,787,841	A, I
	Leachate level monitoring and reporting	LS	<del>1,050,025</del>	1	<del>20</del>	1,494	29,879	I
17	Leachate Sampling & Analysis (35 IAC 724 Appendix I parameters)	LS	1	1	<del>20</del>	2,973	59,460	I
19	Leachate/Gas system maintenance	LS	1	1	<del>20</del>	28,448	568,950	I
20	Gas flare system maintenance	LS	1	1	<del>20</del>	9,105	182,104	I
21	Decommissioning of landfill gas system	LS	1	1	1	68,276	68,276	I
22	Air monitoring - monthly wellfield monitoring	LS	1	12	<del>20</del>	569	136,441	I
23	Air monitoring - annual surface scans	LS	1	1	<del>20</del>	765	15,300	I
24	Air monitoring - Flare: Annual gas sampling and Visible Emission (VE) testing	LS	1	1	<del>20</del>	2,105	42,100	I
25	Air monitoring - Gas Turbine: semi-annual sulfur analysis	LS	1	2	<del>20</del>	932	37,280	I
26	Air monitoring - Gas Turbine: semi-annual sulfur analysis and V.E. testing	LS	1	2	<del>20</del>	1,527	61,080	I
27	Post-closure certification report	LS	1	1	1	11,379	11,379	I
28	Public Access Structures/Facilities maintenance	LS	1	1	<del>20</del>	2,845	56,891	I
29	TOTAL						<del>14,177,847</del>	

Reduced by 2 yrs based on 2018 GME Evaluation

16 and extracted groundwater

changed "Air" to "Landfill Gas" - No changes to actual rates performed

Notes: \* Unit costs are rounded to the number of decimal places shown.

\$12,687,573

\* adjusted by inflation factor (2017 = 1.7%)

C - current cost; I - Adjusted by inflation factor (2018 = 2.3%)

A - average (2014 = 9,822,874; 2015 = 8,923,136; 2016 = 9,337,738; 2017 = 9,135,595)

2018 = 8,835,629

TABLE I-5  
 CID RDF POST-CLOSURE COST ESTIMATE  
 AREA 4 LANDFILL

NOTE: Area 4 landfill was certified closed on April 23, 2010. Post-closure activities for the Area 4 Landfill commenced in 2010

#	TASK	Units	Quantity	#/yr	# yrs	Unit Cost*	COSTS	
1	Mow and fertilize (if required) cover area (26 acres total)	acre	26	1	<del>22</del> 21	62.59	35,799	I
2	Dress and re-seed 3% of cover area (PC Year 7, 12, 17, 22 and 27)	acre	3% total	1	4	1,889	5,892	I
3	Landfill cap and surface water management system maintenance	LS	1	1	<del>22</del> 21	1,138	25,037	I
4	Semi-annual Inspection	each	1	2	<del>22</del> 21	342	15,035	I
5	Groundwater Monitoring (9 Dolomite wells and 10 Sand wells)							
6	- Sampling	each	1	2	<del>22</del> 21	4,025	177,100	I
7	- Analyses	each	1	2	<del>22</del> 21	5,242	230,648	I
8	Groundwater Well Survey (Biennial)	each	1	0.5	<del>22</del> 21	838	9,218	I
9	Groundwater Data Review, Reporting and Statistics	each	1	1	<del>22</del> 21	3,600	79,200	I
10	Security and fencing maintenance (7,200 lineal feet total)	feet	2% total	1	<del>22</del> 21	5.92	18,751	I
11	Leachate collection and disposal (average of last 4 yrs)	gal	<del>1,386,931</del>	1	<del>22</del> 21	0.058	1,768,778	A, I
12	Leachate level monitoring and reporting	LS	<del>1,445,687</del>	1	<del>22</del> 21	2,988	65,735	I
13	Leachate Sampling & Analysis (35 IAC 724 Appendix I parameters)	LS	1	1	<del>22</del> 21	1,063	23,386	I
14	Leachate system maintenance	LS	1	1	<del>22</del> 21	14,793	325,452	I
15	Post-closure certification report	LS	1	1	1	14,224	14,224	I
16	TOTAL						<del>2,794,256</del>	

Notes: \* Unit costs are rounded to the number of decimal places shown.

\$2,793,514

\*adjusted by inflation factor (2017 = 1.7%)

~~current cost~~ I - Adjusted by inflation factor (2018 = 2.3%)

A - average (2014 = 1,559,325; 2015 = 1,233,596; 2016 = 1,477,865; 2017 = 1,276,936)

2018 = 1,794,152

TABLE I-6

CID RDF - CORRECTIVE ACTION COST ESTIMATE

The approved correction action program for the SWMUs of concern (Area 1 and 2 landfills) consists of the following tasks. Costs are based upon ~~23~~ years, to coincide with the Area 4 landfill post-closure period.

21 years

#	TASK	Cost Per Year *	# yrs	COST
1	Operation and maintenance of a landfill gas management system for each landfill			
2	Landfill gas monitoring system - monthly checks of the extraction wells	3,805	<del>21</del> 21	83,710 I
3	Landfill gas monitoring system - semi-annual bar hole probe monitoring and river observations	336	<del>21</del> 21	7,392 I
4	Operation and maintenance of a leachate management system for each landfill			
5	Leachate management system - monthly checks of the removal wells and underground storage tank systems.	26,520	<del>21</del> 21	583,440 I
6	Quarterly groundwater piezometer level measurements for leachate compliance determinations	336	<del>21</del> 21	7,392 I
7	Inspecting/maintaining the final cover of each landfill			
8	Landfill cover for Areas 1 and 2 - quarterly checks for settlement, erosion and vegetative stress.			
9	Area 1 - quarterly checks from Year 5 through Year 30	760	<del>21</del> 21	16,720 I
10	Area 2 - quarterly checks from Year 5 through Year 30	380	<del>21</del> 21	8,360 I
11	TOTAL OPERATION AND MAINTENANCE COST			<del>707,014</del>
	Regrading/upgrading the final cover of each landfill			\$ 690,417
	<del>Regrading and upgrading of the final cover of the Area 1 and Area 2 landfills in accordance with plans and specifications approved by Illinois EPA with conditions and modifications on May 8, 2006; March 16, 2007; July 17, 2007; August 7, 2007; November 13, 2007 and November 30, 2012.</del>			
	<del>Area 2 clean soil and vegetative layer placement and seeding (remaining as of 10-23-18)</del>	<del>135,300</del>	<del>1</del>	<del>135,300</del>
	TOTAL REGRADING/UPGRADING OF FINAL COVER COST			<del>135,300</del>
12	Corrective Measures as required by B-27R-CA-7, issued October 29, 2013			
13	Groundwater remediation system operation and maintenance	5,000	<del>21</del> 21	110,000 I
14	Groundwater remediation system quarterly inspection	7,000	<del>21</del> 21	154,000 I
15	Extracted groundwater treatment	63,600	<del>21</del> 21	1,399,200 I
16	Groundwater Management Zone permit applications	7,000	4	28,000 I
17	Phytoremediation system annual maintenance	3,000	<del>21</del> 21	66,000 I
18	Phytoremediation system annual inspection and report	1,200	<del>21</del> 21	26,400 I
19	Leachate level and volume reporting	2,000	<del>21</del> 21	44,000 I
20	TOTAL CORRECTIVE MEASURES COST			<del>1,827,600</del> \$1,785,966
21	TOTAL			<del>2,669,914</del> \$2,476,383

Notes:

\* Unit costs are rounded to the number of decimal places shown  
 I - Adjusted by inflation factor (2018 = 2.3%)

*February 3, 2020  
CID Recycling and Disposal Facility  
RCRA Log No. B-27R  
Class 1\* Permit Modification Application – Addendum No. 1  
Updated Post-Closure Care Cost Estimates*

***Attachment 3  
Updated Post-Closure Cost Estimate Tables***

**TABLE I-4**  
**CID RDF POST-CLOSURE COST ESTIMATE**  
**AREA 3 LANDFILL**

NOTE: Area 3 landfill was certified closed on October 10, 2008. Post-closure activities for the Area 3 Landfill commenced in 2008

#	TASK	Units	Quantity	#/yr	# yrs	Unit Cost*	COSTS	
1	Mow and fertilize (if required) cover area (170 acres total)	acre	170	1	19	\$64	\$206,720	I
2	Dress and re-seed 3% of cover area (PC Year 7, 12, 17, 22 and 27)	acre	3% total	1	4	\$1,951	\$39,800	I
3	Landfill cap and surface water management system maintenance	LS	1	1	19	\$1,164	\$22,116	I
4	Semi-annual Inspection	each	1	2	19	\$350	\$13,300	I
5	Groundwater monitoring (Sampling & Analysis)							
6	- Routine Sampling (13 wells)	each	1	2	19	\$2,517	\$95,646	I
7	- Routine Analyses (13 wells)	each	1	2	19	\$3,587	\$136,306	I
8	- GMZ Sampling (36 wells)	each	1	4	7	\$6,153	\$172,284	I
9	- GMZ Analyses (36 wells)	each	1	4	7	\$9,465	\$265,020	I
10	- Additional wells after completion of Corrective Action (TBD, not in Permit)	each					\$0	C
11	5-Year GMZ Re-evaluation	each	1	1	4	\$14,271	\$57,084	I
12	Groundwater remediation system operation and maintenance	LS	1	1	7	\$11,253	\$78,771	I
13	Groundwater Well Survey (Biennial)	each	1	0.5	19	\$1,107	\$10,517	I
14	Groundwater Data Review, Reporting and Statistics	each	1	1	19	\$9,207	\$174,933	I
15	Security and fencing maintenance (10,200 lineal feet total)	feet	2% total	1	19	\$6.06	\$23,489	I
16	Leachate, condensate and extracted groundwater collection and disposal (average of last 4 yrs)	gal	9,058,025	1	19	\$0.059	\$10,154,045	A, I
17	Leachate level monitoring and reporting	LS	1	1	19	\$1,528	\$29,032	I
18	Leachate Sampling & Analysis (35 IAC 724 Appendix I parameters)	LS	1	1	19	\$3,041	\$57,779	I
19	Leachate/Gas system maintenance	LS	1	1	19	\$29,102	\$552,938	I
20	Gas flare system maintenance	LS	1	1	19	\$9,314	\$176,966	I
21	Decommissioning of landfill gas system	LS	1	1	1	\$69,846	\$69,846	I
22	Landfill Gas Monitoring - Monthly wellfield monitoring	LS	1	12	19	\$582	\$132,696	I
23	Landfill Gas Monitoring - Annual surface scans	LS	1	1	19	\$783	\$14,877	I
24	Landfill Gas Monitoring - Flare: Annual gas sampling and Visible Emission (VE) testing	LS	1	1	19	\$2,153	\$40,907	I
25	Landfill Gas Monitoring - Gas Turbine: Semi-annual sulfur analysis	LS	1	2	19	\$953	\$36,214	I
26	Landfill Gas monitoring - Gas Turbine: Semi-annual sulfur analysis and V.E. testing	LS	1	2	19	\$1,562	\$59,356	I
27	Post-closure certification report	LS	1	1	1	\$11,641	\$11,641	I
28	Public Access Structures/Facilities maintenance	LS	1	1	19	\$2,910	\$55,290	I
29	<b>TOTAL</b>						<b>\$12,687,573</b>	

Notes:

\*Unit costs are rounded to the number of decimal places shown.

C - Current cost; I - Adjusted by inflation factor (2018 = 2.3%)

A - Average (2015 = 8,923,136; 2016 = 9,337,738; 2017 = 9,135,595; 2018 = 8,835,629)

**TABLE I-5**

**CID RDF POST-CLOSURE COST ESTIMATE**

**AREA 4 LANDFILL**

NOTE: Area 4 landfill was certified closed on April 23, 2010. Post-closure activities for the Area 4 Landfill commenced in 2010

#	TASK	Units	Quantity	#/yr	# yrs	Unit Cost*	COSTS	
1	Mow and fertilize (if required) cover area (26 acres total)	acre	26	1	21	\$ 64.03	\$34,960	I
2	Dress and re-seed 3% of cover area (PC Year 7, 12, 17, 22 and 27)	acre	3% total	1	4	\$ 1,932	\$6,028	I
3	Landfill cap and surface water management system maintenance	LS	1	1	21	\$ 1,164	\$24,444	I
4	Semi-annual Inspection	each	1	2	21	\$ 350	\$14,700	I
5	Groundwater Monitoring (9 Dolomite wells and 10 Sand wells)							
6	- Sampling	each	1	2	21	\$ 4,118	\$172,956	I
7	- Analyses	each	1	2	21	\$ 5,363	\$225,246	I
8	Groundwater Well Survey (Biennial)	each	1	0.5	21	\$ 857	\$8,999	I
9	Groundwater Data Review, Reporting and Statistics	each	1	1	21	\$ 3,683	\$77,343	I
10	Security and fencing maintenance (7,200 lineal feet total)	feet	2% total	1	21	\$ 6.06	\$18,325	I
11	Leachate collection and disposal (average of last 4 yrs)	gal	1,445,637	1	21	\$ 0.059	\$1,791,145	A, I
12	Leachate level monitoring and reporting	LS	1	1	21	\$ 3,057	\$64,197	I
13	Leachate Sampling & Analysis (35 IAC 724 Appendix I parameters)	LS	1	1	21	\$ 1,087	\$22,827	I
14	Leachate system maintenance	LS	1	1	21	\$15,133	\$317,793	I
15	Post-closure certification report	LS	1	1	1	\$14,551	\$14,551	I
16	<b>TOTAL</b>						<b>\$2,793,514</b>	
	Notes: *Unit costs are rounded to the number of decimal places shown. I - Adjusted by inflation factor (2018 = 2.3%) A - average (2015 = 1,233,596; 2016 = 1,477,865; 2017 = 1,276,936; 2018 = 1,794,152)							

**TABLE I-6**

**CID RDF - CORRECTIVE ACTION COST ESTIMATE**

The approved correction action program for the SWMUs of concern (Area 1 and 2 landfills) consists of the following tasks. Costs are based upon 21 years, to coincide with the Area 4 landfill post-closure period.

#	TASK	Cost Per Year*	# yrs	COST	
1	Operation and maintenance of a landfill gas management system for each landfill				
2	Landfill gas monitoring system - monthly checks of the extraction wells	\$3,893	21	\$81,753	I
3	Landfill gas monitoring system - semi-annual bar hole probe monitoring and river observations	\$344	21	\$7,224	I
4	Operation and maintenance of a leachate management system for each landfill				
5	Leachate management system - monthly checks of the removal wells and underground storage tank systems.	\$27,130	21	\$569,730	I
6	Quarterly groundwater piezometer level measurements for leachate compliance determinations	\$344	21	\$7,224	I
7	Inspecting/maintaining the final cover of each landfill				
8	Landfill cover for Areas 1 and 2 – quarterly checks for settlement, erosion and vegetative stress.				
9	Area 1 – quarterly checks from Year 5 through Year 30	\$777	21	\$16,317	I
10	Area 2 – quarterly checks from Year 5 through Year 30	\$389	21	\$8,169	I
11	<b>TOTAL OPERATION AND MAINTENANCE COST</b>			<b>\$690,417</b>	
12	Corrective Measures as required by B-27R-CA-7, issued October 29, 2013				
13	Groundwater remediation system operation and maintenance	\$5,115	21	\$107,415	I
14	Groundwater remediation system quarterly inspection	\$7,161	21	\$150,381	I
15	Extracted groundwater treatment	\$65,063	21	\$1,366,323	I
16	Groundwater Management Zone permit applications	\$7,161	4	\$28,644	I
17	Phytoremediation system annual maintenance	\$3,069	21	\$64,449	I
18	Phytoremediation system annual inspection and report	\$1,228	21	\$25,788	I
19	Leachate level and volume reporting	\$2,046	21	\$42,966	I
20	<b>TOTAL CORRECTIVE MEASURES COST</b>			<b>\$1,785,966</b>	
21	<b>TOTAL</b>			<b>\$2,476,383</b>	

Notes:

\*Unit costs are rounded to the number of decimal places shown.

I - Adjusted by inflation factor (2018 = 2.3%)



# 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

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

APR 17 2020

7018 1830 0000 5290 4781

James A. Wilson  
Waste Management of Illinois, Inc.  
720 E. Butterfield Road  
Suite 400  
Lombard, IL 60148

RE: 0310390001 – Cook County  
CID Recycling and Disposal Facility  
ILD010284248  
Log No. B-27R-M-96  
RCRA Permit  
Permit Approval

Dear Mr. Wilson:

This letter is in response to the documents described below that were submitted by Roderick Stipe of Waste Management of Illinois, Inc. (CID), for the above referenced RCRA permitted facility. The facility's RCRA permit requires CID to provide post-closure care, including groundwater monitoring/remediation at the closed Area 3 and Area 4 hazardous waste landfills, and also requires CID to properly address the closed Area 1 and Area 2 landfills as solid waste management units of concern at the facility.

Submittal No. 1 – A document entitled, "Class 1\* Permit Modification Application – Updated Post-Closure Care Cost Estimates", dated November 27, 2019 and received by the Illinois EPA on December 2, 2019. The submittal provided revised post-closure care and corrective action cost estimates for the above reference facility.

Submittal No. 2 – A document entitled, "Addendum No. 1 – Additional Information", dated February 3, 2020 and received by the Illinois EPA on February 4, 2020. The submittal provided CID's response to Illinois EPA's technical comments on Submittal No. 1 above, received by CID on December 18, 2019.

Submittal No. 3 – A document entitled, "Addendum No. 2 – Addition Information", dated February 3, 2020 and received by the Illinois EPA on February 4, 2020. The submittal provided documentation of third-party costs used to update the facility's post-closure care cost estimate.

The Illinois EPA has reviewed the information in the subject submittals and has determined the permit modification request can be approved.

These determinations were based on the review of: (1) the RCRA Post-Closure Permit (Permit) issued to CID; (2) the regulations [35 Ill. Adm. Code Subtitle G]; and (3) the information contained in the subject submittals.

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

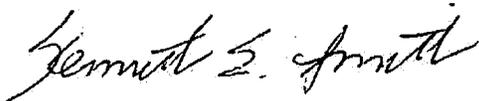
Attachment A to this letter contains a summary of the changes made to the RCRA permit. A revised RCRA permit reflecting the approval of the subject submittals is enclosed with this letter. The information in the subject submittals has been incorporated into CID's approved permit application. Post-closure care and corrective action activities at the above-referenced facility must be in accordance with the RCRA Permit issued to the CID facility and all subsequent approved modifications to the Permit.

Pursuant to 35 Ill. Adm. Code 703.281(a)(2), a notice of this modification shall be sent to all persons on the facility mailing list, maintained by the Illinois EPA in accordance with 35 Ill. Adm. Code 705.163(a)(4), and the appropriate units of state and local government as specified in 35 Ill. Adm. Code 705.163(a)(5). For a Class 1\* modification, the notice must be made within 90 calendar days after the Illinois EPA approves the request.

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 Engineering Practice Act of 1989, the Professional Land Surveyor 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 groundwater issues, please contact Adam Shade at 217/785-9633. For all other questions, please contact Kelly Huser at 217/524-3867.

Sincerely,



Kenneth E. Smith, P.E., Manager  
Permit Section  
Division of Land Pollution Control  
Bureau of Land

KES:KDH:0310390001-RCRA-B27RM96-Approval.docx

*KDH WAW MS*  
Attachment: Attachment A – Changes to the RCRA Post-Closure Permit  
Modified RCRA Post-Closure Permit

cc: James Blough, U.S. EPA – Region V  
Roderic Stipe, Waste Management

Bcc: Bureau File  
Des Plaines Region  
Rob Watson  
Mike Summers *Bob Mathis*  
Kelly Huser  
Adam Shade

ATTACHMENT A  
CHANGES TO THE RCRA POST-CLOSURE PERMIT  
CID Recycling & Disposal Facility

STATE ID No. 0310390001  
USEPA No. ILD010284248  
LOG No. B-27R-M-96

The following changes were made to CID RDF's RCRA Post Closure permit in response to permit modification request B-27R-M-96. These changes reflect approval of modifications to the groundwater sections of your permit and permit application.

Permit Condition I.G:

I. G. POST-CLOSURE COST

1. The post-closure cost for Area 4 landfill is ~~\$2,794,256~~ 2,793,514 (~~2018~~ 2019 dollars).
2. The post-closure cost for Area 3 landfill is ~~\$14,177,847~~ 12,687,573 (~~2018~~ 2019 dollars).

Permit Condition IV.F:

IV. F. FINANCIAL ASSURANCE

35 Ill. Adm. Code 724.201 requires that financial assurance be established for completing required corrective actions at solid waste management units:

1. The cost estimate for conducting the corrective action required by this section is ~~\$2,534,614~~ 2,476,383 (~~2018~~ 2019 dollars) as approved by the Illinois EPA in this permit modification (Log No. B-27R-M-95 96). Table I-6 of the approved permit application contains this cost estimate.

Attachment E:

114. B-27R-M-96; Class I\* permit modification dated November 27, 2019; additional information dated February 3, 2020.



# 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

## HAZARDOUS WASTE MANAGEMENT RCRA POST-CLOSURE PERMIT

0310390001 -- Cook County  
CID Recycling and Disposal Facility  
ILD 010284248  
Log No. B-27R-M-96  
RCRA Permit

Issue Date: June 11, 2008  
Effective Date: July 16, 2008  
Expiration Date: July 16, 2018  
Modification Date: **APR 17 2020**

Waste Management of Illinois, Inc.  
P.O. Box 1309  
138th and Interstate 94  
Calumet City, Illinois 60409

A modified RCRA Post-Closure permit is hereby issued to Waste Management of Illinois, Inc. as owner to provide post closure care for two closed hazardous waste landfills (Area 3 and 4) and two closed solid waste management units (Area 1 and 2) at the above-referenced facility. This permit is issued pursuant to Section 39(d) of the Illinois Environmental Protection Act and Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code).

The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 Ill. Adm. Code Parts 702, 703, 705 and 720 through 729. This permit consists of the conditions contained herein (including those in any attachments).

This permit is issued based on the information submitted in the permit application, and any subsequent amendments as identified in Attachment E of this permit (hereafter referred to as the approved permit application). Any inaccuracies found in this information may be grounds for the termination or modification of this permit (see 35 Ill. Adm. Code 702.187 and 702.186) and potential enforcement action.

Sincerely,

Kenneth E. Smith, P.E., Manager  
Permit Section  
Division of Land Pollution Control  
Bureau of Land

KES:KDH:0310390001-RCRA-B27RM96-Approval.docx

*KDH WAW mts*

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

MODIFIED RCRA POST-CLOSURE PERMIT

CID FACILITY

CALUMET CITY, ILLINOIS

ILD010284248

LOG NO. B-27R-M-96

MODIFIED RCRA POST-CLOSURE PERMIT  
LOG NO. B-27R-M-96

TABLE OF CONTENTS

<u>ITEM</u>	<u>PAGE</u>
General Facility Description	i
I. Post-Closure	I-1 - I-8
II. Area 4 Compliance Monitoring Program	II-1 - II-19
III. Area 3 Groundwater Corrective Action Program	III-1 - III-26
IV. Corrective Action for Solid Waste Management Units	IV-1 - IV-6
V. Standard Conditions	V-1 - V-8
VI. Reporting and Notification Requirements	VI-1 - VI-7

LIST OF ATTACHMENTS

Attachment A -- Groundwater Monitoring Attachments	A-1 - A-8
Attachment B -- Statistical Procedure	B-1 - B-13
Attachment C -- Additional Special Conditions	C-1 - C-2
Attachment D -- Post-Closure Inspection Schedule	D-1 - D-3
Attachment E -- Approved Permit Application Identification	E-1 - E-7
Attachment F -- Statistical Procedures Flow Chart	F-1
Attachment G -- Overview of RCRA Corrective Action Activities at CID RDF	G-1 - G-2
Attachment H -- Construction Certification	H-1
Attachment I -- Reduced Appendix I Lists for Leachate Sampling	I-1
Attachment J -- Site Layout Map	J-1

## GENERAL FACILITY DESCRIPTION

CID Facility  
Calumet City, Illinois  
ILD010284248I. General

The CID facility owned by Waste Management of Illinois, Inc., and operated by Waste Management of Illinois, Inc. was a commercial facility involved in the disposal of hazardous waste. Nearly all of the hazardous waste handled at this facility was generated off-site by various industries. In particular, the largest generators of wastes accepted at the facility were the metal finishing industry, the iron and steel industry, and the petroleum refining industry. Only a small portion of the waste disposed at the facility was actually generated on-site.

A 25.9 acre closed hazardous waste landfill (known as Area 4) exists at the facility. The Illinois EPA approved closure of the Area 4 landfill on April 23, 2010 (Log No. B-27R-M-13).

A 173-acre closed landfill (known as Area 3) also exists at the facility. Approximately 83 acres of this landfill received hazardous waste during operation between 1980 and January, 1983, when hazardous waste was co-disposed with municipal waste disposed at Area 3. Since January 1983, Area 3 has only received municipal refuse and other non-hazardous special wastes. However, as this landfill did receive hazardous waste, it was closed in accordance with the closure plan approved by the Illinois EPA on June 6, 1986 (including any adjudicated revisions as a result of the appeal), and receives post-closure care and monitoring in accordance with this RCRA Post Closure permit. The Illinois EPA approved closure of the Area 3 landfill in a letter dated October 10, 2008 (Log No. C-187-CERT).

II. Site Description

This facility is located in portions of the incorporated limits of Burnham, Calumet City and Chicago, in Cook County, Illinois. The address of the facility is 138th and Interstate 94, Calumet City, Illinois 60409. A portion of the USGS Topographic Map, Lake Calumet Quadrangle is included as Figure B-1 of the Approved Permit Application to show the exact location of this facility. A drawing showing the overall layout of the CID facility is provided as Attachment I to this permit.

**SECTION I: POST-CLOSURE****A. SUMMARY**

Hazardous waste management units where waste is left in-place must receive post-closure care for at least 30 years after they are closed. As Area 3 was used for the disposal of hazardous waste prior to January 26, 1983, and Area 4 was used for the disposal of hazardous waste, post-closure care must be provided for both units. Activities required during post-closure care include, but are not limited to, (1) maintenance of the final cover, (2) management of leachate, and (3) monitoring of the groundwater. Post-closure care for Area 3 began on May 30, 2008. Post-closure care for Area 4 began on February 18, 2010.

**B. UNIT IDENTIFICATION**

1. The Permittee shall provide post-closure care for the Area 3 and Area 4 hazardous waste landfills, subject to the terms and conditions of this permit.
2. Area 3 was closed in accordance with the closure plan in the approved permit application (App. 37). The Illinois EPA approved closure of Area 3 in a letter dated October 10, 2008 (Log No. C-187-CERT). The final elevations for Area 3 landfill are in accordance with the approved closure plan contained in the permit application (Fig. 17A, App. 37).

As closure of the area where hazardous wastes were disposed in Area 3 includes the entire 173-acre parcel of land, the Illinois EPA considers all of Area 3 to be a hazardous waste management unit. Therefore, post-closure care meeting the requirements of 35 Ill. Adm. Code 724.217 through 724.220 must be provided for the entire 173-acre landfill known as Area 3.

3. Illinois EPA approved the general concepts set forth in the End Use Plan submitted December 29, 2010 and July 14, 2011 (B-27R-M-25) for the Area 3 landfill at this facility. However, any technical issues pertaining to post-closure care of this landfill in this plan are superseded by: (a) all conditions in this permit, except this one; and (b) the portions of the approved permit application other than the End Use Plan.

**C. MONITORING, MAINTENANCE, AND RECORDKEEPING**

1. The Permittee shall conduct post-closure care for each hazardous waste management unit listed in Section B above to begin after completion of closure of the unit and continue for a minimum of 30 years after that date.

2. Prior to the time that post-closure care is due to expire, the Board will extend or the Illinois EPA may propose extension of the post-closure care period if it finds that the extended period is necessary to protect human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of waste at levels which may be harmful to human health and the environment).
3. The Illinois EPA may include restrictions upon the future use of the site if necessary to protect public health and the environment, 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 Illinois EPA shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste disposal site is located.
4. The Permittee shall not allow any use of the units designated in Section B which will disturb the integrity of the final cover, liners, any components of the containment system, or function of the facility's monitoring systems during the post-closure care period, unless such use is necessary to protect human health or the environment.
5. The Permittee shall implement the approved Post-Closure Plan contained in the Approved Permit Application. All post-closure care activities must be conducted in accordance with the provisions of the approved Post-Closure Plan.
6. The Permittee must request a permit modification to authorize a change in the approved Post-Closure Plan. This request must be in accordance with applicable requirements of Parts 702, 703 and 724 and must include a copy of the amended Post-Closure Plan for approval by the Illinois EPA's Bureau of Land.
7. The Illinois EPA will require continuation of the security procedures set forth in the approved permit application during part or all of the post-closure period. At a minimum, Area 3 and Area 4 shall be totally fenced and shall have locked gates at each entrance. Any additional requirements beyond this shall be subject to the permit modification procedures set forth in 35 Ill. Adm. Code 705.128.
8. The Permittee shall maintain and monitor the groundwater monitoring system and comply with the other applicable regulations of 35 Ill. Adm. Code 724 Subpart F (Groundwater Protection) during the post-closure period for both Area 3 and Area 4 landfills.
9. The Permittee shall maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, and other events.

10. The Permittee shall prevent run-on and run-off from eroding or otherwise damaging the final cover.
11. The Permittee shall comply with the requirements for landfills as follows:
  - a. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, cracking or other events. Corrective action shall be taken if problems, including but not limited to the following, occur:
    - ponding
    - cracks greater than one inch wide
    - gas problems
    - odor problems
    - dead or stressed vegetation (areas greater than 50 square feet)
    - vegetation with taproots growing in areas not designed to accommodate such
    - vector problems
    - leachate popouts or seeps
    - erosion to public access ways
  - b. Continue to operate the leachate collection and removal system until leachate is no longer detected. Sufficient quantities of leachate shall be removed from the leachate collection systems in Area 3 and Area 4 to ensure that the following requirements are met:
    - i. The leachate level in Area 3 shall not exceed the following compliance elevations as measured in the sumps of the following collection systems:
      - a. 555 ft. MSL for the base collection system. This system consists of a base grade lateral piping system with the eastern half of the system containing a one-foot gravel drainage layer. Leachate levels are monitored at LW3, MH8, MH9, MH10, MH17, MH18 and W450R.
      - b. 566 ft. MSL for the elevated base collection system. This system collects leachate from a small area in the northeast portion of the landfill with lateral piping and a gravel drainage layer. Leachate levels are monitored at LW19 and MH20.
      - c. 580 ft. MSL for the piezometer system. This system consists of a series of leachate collection manholes and wells in the western portion of the landfill. Leachate levels are monitored at MH5, MH6, MH16, L430, L702, L704, G705, W434 and W435.

Maintenance of the leachate level at or below this elevation is necessary to create and maintain an inward gradient in the soil layer surrounding the landfill. The leachate levels with the total volume of leachate extracted shall be submitted to the Illinois EPA annually by January 15<sup>th</sup>, for the previous calendar year.

- ii. The leachate level in Area 4 shall not exceed a depth of one (1) foot above the liner. The maintenance level shall be defined as one (1) foot above the as-built base grade for each sump. Leachate levels observed in each sump and the amount of leachate removed from each sump shall be submitted to the Illinois EPA annually by January 15<sup>th</sup>, for the previous calendar year.
- iii. Three representative samples of leachate from Area 3 and one from Area 4 shall be collected annually and analyzed individually for constituents listed in 35 Ill. Adm. Code Part 724, Appendix I. These samples shall be collected during the first quarter inspections. The four samples will be taken from the withdrawal points listed in Condition I.C.11.b.vi. The results of these analyses shall be submitted electronically to the Illinois EPA by June 1 of each year.
- iv. The annual Appendix I analysis required by Condition I.C.11.b.iii for a given sampling point may be reduced through submittal of a permit modification request, in accordance with 35 Ill. Adm. Code 703.280, to reduce the annual leachate monitoring list. The Reduced List will be based on a review of the four most recent full Appendix I analyses, and include all parameters detected in any of these four Appendix I analysis, along with their appropriate Storet numbers for electronic data submittal. Starting the next sampling event after Illinois EPA approval, this reduced list will be used in lieu of the Appendix I analysis for three out of four years, with the fourth year reverting to a full Appendix I analysis. Any parameters not included on the existing Reduced List detected in the fourth-year Appendix I analysis shall be added to the Reduced list, by means of a permit modification request in accordance with 35 Ill. Adm. Code 703.280, for all future Reduced List analyses. This cycle of three years of Reduced List, followed by one year of Appendix I analysis, shall repeat for the remainder of the post-closure period. The approved Reduced Lists for calendar years 2019, 2020, and 2021 can be found in Attachment I.
- v. Information required by Condition I.C.11.b.iii and I.C.11.b.iv must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment A. Additional guidance regarding the submittal of the information in an electronic format

can be found at <http://www.epa.state.il.us/land/waste-mgmt/groundwater-monitoring.html>

- vi. The following leachate withdrawal points will be used in leachate analysis required by conditions I.C.11.b.iii and I.C.11.b.iv. For purposes of electronic reporting, the points will be renamed as shown below.

<u>Name in Application</u>	<u>Name for Electronic Reporting</u>
A3LC (Area 3 Composite)	L311
A3L3 (Area 3 LW 3)	L312
A3M6 (Area 3 MH 6)	L313
A4LC (Area 4 Composite)	L331

- vii. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting form (LPC 592, a copy is provided in Attachment A) as a cover sheet for all leachate reports for identification purposes. The form is not to be used for permit modification requests.
- c. Prevent run-on and run-off from eroding or otherwise damaging the final cover.
  - d. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of 35 Ill. Adm. Code Part 724 Subpart F.
  - e. Protect and maintain surveyed benchmarks used in complying with surveying and recordkeeping requirements.
12. The Permittee shall monitor the Phase VI leak detection sump to determine if the quantity of leachate collected in the leak detection system exceeds the action leakage rate for Phase VI. The action leakage rate for Phase VI is 1532 gallons per day. The pump operating level for the Phase VI leak detection sump is 551 feet MSL. The Permittee shall inspect and monitor the leak detection system in accordance with the requirements in 35 Ill. Adm. Code 724.403(c).
13. In accordance with 35 Ill. Adm. Code 724.404(b), if the flow rate in the Phase VI leak detection sump exceeds the action leakage rate described above, the Permittee shall:
- a. Notify the Illinois EPA in writing of the exceedence within 7 days of the determination;
  - b. Submit a preliminary written assessment to the Illinois EPA within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible

location, size and cause of any leaks, and short-term actions taken and planned;

- c. Determine to the extent practicable the location, size and cause of any leak;
- d. Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
- e. Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Illinois EPA the results of the determinations specified above, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the Permittee shall submit to the Illinois EPA a report summarizing the results of any remedial actions taken and action planned.

The Permittee shall follow the procedures listed in 35 Ill. Adm. Code 724.404(c) to make the determinations required above.

#### D. INSPECTIONS

1. The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule in Attachment D, subject to the following modification:
  - a. The Area 3 and Area 4 landfills shall be inspected to determine if corrective action for the final cover or any other structure at each landfill is needed. Inspection of the landfills and any corrective action taken shall be in accordance with the post-closure care plan in the approved permit application. If corrective action is taken, the site shall be re-visited one month later to ensure that the actions taken have indeed corrected the problem(s) noted.

#### E. NOTICES AND CERTIFICATION

1. After final closure has been certified, the person or office specified in the approved Post-Closure Plan must keep the plan during the remainder of the post-closure period.
2. A survey plat indicating the location and dimensions of the Area 4 landfill and any other hazardous waste disposal units with respect to permanently surveyed benchmarks was prepared and certified by a professional land surveyor. The notes on the plat state the owner's and operator's obligation to restrict disturbance of the Area 4 landfill in accordance with the applicable Subpart G regulations. These notes state:

- a. The waste materials contained in the Area 4 landfill are considered RCRA hazardous wastes. They include asbestos-containing waste, industrial hazardous waste and commercial hazardous waste.
  - b. Any material removed from the Area 4 landfill during future activities must be managed as a hazardous waste in accordance with 35 Ill. Adm. Code Subtitle G: Waste Disposal.
  - c. The use of this area is restricted.
3. The Plat of Survey for the Area 4 landfill, Drawing No. S09-01-413 was filed with the Cook County Recorder's Office in Chicago, IL on March 18, 2010. The record data is Document No. 1007703015.

The Plat of Survey was attached to the deed to the property and serves as an instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:

- a. The waste material in the Area 4 landfill is considered a RCRA hazardous waste;
  - b. Use of the area is restricted; and
  - c. A survey plat and record of the type, location and quantity of waste material in the Area 4 landfill was filed with the IEPA and the County Recorder.
4. If the Permittee or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes, hazardous waste residues, the liner, if any, or contaminated soils, then he must request a modification to this post-closure permit in accordance with the applicable requirements in 35 Ill. Adm. Code Parts 703, 705 and 724. The owner or operator must, at a minimum, demonstrate that the removal of hazardous wastes will satisfy the criteria of 35 Ill. Adm. Code 724.217(c).
5. No later than sixty (60) days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee shall submit to the Illinois EPA, by registered mail, a certification that the post-closure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved Post-Closure Plan. The certification must be signed by the owner or operator and an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Illinois EPA upon request until the Illinois EPA releases the Permittee from the financial assurance requirements for post-closure care.

6. Illinois EPA has approved the proposed changes to the Area 4 landfill runoff control system contained in the documents titled "Class 3 Permit Modification Application Runoff Modifications", and dated August 9, 2011, March 22, 2012, and February 13, 2014 (B-27R-M-33). Illinois EPA has approved CID's October 1, 2015 document entitled "Class I\* Permit Modification Construction Certification Report", which contained a construction documentation report and as-built drawings for the Area 4 runoff control system changes (B-27R-M-72).

F. SUBSURFACE GAS MANAGEMENT

1. The Permittee shall recover or flare the subsurface gas generated at Area 3 during the post-closure care period.
  - a. Condensate from any gas recovery system is considered hazardous and must be managed as hazardous waste.
2. A corrective action plan shall be submitted to the Illinois EPA's Bureau of Land for approval if subsurface gas problems start to occur.

G. POST-CLOSURE COST

3. The post-closure cost for Area 4 landfill is \$2,793,514 (2019 dollars).
4. The post-closure cost for Area 3 landfill is \$12,687,573 (2019 dollars).

**SECTION II: AREA 4 DETECTION MONITORING PROGRAM****A. SUMMARY**

The detection monitoring program consists of nineteen (19) existing groundwater monitoring wells. This includes nine (9) monitoring wells that are utilized to monitor the Silurian Dolomite and ten (10) that are utilized to monitor the Dolton Sand. Due to highly variable groundwater flow conditions in the Silurian Dolomite in the vicinity of the facility, intrawell statistical analyses will be conducted at each monitoring well. Therefore, there will not be designated upgradient and downgradient monitoring wells in this program.

**B. DEFINITIONS**

As used herein, the words or phrases set forth below shall have the following definitions:

1. "Uppermost Aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with this aquifer in the vicinity of the facility. The uppermost aquifer underlying Area 4 has been identified as a weathered, fractured, and/or jointed Silurian dolomite which overlies a bedrock aquitard and underlies a perched outwash sand unit with minimal hydraulic connection.
2. "Point of Compliance" refers to the vertical surface located at the hydraulically downgradient limits of the waste management area (Area 4) extending down into the uppermost aquifer underlying the regulated unit.
3. "Ft - bgs" refers to the number of feet below the ground surface.
4. "Ft-MSL" refers to elevation referenced to mean sea level.
5. "Detected" shall mean a concentration equal to or above the PQL listed in USEPA's SW-846 (Third Edition) or as approved by the Illinois EPA for the applicable analytical methods specified in the approved Sampling and Analysis Procedures, which are incorporated by reference in Condition II.H of the Permit.
6. "Progressive Increase" shall mean an increase in the concentration of a constituent in successive sampling events.
7. "Stick-up" refers to the height of the reference survey datum. This point is determined within  $\pm 0.01$  foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum.

**C. IMPLEMENTATION**

1. The Permittee shall implement the detection monitoring program established in the permit upon the modification date of this permit (Log No. B-27R-M-30, 31 and 32) to determine if the regulated unit is in compliance with the groundwater protection standard listed in Condition I.E.1. On that date, the detection monitoring requirements set forth in this permit shall supersede those established in the 35 Ill. Adm. Code 724 compliance monitoring program previously approved by the Illinois EPA.
2. The Permittee shall carry out the detection monitoring program specified in this Permit on the groundwater found in the Silurian Dolomite and the Dolton Sand beneath the CID-RDF facility in Calumet City, Illinois. Groundwater occurring within the Silurian Dolomite beneath the CID-RDF facility has been designated a 35 Ill. Adm. Code 620, Class I: Potable Resource Groundwater. Groundwater occurring within the Dolton Sand beneath the CID-RDF facility has been designated a 35 Ill. Adm. Code 620, Class II: General Resource Groundwater.
3. The point of compliance, defined as a vertical surface located at the hydraulically downgradient limits of Area 4 that extends down into the uppermost aquifer underlying the waste management units, is shown on Figure E-5c of the approved Part B Permit Renewal Application.

**D. WELL LOCATION AND CONSTRUCTION**

1. The Permittee shall maintain the groundwater monitoring wells identified in the following table in accordance with the approved Part B Permit Renewal Application to allow for the collection of groundwater samples and elevation from the uppermost aquifer. The location of these wells is specified in Figure E-5c of the approved Part B Permit Renewal Application.

<b>IEPA Well No.</b>	<b>Facility Well No.</b>	<b>Well Depth (ft.)</b>	<b>Well Depth Elevation (ft. MSL)</b>	<b>Well Screen Interval</b>
<b>Area 4 Dolomite Monitoring Wells</b>				
G02D* <sup>v</sup>	G202	67.2	521.13	530.13-521.13
R06D* <sup>v</sup>	R06D	80.0	510.80	520.80-510.80
R08D* <sup>v</sup>	R08D	64.6	523.79	533.79-523.79
G10D* <sup>v</sup>	G210	71.9	515.16	524.36-515.16
G16D* <sup>v</sup>	G216	66.3	517.70	524.00-517.70

G18D* <sup>V</sup>	G218	77.5	508.66	517.56-508.66
G20D* <sup>V</sup>	G220	77.9	511.56	520.46-511.56
R04D* <sup>V</sup>	G04DR	90.9	503.98	513.98-503.98
G05D* <sup>V</sup>	G05D	88.7	502.76	512.76-502.76

**Area 4 Dolton Sand Monitoring Wells**

G01S* <sup>VII</sup>	G201	11.3	577.36	581.64 – 577.36
G04S* <sup>VII</sup>	G204	18.6	575.22	579.42 – 575.22
G05S* <sup>VII</sup>	G205	17.1	574.72	578.92 – 574.72
G07S* <sup>VI</sup>	G207	13.8	574.70	578.90 – 574.70
G09S* <sup>VI</sup>	G209	11.5	576.33	580.53 – 576.33
G13S* <sup>VII</sup>	G213	21.3	573.13	581.67 – 573.13
R15S* <sup>VII</sup>	G215R	12.4	575.54	581.54 – 575.54
R17S* <sup>VI</sup>	R17S	13.6	576.97	581.67 - 576.97
G19S* <sup>VI</sup>	G219	12.1	573.95	579.15 – 573.95
G21S* <sup>VII</sup>	G221	11.8	577.02	581.75 – 577.02

## NOTE:

\* – Denotes point of compliance monitoring well.

<sup>V</sup>- Analysis of List G1, G2, G3, G4 and G5 parameters in accordance with Condition II.E.1.<sup>VI</sup>- Analysis of List G1 and G2 parameters in accordance with Condition II.E.1.<sup>VII</sup>- Analysis of Lists G1, G2, G6 and G7 parameters in accordance with Condition II.E.1.

+ - Denotes monitoring well to be installed

- Construction of any new monitoring well/piezometer must be at a minimum in accordance with the diagram contained in Attachment A to this Permit unless otherwise approved in writing by the Illinois EPA. Any new monitoring wells/piezometers must be continuously sampled and logged on an Illinois EPA boring log and well completion report as provided in Attachment A unless otherwise approved by the Illinois EPA.
- The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition II.D.1 are damaged or the structure integrity has been compromised causing the well not to serve its function or to act as a contaminant pathway. A proposal for the replacement of the subject well requires Illinois EPA approval, and shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged and would create a potential route for groundwater contamination.
- Should any well become consistently dry or unserviceable, a replacement well shall be provided within ten (10) foot of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the well is replaced.

A replacement well which is more than ten (10) feet from the existing well or which does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well. If the facility determines that a replacement well will be a dry well, then it must submit for Illinois EPA approval either a proposal to install a new monitoring well or a proposal not to replace the well with appropriate rationale.

5. The Permittee shall submit boring logs, construction diagrams, and data sheets from the installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures (see Attachment A to this Permit) to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All information should be submitted to the appropriate State Agencies.

Illinois Environmental Protection Agency  
Bureau of Land - #33  
Permit Section  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

6. All wells/piezometers shall be clearly identified and shall be equipped with protective caps and locks. Monitoring wells or piezometers in high traffic areas must be protected with bumperguards.
7. All monitoring wells and piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Attachment A to this Permit.

E. GROUNDWATER PROTECTION STANDARD

1. The following hazardous constituents and concentration limits comprise the groundwater protection standard in the vicinity of the CID-RDF facility. Total (unfiltered) values, derived from the applicable USEPA SW-846 (Latest Version) method or equivalent methods listed in Section E of the approved Permit Renewal Application, will be used for comparison with the concentration limits.

B-27R-M-96

CID RDF  
 ILD010284248  
 Page II-5 of II-19

<u>List G1 – Field Parameters</u>	STORET No.	Units	Concentration Limit (ug/L)	
			<u>Class I</u>	<u>Class II</u>
pH	00400	standard	6.5-9.0	--
Specific Conductance at 25°C	00094	unhos/cm	--	--
Temperature of Water Sample	00011	Fahrenheit	--	--
Turbidity	00076	NTUs	--	--
Depth to Water (below land surface)	72019	Feet	--	--
Depth to Water (below measuring point)	72109	Ft-bgs	--	--
Elevation of Groundwater Surface	71993	Ft-MSL	--	--
Elevation of Bottom of Well#	72020	Ft-MSL	--	--
Elevation of Measuring Point (Top of Casing)##	72110	Ft-MSL	--	--

# Shall be determined in accordance with Condition II.G.3

## Shall be determined in accordance with Condition II.G.2

Hazardous Waste Constituents

<u>List G2 –Organics</u>	STORET No.	PQL (ug/L)	Concentration Limit (ug/L)	
			<u>Class I</u>	<u>Class II</u>
Toluene	34010	1	1,000	2,500
Benzene	34030	1	5	25
Ethylbenzene	78113	1	700	1,000
Xylene (total)	81551	2	10,000	10,000
BTEX(total)	11750	3	11,705	13,525
p-dioxane	81582	5	7.7	7.7

List G3 – Organics

Naphthalene	34696	5	140	220
Acetone	81552	10	6,300	6,300
bis(2-ethylhexyl)phthalate	39100	5	6	60
Chlorobenzene	34301	1	100	500
Methylene Chloride	34423	1	5	50

List G4 – Inorganics (total)

Barium, total	01007	TBD	1,000	--
Chloride, total	00940	1000	200,000	--
Chromium, total	01034	TBD	100	--
Cobalt, total	01037	TBD	1,000	--
Lead, total	01051	TBD	7.5	--

Nickel, total	01067	TBD	100	--
Zinc, total	01092	TBD	5,000	--

List G5 – Inorganics (dissolved)

Barium, dissolved	01005	2	--	--
Chloride, dissolved	00941	1000	--	--
Chromium, dissolved	01030	4	--	--
Cobalt, dissolved	01035	4	--	--
Lead, dissolved	01049	10	--	--
Nickel, dissolved	01065	10	--	--
Zinc, dissolved	01090	10	--	--

List G6 – Inorganics (total)

Arsenic, total	01002	TBD	--	200
Chromium, total	01034	TBD	--	1000
Cobalt, total	01037	TBD	--	1000
Vanadium, total	01087	TBD	--	100

List G7 – Inorganics (dissolved)

Arsenic, dissolved	01000	TBD	--	--
Chromium, dissolved	01030	TBD	--	--
Cobalt, dissolved	01035	TBD	--	--
Vanadium, dissolved	01055	TBD	--	--

2. The background values established for the purpose of intrawell statistical analysis, shall initially be established from the historical groundwater data from the initial sampling of each monitoring well under the initial RCRA Part B Permit (March 1988) to the Fourth Quarter 2006, utilizing the following procedures. This may include data from original monitoring wells and replacement wells as appropriate. This submittal shall include example calculations and shall include, in table form, all groundwater data used in the calculation for each well, the number of pieces of data used to determine the mean, and a list of derived prediction limits.
  - a. For those parameters or constituents which are found to be above the PQL in 85-100 percent of the background data set, the background values for that parameter or constituent shall be calculated using the methodology described in Attachment B, Page 1. The facility must utilize a value of one half the PQL for non-detect results included in the data set.

- b. For the parameters or constituents which are found to be above the PQL in 50-85 percent of the background data set, the background values for that parameter shall be calculated using methodology described in Attachment B, Page 2 or 5 as appropriate.
  - c. For those parameters or constituents from the background data set which do not meet the requirements of Conditions II.E.2.a or II.E.2.b above, the average background value shall be set at the PQL as shown in Condition II. E.1 above.
  - d. Sampling and analytical procedures utilized to establish background values shall be in accordance with Condition II.F below.
  - e. The Permittee must determine the distribution of the background data set for each parameter that meets the requirements of II.E.2.a and II.E.2.b above.
    - i. The Permittee must calculate a coefficient of variation for the background data set from each monitoring well in accordance with Attachment B.
    - ii. If the coefficient of variation is less than or equal to 1.00, the facility may assume a normal data distribution for statistical analysis.
    - iii. In the event that the coefficient of variation is greater than 1.00, the Permittee may choose to transform the background data in lieu of proposing a non-parametric statistical procedure in accordance with Condition II.E.2.e.iv below. The Permittee must demonstrate that the original non-transformed data are inappropriate for a normal theory test.
    - iv. If the Permittee determines that the transformed background data does not pass the test described in Condition II.E.2.e.ii above, it must assume that the background data set is not appropriate for normal theory statistical analysis. In this event, the Permittee must submit for Illinois EPA review and approval a proposed statistical procedure that is appropriate for the distribution of the data used to establish background values, and provides a reasonable balance between the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating unit.
    - v. The Permittee may submit for Illinois EPA review and approval a proposal for an alternative procedure for evaluation of background data distribution.
3. The facility must reestablish intrawell background values every two years as follows:

Background values must be established for each List G2, G3 and G5 parameter listed in Condition II.E.1 above in each Silurian Dolomite monitor well listed in Condition II.D.1 above, and each List G2 and G7 parameter listed in Condition II.E.1 above for each Dolton Sand monitor well listed in Condition II.D.1 above where sampling is required by the notes at the end of Condition II.D.1.

- a. The facility must use a data set consisting of the results of the eight (8) most recent sampling events;
  - b. The facility must utilize the procedures outlined in Conditions II.E.2.a through II.E.2.e above.
  - c. Recalculated background values must be submitted for Illinois EPA review and approval by July 15 of each odd numbered calendar year beginning with July 15, 2009. This submittal shall include example calculations and shall include, in table form, all groundwater data used in the calculation for each well, the number of pieces of data used to determine the mean, and a list of derived prediction limits.
4. For those parameters and constituents which have not been sampled and analyzed in eight (8) previous sampling events, background values shall be established by the methodology approved by Condition II.E.2 above following four (4) sampling events after the effective date of this Renewal Permit. The results of this determination shall be submitted to the Illinois EPA for review and approval within 90 days from the fourth sampling event.
  5. Each of the monitoring wells listed in Condition II.D.1 above shall be sampled semi-annually in accordance with the schedule in Condition II.J.2 below. The groundwater samples collected at each well shall be analyzed for the appropriate Condition II.E.1 constituents indicated by footnotes provided in Condition II.D.1.
  6. Alternate concentration limits may be established in accordance with 35 Ill. Adm. Code 724.194(b) where the Permittee can determine a constituent will not pose a substantial hazard to human health and the environment. The alternative concentration limits proposed by the facility must be approved by the Illinois EPA.

#### F. DETECTION MONITORING PROGRAM

The Permittee shall conduct the Detection Monitoring Program in accordance with Section E of the Approved Permit Renewal Application, and in accordance with the following:

1. The Permittee shall collect, preserve, and analyze samples pursuant to Condition II.H below.

2. The Permittee shall determine groundwater quality at each monitoring well identified in Condition II.D.1 semi-annually (as defined in Condition II.J.2 below) during the active life of the Area 4 landfill (including the closure and post-closure care periods), beginning with the effective date of this Permit. The Permittee shall express the groundwater quality data in a form necessary for the determination of statistically significant increases, as described in Condition II.I below. Replicate measurements are not required. Groundwater quality at each well shall be determined by analyzing a sample from the well for the appropriate Condition II.E.1 constituents indicated by footnotes provided in Condition II.D.1.
3. After determination of background water quality, the Permittee shall determine whether there is a statistically significant increase over the background values for each parameter identified in Condition II.E.1 above each time groundwater quality is determined at the point of compliance as required by Condition II.F.2 above. In determining whether such an increase has occurred, the Permittee must compare the groundwater quality at each monitoring well specified in Condition II.D.1 above to the background values in accordance with the statistical procedures specified in Condition II.I below. All activities described in Condition II.I must be completed within the same quarter that the initial sample required by Condition II.F.2 above was collected.
4. The Permittee shall determine the groundwater flow rate and direction in the Silurian Dolomite unit at least annually from the Silurian Dolomite monitoring wells listed in Condition II.D.1.
5. The Permittee shall evaluate the results of the analyses required by Condition II.F.2 above and identify:
  - a. The concentration of any Condition II.E.1 List G2, G3, G4, G5, G6 and G7 constituent which is above the appropriate PQL or EQL listed in the approved analytical method(s) specified in Section E of the Permit Renewal Application.
  - b. The concentration of any constituent detected which was not detected during the previous sampling event.
  - c. The concentration of any Condition II.E.1 List G2, G3, G4, G5, G6 and G7 constituent that exhibits a progressive increase over four (4) consecutive sampling events.
6. Beginning the 2<sup>nd</sup> Quarter 2015, and for the 2<sup>nd</sup> Quarter every five (5) years thereafter, the Permittee must report the concentration of any tentatively identified compound (TIC) detected by laboratory analysis of that monitoring event. This information must be

provided in the report required by Condition II.J.10 below.

7. For any 35 Ill. Adm. Code 724, Appendix I constituent found in the analysis required by Condition II.F.6 above that is not currently included in Condition II.E.1 the Permittee must, within 30 days, resample all of the monitoring wells listed in Condition II.D.1 for the detected constituent. If the results of the second analysis confirm the presence of the constituent in groundwater, the Permittee must follow the procedures of Condition II.J.13 below.

#### G. GROUNDWATER ELEVATION

1. The Permittee shall determine the groundwater surface elevation referenced to the nearest 0.01 foot MSL at each well each time groundwater is sampled in accordance with Condition II.J.3.
2. The Permittee shall report the surveyed elevation of stick-up, referenced to MSL, when the well is installed (with as-built diagrams) and every two years (during the Second Quarter), or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition II.J.5.
3. Elevation, as referenced to MSL, of the bottom of each monitoring well (STORET 72020), shall be taken in the event a performance problem is identified with the dedicated pumps found in the monitoring wells, or whenever the downhole equipment is removed from the monitoring well in accordance with Condition II.J.7.

#### H. SAMPLING AND ANALYTICAL PROCEDURES

The Permittee shall use the following techniques and procedures described in the approved Permit Renewal Application, as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition II.D.1 above:

1. Samples shall be collected using the techniques described in the approved Permit Renewal Application.
2. Samples shall be preserved, shipped, and handled in accordance with the procedures specified in the approved Permit Renewal Application.
3. Samples shall be analyzed in accordance with the procedures specified in the approved Permit Renewal Application.
4. Samples shall be tracked and controlled using the chain-of-custody procedures specified in the approved Permit Renewal Application.

## I. STATISTICAL PROCEDURES

When evaluating the monitoring results in accordance with Section II.F above, the Permittee shall use the following procedures:

1. The groundwater quality for each well shall be collected in accordance with Condition II.H and shall be compared to the background values which were established for that well in accordance with Condition II.E.2 or II.E.3. The value for each parameter shall be compared to the background value established for that parameter at that well.
2. For those constituents identified in Condition II.E.1 which have background values established in accordance with Conditions II.E.2.a and II.E.2.b above, the Permittee shall conduct the following statistical analysis (NOTE: This procedure shall not be used if the coefficient of variation of the background values is greater than 1.00):
  - a. The difference between the measured concentration of the constituent in a sample from each well and the background value for that constituent shall be evaluated using prediction limits as described in Attachment B to this permit. If the test indicates the difference is significant at the 0.01 level, the Permittee may resample the monitoring well(s), or the Permittee may choose not to resample and shall conclude that a statistically significant increase has occurred.
  - b. If a resample is obtained, it shall be analyzed for the constituent(s) which was (were) initially found to be present in the sample at a value significantly different from its background value. Collection, preservation and analysis of this resample shall be carried out in accordance with Condition II.H. The results of this resample shall be compared to the background value for the constituent, again using the statistical procedure describe in this condition. If the second round of analysis indicated the difference is significant, the Permittee shall conclude that a statistically significant increase has occurred.
3. For those constituents identified in Condition II.E.1 which have background values established in accordance with Condition II.E.2.c above, the Permittee shall conduct the following statistical analysis at each well:
  - a. The measured concentration of each of these constituents present in a sample collected from each well shall be compared to the PQL. If, for a given well, (A) the measured concentration of a single constituent is greater than two (2) times the PQL, or (B) the measured concentration of any two or more of these constituents is greater than the PQL, the Permittee may immediately resample

that well(s), or the Permittee may choose not to resample and shall conclude evidence of statistically significant increase has occurred.

- b. If a resample is obtained, it shall be analyzed for the constituents detected above the PQL in the initial sample collected and analyzed in accordance with this condition. Collection, preservation and analysis of this sample shall be carried out in accordance with Condition II.H above. The results of this resampling shall again be compared to the PQL's as described in this condition. If the measured concentrations for this resampling fail either of the comparisons, the Permittee shall conclude that a significant change has occurred.
4. For those constituents that have intrawell background values that exceed appropriate 35 Ill. Adm. Code 620 Groundwater Quality Standards (GQSs), the facility shall conduct the following statistical evaluation:
    - a. The Permittee shall conclude that there has been a statistically significant increase if any one of the following has occurred:
      - i. The measured concentration of the constituent exceeds the background value calculated in accordance with Conditions II.E.2 or II.E.3 above; or
      - ii. A trend analysis (e.g., Mann-Kendall Trend test or Sen's Trend Estimator) of the ten most recent sampling events indicates a statistically significant increasing trend at the 95% confidence level.
    - b. If the statistical evaluation required in Condition II.I.4.a. above indicates a statistically significant increase, the facility may immediately resample the monitoring well(s), or the Permittee may choose not to resample and shall conclude that a statistically significant increase has occurred.
    - c. If a resample is obtained, it shall be analyzed for the constituent(s) that failed the evaluation in Condition II.I.4.a above. Collection, preservation and analysis of the resample shall be carried out in accordance with Condition II.H. above. The results of this resample shall again be evaluated as required by Condition II.I.4a above substituting the resample result for the most recent sampling event. If the resample results again fail the evaluation required by Condition II.I.4.a, the facility must conclude that as statistically significant increase has occurred.

5. Each time samples are collected for the statistical comparisons required by Conditions II.I.2, II.I.3, or II.I.4 above, the Permittee shall prepare lab (trip) blanks in accordance with the procedures described in the approved Permit Renewal Application.
  - a. If any volatile organic compound identified in Condition II.E.1 above cause the initial sample from a given well to fail the tests required by Conditions II.I.2, II.I.3, or II.I.4 above, and the constituent(s) is (are) found above the PQL in a field and/or lab blank associated with the collection or analysis of the sample, the Permittee shall immediately resample the well of concern. This sample, taken to verify the concentration of those constituents found in the initial sample, shall be collected, preserved and analyzed in accordance with the procedures set forth in Condition II.H.
    - i. Analysis of the resample.
      - A. If the constituent found in the blank is statistically evaluated in accordance with Condition II.I.2, the resample shall be analyzed for the constituents which failed the test and were also found in the blanks.
      - B. If the constituent found in the blank is statistically evaluated in accordance with Condition II.I.3, the resample shall be analyzed for all the constituents statistically evaluated in accordance with Condition II.I.3.
      - C. If the constituent found in the blank is statistically evaluated in accordance with Condition II.I.4, the resample shall be analyzed for all the constituents statistically evaluated in accordance with Condition II.I.4.
    - ii. The measured concentration of the constituents in the resample shall be compared to background values in accordance with Conditions II.I.2, II.I.3 and II.I.4 above.
      - A. If this comparison passes the tests set forth in Condition II.I.2, II.I.3 and/or II.I.4 above, the Permittee may conclude that no significant increase has occurred for the constituents of concern at the well in question.
      - B. If this comparison fails the test set forth in Conditions II.I.2, II.I.3 and/or II.I.4, the Permittee shall immediately collect a

“verification sample” in accordance with Conditions II.I.2, II.I.3 and II.I.4.

- b. If the same problem described in Condition II.I.5.a above occurs in the analysis of the “resample” required by Conditions II.I.2, II.I.3 and II.I.4, the Permittee may collect and analyze a verification sample in accordance with Condition II.I.5.a. as modified below:
  - i. The phrase “resample” shall be substituted for “initial sample.”
  - ii. The verification sample need only by analyzed for those constituents which the “resample” was analyzed for.
  - iii. If the comparison of the analytical results fail the tests in Conditions II.I.2, II.I.3 and/or II.I.4, the Permittee shall conclude that a significant change has occurred.
- c. Chemical and statistical analyses which are not affected by the interpretation of blank data shall not be repeated, except as described above.

J. REPORTING AND RECORDKEEPING

- 1. The Permittee shall enter all monitoring, testing, and analytical data obtained in accordance with Conditions II.E, II.F, II.G, II.H, and II.I above in the operating record. The data must include all computations, calculated means, variances, prediction limits and statistical or results of statistical tests that the Illinois EPA has determined to be equivalent.
- 2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions II.E, II.F, II.G, II.H and II.I shall be collected and reported as identified in the table below. All additional information required by the groundwater monitoring program (as specified in Conditions II.E, II.F, II.G and II.I) shall also be submitted to the Illinois EPA at the address listed in Condition II.D.5 in accordance with this schedule.

<u>Sampling Event of Calendar Year</u>	<u>Samples to be Collected During The Months of</u>	<u>Results Submitted to the Illinois EPA by the Following</u>
Second Quarter	April – June	July 15
Fourth Quarter	October – December	January 15

3. Groundwater surface elevation data, measured pursuant to Condition II.G.1, shall be collected semi-annually and submitted to the Illinois EPA as identified in Condition II.J.2 above.
4. The Permittee shall report the groundwater flow rate and direction in the Silurian Dolomite, as required by Condition II.F.4, by July 15 of each year.
5. The Permittee shall report the surveyed elevation, as required by Condition II.G.2, of the top of the well casing ("stick-up"), referenced to MSL, in accordance with the following schedule:
  - a. For wells identified in Condition II.D.1 above, every two years (during the Second Quarter), or at the request of the Illinois EPA, or whenever the elevation changes.
  - b. For any new wells, at the time of installation and reported in the as-built diagrams. Subsequent measurements shall be made every two years (during the Second Quarter) or at the request of the Illinois EPA, or whenever the elevation changes.
6. Elevation of the bottom of each monitoring well identified in Condition II.D.1 referenced to MSL, is to be reported when maintenance activities are conducted in accordance with Condition II.J.7 below. This measurement shall be taken during the first semi-annual sampling event and reported by July 15 of that year.
7. The Permittee shall maintain all equipment associated with groundwater monitoring wells. Dedicated pumps found in monitoring wells identified in Condition III.D.1 must be removed, inspected and repaired if necessary every five (5) years. Information regarding the inspection and maintenance of pumps must be reported by July 15 of that year.
8. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by the facility's Permit for identification purposes. Only one copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is not to be used for Permit modification requests.
9. Information required by Conditions II.G.3, II.J.2, II.J.3, II.J.5 and II.J.6 must be submitted in an electronic format. The information is to be submitted, as fixed-width text files formatted as found in Attachment A to this permit, in accordance with the schedule in Condition II.J.2 above. Additional guidance regarding the submittal of the

information in an electronic format can be found at [www.epa.state.il.us/land/regulatory-programs/permits-and-management/index.html](http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/index.html).

10. In addition to submitting analytical results electronically as required by Condition II.J.9 above, a summary report describing the results of the groundwater sampling event must be submitted after each sampling event in accordance with the schedule found in Condition II.J.2 above. These reports must include, but not be limited to:
  - a. A description of any problems encountered during the event.
  - b. A tabulated summary of groundwater and analytical data collected during the sampling event including the appropriate groundwater quality standard, appropriate PQL or EQL, and appropriate derived background value for each parameter.
  - c. A summary table of groundwater elevations collected during the sampling event and potentiometric map(s) based on that data.
  - d. Copies of any statistical analysis required to be conducted in accordance with Conditions II.I.2, II.I.3, and II.I.4 above.
  - e. Information required by Conditions II.F.5, II.F.6, and II.F.7 above.
11. If the Permittee determines, pursuant to Condition II.I above, that there is a statistically significant increase for any of the parameters specified in Condition II.E.1 above at any monitoring well at the compliance point, the Permittee shall:
  - a. Notify the Illinois EPA in writing indicating what parameters and wells have shown statistical increases and provide all statistical calculations which have been completed. This notification shall be submitted to the Illinois EPA within seven (7) days of the date that the increase is discovered.
  - b. Sample the groundwater in all wells listed in Condition II.D.1 screened within the hydrostratigraphic unit in which the statistically significant increase was identified and determined the concentration of all constituents identified in 35 Ill. Adm. Code 724, Appendix I such that the results will accompany the permit modification required by Condition II.J.11.d below.
  - c. For any Appendix I compounds found in the analysis pursuant to this condition, the Permittee may resample within one month and repeat the analysis for those compounds detected. If the results of this second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the Permittee does not resample for the compounds pursuant to this condition, the

hazardous constituents found during this initial Appendix I analysis will form the basis for compliance monitoring.

- d. Within ninety (90) days, submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program meeting the requirements of 35 Ill. Adm. Code 724.199. The application must include the following information:
    - i. An identification of the concentration of any 35 Ill. Adm. Code 724, Appendix I constituents found in the groundwater at each monitoring well at the compliance point;
    - ii. Any proposal changes to the groundwater monitoring system at the facility necessary to meet the requirements of Section 724.199;
    - iii. Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of Section 724.199; and
    - iv. For each hazardous constituent found at the compliance point, a proposed concentration limit under 35 Ill. Adm. Code 724.194(a)(1) or 724.194(a)(2), or a notice of intent to seek an alternate concentration limit for a hazardous constituent under 35 Ill. Adm. Code 724.194(b).
  - e. Submit to the Illinois EPA a corrective action feasibility plan to meet the requirements of 35 Ill. Adm. Code 724.200 unless all hazardous constituents identified under Condition II.J.11.b above are listed in 35 Ill. Adm. Code 724.194 and their concentration do not exceed the respective values given in that table or the Permittee has sought an alternate concentration limit under II.J.11.d.iv above for every hazardous constituents identified under Condition II.J.11.b above.
  - f. Within 180 days, submit to the Illinois EPA all data necessary to justify any alternate concentration limits for a hazardous constituent sought under Condition II.J.11.d.iv above.
12. If the Permittee determines, pursuant to Condition II.F above, that there is a statistically significant increase above the background values for the parameters specified in Condition II.E.1 above, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or statistical evaluation, or natural variation in groundwater. To make this demonstration, the Permittee shall:

- a. Notify the Illinois EPA in writing within seven (7) days of the date that it intends to make a demonstration under 35 Ill. Adm. Code 724.198(g).
  - b. Within ninety (90) days submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation.
  - c. Within ninety (90) days submit to the Illinois EPA an application to make any appropriate changes to the detection monitoring program at the facility.
  - d. Continue to monitor in accordance with the detection monitoring program established under Condition II.F.
13. If the Permittee determines that additional hazardous constituents not currently part of the Groundwater Protection Standard are present in the groundwater, the Permittee shall:
- a. Report the concentration of these additional constituents detected in the groundwater to the Illinois EPA within seven (7) days after the receipt of the analytical data from the laboratory, and
  - b. Within thirty (30) days of the date that the additional constituents are confirmed, submit a Class 1\* permit modification request to add the additional constituents to the monitoring list of the Groundwater Protection Standard, Lists G2 through G7 as necessary and establish the concentration limit for each additional constituent following procedures in Condition II.E.2 above.
14. Area 1 RFI activities do not relieve the facility of the responsibility to meet the requirements of 35 Ill. Adm. Code 724.198(g), which among other things, requires the reporting of statistically significant increases for p-dioxane and chloride in Area 4 monitoring wells adjacent to Area 1.

**K. REQUEST FOR PERMIT MODIFICATION**

1. If the Permittee or the Illinois EPA determines that the detection monitoring program no longer satisfies the requirements of 35 Ill. Adm. Code 724, Subpart F, the Permittee must, within ninety (90) days, submit an application for a permit modification to the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.
2. Conditions in this section of the permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm.

Code 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

**SECTION III**  
**AREA 3 GROUNDWATER CORRECTIVE ACTION PROGRAM**

**A. SUMMARY**

Groundwater contamination has been detected in groundwater monitoring wells in the Dolton Sand and the upper Silurian Dolomite aquifer at Area 3 of the CID-RDF. The groundwater contamination is in the form of light non-aqueous phase liquid (LNAPL), as well as dissolved organic constituents at concentrations which exceed the Groundwater Protection Standards established by 35 Ill. Adm. Code 724.192. Therefore, this corrective action program, meeting the requirements of 35 Ill. Adm. Code 724.200, must be implemented at Area 3.

The Area 3 Groundwater Corrective Action Program required by this Permit includes:

1. A Groundwater Management Zone (GMZ), established pursuant to 35 Ill. Adm. Code 620.250, as a three-dimensional region containing groundwater being managed through a corrective action system to mitigate impairment caused by the release of contamination;
2. Extraction of the LNAPL and groundwater contaminated with dissolved organic constituents found in the weathered Silurian Dolomite inside the northern portion of the GMZ.
3. Extraction of groundwater contaminated with dissolved organic constituents inside the southern portion of the GMZ.
4. Implementation of a phytoremediation system at the southern portion of the GMZ.
5. Monitoring of groundwater to ensure the effectiveness of the Corrective Action System within the GMZ. This monitoring will involve: (a) evaluating the zone of influence of the Corrective Action system; and (b) groundwater sampling and analysis to ensure the reduction of contaminant concentrations.
6. Monitoring of groundwater at uncontaminated wells that are situated at the perimeter of the GMZ. This monitoring system ensures wells located at the perimeter of the GMZ are in compliance with the Groundwater Protection Standard.
7. Monitoring of groundwater at the portions of Area 3 that are not included in the GMZ.

**B. DEFINITIONS**

1. "Uppermost Aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with this aquifer in the vicinity of the facility. The uppermost aquifer underlying Area 3 has been identified as a weathered, fractured and/or jointed Silurian dolomite which overlies a bedrock aquitard, and underlies a perched outwash sand unit with minimal hydraulic connection.
2. "GMZ" refers to the three (3) dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site.
3. "Point of Compliance" refers to the vertical surface located at the hydraulically downgradient limits of the waste management area (Area 3) extending down into the uppermost aquifer underlying the regulated unit.
4. "Ft - bgs" refers to the number of feet below the ground surface.
5. "Ft-MSL" refers to elevation referenced to mean sea level.
6. "Detected" shall mean a concentration equal to or above the PQL listed in USEPA's SW-846 (Third Edition) or as approved by the Illinois EPA for the applicable analytical methods specified in the approved Sampling and Analysis Procedures, which are incorporated by reference in Condition III.H of the Permit.
7. "Progressive Increase" shall mean an increase in the concentration of a constituent in successive sampling events.
8. "Stick-up" refers to the height of the reference survey datum. This point is determined within  $\pm 0.01$  foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum.

**C. IMPLEMENTATION**

1. The Permittee shall implement the Corrective Action Program upon the effective date of this Permit. On that date, the corrective action and groundwater monitoring requirements set forth in this Permit shall supersede those previously established in the previous Part B Permit for the facility.
2. The Permittee shall carry out the corrective action monitoring program specified in this Permit on the groundwater beneath the CID-RDF facility in the City of Chicago, Illinois. The uppermost aquifer in the vicinity of the CID-RDF has been identified as a composite zone consisting of a perched outwash sand and gravel,

where present and the underlying weathered, fractured and/or jointed Silurian dolomite which lies above a bedrock aquitard.

3. Monitoring wells at the facility are screened in the shallow outwash sand and gravel referred to as the "Dolton Sand", historic overlying fill material, and the deeper dolomite unit referred to as the "Silurian Dolomite". For the purposes of this Permit and in accordance with 35 Ill. Adm. Code Part 620 regulations: (1) the Dolton Sand has been designated Class II: General Resource Groundwater; and (2) the Silurian Dolomite has been designated Class I: Potable Resource Groundwater. The analytical results obtained from the groundwater monitoring wells shall be compared to the appropriate Class I or Class II concentration limits that comprise the groundwater protection standard found in Condition III.E.1 or to established background values as appropriate.
4. Upon the effective date of this Permit, a GMZ is established as a 3-dimensional region containing groundwater within the previously defined uppermost aquifer pursuant to 35 Ill. Adm. Code 620.250. The GMZ consist of a northern portion and a southern portion. The geographic location of the northern portion of the GMZ is currently bound on the south by monitoring wells O25D, C28D, A28D, B28D, F28DR, G29D, and R13D, and on the west, north, and east by monitoring wells O28D, P28D, M28D, R13D, and N28D. The geographic location of the southern portion of the GMZ is currently bound on the north by well R23D, on the west by well G10S, on the south by well G38D and on the east by well G25D. The geometry of the GMZ and the corrective action activities conducted within the GMZ may be modified in accordance with Condition III.K.11 below as corrective action activities progress.
5. The GMZ shall apply to the constituents comprising the groundwater protection standard found in Condition III.E.1 below. The GMZ shall remain in place as long as corrective action activities are being conducted in a timely and appropriate manner.
6. The facility must remediate groundwater such that it meets appropriate groundwater quality standards at the Point of Compliance. At this time, the Point of Compliance shall be postponed for the Area 3 GMZ until such time that the GMZ monitoring wells have attained the applicable concentration limits that comprise the groundwater protection standard found in Condition III.E.1 and the GMZ expires. At that time, the CID-RDF facility must submit a proposal for establishment of a point of compliance which satisfies the regulatory requirements found in 35 Ill. Adm. Code 724, Subpart F and reflects the current conditions at the facility.

**D. WELL LOCATIONS AND CONSTRUCTION**

1. The Permittee shall maintain the groundwater monitoring wells identified in the following table in accordance with the approved Part B Permit Renewal Application to allow for the collection of groundwater samples. The location of these wells is specified in Figures E-5a and E-5b of the approved Permit Renewal Application.

<b>IEPA Well No.</b>	<b>Permittee Well No.</b>	<b>Well Depth (ft.)</b>	<b>Well Depth Elevation (ft. MSL)</b>	<b>Well Screen Interval</b>
G1A1* <sup>M</sup>	A28D	74.7	518.90	528.40-518.90
G1A2* <sup>M</sup>	B28D	82.0	512.51	522.51-512.51
G1A3* <sup>M</sup>	C28D	71.6	521.54	531.54-521.54
G1A4* <sup>RM</sup>	D28D	77.6	516.81	526.81-516.41
G1A5* <sup>M</sup>	E28DR	84.4	505.71	515.71-505.71
R1A6* <sup>M</sup>	F28DR	84.6	508.81	518.87-508.81
G1A7* <sup>M</sup>	G29D	88.2	505.24	515.24-505.24
G1A8* <sup>M</sup>	H28D	71.6	520.74	530.74-520.74
G1B1* <sup>M</sup>	K28D	85.5	503.23	513.23-503.23
G1B2* <sup>M</sup>	L28D	93.8	496.76	506.76-496.76
G601* <sup>RE</sup>	RW-1	79.52	511.97	511.97-522.14
G602* <sup>RE</sup>	RW-2	84.17	506.58	506.63-516.63
G603* <sup>RM</sup>	RW-3	90.9	502.07	512.07-502.07
A24D* <sup>O</sup>	A24D	94.1	498.84	508.84-498.84
G36D* <sup>M</sup>	G36D	90.7	497.97	507.97-497.97
G37D* <sup>M</sup>	G37D	92.8	496.61	506.61-496.61
GU2D* <sup>M</sup>	IW302D	89.0	503.44	513.44-503.44
G604* <sup>E</sup>	EW1	79.00	509.06	519.56-509.56
G605* <sup>E</sup>	EW2	11.50	576.73	583.23-577.23
P106* <sup>P</sup>	P6W	13.6	577.12	582.12-577.12
G1C1* <sup>P</sup>	RW1S	13.7	578.50	583.50-578.50
G1C2* <sup>P</sup>	RW2S	18.0	576.14	586.14-576.14
G1C3* <sup>P</sup>	RW3S	10.3	578.18	583.18-578.18
G1C4* <sup>P</sup>	RW4S	10.7	579.73	584.73-579.73

List 2 – GMZ Perimeter Monitoring Wells (GMZ wells located outside the area of groundwater contamination)

R13D <sup>M</sup>	R13D	82.3	509.21	519.21-509.21
G1B3 <sup>M</sup>	M28D	96.3	494.27	504.27-494.27
G1B4 <sup>M</sup>	N28D	97.4	493.30	503.30-493.30
G1B5 <sup>M</sup>	P28D	94.5	495.61	505.61-495.61
G1B6 <sup>M</sup>	O28D	60.8	529.06	539.06-529.06
G10S <sup>P</sup>	G10S	7.7	581.22	586.22-581.22
G25D <sup>O</sup>	G25D	102.6	488.46	498.46-488.46
G38D <sup>M</sup>	G38D	96.9	495.14	505.14-495.14
R23D <sup>M</sup>	G23DR	69.5	522.45	532.45-522.45
G1C5 <sup>P</sup>	RW5S	11.0	579.51	585.51-579.51
R1C6 <sup>P</sup>	RW6S	12.5	578.70	583.40-578.70
G1C7 <sup>S</sup>	RW7S	11.9	580.99	585.64-580.99
G1C8 <sup>P</sup>	RW8S	12.6	579.56	583.99-579.56

## List 3 – Area 3 Dolomite Monitoring Wells (Outside the GMZ)

A12D <sup>O</sup>	A12D	54.7	534.65	544.65-534.65
R15D <sup>O</sup>	G15DR	97.7	490.85	495.85-490.85
G21D <sup>O</sup>	G21D	60.5	530.13	535.13-530.13
R107 <sup>O</sup>	G107R	83.0	508.19	517.59-508.19
AW01 <sup>O</sup>	AW01	98.9	490.39	500.39-490.39
R16D <sup>O</sup>	R16D	84.3	505.66	515.66-505.66
R26D <sup>O</sup>	G26DR	87.4	502.96	512.96-502.96
R27D <sup>O</sup>	G27DR	89.6	501.96	511.96-501.96

## List 4 – Area 3 Dolton Sand Monitoring Wells (Outside the GMZ)

G12S <sup>P</sup>	G12S	7.3	581.21	582.21-581.21
R13S <sup>P</sup>	G13SR	7.6	583.92	588.92-583.92
G14S <sup>P</sup>	G14S	17.3	572.62	573.62-572.62
G15S <sup>P</sup>	G15S	18.1	570.33	571.33-570.33
G16S <sup>P</sup>	G16S	11.8	577.56	578.56-577.56

## NOTE:

E -- Groundwater extraction well

M -- Analysis of List G1, G2, G3, G4 and G5 parameters in accordance with Condition III.E.1

O -- Analysis of List G1, G2, G3, G4 and G5 parameters in accordance with Condition III.E.1

P -- Analysis of List G1 and G2 parameters in accordance with Condition III.E.1

R -- Denotes LNAPL recovery well.

R# -- Denotes LNAPL recovery well to be installed in the future.

S -- Denotes monitoring well used only for groundwater elevation measurements

\* -- Denotes well to be used for groundwater quality monitoring and supplemental LNAPL recovery.

+ -- Denotes monitoring well to be installed.

2. Construction of each new or replacement monitoring well/piezometer must be at a minimum in accordance with the diagram contained in Attachment A to this Permit, unless otherwise approved in writing by the Illinois EPA. All new monitoring wells/piezometers must be continuously sampled and logged on an Illinois EPA boring log and well completion report, as provided in Attachment A unless otherwise approved by the Illinois EPA.
3. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III.D.1 are damaged, the structural integrity has been compromised causing the well not to serve its function or to act as a contaminant pathway. A proposal for the replacement of the subject well(s) shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged and would create a potential route for groundwater contamination.
4. Should any well become consistently dry or unserviceable, a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the wells are replaced. A replacement well which is more than ten (10) feet from the existing well and which does not monitor the same geologic zone shall be approved by the Illinois EPA and designated as a new well. If the facility determines that a replacement well will be a dry well, then it must submit for Illinois EPA approval either a proposal to install a new monitoring well or a proposal not to replace the well with appropriate rationale.
5. The Permittee shall submit boring logs, construction diagrams, and data sheets from the installation and development of each new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures (see Attachment A to this Permit) to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All information shall be submitted to the appropriate Agencies.

Illinois Environmental Protection Agency  
Bureau of Land -- #33  
1021 North Grand Avenue East

Permit Section  
 P.O. Box 19276  
 Springfield, Illinois 62794-9276

6. All wells/piezometers shall be clearly identified and shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards.
7. All groundwater monitoring wells and piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Attachment A to this Permit.

E. GROUNDWATER PROTECTION STANDARD

1. The following hazardous constituents and concentration limits comprise the groundwater protection standard in the vicinity of the CID-RDF facility. Total (unfiltered) values, derived from the applicable USEPA SW-846 (latest version) or equivalent methods listed in Section E of the approved Permit Renewal Application, will be used for comparison with the concentration limits.

	STORET No.	Units	Concentration Limit	
			Class I	Class II
<u>List G1 – Field Parameters</u>				
pH	00400	standard	6.5-9.0	
Specific Conductance at 25°C	00094	unhos/cm	--	--
Temperature of Water Sample	00011	Fahrenheit	--	--
Turbidity	00076	NTUs	--	--
Depth to Water (below land surface)	72019	Feet	--	--
Depth to Water (below measuring point)	72109	Ft-bgs	--	--
Elevation of Groundwater Surface	71993	Ft-MSL	--	--
Elevation of Bottom of Well#	72020	Ft-MSL	--	--
Elevation of Measuring Point (Top of Casing)##	72110	Ft-MSL	--	--

Hazardous Waste Constituents

<u>List G2 – Organics</u>	STORET No.	PQL (ug/L)	Concentration Limit (ug/L)	
			Class I	Class II

Toluene	34010	6	1,000	2,500
Benzene	34030	5	5	25
Ethylbenzene	78113	7.2	700	1,000
Xylene (total)	81551	5	10,000	10,000
BTEX(total)	11750	--	11,705	13,525
p-dioxane	81582	5	7.7	7.7
Chlorobenzene	34301	6	100	500

List G3 – Organics

Naphthalene	34696	10	140	220
Acetone	81552	100	6,300	6,300
bis(2-ethylhexyl)phthalate	39100	6	6	60
Methylene Chloride	34423	5	5	50
1,4-dichlorobenzene	34571	2	25	375
Vinyl Chloride	39175	2	2	10

List G4 – Inorganics (total)

Chloride, total	00940	1,000	200,000	200,000
-----------------	-------	-------	---------	---------

List G5 – Inorganics (dissolved)

Chloride, dissolved	00941	1000	--	--
---------------------	-------	------	----	----

# Shall be determined in accordance with Condition III.G.3

## Shall be determined in accordance with Condition III.G.2

2. Alternate concentration limits may be established in accordance with 35 Ill. Adm. Code 724.194 (b) where the Permittee can determine a constituent will not pose a substantial hazard to human health or the environment. The alternate concentration limits proposed by the facility must be approved by the Illinois EPA.
3. The compliance period when the Groundwater Protection Standard applies is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting and the closure period). The compliance period at the CID-RDF facility has been defined as 30 years following certification of closure of the Area 3 Landfill.
4. This Corrective Action Program shall continue during the compliance period until the Permittee demonstrates that the LNAPL has been removed to greatest extent practicable, and that the Groundwater Protection Standard has not been exceeded for four (4) consecutive monitoring events. However, if the owner or operator is

engaged in a corrective action at the end of the defined compliance period, the compliance period is extended until the owner or operator can demonstrate that the Groundwater Protection Standard has not been exceeded for three (3) consecutive years.

5. The Permittee shall not be relieved of the responsibility to remediate a release that has migrated beyond the facility boundary where off-site access is denied.

F. CORRECTIVE ACTION PROGRAM

The Permittee shall conduct the corrective action program and perform groundwater monitoring detailed in this section, in accordance with the following:

1. List 1, Observation Zone Monitoring Wells/LNAPL/Groundwater Extraction Network
  - a. The GMZ Observation Zone monitoring wells identified in Condition III.D.1, List 1 are the wells that comprise the Groundwater Remediation System. The Groundwater Remediation System consists of wells that are used for recovery of LNAPL, contaminated groundwater, and for groundwater quality monitoring when LNAPL is not present. For the northern portion of the GMZ, the Permittee shall implement, at these wells, the corrective measures detailed in Section E-9 of the approved Permit Renewal Application as modified by Illinois EPA Log No. B-27R-M-67. For the southern portion of the GMZ, the Permittee shall implement the corrective measures detailed in the document entitled, "Class 2 Permit Modification", dated may 24, 2013 and additional information to that document dated July 30, 2013, with the following conditions:
    - i. Extraction using the LNAPL Extraction System shall begin within thirty (30) days of the effective date of this Permit. Extraction at newly installed extraction wells shall begin within thirty (30) days of the date of installation of the new well.
    - ii. The facility must extract LNAPL from each well identified in Condition III.D.1, List 1 on a quarterly basis. LNAPL extraction must be conducted in accordance with the procedures described in Section E-9d(3) of the approved Permit Renewal Application.
    - iii. Written approval in the form of a Class 1\* Permit Modification must be obtained from the Illinois EPA prior to the installation of additional LNAPL extraction well(s) other than the two (2) additional wells

proposed in Section E-9d(1) of the approved Permit Renewal Application.

- iv. LNAPL extraction shall be evaluated and reported quarterly in accordance with Conditions III.I.1 and III.K.2 below.
  - v. New groundwater extraction wells approved for the southern portion of the GMZ must be installed within 60 days of the effective date of this revised Permit. Extraction at newly installed extraction wells shall begin within 30 days of the date of installation of the new well(s).
- b. The Permittee shall demonstrate the effectiveness of the Corrective Action Program by monitoring the groundwater from the GMZ Observation Zone well network identified in Condition III.D.1, List 1. The effectiveness shall be evaluated quarterly in accordance with the procedures described in the approved Permit Renewal Application and the following conditions:
- i. Groundwater samples shall be collected quarterly in accordance with the schedule provided in Condition III.K.2 below and analyzed for List G1, G2, G3, G4 and G5 parameters as identified by the Notes in Condition III.D.1 above. However, if measurable LNAPL is present within a well at the time of a sampling event, the well must be monitored for the presence and thickness of LNAPL in lieu of the above lists.
  - ii. Wells that exhibit measurable quantities of LNAPL must be recorded as containing free product and area not required to be sampled for pH, specific conductance, water temperature, turbidity, or Lists G2, G3, G4 and G5 parameters during that event. Wells that do not exhibit measurable quantities of LNAPL (i.e., wells with sheens, emulsions or no evidence of free product) must be sampled for pH, specific conductance, water temperature, turbidity, and Lists G2, G3, G4 and G5 parameters, as identified by the Notes to Condition III.D.1 above, during that event.
  - iii. The volume of LNAPL removed by each well in the LNAPL Extraction System shall be determined quarterly during the time that measurable LNAPL is extracted from the LNAPL Extraction System. If no measurable LNAPL is extracted by the LNAPL Extraction System, the facility shall note that no LNAPL was recovered during this period.

- iv. The facility must report the method of LNAPL extraction utilized for each well during each extraction event and the criteria used to determine the extraction method.
- v. The volume of groundwater extracted by each well must be reported in accordance with the requirements of Condition III.K.2 below.
- vi. Sampling and analytical procedures utilized in the Observation Zone wells shall be in accordance with Condition III.H below.
- vii. Statistical analysis of the data collected from Observation Zone wells must be conducted in accordance with Condition III.I.1.a below.
- viii. Results of the Observation Zone monitoring and LNAPL/groundwater extraction activities must be reported in accordance with Condition III.K below.

2. Perimeter Wells

- a. The Permittee shall determine whether the Groundwater Protection Standard has been exceeded at the GMZ Perimeter (non-impacted) wells. The wells identified in Condition III.D.1, List 2 shall be used for this evaluation. These wells shall be evaluated during the compliance period as follows:
  - i. Groundwater samples shall be collected quarterly in accordance with the schedule provided in Condition III.K.2 below and analyzed for Lists G1, G2, G3, G4 and G5 parameters as identified by the Notes in Condition III.D above.
  - ii. Sampling and analytical procedures shall be in accordance with Condition III.H below.
  - iii. Statistical analysis of the data collected from the GMZ Perimeter wells must be conducted in accordance with Condition III.I.1.b below.
  - iv. Results of the GMZ Perimeter well monitoring must be reported in accordance with Condition III.K below.

3. List 3 – Area 3 Dolomite Monitoring Wells (Outside the GMZ)

- a. The facility must monitor groundwater in the Silurian Dolomite for releases from portions of Area 3 that are not associated with the current GMZ. The wells identified in Condition III.D.1, List 3 shall be used for this evaluation. These wells shall be evaluated during the compliance period as follows:

- i. Groundwater samples shall be collected semi-annually (2<sup>nd</sup> and 4<sup>th</sup> quarters) in accordance with the schedule provided in Condition III.K.2 below and analyzed for List G1, G2, G3, G4 and G5 parameters identified in Condition III.E above.
  - ii. Sampling and analytical procedures shall be in accordance with Condition III.H below.
  - iii. Statistical analysis of the data collected from the List 3 – Area 3 Dolomite Monitoring wells must be conducted for the List G2, G3 and G5 parameters in accordance with Conditions III.J below.
  - iv. Results of the List 3 well monitoring must be reported in accordance with Condition III.K below.
4. List 4 – Area 3 Dolton Sand Monitoring Wells (Outside the GMZ)
  - a. The facility must monitor groundwater in the Dolton Sand for releases from portions of Area 3 that are not associated with the current GMZ. The wells identified in Condition III.D.1, List 4 shall be used for this evaluation. These wells shall be evaluated during the compliance period as follows:
    - i. Groundwater samples shall be collected semi-annually (2<sup>nd</sup> and 4<sup>th</sup> quarters) in accordance with the schedule provided in Condition III.K.2 below and analyzed for List G1 and G2 parameters identified in Condition III.E above.
    - ii. Sampling and analytical procedures shall be in accordance with Condition III.H below.
    - iii. Statistical analysis of the data collected from the List 4 – Area 3 Dolton Sand Monitoring wells must be conducted for the List G2 parameters in accordance with Condition III.J below.
    - iv. Results of the List 4 well monitoring must be reported in accordance with Condition III.K below.
5. The Permittee shall determine the groundwater flow rate and direction in the Dolton Sand and the Silurian Dolomite at least annually from the wells listed in Condition III.D, Lists 1, 2, 3 and 4. The groundwater flow rate should be reported as a minimum and maximum range.

6. The Permittee shall provide, on a quarterly basis, isoconcentration maps, by monitored zone, of the extent of contamination in groundwater at the corrective action area.
7. The Permittee shall evaluate the effectiveness of the Groundwater Remediation System to hydraulically capture and withdraw the off-site plume of groundwater contamination. This evaluation shall be conducted quarterly. If the evaluation indicates the off-site plume of contamination is not completely captured by the current corrective action system design, the Permittee shall submit within thirty (30) days of the quarterly evaluation proper notification or modification request to achieve capture of the groundwater contamination.
8. The Permittee shall evaluate the results of the analyses required by Conditions III.F.1, III.F.2, III.F.3 and III.F.4 above, excluding the List G1 parameters, and identify:
  - a. The concentration of any constituent listed in Condition III.E.1 which is above the appropriate PQL or EQL listed in the approved analytical method(s) specified in Section E of the Permit Renewal Application.
  - b. The concentration of any constituent detected which was not detected during the previous sampling event.
  - c. The concentration of any constituent that exhibits a progressive increase over four (4) consecutive sampling events.
8. Beginning the 2<sup>nd</sup> Quarter 2015, and for the 2<sup>nd</sup> Quarter every five (5) years thereafter, the Permittee must report the concentration of any tentatively identified compound (TIC) detected by laboratory analysis of that monitoring event. This information must be provided in the report required by Condition III.K.10 below.
9. For any 35 Ill. Adm. Code 724, Appendix I constituent found in the analysis required by Condition III.F.9 above that is not currently included in Condition III.E.1 the Permittee must, within 30 days, resample all of the monitoring wells listed in Condition III.D.1 for the detected constituent. If the results of the second analysis confirm the presence of the constituent in groundwater, the Permittee must follow the procedures of Condition III.K.13 below.

G. GROUNDWATER ELEVATION

1. The Permittee shall determine the groundwater surface elevation referenced to the nearest 0.01 foot MSL at each well each time groundwater is sampled in accordance with Condition III.K.3.

2. The Permittee shall report the surveyed elevation of stick-up, referenced to MSL, when the well is installed (with as-built diagrams) and every two years (during the Second Quarter), or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition III.K.5.
3. Elevation, as referenced to MSL, of the bottom of each monitoring well (STORET 72020), shall be taken in the event a performance problem is identified with the dedicated pumps found in the monitoring wells. Additionally, the elevation of the bottom of each monitoring well shall be taken whenever the downhole equipment is removed from the monitoring well.

#### H. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the techniques and procedures described in approved Permit Renewal Application when obtaining samples from the groundwater monitoring wells described in Condition III.D.1 above with the following conditions:

1. Samples shall be collected by the techniques described in the approved Permit Renewal Application.
2. Samples shall be preserved, shipped, and handled in accordance with the procedures specified in the approved Permit Renewal Application.
3. Samples shall be analyzed according to the procedures specified in the approved Permit Renewal Application.
4. Samples shall be tracked and controlled using the chain-of-custody procedures specified in the approved Permit Renewal Application.

#### I. STATISTICAL PROCEDURES FOR THE GMZ MONITORING WELLS

To determine the effectiveness of the corrective action system in reducing the concentration of contaminants within the GMZ the facility must conduct the following activities:

1. The Permittee shall evaluate the quality of groundwater samples acquired during the quarterly sampling events identified below in Condition III.K.2.
  - a. List 1 GMZ Observation Zone wells shall be evaluated according to the following procedures:

- i. When measurable LNAPL is present, LNAPL thickness and elevation referenced to feet MSL for each well must be tabulated and graphed to indicate historical trends.
  - ii. Measurable LNAPL/groundwater volume recovered from each recovery well must be tabulated and graphed to indicate historical trends.
  - iii. Concentrations of each List G2, G3 and G5 parameter analyzed in accordance with Condition III.F.1.b at each well must be tabulated and graphed to indicate historical trends.
  - iv. The results of Observation Zone analyses must be reported in accordance with Condition III.K.2.
- b. List 2 GMZ Perimeter wells shall be evaluated according to the following procedures:
- i. The concentration of each List G2, G3 and G4 parameter shall be compared to its PQL and its respective Concentration Limit. If a List G2, G3 or G4 constituent is found to exceed the appropriate concentration limit(s) in the sample collected from the well, the Permittee may resample within thirty (30) days. If the Permittee chooses not to resample, it shall conclude that that a statistically significant increase has occurred and follow the procedures in Conditions III.K.11 or III.K.12.
  - ii. If the Permittee chooses to resample, it must repeat the analysis for those compounds detected. Collection preservation and analysis of this resample shall be carried out in accordance with Condition III.H. If the second round of analysis indicates an exceedence of appropriate concentration limit(s), the Permittee shall conclude that a statistically significant increase has occurred and shall follow the procedures specified in Conditions III.K.11 or III.K.12.
  - iii. Constituents detected below the PQL shall be determined to be showing no change and no action is necessary.
  - iv. Constituents detected above the PQL shall be plotted on graphs which show historical concentration versus time. Plots indicating statistically significant increasing trends shall be reported, in accordance with Condition III.K.14 below, as a potential area of increasing contamination. The trend analysis must be based on data from a

minimum of four (4) and a maximum of the ten (10) most recent consecutive sampling events and use of an appropriate trend test (e.g. Mann-Kendall Trend Test or Sen's Trend Estimator) of the 95% confidence level. In addition, this report shall contain an evaluation as to whether the corrective actions are operating effectively and whether adjustments or additional remedial actions are necessary based on this trend.

- v. If the Permittee determines at any time that free product is present in any GMZ Perimeter well listed in Condition III.D.1, List 2, it must be reported and addressed in accordance with Condition III.K.11 and III.K.12 below.

J. STATISTICAL PROCEDURES FOR THE AREA 3 MONITORING WELLS OUTSIDE THE GMZ

To monitor for releases of contamination to groundwater underlying Area 3 that are not associated with the GMZ, the facility must conduct the following activities:

1. The background values established for the purpose of intrawell statistical analysis for the groundwater parameters monitored at the List 3 and List 4 monitoring wells listed in Condition III.D.1 above, shall initially be established from the historical groundwater data from the initial sampling of each monitoring well under the initial RCRA Part B Permit (1988) to the Fourth Quarter 2006. This may include data from original monitoring wells and replacement wells as appropriate. The parameters for which background values must be established at the List 3 wells include the List G2, G3 and G5 parameters. The parameters monitored at the List 4 wells for which background values must be established include the List G2 parameters.
2. The background values established for the purpose of intrawell statistical analysis, shall be established from the background data set, utilizing the following procedures. This submittal shall include example calculations and shall include, in table form, all groundwater data used in the calculation for each well, the number of pieces of data used to determine the mean, and a list of derived prediction limits.
  - a. For those parameters or constituents which are found to be above the PQL in 85-100 percent of the background data set, the background values for that parameter or constituent shall be calculated using the methodology described in Attachment B, Page 1. The facility must utilize a value of one half the PQL for non-detect results included in the data set.

- b. For the parameters or constituents which are found to be above the PQL in 50-85 percent of the background data set, the background values for that parameter shall be calculated using methodology described in Attachment B, Page 2 or 5 as appropriate.
- c. For those parameters or constituents in the background data set which do not meet the requirements of Conditions III.J.2.a or III.J.2.b above, the average background value shall be set at the PQL as shown in Condition III.E.1 above.
- d. Sampling and analytical procedures utilized to establish background values shall be in accordance with Condition III.H.
- e. The Permittee must determine the distribution of the background data set for each parameter that meets the requirements of III.J.2.a and III.J.2.b above.
  - i. The Permittee must calculate a coefficient of variation for the background data set from each monitoring well in accordance with Attachment B.
  - ii. If the coefficient of variation is less than or equal to 1.00, the facility may assume a normal data distribution for statistical analysis.
  - iii. In the event that the coefficient of variation is greater than 1.00, the Permittee may choose to transform the background data in lieu of proposing a non-parametric statistical procedure in accordance with Condition III.J.2.e.iv below. The Permittee must demonstrate that the original non-transformed data are inappropriate for a normal theory test.
  - iv. If the Permittee determines that the transformed background data does not pass the test described in Condition III.J.2.e.ii above, it must assume that the background data set is not appropriate for normal theory statistical analysis. In this event, the Permittee must submit for Illinois EPA review and approval a proposed statistical procedure that is appropriate for the distribution of the data used to establish background values, and provides a reasonable balance between the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating unit.

- v. The Permittee may submit for Illinois EPA review and approval a proposal for an alternative procedure for evaluation of background data distribution.
3. The facility must reestablish intrawell background values at the List 3 and List 4 monitoring wells every two years as follows:
  - a. The parameters for which background values must be established at the List 3 wells include the List G2, G3 and G5 parameters. The parameters monitored at the List 4 wells for which background values must be established include the List G2 parameters.
  - b. The facility must use a data set consisting of the results of the eight (8) most recent sampling events.
  - c. The facility must utilize the procedures outlined in Conditions III.J.2.a through II.J.2.e above.
  - d. Recalculated background values must be submitted for Illinois EPA review and approval by July 15 of each odd numbered calendar year beginning with July 15, 2009. This submittal shall include example calculations and shall include, in table form, all groundwater data used in the calculation for each well, the number of pieces of data used to determine the mean, and a list of derived prediction limits.
4. For those parameters and constituents which have not been sampled and analyzed in eight (8) previous sampling events, background values shall be established by the methodology approved by Condition III.J.2 above following four (4) sampling events after the effective date of this Renewal Permit. The results of this determination shall be submitted to the Illinois EPA for review and approval within 90 days from the fourth sampling event.
5. Each of the List 3 and List 4 monitoring wells in Condition III.D.1 above shall be sampled semi-annually in accordance with the schedule in Condition III.K.2 below. The semi-annual sampling events must be conducted during the Second and Fourth Quarters of each calendar year during the compliance period.
6. The groundwater quality for each List 3 and List 4 monitoring well shall be collected in accordance with Condition III.H and shall be compared to the background values which were established for that well in accordance with Condition III.J.2 or III.J.3. The value for each parameter shall be compared to the background value established for that parameter at that well.

7. For those constituents identified in Condition III.E.1 which have background values established in accordance with Conditions III.J.2.a and III.J.2.b above, the Permittee shall conduct the following statistical analysis (NOTE: This procedure shall not be used if the coefficient of variation of the background values is greater than 1.00):
  - a. The difference between the measured concentration of the constituent in a sample from each well and the background value for that constituent shall be evaluated using prediction limits as described in Attachment B to this permit. If the test indicates the difference is significant at the 0.01 level, the Permittee may resample the monitoring well(s), or the Permittee may choose not to resample and shall conclude that a statistically significant increase has occurred.
  - b. If a resample is obtained, it shall be analyzed for the constituent(s) which was (were) initially found to be present in the sample at a value significantly different from its background value. Collection, preservation and analysis of this resample shall be carried out in accordance with Condition III.H. The results of this resample shall be compared to the background value for the constituent, again using the statistical procedure describe in this condition. If the second round of analysis indicated the difference is significant, the Permittee shall conclude that a statistically significant increase has occurred.
  
8. For those constituents identified in Condition III.E.1 which have background values established in accordance with Condition III.J.2.c above, the Permittee shall conduct the following statistical analysis at each well:
  - a. The measured concentration of each of these constituents present in a sample collected from each well shall be compared to the PQL. If, for a given well, (A) the measured concentration of a single constituent is greater than two (2) times the PQL, or (B) the measured concentration of any two or more of these constituents is greater than the PQL, the Permittee may immediately resample from that well(s), or the Permittee may choose not to resample and shall conclude evidence of statistically significant increase has occurred.
  - b. If a resample is obtained, it shall be analyzed for the constituents detected above the PQL in the initial sample collected and analyzed in accordance with this condition. Collection, preservation and analysis of this sample shall be carried out in accordance with Condition III.H above. The results of this resampling shall again be compared to the PQLs as described in this condition. If the measured concentrations for this resampling fail either of

the comparisons, the Permittee shall conclude that a significant change has occurred.

9. For those constituents that have intrawell background values that exceed appropriate 35 Ill. Adm. Code 620 Groundwater Quality Standards (GQSs), the facility shall conduct the following statistical evaluation:
  - a. The Permittee shall conclude that there has been a statistically significant increase if any one of the following has occurred:
    - i. The measured concentration of the constituent exceeds the intrawell background value calculated in accordance with Conditions III.J.1, III.J.2, or III.J.3 above; or
    - ii. A trend analysis (e.g., Mann-Kendall Trend test or Sen's Trend Estimator) of the ten most recent sampling events indicates a statistically significant increasing trend at the 95% confidence level.
  - b. If the statistical evaluation required in Condition III.J.9.a above indicates a statistically significant increase, the facility may immediately resample the monitoring well(s), or the Permittee may choose not to resample and shall conclude that a statistically significant increase has occurred.
  - c. If a resample is obtained, it shall be analyzed for the constituent(s) that failed the evaluation in Condition III.J.9.a above. Collection, preservation and analysis of the resample shall be carried out in accordance with Condition III.H. above. The results of this resample shall again be evaluated as required by Condition III.J.9.a above substituting the resample result for the most recent sampling event. If the resample results again fail the evaluation required by Condition III.J.9.a, the facility must conclude that a statistically significant increase has occurred.
10. Each time samples are collected for the statistical comparisons required by Conditions III.J.7, III.J.8 or III.J.9 above, the Permittee shall prepare lab (trip) blanks in accordance with the procedures described in the approved Permit Renewal Application.
  - a. If any volatile organic compound identified in Condition III.E.1 above cause the initial sample from a given well to fail the tests required by Conditions III.J.7 or III.J.8 above, and the constituent(s) is (are) found above the PQL in a field and/or lab blank associated with the collection or analysis of the sample, the Permittee shall immediately resample the well of concern. This sample, taken to verify the concentration of those

constituents found in the initial sample, shall be collected, preserved and analyzed in accordance with the procedures set forth in Condition III.H.

- i. Analysis of the resample
    - A. If the constituent found in the blank is statistically evaluated in accordance with Condition III.J.7, the resample shall be analyzed for the constituents which failed the test and were also found in the blanks.
    - B. If the constituent found in the blank is statistically evaluated in accordance with Condition III.J.8, the resample shall be analyzed for all the constituents statistically evaluated in accordance with Condition III.J.8.
    - C. If the constituent found in the blank is statistically evaluated in accordance with Condition III.J.9, the resample shall be analyzed for the constituents statistically evaluated in accordance with Condition III.J.9.
  - ii. The measured concentration of the constituents in the resample shall be compared to background values in accordance with Conditions III.J.7, III.J.8, and III.J.9 above.
    - A. If this comparison passes the tests set forth in Condition III.J.7, III.J.8 and/or III.J.9 above, the Permittee may conclude that no significant increase has occurred for the constituents of concern at the well in question.
    - B. If this comparison fails the test set forth in Conditions III.J.7, III.J.8 and/or III.J.9, the Permittee shall immediately collect a "verification sample" in accordance with Conditions III.J.7, III.J.8 and III.J.9.
- b. If the same problem described in Condition III.J.10.a above occurs in the analysis of the "resample" required by Conditions III.J.7, III.J.8, and III.J.9, the Permittee may collect and analyze a verification sample in accordance with Condition III.J.10.a as modified below:
- i. The phrase "resample" shall be substituted for "initial sample."
  - ii. The verification sample need only be analyzed for those constituents which the "resample" was analyzed for.

- iii. If the comparison of the analytical results fail the tests in Conditions III.J.7, III.J.8 and/or III.J.9, the Permittee shall conclude that a significant change has occurred.
- c. Chemical and statistical analyses which are not affected by the interpretation of blank data shall not be repeated, except as described above.

**K. REPORTING AND RECORDKEEPING**

1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with Conditions III.E, III.F, III.G, III.H, III.I and III.J into the operating record. The data must include all computations, calculated means, variance, prediction limits, and statistical or results of statistical tests that the Illinois EPA has determined to be equivalent.
2. Samples collected to meet the requirements of the groundwater monitoring described in Conditions III.E, III.F, III.G, III.H, III.I and III.J shall be collected and reported as identified in the table below. All additional information required by the groundwater monitoring program (as specified in Conditions III.E, III.F, III.G, III.H, III.I and III.J) shall also be submitted to the Illinois EPA at the address listed in Condition III.D.5 in accordance with this schedule.

<u>Sampling Event of Calendar Year*</u>	<u>Samples to be Collected in the Months of</u>	<u>Results Submitted to the Illinois EPA by the Following</u>
First Quarter	January-March	April 15
Second Quarter	April-June	July 15
Third Quarter	July-September	October 15
Fourth Quarter	October-December	January 15

\*Groundwater quality must be monitored quarterly at the List 1 and List 2 monitoring wells. Groundwater quality must be monitored semi-annually at the List 3 and 4 monitoring wells.

3. Groundwater surface elevation data, measured pursuant to Condition III.G.1, shall be collected and submitted to the Illinois EPA as identified in Condition III.K.2 above.
4. The Permittee shall report the groundwater flow rate and direction in the Dolton Sand and the Silurian Dolomite, as required by Condition III.F.5 by July 15 of each year.

5. The Permittee shall report the surveyed elevation, as required by Condition III.G.2, of the top of the well casing (“stick-up”), referenced to MSL, in accordance with the following schedule:
  - a. For wells identified in Condition III.D.1 above, every two years (during the second quarter), or at the request of the Illinois EPA, or whenever the elevation changes.
  - b. For any new wells, at the time of installation and reported in the as-built diagrams. Subsequent measurements shall be made every two years (during the second quarter), or at the request of the Illinois EPA, or whenever the elevation changes.
6. Elevation of the bottom of each monitoring well identified in Condition III.D.1 referenced to MSL, is to be reported when maintenance activities are conducted in accordance with Condition III.K.7 below. This measurement shall be taken during the first semi-annual sampling event and reported by July 15 of that year.
7. The Permittee shall maintain all equipment associated with groundwater monitoring wells. Dedicated pumps found in monitoring wells identified in Condition III.D.1 must be removed, inspected and repaired if necessary every five (5) years. Information regarding the inspection and maintenance of pumps must be reported by July 15 of that year.
8. The Permittee shall submit a completed “RCRA Facility Groundwater, Leachate and Gas Reporting Form” (LPC 592) as a cover sheet for any notices or reports required by the facility’s Permit for identification purposes. Only one copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report submitted to the Illinois EPA. The form is not to be used for Permit modification requests.
9. Information required by Conditions III.F above must be submitted in an electronic format. The information is to be submitted, as fixed-width text files formatted as found in Attachment A to this Permit, in accordance with the schedule in Condition III.K.2 above. Additional guidance regarding the submittal of the information in an electronic format can be found at [www.epa.state.il.us/land/regulatory-programs/permits-and-management/index/html](http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/index/html).
10. In addition to submitting analytical results electronically as required by Condition III.K.9 above, a summary report describing the results of the groundwater sampling event must be submitted after each sampling event in accordance with the schedule

found in Condition III.K.2 above. These reports must include, but not be limited to:

- a. A description of any problems encountered during the event.
  - b. A tabulated summary of groundwater and analytical data collected during the sampling event including the appropriate groundwater quality standard, appropriate PQL, and appropriate derived background value for each parameter.
  - c. A summary table of groundwater elevations collected during the sampling event and potentiometric map(s) based on that data.
  - d. Copies of any statistical analysis required to be conducted in accordance with Conditions III.I and III.J.
  - e. Information required by Condition III.F.6, III.F.7, III.F.8, III.F.9 and III.F.10 above.
11. If the Permittee determines pursuant to Condition III.I.I.b above that any Concentration Limits specified in the Groundwater Protection Standard are being exceeded at any monitoring well within the List 2 GMZ Perimeter wells, or pursuant to Condition III.J.6 that a statistically significant increase has occurred in any of the List 3 Dolomite or List 4 Dolton Sand monitoring wells, the Permittee shall:
- a. Notify the Illinois EPA of this finding in writing within seven (7) days. The notification must indicate what exceedences have been observed.
  - b. Within 90 days of the date that the increase is discovered, submit to the Illinois EPA a request for modification to the Corrective Action Program to meet the requirements of 35 Ill. Adm. Code 724.200. The application must at a minimum included the following information:
    - (1) A detailed description of corrective actions that will achieve compliance with the Groundwater Protection Standard.
    - (2) A plan for a groundwater monitoring program that will demonstrate the effectiveness of the corrective action. Such a groundwater monitoring program may be based on a compliance monitoring program.

12. If the Permittee determines, pursuant to Condition III.I.1.b that the groundwater Concentration Limits in Condition III.E are being exceeded at any GMZ Perimeter well, or that a statistically significant increase has occurred in any of the List 3 Dolomite or List 4 Dolton Sand monitoring wells, the Permittee may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis or statistical evaluation, or natural variation in groundwater. In making a demonstration under this condition, the Permittee shall:
  - a. Notify the Illinois EPA in writing within seven (7) days of the date that the increase is discovered that they intend to make this demonstration under this condition;
  - b. Within ninety (90) days, submit a report to the Illinois EPA, which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from an error in sampling analysis or evaluation;
  - c. Within ninety (90) days, submit to the Illinois EPA an application to make any appropriate changes to the corrective action monitoring program at the facility; and
  - d. Continue to monitor in accordance with Condition III.F.
13. If the Permittee determines that additional constituents not currently part of the Groundwater Protection Standard are present in the groundwater, the Permittee shall:
  - a. Report the concentration of these additional constituents detected in the groundwater to the Illinois EPA within seven (7) days of receipt of the analytical data from the laboratory; and
  - b. Within thirty (30) days of the date that the additional constituents are confirmed, submit a permit modification request to add the additional constituents to the monitoring list of the Groundwater Protection Standard, Lists G2 and G3 and establish the concentration limit for each additional constituent following procedures in Condition III.J.2 above.
14. The Permittee shall submit a written report to the Agency annually which discusses the effectiveness of the Corrective Action Program and place it in the operating record for the facility. The report must be submitted as a stand alone document by July 15 of each year that the Corrective Action Program is in effect. At a minimum, the report must:

- a. Present a detailed summary of the information requirements in Conditions III.E, F, G, H, I and J presented during the previous calendar year;
  - b. Evaluate the effectiveness of the hydraulic control and contaminant removal from the Groundwater Remediation System; and
  - c. Provide recommendations for the Corrective Action Program based on the information provided in III.K.14.a and III.K.14.b above.
15. In accordance with 35 Ill. Adm. Code 620.250(c), a review of the GMZ must take place no less often than every five years and the results shall be presented to the Illinois EPA in a written report. The most recent review was approved by an October 29, 2013 Illinois EPA letter. The next GMZ review must be submitted to the Illinois EPA by October 29, 2018.

L. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee or the Illinois EPA determines that the corrective action program no longer satisfies the requirements of 35 Ill. Adm. Code 724, Subpart F, the Permittee must, within ninety (90) days, submit an application for a permit modification to make any appropriate changes to the program which will satisfy the regulations.
2. Conditions in this section of this Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification identified in this section include, but are not limited to, alteration to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

## SECTION IV

### CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

#### A. INTRODUCTION

1. In accordance with Section 3004(u) of RCRA and 35 Ill. Adm. Code 724.201, the Permittee shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous waste constituents, listed in 35 Ill. Adm. Code 721, Appendix H, from any solid waste management unit (SWMU) at its facility.
2. The original USEPA RCRA permit contained, among other things, corrective action requirements for SWMUs at the facility. A summary of the corrective action activities completed under the initial RCRA permit overseen by USEPA is provided in Attachment G to this permit. This summary also discusses completed closure efforts at several former hazardous waste management units at the facility. The Permittee has implemented corrective measures, which will be maintained and monitored under this permit.
3. The Illinois EPA has authority for imposing corrective action requirements at RCRA permitted facilities and thus will now be responsible for overseeing future corrective action activities at this facility.
4. The Permittee must provide corrective action, as appropriate, for any future releases from SWMUs present at the facility.
5. The requirements of 35 Ill. Adm. Code 742 must be met in determining remediation objectives for all corrective action activities.
6. Illinois EPA approved the general concepts set forth in the End Use Plan submitted December 29, 2010 and July 14, 2011 (B-27R-M-25) for the Area 2 landfill at this facility. However, any technical issues pertaining to post-closure care of this landfill in this plan are superseded by: (a) all conditions in this permit, except this one; and (b) the portions of the approved permit application other than the End Use Plan.

#### B. INSPECTION AND MAINTENANCE REQUIREMENTS ESTABLISHED AS PART OF THE CORRECTIVE ACTION PROGRAM

1. Corrective measures have been completed at two SWMUs. These units, which must be monitored and maintained, are landfill Areas 1 and 2. Attachment G to this permit contains a summary of corrective action activities completed at these SWMUs.
2. The monitoring and maintenance program for landfill Areas 1 and 2 shall be in accordance with the approved operating and maintenance plan for the Area 1 and Area 2 landfills, dated September 2012.
3. Based on the current groundwater conditions at the facility and the requirements of the October 29, 1997 USEPA letter, the Illinois EPA has determined that groundwater monitoring of the Area 1 and Area 2 landfills will continue to be accomplished via the groundwater monitoring programs for the Area 3 and Area 4 landfills. The Illinois EPA reserves the right to require the installation of additional groundwater monitoring wells, as well as implementation of groundwater monitoring programs specific to the Area 1 and/or Area 2 Landfill, in the event that groundwater flow conditions change or groundwater contamination has been determined to be present in the vicinity of those landfills.
4. An annual report shall be submitted to the Illinois Environmental Protection Agency by February 1 of each year (for the preceding calendar year). This report shall document the dates of inspections, problems discovered and actions completed to remedy any problems.
5. The Permittee may modify the approved plans and programs set forth in this subsection; such modifications must first be approved by the Illinois EPA. Requests to modify the approved plans and programs set forth in the subsection must be submitted as requests to modify the approved corrective action program for Areas 1 and 2.
6. The Plat of Survey for the Area 1 landfill and Area 2 landfill, Draw No. 19-R0710, was filed with the Cook County Recorder's Office in Chicago, IL on July 19, 2019. The record data is Document No. 1920006110.

The Plat of Survey was attached to the deed to the property and serves as an instrument which is normally examined during title search that will in perpetuity notify any potential purchasers of the property that:

- a. The property has been used to manage hazardous wastes;
- b. The use of the property is restricted under 35 Ill. Adm. Code, Part 724, Subpart G;
- c. A survey plat and record of the type of waste material in the Area 1 landfill and Area 2 landfill was filed with the IEPA and the County Recorder.

C. NOTIFICATION REQUIREMENTS FOR AN ASSESSMENT OF NEWLY- IDENTIFIED SOLID WASTE MANAGEMENT UNIT(S)

1. The Permittee shall notify the Illinois EPA in writing of any newly-identified SWMU(s) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than sixty (60) calendar days after discovery. The notification shall provide the following information, as available:
  - a. The location of the newly-identified SWMU(s) in relation to other SWMUs on a scaled map or drawing;
  - b. A description of the past and present function of the unit(s);
  - c. The general dimensions, capacities, and structural description of the unit(s) (including drawings and specifications);
  - d. The time period during which the unit(s) was(were) operated;
  - e. Specific information on all materials, including but not limited to, wastes and hazardous waste constituents, that have been or are being managed at the unit(s); and,
  - f. The results of any sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous waste constituents have occurred or are occurring from the unit.
2. If the information submitted under C.1 demonstrates a potential for a release of hazardous waste or hazardous waste constituents from the new or existing SWMU(s), the Illinois EPA may request, in writing, that the Permittee prepare a Solid Waste Management Unit Assessment Plan (Plan). The Plan will include a proposed schedule of implementation and completion. Guidance for the development of the Plan will be provided in Illinois EPA's written request for such a Plan.

This Plan must propose investigations, including necessary field investigations, to determine the release potential to specific environmental media for the newly-identified SWMU(s). The Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must be sufficient to identify the migration of hazardous waste and hazardous waste constituents from the SWMU(s) to the environment.

3. The Illinois EPA shall either approve, approve with conditions or disapprove the Plan in writing. If the Plan is approved, or approved with conditions, the Permittee shall

begin implementation within forty-five (45) calendar days of receiving such written notification. If the Plan is disapproved, the Illinois EPA shall notify the Permittee, in writing, of the Plan's deficiencies and specify a due date for submittal of a revised plan.

4. The Permittee shall submit a report documenting the results of the approved Plan to the Illinois EPA in accordance with the schedule in the approved Plan. The report shall describe all results obtained from the implementation of the approved Plan.
5. Additional investigation, and corrective measures, as necessary, shall be carried out to ensure the requirements of 35 Ill. Adm. Code 724.201 and 742 are met.
6. All Illinois EPA actions described above are subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

D. FUTURE RELEASES FROM SWMUs

There exists a potential that a release may occur in the future from SWMUs identified in the RFA or RFI which did not require any corrective action at the time that the RFA or RFI was completed. If the Permittee discovers that a release has occurred from these SWMU(s) in the future, then the Illinois EPA must be notified of this release within sixty (60) days after its discovery. This notice must contain the information identified in Condition C.1 above. Upon the Illinois EPA's written request, the Permittee shall determine the nature and extent of the release by following the procedures set forth in Subsection C above. All Illinois EPA actions on such future releases shall be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

E. INTERIM MEASURES

At any time during the course of this permit, the Permittee may initiate interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous waste constituents. It shall not be necessary to conduct all phases of an investigation prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release mitigated, without additional study and/or without a formal Corrective Measures Study (CMS).

1. Prior to implementing any interim measures, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA for approval. This information shall include, at a minimum:

- a. The objectives of the interim measure, including: how the measure is mitigating a potential threat to human health and the environment; and/or, is consistent with, and integrated into, any long-term solution at the facility;
  - b. The design, construction, and maintenance requirements;
  - c. A schedule for design and construction; and
  - d. A schedule for progress reports.
2. If the Illinois EPA determines that a release cannot be addressed without additional study and/or a formal CMS, then the Illinois EPA will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal shall not affect the schedule for implementation of any other portion of the Part B Permit.
  3. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, the Permittee will be notified by way of a permit modification.

#### F. FINANCIAL ASSURANCE

35 Ill. Adm. Code 724.201 requires that financial assurance be established for completing required corrective actions at solid waste management units:

1. The cost estimate for conducting the corrective action required by this section is \$2,476,383 (2019 dollars) as approved by the Illinois EPA in this permit modification (Log No. B-27R-M-96). Table I-6 of the approved permit application contains this cost estimate.
2. The approved correction action program for the SWMUs still of concern (the Area 1 and 2 landfills) consists of:
  - Operation and maintenance of a landfill gas management system for each landfill;
  - Operation and maintenance of a leachate management system for each landfill;
  - Inspecting/maintaining the final cover of each landfill;
3. The Permittee shall demonstrate compliance with the financial assurance requirements of 35 Ill. Adm. Code 724.201 by providing documentation of financial assurance using a mechanism specified in 35 Ill. Adm. Code 724.243, in at least the amount of the approved corrective action cost estimate. The words "completion of corrective action" shall be substituted for "closure and/or post-closure", as appropriate in the financial

instrument specified in 35 Ill. Adm. Code 724.251. The Illinois EPA may accept financial assurance for completion of corrective action in combination with another financial mechanism that is acceptable under 35 Ill. Adm. Code 724.246.

4. The financial assurance requirements of 35 Ill. Adm. Code 724.201 must also be met for any investigative or corrective action efforts carried out in accordance with Subsections C or D above. Detailed cost estimates must be developed for any activities carried out under this Section and must accompany any workplan/report submitted to Illinois EPA for review and approval. Appropriate documentation of financial assurance in at least the amount of the approved cost estimate must be submitted to Illinois EPA within 60 days after the cost estimates are approved.
5. Financial assurance for corrective action must be updated, as necessary, to reflect the current status of the RCRA corrective action program at this facility.

**SECTION V: STANDARD CONDITIONS FOR POST CLOSURE CARE****GENERAL REQUIREMENTS**

1. **EFFECT OF PERMIT.** The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (35 Ill. Adm. Code 702.181)
2. **PERMIT ACTIONS.** This permit may be modified, reissued or revoked for cause as specified in 35 Ill. Adm. Code 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or revocation, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 Ill. Adm. Code 702.146)
3. **SEVERABILITY.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 Ill. Adm. Code 700.107)
4. **PERMIT CONDITION CONFLICT.** In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 Ill. Adm. Code 702.160)
5. **DUTY TO COMPLY.** The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 Ill. Adm. Code 702.141 and 703.242)
6. **DUTY TO REAPPLY.** If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 Ill. Adm. Code 702.142 and 703.125)
7. **PERMIT EXPIRATION.** This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete

application (see 35 Ill. Adm. Code 703.181-703.209) and through no fault of the Permittee the Illinois EPA has not issued a new permit as set forth in 35 Ill. Adm. Code 702.125.

8. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE.** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 Ill. Adm. Code 702.143)
9. **DUTY TO MITIGATE.** In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 Ill. Adm. Code 702.144)
10. **PROPER OPERATION AND MAINTENANCE.** The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 Ill. Adm. Code 702.145)
11. **DUTY TO PROVIDE INFORMATION.** The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 Ill. Adm. Code 702.148)
12. **INSPECTION AND ENTRY.** The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:
  - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 Ill. Adm. Code 702.149)

13. MONITORING AND RECORDS. (35 Ill. Adm. Code 702.150)

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 Ill. Adm. Code 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.
- b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.
- c. Records of monitoring information shall include:
  - i. The date(s), exact place, and time of sampling or measurements;
  - ii. The individual(s) who performed the sampling or measurements;
  - iii. The date(s) analyses were performed;
  - iv. The individual(s) who performed the analyses;
  - v. The analytical technique(s) or method(s) used; and
  - vi. The result(s) of such analyses. (35 Ill. Adm. Code 702.150)

14. **REPORTING PLANNED CHANGES.** The permittee shall give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 Ill. Adm. Code 703.280. (35 Ill. Adm. Codes 702.152(a))
15. **CONSTRUCTION CERTIFICATION.** For a new hazardous waste management facility, the permittee shall not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee shall not treat, store or dispose of hazardous waste in the modified portion of the facility, until:
  - a. The permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and
  - b.
    1. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or
    2. If, within 15 days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived and the permittee may commence treatment, storage or disposal of hazardous waste. (35 Ill. Adm. Code 703.247)
16. **ANTICIPATED NONCOMPLIANCE.** The Permittee shall give advanced written notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, regulations, or the Act. (35 Ill. Adm. Code 702.152(b))
17. **TRANSFER OF PERMITS.** This permit may not be transferred by the permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 Ill. Adm. Code 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 Ill. Adm. Code 703.260)
18. **MONITORING REPORTS.** Monitoring results shall be reported at the intervals specified in the permit. (35 Ill. Adm. Code 702.152(d))
19. **COMPLIANCE SCHEDULES.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule

of this permit shall be submitted no later than specified in 35 Ill. Adm. Code 702.162. (35 Ill. Adm. Code 702.152(e))

20. TWENTY-FOUR HOUR REPORTING.

- a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:
  - i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
  - ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the HWM facility, which could threaten the environment or human health outside the facility.
- b. The description of the occurrence and its cause shall include:
  - i. Name, address, and telephone number of the owner or operator;
  - ii. Name, address, and telephone number of the facility;
  - iii. Date, time, and type of incident;
  - iv. Name and quantity of material(s) involved;
  - v. The extent of injuries, if any;
  - vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and
  - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
- c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The

Illinois EPA may waive the five day written notice requirement in favor of a written report within fifteen days. (35 Ill. Adm. Code 702.152(f) and 703.245(b))

21. **OTHER NONCOMPLIANCE.** The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 18, 19, and 20, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 Ill. Adm. Code 702.152(g))
22. **OTHER INFORMATION.** Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 Ill. Adm. Code 702.152(h))
23. **SUBMITTAL OF REPORTS OR OTHER INFORMATION.** All written reports or other written information required to be submitted by the terms of this permit shall be sent to:  
  
Illinois Environmental Protection Agency  
Bureau of Land  
Planning and Reporting Section - #24  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, Illinois 62794-9276
24. **SIGNATORY REQUIREMENT.** All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 Ill. Adm. Code 702.126. (35 Ill. Adm. Code 702.151)
25. **CONFIDENTIAL INFORMATION.** Any claim of confidentiality must be asserted in accordance with 35 Ill. Adm. Code 702.103 and 35 Ill. Adm. Code 161.
26. **DOCUMENTS TO BE MAINTAINED AT FACILITY SITE.** The Permittee shall maintain at the facility, until post-closure is complete, the following documents and amendments, revisions and modifications to these documents:
  - a. Post-closure plan as required by 35 Ill. Adm. Code 724.218(a) and this permit.
  - b. Cost estimate for post-closure care as required by 35 Ill. Adm. Code 724.244(d) and this permit.
  - c. Operating record as required by 35 Ill. Adm. Code 724.173 and this permit.
  - d. Inspection schedules as required by 35 Ill. Adm. Code 724.115(b) and this permit.

### **GENERAL FACILITY STANDARDS**

27. **GENERATOR REQUIREMENTS.** Any hazardous waste generated at this facility shall be managed in accordance with the generator requirements at 35 Ill. Adm. Code Part 722.
28. **SECURITY.** The Permittee shall comply with the security provisions of 35 Ill. Adm. Code 724.114(b) and (c).
29. **GENERAL INSPECTION REQUIREMENTS.** The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 Ill. Adm. Code 724.115(c). Records of inspections shall be kept as required by 35 Ill. Adm. Code 724.115(d).

### **PREPAREDNESS AND PREVENTION**

30. **DESIGN AND OPERATION OF FACILITY.** The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 Ill. Adm. Code 724.131)

### **RECORD KEEPING**

31. **OPERATING RECORD.** The Permittee shall maintain a written operating record at the facility in accordance with 35 Ill. Adm. Code 724.173.

### **POST-CLOSURE**

32. **CARE AND USE OF PROPERTY.** The Permittee shall provide post-closure care for the facility as required by 35 Ill. Adm. Code 724.217 and in accordance with the approved post-closure plan.
33. **AMENDMENT TO POST-CLOSURE PLAN.** The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 Ill. Adm. Code 724.218(d).
34. **COST ESTIMATE FOR POST-CLOSURE.** The Permittee's original post-closure cost estimate, prepared in accordance with 35 Ill. Adm. Code 724.244, must be:
  - a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year.

- b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of post closure.
  - c. Kept on record at the facility and updated. (35 Ill. Adm. Code 724.244)
35. **FINANCIAL ASSURANCE FOR POST-CLOSURE CARE.** The Permittee shall demonstrate compliance with 35 Ill. Adm. Code 724.245 by providing documentation of financial assurance, as required by 35 Ill. Adm. Code 724.251, in at least the amount of the cost estimates required by the previous Permit Condition. Changes in financial assurance mechanisms must be approved by the Agency pursuant to 35 Ill. Adm. Code 724.245.

Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Agency  
Bureau of Land #24  
Financial Assurance Program  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

36. **INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS.** The Permittee shall comply with 35 Ill. Adm. Code 724.248 whenever necessary.

**SECTION VI: REPORTING AND NOTIFICATION REQUIREMENTS**

The reporting and notification requirements of each Section of the RCRA permit are summarized below. This summary is provided to highlight the various reporting and notification requirements of this permit.

**SECTION I: POST-CLOSURE**

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
C.11.b.i	Leachate levels and total volume of leachate removed from Area 3 landfill for the previous calendar year.	January 15 <sup>th</sup> of each year
C.11.b.ii	Leachate levels in each sump and amount removed from Area 4 landfill for the previous calendar year	January 15 <sup>th</sup> of each year
C.11.b.iii	Leachate analyses from Area 3 and Area 4	June 1 of each year
C.13.a	Notify IEPA in writing that flow into the leak detection system exceeds the action leakage rate.	7 days after the determination is made
C.13.b	Submit a preliminary assessment of the liner and leachate collection/detection systems.	14 days after the Permittee determines flow into the leak detection system has exceeded the action leakage rate
C.13.e	Submit a report meeting the requirements of 35 Ill. Adm. Code 724.404(b) if the action leakage rate has been exceeded.	30 days after the notification that the action leakage rate has been exceeded
E.5	Submit certification for completion of post-closure care.	60 days after completion of post-closure care

**SECTION II: AREA 4 DETECTION MONITORING PROGRAM**

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
D.3	Notification/proposal to replace damaged monitoring well	30 days from date of determination

D.5	Submit as-built of additional wells to be installed.	30 days after they have been installed and developed.
D.5	Submit well plugging and abandonment certifications.	30 days after well abandonment
E.3.c	Submit recalculated intrawell background values	July 15 of each odd numbered calendar year
E.4	Submit proposed background values for constituents not sampled during eight previous sampling events	90 days after fourth sampling event
F.4	Report groundwater flow rate and direction In accordance with Condition II.J.4	July 15 of every year
G.2	Report surveyed elevation of stick-up.	July 15 every two years
G.3	Report elevation of well bottom when a problem is identified, or when downhole equipment is removed.	with groundwater report
J.2	Groundwater monitoring <u>data/summary report</u>	All Information Collected During <u>Preceding Months of</u> April-June October-December Results to <u>Illinois EPA by</u> July 15 January 15
J.6 and J.7	Report elevation of well bottom when downhole equipment is removed for five year inspection	July 15
J.11.a	Notify Illinois EPA of statistically significant increase.	7 days after discovery of increase.
J.11.b	Apply for permit modification establishing corrective action program.	90 days after discovery of increase
J.12.a	Notify Illinois EPA that the Permittee intends to demonstrate that a source other than the regulated unit is responsible for a statistical increase or that the increase was due to error.	7 days after discovery of increase

J.12.b	Submit report which demonstrates that a source other than the regulated unit caused a statistical increase or that the increase resulted from error in sampling, analysis or evaluation.	90 days after discovery of increase
J.12.c	Submit application for modification of Detection Monitoring program.	90 days after discovery of increase
J.13.a	Report concentration of additional constituents detected	7 days after receipt of data confirming increase
J.13.b	Permit modification request to add additional constituents to Groundwater Protection Standard	30 days after the date of the confirmation of the increase
K.1	Submit application for permit modification.	90 days after determination that the compliance monitoring program no longer satisfies 35 Ill. Adm. Code 724 Subpart F requirements

## SECTION III: AREA 3 GROUNDWATER CORRECTIVE ACTION PROGRAM

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
D.3	Notification/proposal to replace damaged monitoring well	30 days from date of determination
D.5	Submit well plugging and abandonment	30 days after well abandonment well from monitoring program
D.5	Submit as-built diagrams, boring logs, drawing for new and replacement wells.	30 days after they have been installed and developed data sheets, grid coordinates and location
F.5	Report groundwater flow rate and direction In accordance with Condition III.K.4	July 15 of each year

G.2	Report surveyed elevation of stick-up.	July 15 every two years										
G.3	Report elevation of well bottom when a problem is identified, or when downhole equipment is removed.	with groundwater monitoring										
J.3.d	Submit recalculated intrawell background values	July 15 of each odd numbered calendar year										
J.4	Submit proposed background values for constituents not sampled during eight previous sampling events	90 days after fourth sampling event										
K.2	Groundwater monitoring data/summary report	<table border="0"> <tr> <td>All Information Collected During Preceding Months of</td> <td>Results to Illinois EPA by</td> </tr> <tr> <td>January-March</td> <td>April 15</td> </tr> <tr> <td>April-June</td> <td>July 15</td> </tr> <tr> <td>July-September</td> <td>October 15</td> </tr> <tr> <td>October-December</td> <td>January 15</td> </tr> </table>	All Information Collected During Preceding Months of	Results to Illinois EPA by	January-March	April 15	April-June	July 15	July-September	October 15	October-December	January 15
All Information Collected During Preceding Months of	Results to Illinois EPA by											
January-March	April 15											
April-June	July 15											
July-September	October 15											
October-December	January 15											
K.6 and K.7	Report elevation of well bottom when downhole equipment is removed for five year inspection	July 15										
K.11.a	Notify Illinois EPA of statistically significant increase.	7 days after discovery of increase										
K.11.b	Submit request to modify Corrective Action Program	90 days after discovery of increase										
K.12.a	Notify Illinois EPA that the Permittee intends to demonstrate that a source other than the regulated unit is responsible for a statistical increase or that the increase was due to error.	7 days after discovery of increase										
K.12.b	Submit report which demonstrates that a source other than the regulated unit caused a statistical increase or that the increase resulted from error in sampling, analysis or	90 days after discovery of increase										

evaluation.

K.12.c	Submit application for modification of Corrective Action monitoring program.	90 days after discovery of increase
K.13.a	Report concentration of additional constituents detected	7 days after receipt of data confirming increase
K.13.b	Permit modification request to add additional constituents to Groundwater Protection Standard	30 days after the date of the confirmation of the increase
K.14	Annual evaluation of Corrective Action Program	July 15

#### SECTION IV: CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
B.2	Submit annual monitoring and maintenance report for landfill Areas 1 and 2.	February 1 of each year
C.1	Notify Illinois EPA in writing of any newly identified SWMU(s) discovered during the course of groundwater monitoring.	60 calendar days after discovery
D	Notify Illinois EPA of any releases from SWMU(s).	60 days after its discovery
F.1	Submit to the Illinois EPA, for review and approval, a cost estimate for conducting the corrective action required by this section.	Within 30 days of the Illinois EPA's approval of a corrective action investigation plan.
F.3	Shall meet the requirements of 35 Ill. Adm. Code 724.201 and provide financial assurance to Illinois EPA in the amount of the approved	Within 60 days after the cost estimates are approved by Illinois EPA.
F.4	Financial assurance for corrective action must be updated to reflect the current status of the RCRA corrective action program at this facility.	As necessary

#### SECTION V: STANDARD CONDITIONS

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
6	Complete application for new permit	180 days prior to permit expiration
11	Information requested by the Illinois EPA and copies of records required to be kept by this permit.	Submittal date to be determined by the Illinois EPA
14	Notify Illinois EPA of planned physical alterations or additions.	As soon as possible.
16	Notify Illinois EPA of changes which may result in permit noncompliance.	Within 15 days of change.
17	Application for permit modification indicating permit is to be transferred.	at least 90 days prior to transfer date
19	Submission of any information required in a compliance schedule.	14 days after each schedule date.
20	Report to the Illinois EPA any non-compliance which may endanger health or environment.	
	by telephone	24 hours after discovery, and
	in writing	5 days after discovery.
21	Report all other instances of non-compliance.	March 1 of each year along with Annual Report
33	Application for permit modification amending post closure plan.	When a change in operation or design affects the post-closure plan.
34(a)	Adjust post closure cost estimate for inflation.	60 days prior to anniversary date
34(b)	Revision of post closure cost estimate.	Whenever there is a change that increases costs.
35	Change in financial assurance mechanism for post closure.	As needed

B-27R-M-96

CID RDF  
ILD010284248  
Page VI-7 of VI-7

36

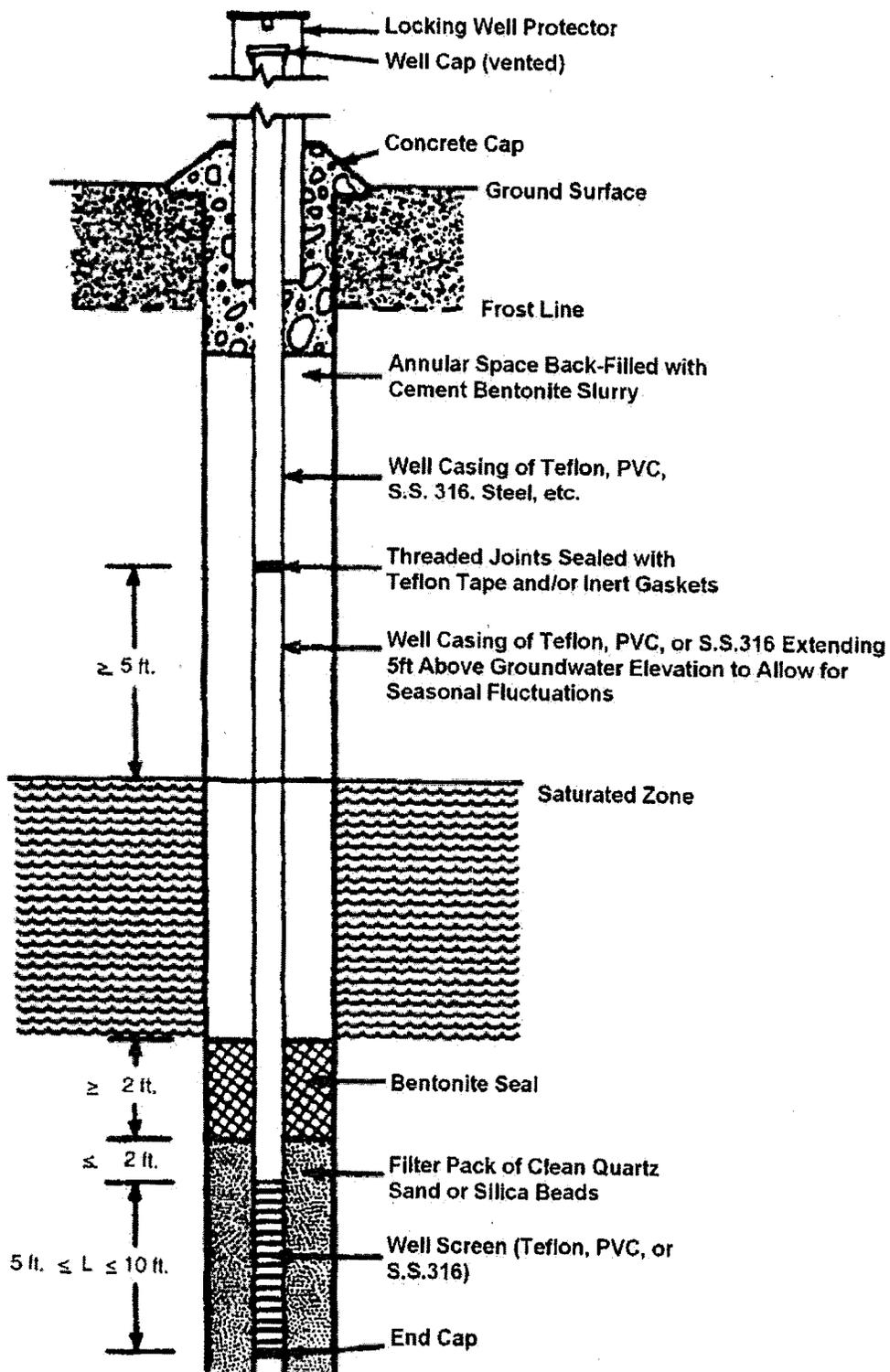
Notify Illinois EPA of commencement of  
voluntary or involuntary bankruptcy  
proceedings.

10 days after  
commencement of  
proceeding.

ATTACHMENT A  
GROUNDWATER MONITORING ATTACHMENTS

ILD010284248

# Monitoring Well Diagram



**ILLINOIS EPA MONITOR WELL PLUGGING AND ABANDONMENT PROCEDURES**

	Well Construction		Plugging Procedure
<b>I. Unconsolidated Sediment Wells</b>	I-A	...if backfilled with cement grout above bentonite seal and/or sandpack:	<ol style="list-style-type: none"> <li>1. Cut casing off at desired depth.</li> <li>2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement).</li> <li>3. Insert tremi pipe (1" i.d. pvc) into well and extend to bottom.</li> <li>4. Slowly pump slurry under low pressure through tremi pipe.</li> <li>5. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry.</li> <li>6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.</li> </ol>
	I-B	...if backfilled with soft sediments (cuttings) above bentonite seal and/or sandpack:	<ol style="list-style-type: none"> <li>1. Knock out and remove thin surface concrete plug, if present.</li> <li>2. Re-auger entire length of well.</li> <li>3. Remove well casing from re-augured borehole.</li> <li>4. Mix neat cement slurry (5 gal. water per 94 lb. bag cement).</li> <li>5. Insert tremi pipe (1" i.d. pvc) into augers and extend to bottom.</li> <li>6. Slowly pump slurry under low pressure through tremi pipe.</li> <li>7. Continue slow pumping until all formation water and the water slurry mix is displaced from top of casing.</li> <li>8. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry.</li> <li>9. Pull a flight of augers (5" if in unstable materials and hole collapse is likely or 10" if in competent material and collapse is unlikely).</li> <li>10. Top off cement slurry after each flight is removed.</li> </ol>
	I-C	...if monitor well construction is unknown:	<ol style="list-style-type: none"> <li>1. Follow procedures in I-A.</li> </ol>
<b>II. Bedrock Wells</b>	II-A	...All bedrock monitor wells:	<ol style="list-style-type: none"> <li>1. Cut casing off at desired depth.</li> <li>2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement).</li> <li>3. Insert tremi-pipe (1" i.d. pvc) into well and extend to bottom.</li> <li>4. Slowly pump slurry under low pressure through tremi pipe.</li> <li>5. Slowly withdraw pipe making sure bottom of pipe remains below pure slurry.</li> <li>6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.</li> </ol>





Site Number: \_\_\_\_\_ County: \_\_\_\_\_

Site Name: \_\_\_\_\_ Well #: \_\_\_\_\_

State \_\_\_\_\_

Plane Coordinate: X \_\_\_ Y \_\_\_ (or) Latitude: \_\_\_° \_\_\_' \_\_\_" Longitude: \_\_\_° \_\_\_' \_\_\_" Borehole #: \_\_\_\_\_

Surveyed by: \_\_\_\_\_ IL Registration #: \_\_\_\_\_

Drilling Contractor: \_\_\_\_\_ Driller: \_\_\_\_\_

Consulting Firm: \_\_\_\_\_ Geologist: \_\_\_\_\_

Drilling Method: \_\_\_\_\_ Drilling Fluid (Type): \_\_\_\_\_

Logged By: \_\_\_\_\_ Date Started: \_\_\_\_\_ Date Finished: \_\_\_\_\_

Report Form \_\_\_\_\_ Date: \_\_\_\_\_

Completed By: \_\_\_\_\_

**ANNULAR SPACE DETAILS**

Type of Surface Seal: \_\_\_\_\_

Type of Annular Sealant: \_\_\_\_\_

Installation Method: \_\_\_\_\_

Setting Time: \_\_\_\_\_

Type of Bentonite Seal ~ Granular, Pellet, Slurry  
(Choose One)

Installation Method: \_\_\_\_\_

Setting Time: \_\_\_\_\_

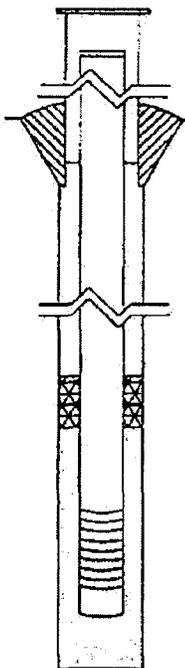
Type of Sand Pack: \_\_\_\_\_

Grain Size: \_\_\_\_\_ (Sieve Size)

Installation Method: \_\_\_\_\_

Type of Backfill Material: \_\_\_\_\_  
(if applicable)

Installation Method: \_\_\_\_\_



Elevations (MSL)*	Depth (BGS)	(.01ft.)
_____	_____	Top of Protective Casing
_____	_____	Top of Riser Pipe
_____	_____	Ground Surface
_____	_____	Top of Annular Sealant
_____	_____	Static Water Level (After Completion)
_____	_____	Top of Seal
_____	_____	Top of Sand Pack
_____	_____	Top of Screen
_____	_____	Bottom of Screen
_____	_____	Bottom of Well
_____	_____	Bottom of Borehole

\* Referenced to a National Geodetic Datum

**WELL CONSTRUCTION MATERIAL**

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

**CASING MEASUREMENTS**

Diameter of Borehole (inches)	_____
ID of Riser Pipe (inches)	_____
Protective Casing Length (feet)	_____
Riser Pipe Length (feet)	_____
Bottom of Screen to End Cap (feet)	_____
Screen Length (1 <sup>st</sup> slot to last slot) (feet)	_____
Total Length of Casing (feet)	_____
Screen Slot Size**	_____

\*\*Hand-Slotted Well Screens are Unacceptable



Illinois Bureau of Land  
 Environmental 1021 North Grand Avenue East  
 Protection Agency Box 19276  
 Springfield, IL 62794-9276

## RCRA FACILITY GROUNDWATER, LEACHATE AND GAS REPORTING FORM

This form must be used as a cover sheet for the notices and reports, identified below as required by: (1) a facility's RCRA interim status closure plan; (2) the RCRA interim status regulations; or (3) a facility's RCRA permit. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form is for use by Hazardous Waste facilities only. Reporting for Solid Waste facilities should be submitted on a separate form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note: This form is not to be used with permit or closure plan modification requests. The facility's approved permit or closure plan will state whether the document you are submitting is required as a report or a modification request.

Facility Name: \_\_\_\_\_ Site ID #: \_\_\_\_\_  
 Facility Address: \_\_\_\_\_ Fed ID #: \_\_\_\_\_

Check the appropriate heading. Only one heading may be checked for each corresponding submittal. Check the appropriate sub-heading, where applicable. Attach the original and all copies behind this form.

<input type="checkbox"/> LPC-160 Forms	
<input type="checkbox"/> <u>Groundwater</u>	<input type="checkbox"/> <u>Leachate</u>
<input type="checkbox"/> Quarterly – Indicate one: 1 2 3 4	<input type="checkbox"/> Quarterly – Indicate one: 1 2 3 4
<input type="checkbox"/> Semi-Annual	<input type="checkbox"/> Semi-Annual
<input type="checkbox"/> Annual	<input type="checkbox"/> Annual
<input type="checkbox"/> Biennial	<input type="checkbox"/> Biennial

Groundwater Data (without LPC-160 Forms)  
 Quarterly – Indicate one: 1 2 3 4  
 Annual                       Semi-Annual                       Biennial

Well Construction Information  
 Well Construction Forms, Boring Logs and/or Abandonment Forms  
 Well Survey Data (e.g., Stick-up Elevation Data)

Notice of Statistically Significant Evidence of Groundwater Contamination  
 (35 Ill. Adm. Code 724.198)

Notice of Exceedence of Groundwater Concentration Limit (35 Ill. Adm. Code 724.199(h))

Notice of Alternate Source or Error in Sampling Analysis or Evaluation of Groundwater  
 (35 Ill. Adm. Code 724.199(i))

Gas Monitoring Reports

Other (identify) \_\_\_\_\_

Formatting Requirements for the 01 Record of the Electronically Submitted  
Groundwater and Leachate Data (the 01 Record portion of the LPC-160 is included  
for example purposes)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
DIVISION OF LAND POLLUTION CONTROL  
CHEMICAL ANALYSIS FORM

Page 1 of \_\_\_\_\_

RECORD CODE							TRANS CODE
L	P	C	S	M	0	1	A
1					7		8

REPORT DUE DATE 36 M / D / Y 41

FEDERAL ID NUMBER \_\_\_\_\_

SITE INVENTORY NUMBER <u>9</u> _____ <u>18</u>	MONITOR POINT NUMBER <u>19</u> _____ <u>22</u> (see Instructions)
REGION _____ CO. _____	DATE COLLECTED <u>23</u> M / <u>D</u> / <u>Y 28</u>
FACILITY NAME _____	

**FOR IEPA USE ONLY**

LAB 29

DATE RECEIVED 42 M / D / Y 47

BACKGROUND SAMPLE (X) 54 TIME COLLECTED 55 H / M 58  
(24 Hr. Clock)

UNABLE TO COLLECT SAMPLE \_\_\_\_\_  
(see Instructions) 59

MONITOR POINT SAMPLED BY 60 OTHER (SPECIFY) \_\_\_\_\_  
(see Instructions)

SAMPLE FIELD FILTERED - INORGANICS (X) 61 ORGANICS (X) 62

SAMPLE APPEARANCE \_\_\_\_\_  
\_\_\_\_\_ 102

COLLECTOR COMMENTS \_\_\_\_\_  
\_\_\_\_\_ 142

LAB COMMENTS \_\_\_\_\_  
\_\_\_\_\_ 150

\_\_\_\_\_ 199

II 532 1213  
LPC 160 12:2011

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

\*Only Keypunch with Data in Column 35 or Columns 38-47

**KEY:**

<u>Spaces Numbered</u>	<u>Description</u>	<u>Format</u>
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-159	Lab Comments	





ATTACHMENT B  
STATISTICAL PROCEDURE

ILD010284248

## Attachment B-1

The following statistical procedure must be followed as referenced in Section II (Area 4 Compliance Monitoring Program) and Section III (Area 3 Groundwater Corrective Action Program). This statistical procedure is only valid for normally distributed data sets.

1. Calculate the arithmetic mean,  $\bar{x}_b$ , of the background values as follows:

$$\bar{x}_b = \frac{x_{b1} + x_{b2} + \dots + x_{bn}}{n}$$

where:  $x_b$  = background concentration  
 $n$  = number of observations

2. Calculate the variance,  $S_b^2$ , of the background values:

$$S_b^2 = \frac{(x_{b1} - \bar{x}_b)^2 + (x_{b2} - \bar{x}_b)^2 + \dots + (x_{bn} - \bar{x}_b)^2}{n-1}$$

3. Calculate the standard deviation,  $S_b$ , of the background values:

$$S_b = \sqrt{S_b^2}$$

4. Specify the number of future observations per well (k) and calculate the prediction limit (PL) using the following equation:

$$PL = \bar{x}_b + C * S_b$$

where:  $\bar{x}_b$  = background mean value

C = factor for obtaining a one-sided 99% prediction limit for k additional samples given a background sample size of n (see "Note" below)

$S_b$  = Background standard deviation

Note: C is determined from Tables 1-3 of "Standard Prediction Intervals for the Evaluation of Groundwater Quality", R. Gibbons, Ground Water, Vol. 25, No. 4, July-August 1987. Refer to Attachment F, pages F-6 through F-8.

Reference: "Statistical Analysis of Ground-water Monitoring Data at RCRA Facilities, Interim Final Guidance", USEPA, February 1989

## Attachment B-2

**Cohen's Method for Calculating Estimates of the Mean and Variance of Background Measurements when Some Observations ( $\leq 50\%$ ) are Below the Practical Quantitation Limit (PQL)**

This method is to be used only when PQLs are equal for the data set. Let  $n$  be the total number of observations,  $m$  represents the number of data points above the PQL, and  $x_i$  represents the value of the  $i^{\text{th}}$  constituent value above the PQL.

1. Compute the sample mean  $\bar{x}_d$  from the data above the PQL as follows:

$$\bar{x}_d = \frac{1}{m} \sum_{i=1}^m x_i$$

2. Compute the sample variance  $S_d^2$  from the data above the PQL as follows:

$$S_d^2 = \frac{\sum_{i=1}^m (x_i - \bar{x}_d)^2}{m-1} = \frac{\sum_{i=1}^m x_i^2 - \frac{1}{m} (\sum_{i=1}^m x_i)^2}{m-1}$$

3. Compute the two parameters,  $h$  and  $\gamma$  (lower case gamma), as follows:

$$h = \frac{(n-m)}{n} \qquad \gamma = \frac{S_d^2}{(\bar{x} - PQL)^2}$$

where  $n$  is the total number of observations (i.e. above and below the PQL). These values are then used to determine the value of the parameter  $\hat{\lambda}$  from Appendix B, Table 7 (see Attachment F.2A).

4. Estimate the corrected sample mean, which accounts for the data below the PQL, as follows:

$$\bar{x} = \bar{x}_d - \hat{\lambda}(\bar{x}_d - PQL)$$

5. Estimate the corrected sample standard deviation, which accounts for the data below the PQL, as follows:

$$S = (S_d^2 + \hat{\lambda}(\bar{x}_d - PQL)^2)^{1/2}$$

6. Use the corrected values of  $\bar{x}$  and  $S$  in the procedure for constructing a prediction limit outlined in Attachment F-1.

$\bar{x}_d$  = sample mean

$x_i$  =  $i^{\text{th}}$  value above the PQL

$m$  = number of data points above the PQL

$h$  = parameter to determine  $\lambda$  from Appendix B, Table 7 (see Attachment B-2A).

$\gamma$  = parameter to determine  $\lambda$  from Appendix B, Table 7 (see Attachment B-2A).

$n$  = number of observations

$S_v^2$  = Sample variance

PQL = Practical Quantitation Limit

$\lambda$  = parameter used to derive corrected  $\bar{x}$  and corrected S

$\bar{x}$  = corrected sample mean

S = corrected sample standard deviation

Reference: "Statistical analysis of Ground-water Monitoring Data at RCRA Facilities, Interim Final Guidance", USEPA, February 1989

Attachment B-2A

Appendix B, Table 7, from: "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance," USEPA, February 1989.

Table 7. Values of the Parameter  $\hat{\lambda}$  for Cohen's Estimates Adjusting for Nondetected Values

r	h											
	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.15	.20
.00	.010100	.020400	.030902	.041583	.052507	.063625	.074953	.08649	.09824	.11020	.12342	.14268
.05	.010551	.021294	.032225	.043350	.054670	.066159	.077909	.08983	.10197	.11431	.12725	.15033
.10	.010950	.022082	.033398	.044902	.056596	.068483	.080563	.09285	.10534	.11804	.13147	.15741
.15	.011310	.022798	.034466	.046318	.058356	.070586	.083009	.09563	.10845	.12148	.13485	.16405
.20	.011642	.023459	.035453	.047829	.059990	.072539	.085280	.09822	.11135	.12469	.13846	.17031
.25	.011952	.024076	.036377	.048858	.061522	.074372	.087413	.10065	.11408	.12772	.14160	.17626
.30	.012243	.024658	.037249	.050018	.062969	.076106	.089433	.10295	.11667	.13059	.14483	.18193
.35	.012520	.025211	.038077	.051120	.064345	.077736	.091355	.10515	.11914	.13335	.14787	.18737
.40	.012784	.025738	.038866	.052173	.065660	.079332	.093193	.10725	.12150	.13595	.15069	.19250
.45	.013036	.026245	.039624	.053182	.066921	.080845	.094958	.10926	.12377	.13847	.15347	.19765
.50	.013279	.026728	.040352	.054153	.068135	.082301	.096657	.11121	.12595	.14090	.15612	.20253
.55	.013513	.027196	.041054	.055089	.069306	.083708	.098298	.11308	.12806	.14325	.15875	.20725
.60	.013739	.027849	.041733	.055995	.070439	.085068	.099887	.11490	.13011	.14552	.16125	.21184
.65	.013958	.028087	.042391	.056874	.071538	.086388	.10145	.11666	.13209	.14775	.16360	.21630
.70	.014171	.028513	.043030	.057726	.072505	.087670	.10292	.11837	.13402	.14987	.16594	.22065
.75	.014378	.029927	.043652	.058556	.073643	.088917	.10438	.12004	.13590	.15196	.16830	.22489
.80	.014579	.029530	.044258	.059364	.074655	.090133	.10580	.12167	.13775	.15400	.17058	.22903
.85	.014773	.029725	.044848	.060153	.075642	.091319	.10719	.12325	.13952	.15599	.17268	.23307
.90	.014967	.030107	.045425	.060923	.075606	.092477	.10854	.12480	.14126	.15793	.17482	.23703
.95	.015154	.030483	.045989	.061676	.075549	.093611	.10987	.12632	.14297	.15983	.17690	.24091
1.00	.015338	.030850	.046540	.062413	.078471	.094720	.11116	.12780	.14465	.16170	.17902	.24471

r	h											
	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.80	.90
.00	.31862	.4021	.4941	.5961	.7096	.8388	.9808	1.145	1.336	1.561	1.776	3.283
.05	.32793	.4130	.5066	.6101	.7252	.8540	.9994	1.166	1.358	1.585	1.803	3.314
.10	.33662	.4233	.5184	.6234	.7400	.8703	1.017	1.185	1.379	1.608	1.829	3.345
.15	.34480	.4330	.5296	.6361	.7542	.8850	1.035	1.204	1.400	1.630	1.855	3.376
.20	.35255	.4422	.5403	.6483	.7673	.9012	1.051	1.222	1.419	1.651	1.880	3.405
.25	.35993	.4510	.5506	.6600	.7810	.9158	1.067	1.240	1.439	1.672	1.905	3.435
.30	.36700	.4595	.5604	.6713	.7937	.9300	1.083	1.257	1.457	1.693	1.939	3.464
.35	.37379	.4676	.5699	.6821	.8060	.9437	1.098	1.274	1.475	1.713	1.953	3.492
.40	.38033	.4735	.5791	.6927	.8179	.9570	1.113	1.290	1.494	1.732	1.967	3.520
.45	.38665	.4831	.5880	.7029	.8295	.9700	1.127	1.306	1.511	1.751	1.981	3.547
.50	.39276	.4904	.5967	.7129	.8408	.9826	1.141	1.321	1.528	1.770	1.995	3.575
.55	.39679	.4976	.6061	.7225	.8517	.9950	1.155	1.337	1.545	1.788	2.009	3.601
.60	.40447	.5045	.6133	.7320	.8625	1.007	1.169	1.351	1.561	1.806	2.023	3.628
.65	.41008	.5114	.6213	.7412	.8729	1.019	1.182	1.368	1.577	1.824	2.037	3.654
.70	.41555	.5180	.6291	.7502	.8832	1.030	1.195	1.380	1.593	1.841	2.050	3.679
.75	.42090	.5245	.6367	.7590	.8932	1.042	1.207	1.394	1.608	1.851	2.062	3.705
.80	.42612	.5308	.6441	.7676	.9031	1.053	1.220	1.408	1.624	1.875	2.074	3.730
.85	.43122	.5370	.6515	.7761	.9127	1.064	1.232	1.422	1.639	1.892	2.086	3.754
.90	.43622	.5430	.6586	.7844	.9222	1.074	1.244	1.435	1.653	1.908	2.098	3.779
.95	.44112	.5490	.6656	.7925	.9314	1.083	1.255	1.448	1.668	1.924	2.109	3.803
1.00	.44592	.5548	.6724	.8005	.9406	1.093	1.267	1.461	1.682	1.940	2.120	3.827

Source: Cohen, A.C., Jr. 1961. "Tables for Maximum Likelihood Estimates: Singly Truncated and Singly Censored Samples." *Technometrics*.

**Attachment B-3****Aitchison's Method for Calculating Estimates of the Mean and Variance of Background Measurements when Some Observations ( $\leq 50\%$ ) are Below the Practical Quantitation Limit (PQL)**

This method may be used when PQLs are not equal for the dataset.

1. The corrected sample mean is calculated using the following equation:

$$\bar{X} = \left(1 - \frac{d}{n}\right) \bar{X}^*$$

2. The corrected standard deviation is calculated using the following equation:

$$S = \frac{n - (d + 1)}{n - 1} (S^*)^2 + \frac{d}{n} \left(\frac{n - d}{n - 1}\right) (\bar{X}^*)^2$$

3. Use the corrected values of  $\bar{X}$  and S in the procedure for constructing a prediction limit outlined in Attachment F-1.

$\bar{X}$  = corrected sample mean

$\bar{X}^*$  = sample mean of detected values

n = number of samples

S = corrected sample standard deviation

d = number of values below the PQL

Reference: "Statistical analysis of Ground-water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance", USEPA, July 1992

**Attachment B-4****Coefficient of Variation Test**

This test is a simple check for evidence of gross nonnormality in groundwater monitoring data.

1. Calculate the sample mean ( $\bar{x}$ ) of  $n$  observations  $x_i, i=1, \dots, n$ .

$$\bar{x} = \frac{\left(\sum_{i=1}^n x_i\right)}{n}$$

2. Calculate the sample standard deviation,  $S$ .

$$S = \left[ \frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1} \right]^{1/2}$$

3. Divide the sample standard deviation by the sample mean. This ratio is the Coefficient of Variation (CV).

$$CV = S / \bar{x}$$

4. Determine if the result of Step 3 exceeds 1.00. If so, this is evidence that the assumption of normal distribution does not fit the data adequately.

Reference: "Statistical analysis of Ground-water Monitoring Data at RCRA Facilities, Interim Final Guidance", USEPA, February 1989

**Attachment B-5**

**Table 1. Factors for Obtaining One-Sided 99% Prediction Limits for k Additional Samples Given a Background Sample of Size n**

Previous n	Number of new measurements (k)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4	4.70	5.81	6.52	7.06	7.49	7.86	8.17	8.45	8.71	8.94	9.15	9.35	9.53	9.70	9.86
5	3.96	4.77	5.28	5.66	5.96	6.22	6.44	6.63	6.81	6.97	7.11	7.24	7.37	7.48	7.59
6	3.67	4.23	4.63	4.93	5.17	5.37	5.54	5.69	5.83	5.95	6.06	6.16	6.26	6.35	6.43
7	3.32	3.89	4.24	4.49	4.69	4.86	5.00	5.13	5.24	5.34	5.43	5.52	5.60	5.67	5.74
8	3.16	3.67	3.98	4.20	4.38	4.52	4.65	4.75	4.85	4.94	5.02	5.09	5.16	5.22	5.28
9	3.04	3.61	3.79	3.99	4.16	4.28	4.39	4.49	4.58	4.66	4.73	4.79	4.85	4.91	4.96
10	2.95	3.39	3.65	3.84	3.98	4.10	4.21	4.30	4.37	4.45	4.51	4.57	4.62	4.68	4.72
11	2.88	3.30	3.54	3.72	3.85	3.97	4.06	4.14	4.22	4.28	4.34	4.40	4.45	4.50	4.54
12	2.82	3.22	3.46	3.62	3.76	3.86	3.95	4.03	4.09	4.16	4.21	4.26	4.31	4.36	4.40
13	2.78	3.16	3.39	3.54	3.67	3.77	3.85	3.93	3.99	4.05	4.11	4.16	4.20	4.24	4.28
14	2.74	3.11	3.33	3.48	3.60	3.70	3.78	3.85	3.91	3.97	4.02	4.07	4.11	4.15	4.19
15	2.71	3.07	3.28	3.43	3.54	3.63	3.71	3.78	3.84	3.90	3.95	3.99	4.03	4.07	4.11
16	2.68	3.03	3.24	3.38	3.49	3.58	3.66	3.72	3.78	3.84	3.88	3.93	3.97	4.00	4.04
17	2.66	3.00	3.20	3.34	3.46	3.54	3.61	3.68	3.73	3.78	3.83	3.87	3.91	3.95	3.98
18	2.64	2.97	3.17	3.31	3.41	3.50	3.57	3.63	3.69	3.74	3.78	3.82	3.86	3.89	3.93
19	2.62	2.95	3.14	3.28	3.38	3.46	3.53	3.60	3.65	3.70	3.74	3.78	3.82	3.85	3.88
20	2.60	2.93	3.12	3.25	3.35	3.43	3.50	3.56	3.61	3.66	3.70	3.74	3.78	3.81	3.84
21	2.69	2.91	3.10	3.22	3.32	3.41	3.47	3.53	3.58	3.63	3.67	3.71	3.75	3.78	3.81
22	2.57	2.89	3.08	3.20	3.30	3.38	3.45	3.51	3.56	3.60	3.64	3.68	3.71	3.75	3.78
23	2.66	2.88	3.06	3.18	3.28	3.36	3.42	3.48	3.53	3.58	3.62	3.65	3.69	3.72	3.75
24	2.65	2.86	3.04	3.17	3.26	3.34	3.40	3.46	3.51	3.55	3.59	3.63	3.66	3.69	3.72
25	2.64	2.85	3.03	3.15	3.24	3.32	3.39	3.44	3.49	3.53	3.57	3.61	3.64	3.67	3.70
26	2.63	2.84	3.01	3.14	3.23	3.30	3.37	3.42	3.47	3.51	3.55	3.59	3.62	3.65	3.68
27	2.62	2.83	3.00	3.12	3.21	3.29	3.35	3.41	3.45	3.50	3.53	3.57	3.60	3.63	3.66
28	2.62	2.82	2.99	3.11	3.20	3.27	3.34	3.39	3.44	3.48	3.52	3.55	3.58	3.61	3.64
29	2.61	2.81	2.98	3.10	3.19	3.26	3.32	3.38	3.42	3.46	3.50	3.54	3.57	3.60	3.62
30	2.60	2.80	2.97	3.09	3.18	3.25	3.31	3.36	3.41	3.45	3.49	3.52	3.55	3.58	3.61
31	2.50	2.79	2.96	3.08	3.17	3.24	3.30	3.35	3.40	3.44	3.47	3.51	3.54	3.57	3.59
32	2.49	2.79	2.95	3.07	3.16	3.23	3.29	3.34	3.39	3.43	3.46	3.50	3.53	3.55	3.58
33	2.49	2.78	2.94	3.06	3.16	3.22	3.28	3.33	3.37	3.41	3.45	3.48	3.51	3.54	3.57
34	2.48	2.77	2.94	3.05	3.14	3.21	3.27	3.32	3.36	3.40	3.44	3.47	3.50	3.53	3.56
35	2.48	2.77	2.93	3.04	3.13	3.20	3.26	3.31	3.35	3.39	3.43	3.46	3.49	3.52	3.54
36	2.47	2.76	2.92	3.04	3.12	3.19	3.25	3.30	3.35	3.39	3.42	3.45	3.48	3.51	3.53
37	2.47	2.76	2.92	3.03	3.12	3.19	3.24	3.29	3.34	3.38	3.41	3.44	3.47	3.50	3.53
38	2.46	2.75	2.91	3.02	3.11	3.18	3.24	3.29	3.33	3.37	3.40	3.44	3.46	3.49	3.52
39	2.46	2.75	2.91	3.02	3.10	3.17	3.23	3.28	3.32	3.36	3.40	3.43	3.46	3.48	3.51
40	2.46	2.74	2.90	3.01	3.10	3.17	3.22	3.27	3.31	3.35	3.39	3.42	3.45	3.47	3.50
41	2.45	2.74	2.90	3.01	3.09	3.16	3.22	3.27	3.31	3.35	3.38	3.41	3.44	3.47	3.49
42	2.45	2.73	2.89	3.00	3.09	3.15	3.21	3.26	3.30	3.34	3.37	3.41	3.43	3.46	3.48
43	2.45	2.73	2.89	3.00	3.08	3.15	3.20	3.25	3.30	3.33	3.37	3.40	3.43	3.45	3.48
44	2.44	2.73	2.88	2.99	3.08	3.14	3.20	3.25	3.29	3.33	3.36	3.39	3.42	3.45	3.47
45	2.44	2.72	2.88	2.99	3.07	3.14	3.19	3.24	3.28	3.32	3.36	3.39	3.41	3.44	3.46
46	2.44	2.72	2.88	2.98	3.07	3.13	3.19	3.24	3.28	3.32	3.35	3.38	3.41	3.43	3.46
47	2.44	2.72	2.87	2.98	3.06	3.13	3.18	3.23	3.27	3.31	3.34	3.38	3.40	3.43	3.45
48	2.43	2.71	2.87	2.98	3.06	3.12	3.18	3.23	3.27	3.31	3.34	3.37	3.40	3.42	3.45
49	2.43	2.71	2.86	2.97	3.06	3.12	3.18	3.22	3.26	3.30	3.34	3.37	3.39	3.42	3.44
50	2.43	2.71	2.86	2.97	3.05	3.12	3.17	3.22	3.26	3.30	3.33	3.36	3.39	3.41	3.44
60	2.41	2.68	2.84	2.94	3.02	3.08	3.14	3.18	3.22	3.26	3.29	3.32	3.35	3.37	3.40
70	2.40	2.67	2.82	2.92	3.00	3.06	3.12	3.16	3.20	3.24	3.27	3.30	3.32	3.35	3.37
80	2.39	2.66	2.80	2.91	2.98	3.05	3.10	3.14	3.18	3.22	3.25	3.28	3.30	3.33	3.35
90	2.38	2.65	2.79	2.89	2.97	3.03	3.08	3.13	3.17	3.20	3.23	3.26	3.29	3.31	3.33
100	2.38	2.64	2.79	2.89	2.96	3.02	3.07	3.12	3.16	3.19	3.22	3.25	3.27	3.30	3.32

Factor =  $t_{(n-1, 1-\alpha)} \sqrt{1 + T/n}$

Table 2. Factors for Obtaining One-Sided 99% Prediction Limits for k  
 Additional Samples Given a Background Sample of Size n

Previous n	Number of new measurements (k)														
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
4	10.01	10.16	10.30	10.43	10.55	10.67	10.79	10.90	11.00	11.11	11.21	11.30	11.40	11.49	
5	7.70	7.79	7.89	7.97	8.06	8.14	8.22	8.29	8.36	8.43	8.50	8.56	8.62	8.68	
6	6.51	6.58	6.65	6.72	6.79	6.85	6.90	6.96	7.02	7.07	7.12	7.17	7.21	7.26	
7	5.80	5.86	5.92	5.98	6.03	6.08	6.13	6.17	6.21	6.26	6.30	6.34	6.38	6.41	
8	5.34	5.39	5.44	5.49	5.53	5.57	5.61	5.65	5.69	5.73	5.76	5.80	5.83	5.86	
9	5.01	5.06	5.10	5.14	5.18	5.22	5.25	5.29	5.32	5.35	5.39	5.42	5.44	5.47	
10	4.77	4.81	4.85	4.89	4.92	4.96	4.99	5.02	5.05	5.08	5.11	5.14	5.16	5.19	
11	4.58	4.62	4.66	4.69	4.73	4.76	4.79	4.82	4.84	4.87	4.90	4.92	4.94	4.97	
12	4.44	4.47	4.51	4.64	4.57	4.60	4.63	4.65	4.68	4.71	4.73	4.75	4.77	4.80	
13	4.32	4.35	4.38	4.42	4.44	4.47	4.50	4.52	4.55	4.57	4.59	4.62	4.64	4.66	
14	4.22	4.25	4.28	4.31	4.34	4.37	4.39	4.42	4.44	4.46	4.48	4.50	4.52	4.54	
15	4.14	4.17	4.20	4.23	4.25	4.28	4.30	4.33	4.35	4.37	4.39	4.41	4.43	4.45	
16	4.07	4.10	4.13	4.15	4.18	4.20	4.23	4.25	4.27	4.29	4.31	4.33	4.35	4.37	
17	4.01	4.04	4.07	4.09	4.12	4.14	4.16	4.18	4.20	4.22	4.24	4.26	4.28	4.30	
18	3.96	3.99	4.01	4.04	4.06	4.08	4.11	4.13	4.15	4.17	4.18	4.20	4.22	4.24	
19	3.91	3.94	3.97	3.99	4.01	4.04	4.06	4.08	4.10	4.11	4.13	4.15	4.17	4.18	
20	3.87	3.90	3.92	3.95	3.97	3.99	4.01	4.03	4.05	4.07	4.09	4.10	4.12	4.14	
21	3.84	3.86	3.89	3.91	3.93	3.95	3.97	3.99	4.01	4.03	4.05	4.06	4.08	4.09	
22	3.80	3.83	3.85	3.88	3.90	3.92	3.94	3.96	3.98	3.99	4.01	4.03	4.04	4.06	
23	3.77	3.80	3.82	3.85	3.87	3.89	3.91	3.93	3.94	3.96	3.98	3.99	4.01	4.02	
24	3.75	3.77	3.80	3.82	3.84	3.86	3.88	3.90	3.92	3.93	3.95	3.96	3.98	3.99	
25	3.72	3.75	3.77	3.79	3.82	3.84	3.85	3.87	3.89	3.91	3.92	3.94	3.95	3.97	
26	3.70	3.73	3.75	3.77	3.79	3.81	3.83	3.85	3.87	3.88	3.90	3.91	3.93	3.94	
27	3.68	3.71	3.73	3.75	3.77	3.79	3.81	3.83	3.84	3.86	3.87	3.89	3.90	3.92	
28	3.66	3.69	3.71	3.73	3.75	3.77	3.79	3.81	3.82	3.84	3.85	3.87	3.88	3.90	
29	3.65	3.67	3.69	3.71	3.73	3.75	3.77	3.79	3.80	3.82	3.83	3.85	3.86	3.88	
30	3.63	3.66	3.68	3.70	3.72	3.74	3.75	3.77	3.79	3.80	3.82	3.83	3.85	3.86	
31	3.62	3.64	3.66	3.68	3.70	3.72	3.74	3.75	3.77	3.79	3.80	3.81	3.83	3.84	
32	3.60	3.63	3.65	3.67	3.69	3.71	3.72	3.74	3.76	3.77	3.79	3.80	3.81	3.83	
33	3.59	3.61	3.64	3.66	3.67	3.69	3.71	3.73	3.74	3.76	3.77	3.79	3.80	3.81	
34	3.58	3.60	3.62	3.64	3.66	3.68	3.70	3.71	3.73	3.74	3.76	3.77	3.78	3.80	
35	3.57	3.59	3.61	3.63	3.65	3.67	3.69	3.70	3.72	3.73	3.75	3.76	3.77	3.78	
36	3.56	3.58	3.60	3.62	3.64	3.66	3.67	3.69	3.71	3.72	3.73	3.75	3.76	3.77	
37	3.55	3.57	3.59	3.61	3.63	3.65	3.66	3.68	3.69	3.71	3.72	3.74	3.75	3.76	
38	3.54	3.56	3.58	3.60	3.62	3.64	3.65	3.67	3.68	3.70	3.71	3.73	3.74	3.75	
39	3.53	3.55	3.57	3.59	3.61	3.63	3.64	3.66	3.67	3.69	3.70	3.72	3.73	3.74	
40	3.52	3.54	3.56	3.58	3.60	3.62	3.63	3.65	3.67	3.68	3.69	3.71	3.72	3.73	
41	3.51	3.54	3.56	3.58	3.59	3.61	3.63	3.64	3.66	3.67	3.68	3.70	3.71	3.72	
42	3.51	3.53	3.55	3.57	3.59	3.60	3.62	3.63	3.65	3.66	3.68	3.69	3.70	3.71	
43	3.50	3.52	3.54	3.56	3.58	3.59	3.61	3.63	3.64	3.65	3.67	3.68	3.69	3.71	
44	3.49	3.51	3.53	3.56	3.57	3.59	3.60	3.62	3.63	3.65	3.66	3.67	3.69	3.70	
45	3.49	3.51	3.53	3.56	3.56	3.58	3.60	3.61	3.63	3.64	3.65	3.67	3.68	3.69	
46	3.48	3.50	3.52	3.54	3.56	3.57	3.59	3.61	3.62	3.63	3.65	3.66	3.67	3.68	
47	3.48	3.50	3.52	3.53	3.55	3.57	3.58	3.60	3.61	3.63	3.64	3.65	3.67	3.68	
48	3.47	3.49	3.51	3.53	3.55	3.56	3.58	3.59	3.61	3.62	3.63	3.65	3.66	3.67	
49	3.46	3.48	3.50	3.52	3.54	3.56	3.57	3.59	3.60	3.62	3.63	3.64	3.65	3.66	
50	3.46	3.48	3.50	3.52	3.53	3.55	3.57	3.58	3.60	3.61	3.62	3.64	3.65	3.66	
60	3.42	3.44	3.46	3.47	3.49	3.51	3.52	3.54	3.55	3.56	3.58	3.59	3.60	3.61	
70	3.39	3.41	3.43	3.45	3.46	3.48	3.49	3.51	3.52	3.53	3.54	3.56	3.57	3.58	
80	3.37	3.39	3.41	3.42	3.44	3.45	3.47	3.48	3.50	3.51	3.52	3.53	3.54	3.56	
90	3.35	3.37	3.39	3.41	3.42	3.44	3.45	3.47	3.48	3.49	3.50	3.51	3.53	3.54	
100	3.34	3.36	3.38	3.39	3.41	3.42	3.44	3.45	3.46	3.48	3.49	3.50	3.51	3.52	

Factor =  $t_{(n-1, 1-\alpha/k)} \sqrt{1 + 1/n}$

Table 3 Factors for Obtaining One-Sided 99% Prediction Limits for k Additional Samples Given a Background Sample of Size n

Previous n	Number of new measurements (k)														
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
4	11.57	11.98	12.34	12.66	12.95	13.22	13.47	13.70	13.91	14.11	14.31	14.49	14.66	14.82	14.98
6	8.74	9.01	9.25	9.46	9.65	9.83	9.99	10.14	10.29	10.42	10.64	10.66	10.77	10.88	10.98
6	7.30	7.51	7.68	7.84	7.99	8.12	8.24	8.35	8.46	8.55	8.65	8.73	8.82	8.90	8.97
7	6.45	6.61	6.76	6.89	7.00	7.11	7.20	7.29	7.38	7.46	7.53	7.60	7.67	7.73	7.79
8	5.89	6.03	6.15	6.26	6.36	6.45	6.53	6.61	6.68	6.74	6.81	6.87	6.92	6.97	7.02
9	5.50	5.62	5.73	5.82	5.91	5.99	6.06	6.13	6.19	6.25	6.30	6.35	6.40	6.45	6.49
10	5.21	5.32	5.42	5.50	5.58	5.65	5.72	5.77	5.83	5.88	5.93	5.98	6.02	6.06	6.10
11	4.99	5.09	5.18	5.26	5.33	5.39	5.45	5.51	5.56	5.60	5.65	5.69	5.73	5.77	5.80
12	4.82	4.91	4.99	5.07	5.13	5.19	5.25	5.30	5.34	5.39	5.43	5.47	5.50	5.54	5.57
13	4.68	4.77	4.84	4.91	4.97	5.03	5.08	5.13	5.17	5.21	5.25	5.28	5.32	5.35	5.38
14	4.56	4.65	4.72	4.78	4.84	4.89	4.94	4.99	5.03	5.07	5.10	5.14	5.17	5.20	5.23
15	4.46	4.54	4.61	4.68	4.73	4.78	4.83	4.87	4.91	4.95	4.98	5.01	5.04	5.07	5.10
16	4.38	4.46	4.53	4.59	4.64	4.69	4.73	4.77	4.81	4.84	4.88	4.91	4.94	4.96	4.99
17	4.31	4.39	4.45	4.51	4.56	4.61	4.65	4.69	4.72	4.76	4.79	4.82	4.85	4.87	4.90
18	4.25	4.32	4.39	4.44	4.49	4.54	4.58	4.61	4.65	4.68	4.71	4.74	4.77	4.79	4.82
19	4.20	4.27	4.33	4.38	4.43	4.47	4.51	4.55	4.58	4.61	4.64	4.67	4.70	4.72	4.75
20	4.15	4.22	4.28	4.33	4.38	4.42	4.46	4.49	4.53	4.56	4.59	4.61	4.64	4.66	4.68
21	4.11	4.18	4.23	4.28	4.33	4.37	4.41	4.44	4.48	4.50	4.53	4.56	4.58	4.61	4.63
22	4.07	4.14	4.19	4.24	4.29	4.33	4.36	4.40	4.43	4.46	4.49	4.51	4.54	4.56	4.58
23	4.04	4.10	4.16	4.21	4.25	4.29	4.32	4.36	4.39	4.42	4.44	4.47	4.49	4.51	4.54
24	4.01	4.07	4.12	4.17	4.21	4.25	4.29	4.32	4.35	4.38	4.41	4.43	4.45	4.48	4.50
25	3.98	4.04	4.09	4.14	4.18	4.22	4.26	4.29	4.32	4.35	4.37	4.40	4.42	4.44	4.46
26	3.95	4.01	4.07	4.11	4.16	4.19	4.23	4.26	4.29	4.31	4.34	4.36	4.39	4.41	4.43
27	3.93	3.99	4.04	4.09	4.13	4.17	4.20	4.23	4.26	4.29	4.31	4.33	4.36	4.38	4.40
28	3.91	3.97	4.02	4.06	4.11	4.14	4.17	4.21	4.23	4.26	4.28	4.31	4.33	4.35	4.37
29	3.89	3.95	4.00	4.04	4.08	4.12	4.15	4.18	4.21	4.24	4.26	4.28	4.30	4.32	4.34
30	3.87	3.93	3.98	4.02	4.06	4.10	4.13	4.16	4.19	4.21	4.24	4.26	4.28	4.30	4.32
31	3.85	3.91	3.96	4.00	4.04	4.08	4.11	4.14	4.17	4.19	4.22	4.24	4.26	4.28	4.30
32	3.84	3.90	3.94	3.99	4.03	4.06	4.09	4.12	4.15	4.17	4.20	4.22	4.24	4.26	4.28
33	3.82	3.88	3.93	3.97	4.01	4.04	4.08	4.10	4.13	4.16	4.18	4.20	4.22	4.24	4.26
34	3.81	3.87	3.91	3.96	3.99	4.03	4.06	4.09	4.11	4.14	4.16	4.18	4.20	4.22	4.24
35	3.80	3.85	3.90	3.94	3.98	4.01	4.04	4.07	4.10	4.12	4.15	4.17	4.19	4.21	4.22
36	3.79	3.84	3.89	3.93	3.97	4.00	4.03	4.06	4.08	4.11	4.13	4.15	4.17	4.19	4.21
37	3.77	3.83	3.88	3.92	3.95	3.99	4.02	4.04	4.07	4.09	4.12	4.14	4.16	4.18	4.19
38	3.76	3.82	3.86	3.90	3.94	3.97	4.00	4.03	4.06	4.08	4.10	4.12	4.14	4.16	4.18
39	3.75	3.81	3.85	3.89	3.93	3.96	3.99	4.02	4.05	4.07	4.09	4.11	4.13	4.15	4.17
40	3.74	3.80	3.84	3.88	3.92	3.95	3.98	4.01	4.03	4.06	4.08	4.10	4.12	4.14	4.15
41	3.73	3.79	3.83	3.87	3.91	3.94	3.97	4.00	4.02	4.05	4.07	4.09	4.11	4.12	4.14
42	3.73	3.78	3.82	3.86	3.90	3.93	3.96	3.99	4.01	4.04	4.06	4.08	4.10	4.11	4.13
43	3.72	3.77	3.82	3.85	3.89	3.92	3.95	3.98	4.00	4.03	4.05	4.07	4.09	4.10	4.12
44	3.71	3.76	3.81	3.85	3.88	3.91	3.94	3.97	3.99	4.02	4.04	4.06	4.08	4.09	4.11
45	3.70	3.75	3.80	3.84	3.87	3.91	3.93	3.96	3.98	4.01	4.03	4.05	4.07	4.08	4.10
46	3.70	3.75	3.79	3.83	3.87	3.90	3.93	3.95	3.98	4.00	4.02	4.04	4.06	4.08	4.09
47	3.69	3.74	3.78	3.82	3.80	3.89	3.92	3.94	3.97	3.99	4.01	4.03	4.05	4.07	4.08
48	3.68	3.73	3.78	3.82	3.86	3.88	3.91	3.94	3.96	3.98	4.00	4.02	4.04	4.06	4.07
49	3.68	3.73	3.77	3.81	3.84	3.88	3.90	3.93	3.95	3.98	4.00	4.02	4.03	4.05	4.07
50	3.67	3.72	3.76	3.80	5.84	3.87	3.90	3.92	3.95	3.97	3.99	4.01	4.03	4.04	4.06
60	3.62	3.67	3.71	3.75	3.78	3.81	3.84	3.87	3.89	3.91	3.93	3.95	3.97	3.98	4.00
70	3.59	3.64	3.68	3.72	3.75	3.78	3.80	3.83	3.85	3.87	3.89	3.91	3.93	3.94	3.96
80	3.57	3.61	3.65	3.69	3.72	3.76	3.78	3.80	3.82	3.84	3.86	3.88	3.89	3.91	3.93
90	3.55	3.59	3.63	3.67	5.70	3.73	3.75	3.78	3.80	3.82	3.84	3.85	3.87	3.89	3.90
100	3.53	3.58	3.62	3.65	3.68	3.71	3.74	3.76	3.78	3.80	3.82	3.84	3.85	3.87	3.88

Factor =  $t_{(n-1, 1-a/k)} \sqrt{1 + 1/n}$

**Attachment B-6, Table 1**  
**CID-RDF Area 4 Landfill**  
**Silurian Dolomite**  
**Intrawell Background Values (ug/L)**  
**December 2019**  
**Illinois EPA Log No. B-27R-M-91**

List G2	Concentration	G02D	R06D	R08D	G10D	G16D	G18D	G20D	R04D	G05D
	Limit									
Toluene	1000	6	6	6	6	6	6	6	1	6
Benzene	5	5	5	5	5	5	5	5	1	5
Ethylbenzene	700	7.2	7.2	7.2	7.2	7.2	7.2	7.2	1	7.2
Xylene (total)	10000	5	5	5	5	5	5	5	2	5
BTEX (total)	11705	23.2	23.2	23.2	23.2	23.2	23.2	23.2	3	23.2
p-dioxane	7.7	5	5	5	5	5	5	5	5	5
<b>List G3</b>										
Naphthalene	140	10	10	10	10	10	10	10	5	10
Acetone	6300	100	100	100	100	100	100	100	10	100
bis(2-ethylhexyl)phthalate	6	6	6	6	6	6	6	6	5	6
chlorobenzene	100	6	6	6	6	6	6	6	1	6
methylene chloride	5	5	5	5	5	5	5	5	1	5
<b>List G5</b>										
Barium, dissolved (ug/L)	--	84.8	43	53	346	36.8	26.4	216	316	1330
Chloride, dissolved (mg/L)	--	72.6	51.4	32.8	193	36.1	35.7	73.7	473.0	162.0
Chromium, dissolved (ug/L)	--	PQL	4	19						
Cobalt, dissolved (ug/L)	--	PQL	4	7						
Lead, dissolved (ug/L)	--	PQL	10	PQL						
Nickel, dissolved (ug/L)	--	PQL	10	151						
Zinc, dissolved (ug/L)	--	PQL	10	PQL						

Shaded value shall be evaluated in accordance with Condition II.1.4 of the Permit.

**Attachment B-6, Table 2**  
**CID-RDF Area 3 Landfill**  
**Silurian Dolomite**  
**Intrawell Background Values (ug/L)**  
**December 2019**  
**Illinois EPA Log No. B-27R-M-91**

List G2	Concentration	A12D	R15D	G21D	R107	AW01	R16D	R26D	R27D
	Limit								
Toluene	1000	6	6	6	6	6	6	6	6
Benzene	5	5	5	5	5	5	5	5	5
Ethylbenzene	700	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Xylene (total)	10000	5	5	5	5	5	5	5	5
BTEX (total)	11705	23.2	7	23.2	23.2	23.2	23.2	23.2	23.2
p-dioxane	7.7	5	5	5	5	3.6	5	5	5
<b>List G3</b>									
Naphthalene	140	10	10	10	10	10	10	10	10
Acetone	6300	100	100	100	100	100	100	100	100
bis(2-ethylhexyl)phthalate	6	6	6	6	6	6	6	6	6
chlorobenzene	100	6	6	6	6	6	6	6	6
methylene chloride	5	5	5	5	5	5	5	5	5
1,4-dichlorobenzene	75	2	2	2	2	2	2	2	2
vinyl chloride	2	2	2	2	2	2	2	2	2
<b>List G5</b>									
Chloride, dissolved (mg/L)	--	32.4	57.8	41.2	43.7	53	123.3	41.3	44.3

Shaded value shall be evaluated in accordance with Condition III.J.9 of the Permit.

**Attachment B-6, Table 3**  
**CID-RDF Area 4 Landfill**  
**Dolton Sand**  
**Intrawell Background Values (ug/L)**  
**December 2019**  
**Illinois EPA Log No. B-27R-M-91**

List G2	Concentration	G01S	G04S	G05S	G07S	G09S	G13S	R15S	R17S	G19S	G21S
	Limit										
Toluene	2500	6	6	6	6	6	6	6	6	6	6
Benzene	25	5	5	5	5	5	5	5	5	5	5
Ethylbenzene	1000	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Xylene (total)	10000	5	5	5	5	5	5	5	5	5	5
BTEX (total)	13525	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
p-dioxane	7.7	5	5	5	PQL	5	498	5	10.3	4.9	3588
<b>List G6</b>											
Arsenic, dissolved(ug/L)	--	PQL	PQL	PQL	NA	NA	PQL	PQL	NA	NA	84
Chromium, dissolved (ug/L)	--	PQL	70.90	PQL	NA	NA	PQL	PQL	NA	NA	11.7
Cobalt, dissolved (ug/L)	--	PQL	PQL	PQL	NA	NA	PQL	PQL	NA	NA	15.44
Vanadium,dissolved(ug/L)	--	PQL	PQL	PQL	NA	NA	PQL	PQL	NA	NA	16.4

Shaded value shall be evaluated in accordance with Condition II.1.4 of the Permit.

**Attachment B-6, Table 4**  
**CID-RDF Area 3 Landfill**  
**Dolton Sand**  
**Intrawell Background Values (ug/L)**  
**December 2019**  
**Illinois EPA Log No. B-27-M-91**

<b>List G2</b>	<b>Concentration Limit</b>	<b>G12S</b>	<b>R13S</b>	<b>G14S</b>	<b>G15S</b>	<b>G16S</b>
Toluene	2500	6	6	6	6	6
Benzene	25	5	5	5	5	5
Ethylbenzene	1000	7.2	7.2	7.2	7.2	7.2
Xylene (total)	10000	5	5	5	5	5
BTEX (total)	13525	23.2	23.2	23.2	23.2	23.2
p-dioxane	7.7	5	5	5	5	5

ATTACHMENT C  
ADDITIONAL SPECIAL CONDITIONS  
ILD010284248

ATTACHMENT C

ADDITIONAL SPECIAL CONDITIONS

A. Contingency Plan

1. Permittee shall respond to any emergency situation (fire, explosion or release of hazardous waste/hazardous constituents) in accordance with the contingency plan in the approved permit application, subject to the following modifications:
  - a. The emergency coordinator shall be immediately notified of any spill or release of hazardous waste or hazardous constituent, any fire, or any other emergency situation which occurs at the facility. This notification shall be made by the person observing the release, a co-worker or supervisor, or a security officer.
  - b. The emergency coordinator shall notify the appropriate local and state emergency response teams as necessary when their help is needed or when there is danger to the surrounding area during an imminent or actual emergency.
  - c. During an emergency, the emergency coordinator shall take all reasonable measures necessary to ensure fires, explosions, or releases do not occur, recur, or spread. These measures shall include stopping processes, stopping operation, collecting and containing waste, and removing and isolating containers.
  - d. The Permittee shall not handle incompatible waste in an area where there has been a spill or release of waste until the waste has been removed from the affected area in accordance with the approved contingency plan.
  - e. All wastewater generated during decontamination of the equipment used in responding to an emergency involving hazardous waste shall be managed as a hazardous waste.
2. The Permittee shall contact the local police and fire departments, the local hospitals, and the concerned emergency response teams annually to:
  - a. Review the agreements made with each entity,
  - b. Discuss any changes made to the facility or contingency plan.

Copies of all communications made during the annual review, including minutes and summaries of the meetings and telephone conversations shall be incorporated into the operating record for this facility.

B. Repository

1. The permittee shall maintain a repository at the Hegewisch Branch of the Chicago Public Library, located at 3048 East 130<sup>th</sup> Street, Chicago, Illinois. The following information shall be sent to the repository:
  - a. A copy of the approved RCRA Part B Renewal Permit.
  - b. All permit applications and permit modification requests.
  - c. All Illinois EPA responses to modification requests made to the RCRA Part B Renewal Permit (Log No. B-27R).

C. 39i Certification

The permittee shall submit a current 39(i) certification and supporting documentation with all applications for a permit.



ATTACHMENT D  
POST CLOSURE INSPECTION SCHEDULE  
&  
POST CLOSURE MAINTENANCE  
ILD010284248

## ATTACHMENT D

## Area 3 and Area 4 Post-Closure Inspections

Inspection Schedule

Post-closure inspections will be conducted quarterly during the first two years following closure certification, and semi-annually thereafter. Findings made during each inspection will be recorded on the post-closure inspection log. Copies of all inspection logs will be kept at CID RDF or a local Waste Management, Inc., office or storage facility. Documentation of all repairs performed or replacements required to properly maintain the site will be kept with the inspection logs. General post-closure inspection procedures will include the following:

1. Visually inspect the perimeter fence and all gates. Check for fence integrity and note any areas of damage. Note the working condition of each gate, and check to ensure that all locks and other security systems are in place and functioning.
2. Visually inspect each benchmark. Report any missing benchmarks, and note any damage to the benchmarks.
3. Visually inspect the landfill cover, drainage system, and surrounding areas. Note any evidence of cover erosion, settling, or vegetative stress. Also note any unusual conditions such as odors, ponded water, or bubbling. Report any areas requiring further inspection or repairs so arrangements can be made to efficiently make all necessary repairs.
4. Visually inspect each leachate collection riser and note any damage. Check and record the liquid level in each riser. If the liquid level is found to be approaching or above the maximum acceptable level, make arrangements for leachate removal.
5. Check the secondary leachate detection system in Area 4 for the presence of liquids. Make arrangements for leachate removal if liquid is detected. Record the amount withdrawn, if applicable.
6. Visually inspect each groundwater well protective casing for damage. Check the protective casing and lock to ensure they are functioning and have not been tampered with. Note area around wells for erosion, settling or negative stress.
7. Visually inspect any required safety and emergency equipment. Report missing and/or damaged equipment.

8. Visually inspect the run-on and run-off control measures. Note any erosion, missing riprap, or other disrepair.
9. Visually inspect the various end-use structures/facilities. Note any areas requiring repair or replacement. For any areas proposed for public access, any deficiencies that could potentially pose a threat to the public will be communicated immediately to the appropriate WMI personnel responsible for managing public access requests.

Following each inspection, a copy of the inspection log will be sent to the appropriate WMI personnel for review. Arrangements will also be made to repair or replace any items in order to maintain the site at a condition equal to that in the application.

### Area 3 and Area 4 Post-Closure Maintenance

#### Post-Closure Maintenance

Maintenance activities will respond to the needs determined from the inspections. Items that may require repair include:

- Inoperative security control devices;
- slopes damaged by erosion;
- areas of differential settlement, subsidence and displacement;
- run-on and run-off control structures;
- leachate and gas collection and removal systems; and
- damaged or unsafe public access ways of facilities.

Groundwater monitoring wells will be repaired or replaced as needed, and will be decommissioned upon Agency approval.

The final cover system will be mowed at least annually and fertilized as needed (except for areas where shrubbery or other structures are present).

Corrective action for the cover materials will be taken if the following problems occur:

- ponding;
- cracks greater than one inch wide;
- gas problems;
- odor problems;
- larger areas of dead or stressed vegetation (areas greater than 50 square feet);
- vegetation with taproots growing in areas not designed to accommodate such;
- vector problems
- leachate popouts or seeps; or
- erosion to public access ways

Corrective action measures for these types of problems could include regrading, addition of soils to repair cracks or to eliminate ponding, or re-seeding to re-establish vegetation.

ATTACHMENT E

ORIGINAL APPROVED PERMIT APPLICATION IDENTIFICATION

ILD010284248

ATTACHMENT E  
IDENTIFICATION OF APPROVED PERMIT APPLICATION

1. RCRA Part B Permit Renewal Application dated October 3, 1997
2. Additional Information dated June 9, 1999
3. Additional Information dated August 11, 1999
4. Additional Information dated September 29, 1999
5. Additional Information dated December 1, 1999
6. Additional Information dated March 6, 2000
7. Additional Information (2- submittals) dated May 15, 2000
8. Additional Information dated June 27, 2000
9. Additional Information dated June 30, 2000
10. Additional Information dated May 8, 2002
11. Additional Information dated January 10, 2003
12. Additional Information dated September 12, 2003
13. Additional Information dated October 14, 2003
14. Additional Information dated July 1, 2004
15. Additional Information dated December 13, 2004
16. Additional Information dated March 14, 2005
17. Additional Information dated May 5, 2005
18. Additional Information dated June 2, 2005
19. Additional Information dated October 14, 2005
20. Additional Information dated November 15, 2005

21. Additional Information dated December 8, 2005
22. Additional Information dated January 31, 2006
23. Additional Information dated February 15, 2006
24. Additional Information dated February 22, 2006
25. Additional Information dated February 23, 2006
26. Additional Information dated May 15, 2006
27. Additional Information dated January 22, 2007
28. Additional Information dated May 14, 2007
29. Additional Information dated February 26, 2008
30. B-27R-M-1, Class 1\* permit modification dated September 13, 2008
31. B-27R-M-2, Class 1\* permit modification dated December 2, 2008
32. B-27R-M-3, Class 1\* permit modification dated January 13, 2009
33. B-27R-M-4, Class 1\* permit modification dated February 13, 2009
34. B-27R-M-5, Class 1\* permit modification dated June 5, 2009, June 12, 2009, June 26, 2009 and August 27, 2009.
35. B-27R-M-7, Class 3 permit modification dated August 12, 2009.
36. B-27R-M-8, Class 3 permit modification dated September 15, 2009 and October 6, 2009.
37. B-27R-M-11, Class 1 permit modification dated December 11, 2009.
38. B-27R-M-10, Class 1\* permit modification dated October 26, 2009 and January 14, 2010.
39. B-27R-M-12, Class 1\* permit modification dated October 26, 2009 and January 8, 2010.
40. B-27R-M-13, Class 1\* permit modification dated February 17, 2010, March 10, 2010 and March 26, 2010.

41. B-27R-M-15, Class 1\* permit modification dated March 4, 2010.
42. B-27R-M-16, Class 1\* permit modification dated March 19, 2010.
43. B-27R-M-14, Class 1\* permit modification dated February 10, 2010.
44. B-27R-M-17 and 19, Class 1\* permit modification dated May 20, 2010, June 8, 2010 and June 25, 2010.
45. B-27R-M-20, Class 1\* permit modification dated June 24, 2010.
46. B-27R-M-18, Class 1\* permit modification dated May 26, 2010.
47. B-27R-M-22, Class 1\* permit modification dated September 30, 2010.
48. B-27R-M-23, Class 1\* permit modification dated October 11, 2010 (Partial approval).
49. B-27R-M-26, Class 1\* permit modification dated March 3, 2011.
50. B-27R-M-27, Class 1 permit modification dated March 3, 2011.
51. B-27R-M-28, Class 1\* permit modification dated March 15, 2011.
52. B-27R-M-29, Class 1\* permit modification dated June 3, 2011.
53. B-27R-M-30, Class 1\* permit modification dated July 14, 2011.
54. B-27R-M-25, Class 1\* permit modification dated December 29, 2010 and July 14, 2011.
55. B-27R-M-31 and 32, Class 2 permit modifications dated August 9, 2011.
56. B-27R-M-35, Class 1\* permit modification dated December 2, 2011.
57. B-27R-M-36&37, Class I permit modification dated March 8, 2012 & April 4, 2012.
58. B-27R-M-38, Class 1\* permit modification dated May 2, 2012.
59. B-27R-M-39, Class 1\* permit modification dated May 4, 2012.
60. B-27R-M-40, Class 1\* permit modification dated August 16, 2012.
61. B-27R-M-41, Class I permit modification dated September 12, 2012.

62. B-27R-M-23; M-42, Class I\* permit modification dated October 11, 2010, February 24, 2011, and September 19, 2012.
63. B-27R-M-45; Class I\* permit modification dated December 21, 2012 and addendum dated March 26, 2013.
64. B-27R-M-46; Class I\* permit modification dated March 21, 2013.
65. B-27R-M-47; Class 2 permit modification dated May 24, 2013 and additional information dated July 30, 2013.
66. B-27R-M-48; M-49; Class I\* permit modification dated June 13, 2013. (Only approved portions as referenced in IEPA's approval letter for this modification request)
67. B-27R-M-50; Class I\* permit modification dated July 9, 2013. (Only approved portions as referenced in IEPA's approval letter for this modification request)
68. B-27R-M-51; Class I\* permit modification dated October 31, 2013, addendum dated November 20, 2013 and December 6, 2013.
69. B-27R-M-52; Class I\* permit modification dated November 19, 2013 and additional information dated November 25, 2013. (Only approved portions as referenced in IEPA's approval letter for this modification request)
70. B-27R-M-53; Class I permit modification dated December 9, 2013.
71. B-27R-M-54; Class I\* permit modification dated December 9, 2013 and additional information dated February 3, 2014.
72. B-27R-M-55; Class I\* permit modification dated January 30, 2014; additional information dated February 13, 2014; and additional information dated March 5, 2014.
73. B-27R-M-24; Class 3 permit modification dated December 2, 2010; revised submittal August 9, 2011.
74. B-27R-M-33; Class 3 permit modification dated August 9, 2011; additional information March 22, 2012; additional information dated February 13, 2014.
75. B-27R-M-56; Class I\* permit modification dated February 21, 2014.
76. B-27R-M-57; Class I\* permit modification dated March 11, 2014.

77. B-27R-M-58; Class I\* permit modification dated May 15, 2014; additional information dated June 20, 2014.
78. B-27R-M-59; Class I\* permit modification dated June 4, 2014. (Only approved portions as referenced in IEPA's approval letter for this modification request)
79. B-27R-M-60; Class I permit modification dated June 4, 2014.
80. B-27R-M-61; Class I\* permit modification dated July 21, 2014.
81. B-27R-M-62; Class I\* permit modification dated September 18, 2014.
82. B-27R-M-63; Class I\* permit modification dated October 16, 2014.
83. B-27R-M-64; Class I\* permit modification dated October 2, 2014; additional information dated December 4, 2014.
84. B-27R-M-65; Class 2 modification dated November 26, 2014. (Only approved portions as referenced in IEPA's approval letter for this modification request)
85. B-27R-M-66; Class I\* permit modification dated November 26, 2014.
86. B-27R-M-67; Class 2 Modification dated March 4, 2015. (Only approved portions as referenced in IEPA's approval letter for this modification request)
87. B-27R-M-68; Class I\* permit modification dated May 12, 2015. (Only approved portions as referenced in IEPA's approval letter for this modification request)
88. B-27R-M-69; Class I\* permit modification dated May 21, 2015. (Only approved portions as referenced in IEPA's approval letter for this modification request)
89. B-27R-M-70; Class I\* permit modification dated June 18, 2015. (Only approved portions as referenced in IEPA's approval letter for this modification request)
90. B-27R-M-71; Class I\* permit modification dated August 25, 2015
91. B-27R-M-72; Class I\* permit modification dated October 1, 2015.
92. B-27R-M-73; Class I\* permit modification dated November 11, 2015.
93. B-27R-M-74; Class I\* permit modification dated November 24, 2015.

94. B-27R-M-75; Class I\* permit modification dated December 15, 2015.
95. B-27R-M-76; Class I\* permit modification dated April 12, 2016; additional information dated July 20, 2016.
96. B-27R-M-77; Class I permit modification dated June 14, 2016.
97. B-27R-M-78; Class I\* permit modification dated May 26, 2016; additional information dated September 29, 2016; additional information dated May 18, 2017.
98. B-27R-M-79; Class I\* permit modification dated September 20, 2016. (Only approved portions as referenced in IEPA's approval letter for this modification request)
99. B-27R-M-80; Class I\* permit modification dated November 15, 2016.
100. B-27R-M-81; Class I permit modification dated December 20, 2016.
101. B-27R-M-82; Class I\* permit modification dated May 12, 2017. (Only approved portions as referenced in IEPA's approval letter for this modification request)
102. B-27R-M-83; Portions of Class I\* permit modification dated November 2, 2017.
  - a. Proposed revised intrawell values for p-dioxane and dissolved chloride at well R04D are rejected. Groundwater in the vicinity of this monitoring well has been impacted by a release from Area 1 and groundwater corrective action is required by July 16, 2012 (Log Nos. B-27R-CA-3 and 5), December 18, 2012 (Log No. B-27R-CA- 6), and October 29, 2013 Illinois EPA letters (Log No. B-27R-CA-7).
  - b. Revised intrawell background values for the following parameters at monitoring well R04D can be approved at this time: toluene, benzene, ethylbenzene, xylene, total BTEX, naphthalene, acetone, bis(2-ethylhexyl)phthalate, chlorobenzene, methylene chloride, dissolved lead, dissolved barium, dissolved chromium, dissolved cobalt, dissolved nickel, and dissolved zinc.
103. B-27R-M-84; Class I\* permit modification dated November 13, 2017.
104. B-27R-M-85; Class I\* permit modification dated March 6, 2018; additional information dated May 14, 2018.
105. B-27R-M-86; Class I\* permit modification dated September 12, 2018; additional information dated September 26, 2018 and November 7, 2018.

106. B-27R-M-88; Class I\* permit modification dated November 7, 2018; addendum dated November 28, 2018.

107. B-27R-M-89; Class I\* permit modification dated November 14, 2018.

108. B-27R-M-90; Class I\* permit modification dated March 26, 2019; addendum dated April 5, 2019.

109. B-27R-M-91; Class I\* permit modification dated May 17, 2019.

Did not approve the following:

1. Revised intrawell background values for wells G04S, G05S, G13S, R15S, G21S, R04D, G05D, R06D, and G20D.
2. Revised intrawell background value for benzene in Well R15D.
3. Revised intrawell background values for dissolved chloride at well AW01 and dissolved barium at well G18D.

110. B-27R-M-92; Class I\* permit modification dated May 17, 2019.

111. B-27R-M-93; Class I permit modification dated June 26, 2019.

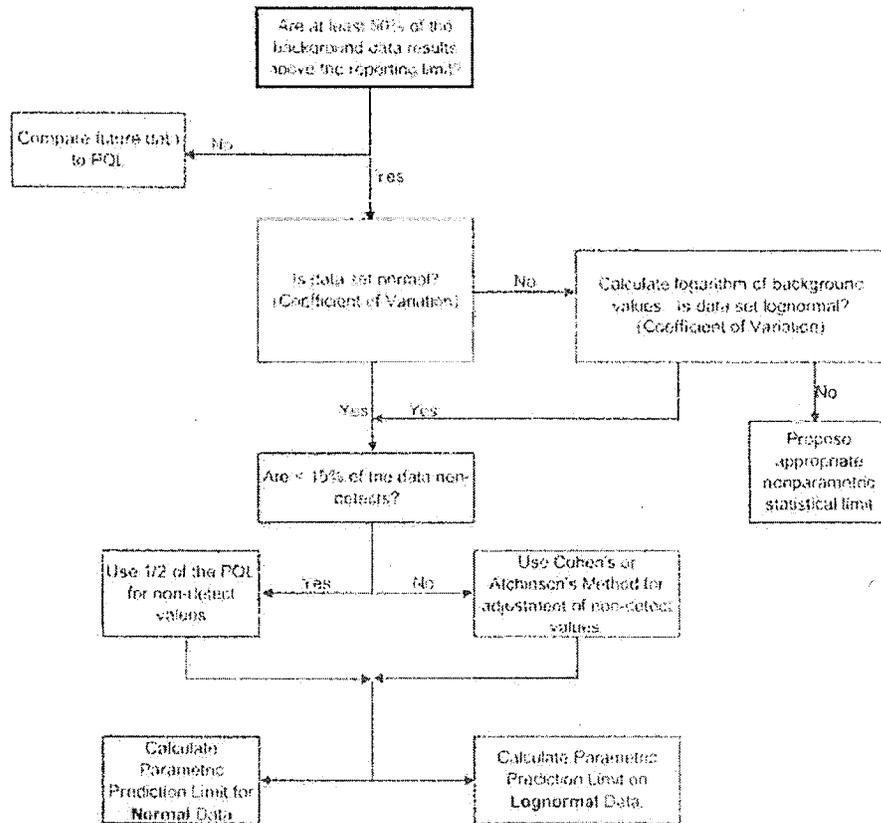
112. B-27R-M-94; Class I\* permit modification dated June 26, 2019.

113. B.27R-M-95; Class I\* permit modification dated July 24, 2019; additional information dated September 6, 2019.

114. B-27R-M-96; Class I\* permit modification dated November 27, 2019; additional information dated February 3, 2020.

ATTACHMENT F  
STATISTICAL PROCEDURES FLOW CHART  
ILD010284248

**CID Recycling and Disposal Facility  
Background Statistical Calculations  
Flow Chart**



**ATTACHMENT G**

**OVERVIEW OF RCRA CORRECTIVE ACTION ACTIVITIES  
AT CID RECYCLING AND DISPOSAL**

**ILD 010284248**

**ATTACHMENT G****Overview of RCRA Corrective Action Activities at  
CID Recycling and Disposal****1.0 INTRODUCTION**

This attachment documents the history of RCRA Corrective Action Activities completed to date at the Waste Management of Illinois, Inc. (WMII), CID Recycling and Disposal (CID) facility located in portions of Burnham, Calumet City and Chicago in Cook County.

**2.0 CORRECTIVE ACTION ACTIVITIES AT FACILITY**

WMII performed corrective action activities with oversight from the USEPA. As part of the RCRA corrective action program, WMII conducted corrective measures to prevent releases that may occur to the Dolton Sand Layer adjacent to the closed landfills referred to as Areas 1 and 2. The USEPA and IEPA have determined that corrective measures are complete. Continued monitoring of the groundwater, landfill gas management system, leachate management system and final cover for Areas 1 and 2 will be required.

Corrective measures for the Dolton Sand included construction of a slurry wall along the boundaries of Area 1 and 2. Additional corrective measures at Areas 1 and 2 included: (1) installation of a leachate collection system inside the slurry wall; (2) upgrading the Landfill Gas Removal System; and (3) repair, regrading, reseeding and maintenance of the final cover for Areas 1 and 2.

Para-dioxane has been detected in the shallow and deep groundwater present between the Area 1 and 4 landfills. A plan to investigate this contamination in the shallow groundwater, which included soil investigations, groundwater investigation, and an evaluation of the construction/operation details of the Area 1 and Area 4 landfills, was approved by IEPA on January 19, 2010 (B-27R-CA-1). On July 16, 2010, CID submitted the results of that investigation. In a letter from Illinois EPA, dated January 20, 2011 (B-27R-CA-2), IEPA concurred with CID that the source of the p-dioxane is Area 1 and required CID to submit a RCRA Facility Investigation (RFI) work plan and a Current Conditions Report (CCR) for Area 1. On April 18, 2011, CID submitted their RFI and CCR to the IEPA. IEPA conditionally approved the work plan and CCR on June 21, 2011 (B-27R-CA-3). Following investigation activities, a January 2012 investigation report was conditionally approved by IEPA on July 16, 2012 (B-27R-CA-3 and 5). A Basis of Design Report was submitted by the facility on October 12, 2012 and the report was conditionally approved by IEPA on December 18, 2012 (B-27R-CA-6). A Final Design Report was submitted by the facility on March 18, 2013, and the report was conditionally approved by IEPA on October 28, 2013 (B-27R-CA-7). Installation of the approved corrective measures began in the spring of 2014.

### 3.0 DESCRIPTION OF CLOSED HAZARDOUS WASTE MANAGEMENT UNITS

The following is a list of former hazardous waste management units at the facility (and thus solid waste management), which have been clean closed in accordance with plans approved by Illinois EPA and which need no further action.

1. Pug Mill (T04) - This unit was used between 1980 and February 1987 for acid neutralization and solidification of liquid hazardous wastes. Illinois EPA approved certification of closure for the Pug Mill on March 27, 1992 (Illinois EPA Log No. C-317).
2. Drum Tipping Unit - This unit was a hydraulically operated table-like unit housed in a small roofed structure, which transferred liquid waste from drums into bulk containers for subsequent treatment, processing or disposal. Illinois EPA approved certification of closure for the Drum Tipping Unit on June 8, 1989 (Illinois EPA Log No. C-317-M-1).
3. Surface Impoundments – These units were operated for storage of acidic, metal-bearing waste prior to treatment. They were referred to as the ‘North Pond’, the ‘South Pond’, the ‘East Pond’, and the ‘West Pond’. These units were closed in accordance with a plan approved by Illinois EPA (Log No. C-317 and associated modifications). Certification of closure of these units was accepted by Illinois EPA on August 24, 2005 (Log No. C-317).
4. Dewatering Plant – Certified closed on July 29, 1991. IEPA acknowledged closure of this on December 7, 1999 (Log No B-27-M-73, 81, 83) by removing the tanks associated with this plant from the facility’s RCRA Permit.
5. Drum Storage Building – Certified closed on June 14, 1995 (IEPA Log No. B-27-M-54).
6. Stabilization Facility – Certified closed on December 7, 1999 (IEPA Log No. B-27-M-73).
7. Container Storage Area – Certified closed January 13, 2005 (IEPA Log No. PS04-169).



ATTACHMENT H  
CONSTRUCTION CERTIFICATION  
ILD010284248

**ATTACHMENT H**  
**Construction Certification**

This statement is to be completed by both the responsible officer and the registered professional engineer upon completion of construction in accordance with 35 Ill. Adm. Code Section 702.126. Submit one copy of the certification with original signatures and two additional copies. Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Agency  
Bureau of Land #33  
Permit Section  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276

FACILITY NAME: CID Recycling and Disposal Facility

IEPA's SITE CODE: LPC #0310390001

U.S. EPA ID NO.: ILD010284248

PART B PERMIT LOG #27R

PERMIT (OR MODIFICATION) ISSUANCE DATE:

PERMIT CONDITION NO. REQUIRING CERTIFICATION:

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

\_\_\_\_\_  
Signature of Owner/Operator

Name and Title

\_\_\_\_\_  
Signature of Registered P.E.

Name of Registered P.E. and  
Illinois Registration Number

Date

(P.E. SEAL)

ATTACHMENT I

APPROVED REDUCED LISTS FOR APPENDIX I PARAMETERS

LEACHATE SAMPLING POINTS

L311, L312, L313, L331

ILD010284248

## Reduced Appendix I Sampling List (LEACHATE) for Calendar Year 2019, 2020, and 2021

L311		L311 Continued		L331	
Storet	Parameter	Storet	Parameter	Storet	Parameter
00720	Cyanide	78113	Ethylbenzene	00720	Cyanide
00745	Sulfide	78133	4-Methyl-2-pentanone	00745	Sulfide
01002	Arsenic	81302	Dibenzofuran	01002	Arsenic
01007	Barium	81551	Xylenes (total)	01007	Barium
01027	Cadmium	81552	Acetone	01027	Cadmium
01034	Chromium	81582	1,4-Dioxane	01034	Chromium
01037	Cobalt	81595	2-Butanone (MEK)	01037	Cobalt
01042	Copper			01042	Copper
01067	Nickel		<b>L312</b>	01051	Lead
01087	Vanadium	01007	Barium	01067	Nickel
01092	Zinc	01034	Chromium	01087	Vanadium
01097	Antimony	01037	Cobalt	01092	Zinc
01102	Tin	01042	Copper	01147	Selenium
34010	Toluene	01067	Nickel	34010	Toluene
34030	Benzene	01087	Vanadium	34030	Benzene
34205	Acenaphthene	01092	Zinc	34301	Chlorobenzene
34220	Anthracene	39310	4,4'-DDD	34408	Isophorone
34301	Chlorobenzene	39782	gamma-BHC(Lindane)	34423	Methylene Chloride
34381	Fluorene	81582	1,4-Dioxane	34496	1,1-Dichloroethane
34408	Isophorone			34586	2-Chlorophenol
34423	Methylene Chloride		<b>L313</b>	34591	2-Nitrophenol
34461	Phenanthrene	00720	Cyanide	34601	2,4-Dichlorophenol
34571	1,4-Dichlorobenzene	00745	Sulfide	34606	2,4-Dimethylphenol
34606	2,4-Dimethylphenol	01002	Arsenic	34621	2,4,6-Trichlorophenol
34626	2,6-Dinitrotoluene	01007	Barium	34646	4-Nitrophenol
34671	Aroclor 1016	01027	Cadmium	34694	Phenol
34694	Phenol	01034	Chromium	34696	Naphthalene
34696	Naphthalene	01037	Cobalt	39310	4,4'-DDD
39300	4,4'-DDT	01042	Copper	39730	2,4-D
39310	4,4'-DDD	01051	Lead	39782	gamma-BHC(Lindane)
39337	Alpha-BHC	01067	Nickel	46323	Delta-BHC
39480	Methoxychlor	01087	Vanadium	73501	2-Acetylaminofluorene
39492	Aroclor 1232	01092	Zinc	77033	Isobutyl alcohol
39496	Aroclor 1242	01102	Tin	77041	Carbon disulfide
39760	2,4,5-TP (Silvex)	34010	Toluene	77045	Pyridine
39782	gamma-BHC (Lindane)	34030	Benzene	77089	ANILINE
46323	Delta-BHC	34220	Anthracene	77146	4-Methylphenol (p-cresol)
77033	Isobutyl alcohol	34301	Chlorobenzene	77147	Benzyl alcohol
77041	Carbon disulfide	34606	2,4-Dimethylphenol	77151	3-Methylphenol (m-cresol)
77089	ANILINE	39782	Gamma-BHC(Lindane)	77152	2-Methylphenol (o-cresol)
77146	4-Methylphenol (p-cresol)	46323	Delta-BHC	78133	4-Methyl-2-pentanone
77147	Benzyl alcohol	77089	ANILINE	81551	Xylenes (total)
77151	3-Methylphenol (m-cresol)	78113	Ethylbenzene	81552	Acetone
77152	2-Methylphenol (o-cresol)	81551	Xylenes (total)	81553	Acetophenone
77416	2-Methylnaphthalene	81582	1,4-Dioxane	81582	1,4-Dioxane
				81595	2-Butanone (MEK)

ATTACHMENT J

SITE LAYOUT MAP

ILD010284248

