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Gainesville, FL 32606

Phone: 352.376.6533
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November 17, 2013

Mr. David Read
Dept. of Environmental Protection
Office of Permitting and Compliance
Division of Air Resources Management
2600 Blairstone Road
Tallahassee, FL 32399

RE: RAI - Response
Project No. 0230047-004-AV
Winfield Solid Waste Facility

Dear Mr. Read

We are hereby providing the response to the request for additional information dated October 21, 2013.

1. Part C. Facility Additional Information: Facility plot plans of the Columbia County Central Landfill and the Winfield Solid Waste Facility were not included with the application. Please provide a current plot plan for the facility, including the Winfield expansion. The applicant states "See Appendix" but the appendix was not attached to the submitted application.

Response: The facility plot plan for the closed landfill, Winfield and an aerial map showing both is attached.

2. Part C. Facility Additional Information: Process Flow Diagram of the Columbia County Central Landfill and the Winfield Solid Waste Facility were not included with the application. The applicant states "See Appendix" but the appendix was not attached to the submitted application.

Response: We do not know what is meant by a flow diagram. Obviously landfills are not normal production facility or Power plants and have no Flow Diagrams. The location of each Cell is shown in attached.

3. Part C. Facility Additional Information: The list of insignificant activities was not provided with the application. The applicant states "See Appendix" but the appendix was not attached to the submitted application.

Response: Insignificant activities include, on road trucks bringing waste to the facility and off road equipment used to compact and cover the waste. We have no list of Trucks as it varies from a pickup truck to waste collection vehicles. List of off road equipment is attached. Appendix 5

4. Part C. Facility Additional Information: The applicant did not identify applicable requirements but merely states "See Appendix" but the appendix was not attached to the submitted application.

Response: The list of applicable requirements is presented in Appendix 6

5. The emission calculations provided with the application indicates the Columbia County Central Landfill is closed, with a closure date of 1993. The application also indicated the Winfield Solid Waste Facility has a projected closure date of 2013, is this correct? If the information provided is inaccurate, provide the department with the total design capacity of the Winfield Solid Waste Facility along with the long term projected total landfill gas (i.e. the point in which the gas generation rate starts to decline), long term projected methane rate (mg/year), long term projected NMOC rate (Mg/year), and long term projected carbon dioxide rate (mg/yr.).

Response: the Old closed landfill has been closed since 1993 and gas monitoring has consistently been ZERO. The current Cell at the Winfield is reaching its capacity and must be expanded laterally, so we can add more waste to the existing Cell 3, Simple geometry. Cell 4 is under construction and will accept waste shortly, once the Solid waste section issues the authorization. It will take 12- 15 years to fill cell 4 at the current waste volume. The emission calculations have been updated to reflect Methane, NMOC, CO2 and other pollutants based on correct landfill dates (see attached calculations). The updated dates and emission rates have also been corrected in the application form (see revised application pages). The landfill capacities are unchanged from those previously submitted.

6. Are there any gas collection wells and/or flares located at the facility? Please provide information on these or any other current emission sources at the facility.

Response: The old closed landfill does have gas Vents and all reading have been consistently Zero. Attached is the last year report. The Winfield facility will not have any gas collection or Emission for another 20 years, once the cells 1, 2, 3 are at capacity and are closed. No flares are located at either facility.

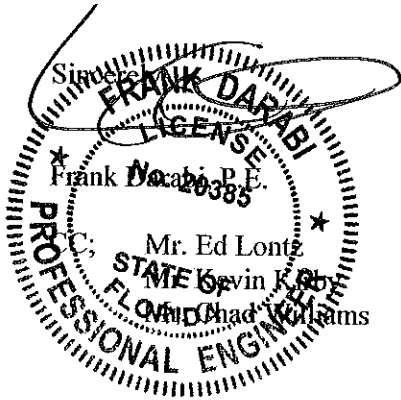
7. Major Source PSD Threshold and Potential to Emit: Based on information provided in the application, the volatile organic compounds are 431.49 tons per year and the hazardous air pollutants are 13.7 tons per year. Are the numbers provided in the application actual or fugitive emissions? Based on the additional information provided in response to this request for additional information (gas collection system/flares), if the emissions are actual emissions then the project will be subject to PSD preconstruction review. Please identify any new/revised emissions increases which occur with the Winfield expansion and new facility-wide potential emissions.

Response: Based on the updated calculations, with the corrected landfill dates, the maximum peak emissions from the combined landfills are estimated to be a maximum of 225 tpy on NMOC and 6.9 tpy of total HAP.s. These projected emission levels are well below the major PSD thresholds.

8. Columbia County Central Landfill is currently permitted for an air curtain incinerator which was not identified on the application. Is this emission source currently located at the facility and/or wish to remain permitted?

Response: The portable Air Curtain is located at the Public Works Department 10 miles away. There plans to may be use it at landfills occasionally, but that has never been necessary.

We trust the additional information provide will allow the processing of this application. Should you have any question or concerns please contact Frank Darabi, P.E @ 352-376-6533.



**Winfield Facility- Columbia County
Response to RAI**

Figure 1

- 1. Winfield and Closed Landfill Locations**
- 2. Closed Landfill Gas Vent Locations**
- 3. Closed landfill Gas vents profile**
- 4. Winfield Cell Lay out**



Columbia County
Class I Landfill

Columbia County
Class III Landfill

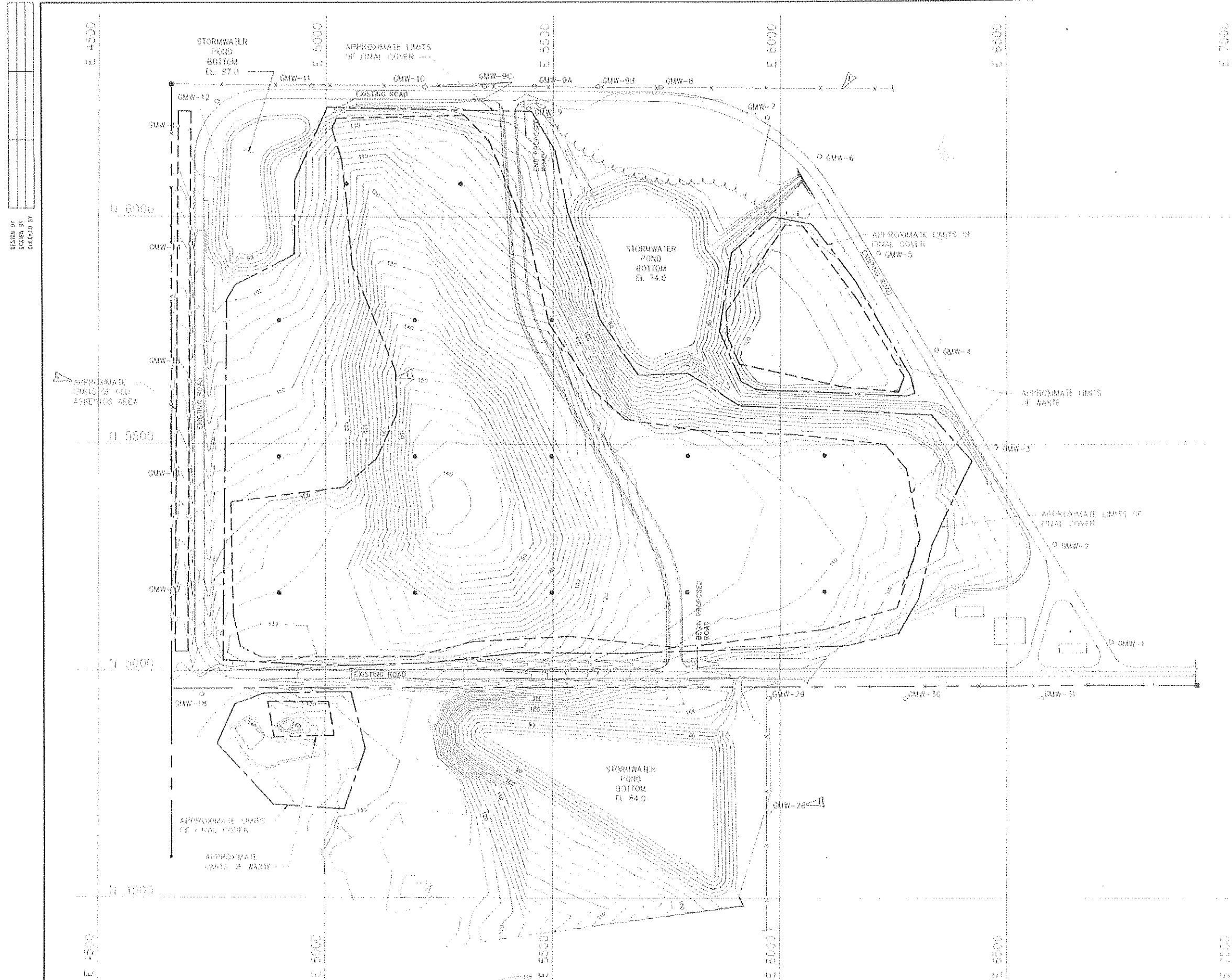
Winfield Class I
Landfill

Winfield Class III
Landfill



Figure 1, Site Plan

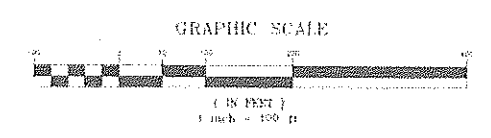




LEGEND

- GMW-1 GAS MONITORING WELL
- GAS VENT
- BASE LINE
- PROPOSED CONTOURS
- TREE LINE
- ROAD
- ▭ EXISTING BUILDINGS
- LIMITS OF FINAL COVER
- LIMITS OF WASTE
- PLACE

NOTE: EXISTING ROADWAY WILL NOT BE MOVED



DESIGN BY: []
CHECKED BY: []

DESIGNED	S.R.	APPROVED	[Signature]
DRAWN	B.W.	DATE	4/2/91
CHECKED	S.R.	BY	APPROVED
DATE	REVISIONS	BY	APPROVED

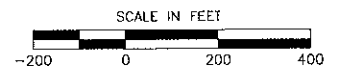
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 730 North Waldo Road Suite A • Gainesville, Florida 32601 • (904) 376-6533

**COLUMBIA COUNTY CENTRAL LANDFILL
 CLOSURE PLAN**

**FINAL GRADING PLAN
 AND GAS VENT LOCATIONS**

DATE	PROJECT NO.
FEB 1991	04100-564-01
SCALE	DATE
1"=100'	9 OF 15

APR 24 1991

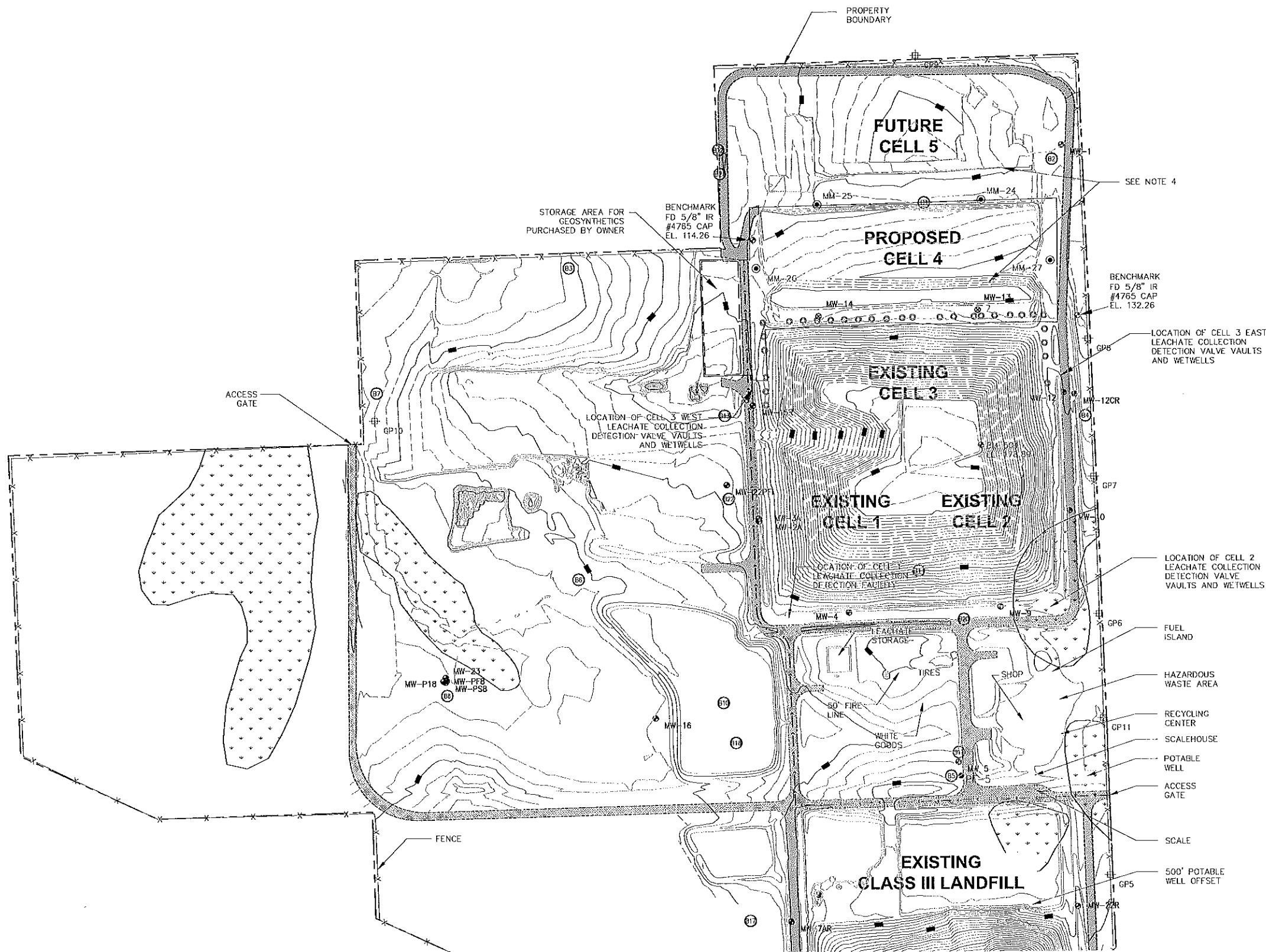


LEGEND

- PROPERTY BOUNDARY
- WETLAND LIMITS
- EXISTING ASPHALT PAVEMENT
- EXISTING LIMEROCK ROAD
- CELL LIMITS
- EXISTING CONTOURS
- EXISTING FENCE LINE
- LIMITS OF CONSTRUCTION
- CONSTRUCTION TRAFFIC ROUTE
- MW-#
EXISTING GROUNDWATER MONITORING WELLS
- BORING LOCATIONS
- GP#
GAS PIPE LOCATION
- PF-5
PIEZOMETER NEST
- BENCHMARK
- MW-#
PROPOSED GROUNDWATER MONITORING WELLS
- MW-#
GROUNDWATER MONITORING WELLS TO BE ABANDONED BY OTHERS
- CELL 3 LINER MARKERS

NOTES:

1. EXISTING TOPOGRAPHY OBTAINED FROM GROUND SURVEYS PERFORMED BY DELTA SURVEY DATED JANUARY 3, 2012.
2. PROPOSED MONITORING WELLS ARE TO BE INSTALLED WHEN CELL 4 IS CONSTRUCTED. (NOT IN THIS CONTRACT)
3. EXISTING GRADES WITHIN CELLS 4 AND 5 ARE NOT CURRENT. CELL 4 BASE GRADES AND AN INFILTRATION POND IN CELL 5 HAVE BEEN CONSTRUCTED AS SHOWN IN SHEET C-02.
4. EXISTING CELL 3 LINER MARKERS OBTAINED FROM GROUND SURVEY PERFORMED BY DELTA SURVEY DATED JULY 5, 2012.



FOR BIDDING
NOT FOR
CONSTRUCTION

DESIGNED	A. EVANS, P.E.
DRAWN	R. SCHANZ
CHECKED	F. DARABI, P.E.
PROJECT MANAGER	A. EVANS, P.E.
LTR.	DATE
	ISSUED FOR BID
	REVISIONS
	BY
	APPRD.

DARABI AND ASSOCIATES INC.
4140 NW 37th Place Suite A • Gainesville, Florida 32606 • (352) 376-6533

**WINFIELD SOLID WASTE FACILITY
CELL 4 EXPANSION
CONSTRUCTION DRAWINGS**

EXISTING CONDITIONS

APPROVED FOR D&A BY	DATE	PROJECT NO.
	01/2013	185380
FARHANG "FRANK" A. DARABI, P.E. REG. PROF. ENGINEER	SCALE	DWG. NO.
	AS NOTED	OCC-01

APPENDIX 5

INSIGNIFICANT EMISSION UNITS AND ACTIVITIES

The following emissions units and activities are considered insignificant pursuant to Rule 62-213.430(6), F.A.C.:

1. Wood waste processing and temporary storage.
2. Recycle materials processing and temporary storage.
3. Household hazardous waste collection and temporary storage.
4. Lawn care equipment and activities.
5. Fuel storage for mobile equipment.
6. Front-end loaders, bulldozers and grading equipment.
7. Equipment maintenance activities and shop supplies (lubricants, oils, etc.).

APPENDIX 6

APPLICABLE REQUIREMENTS

62-4, FAC – Air Permits
62-204, FAC – Air Pollution Control
62-210, FAC – Stationary Sources
62-213, FAC – Operation Permits for Major Sources
62-296.320 (2), FAC - Objectionable Odor Provisions
62-296.320 (4), FAC - General Particulate Emission Limiting Standards
62-297, FAC – Emissions Monitoring Requirements
FDEP’s Title V Core List – General Requirements
40 CFR 60, Subpart A – General Provisions
40 CFR 60.752 – Air Emissions Standards for MSW Landfills
40 CFR Part 82, Subpart F - Recycling and Emissions Reduction

**Winfield Facility- Columbia County
Response to RAI**

Revised Permit Pages: 22, 24,31,37,39

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NMOC – Municipal Solid Waste Landfill Emissions (Measured as Non-methane Organic Compounds)		2. Total Percent Efficiency of Control: 0	
3. Potential Emissions: lb/hour 44.6 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Variable, see attached table. Reference: AP-42		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See attached table.			
11. Potential, Fugitive, and Actual Emissions Comment: Individual VOCs are identified in the attached table.			

EMISSIONS UNIT INFORMATION

Section [2] of [2] Winfield Landfill

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)
<input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
<input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)			
<input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).			
<input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which have at least one definable emission point (stack or vent) but may also produce fugitive emissions.			
<input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.			
2. Description of Emissions Unit Addressed in this Section: Columbia County Winfield Landfill			
3. Emissions Unit Identification Number: Not Known			
4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: 1992	7. Emissions Unit Major Group SIC Code: 49
8. Federal Program Applicability: (Check all that apply)			
<input type="checkbox"/> Acid Rain Unit			
<input type="checkbox"/> CAIR Unit			
9. Package Unit: Manufacturer:		Model Number:	
10. Generator Nameplate Rating: MW			
11. Emissions Unit Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: HAPS - Total Hazardous Air Pollutants		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour 6.5 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Variable, see attached table. Reference: AP-42		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See attached table.			
11. Potential, Fugitive, and Actual Emissions Comment: Individual HAPs are identified in the attached table.			

Winfield Facility- Columbia County
Response to RAI
Emission Calculations

Columbia County Central Landfill Emission Calculations

Waste & Daily Cover Class I:	692401 tons
Waste & Daily Cover Class III:	99447 tons
Total Waste Mass Class I:	594080 tons
Total Waste Mass Class III:	90397 tons
Total Waste Mass (tons):	684477 tons
Daily Cover Class I (%):	85.8 %
Daily Cover Class III (%):	90.9 %
Avg. Disposal Rate Class I:	34457 tons/yr
Avg. Disposal Rate Class III:	4758 tons/yr
LandGem Version:	3.02
Emission Factor Reference:	AP-42 (1998)
Landfill Startup:	1974
Landfill Closure:	1993

Table 1: Inputs for Columbia Central Class I Landfill

Year	Input Units (short tons/year)	Calculated Units (Mg/year)
1974	34457	31324
1975	34457	31324
1976	34457	31324
1977	34457	31324
1978	34457	31324
1979	34457	31324
1980	34457	31324
1981	34457	31324
1982	34457	31324
1983	34457	31324
1984	34457	31324
1985	34457	31324
1986	34457	31324
1987	34457	31324
1988	34457	31324
1989	34457	31324
1990	34457	31324
1991	34457	31324
1992	34457	31324
1993	34457	31324

Table 2: Peak Emission Results for Columbia Central Class I Landfill

Pollutants	Emission (tons/yr)
Methane	911.0350
Carbon dioxide	2499.6664
NMOC	39.1586
1,1,1-Trichloroethane	0.0073
1,1,2,2-Tetrachloroethane	0.0210
1,1-Dichloroethane	0.0270
1,1-Dichloroethene	0.0022
1,2-Dichloroethane	0.0046
1,2-Dichloropropane	0.0023
2-Propanol	0.3414
Acetone	0.0462
Acrylonitrile	0.0380
Benzene - No Co-disposal	0.0169
Benzene - Co-disposal	0.0976
Bromodichloromethane	0.0577
Butane	0.0330
Carbon disulfide	0.0050
Carbon Monoxide	0.4455
Carbon tetrachloride	0.0001
Carbonyl sulfide	0.0033
Chlorobenzene	0.0032
Chlorodifluoromethane	0.0128
Chloroethane	0.0095
Chloroform	0.0004
Chloromethane	0.0069
Dichlorobenzene	0.0035
Dichlorodifluoromethane	0.2198
Dichlorofluoromethane	0.0304
Dichloromethane	0.1351
Dimethyl sulfide	0.0550
Ethane	3.0401
Ethanol	0.1413
Ethyl mercaptan	0.0162
Ethylbenzene	0.0555
Ethylene dibromide	0.0000
Fluorotrichloromethane	0.0119
Hexane	0.0646
Hydrogen sulfide	0.1394
Mercury (total)	0.0000
Methyl ethyl ketone	0.0582
Methyl isobutyl ketone	0.0216
Methyl mercaptan	0.0137
Pentane	0.0270

HAP
VOC
HAP/VOC



Table 2 Continued: Emission Results for Columbia Central Class I Landfill

Pollutants	Emission (tons/yr)
Perchloroethylene	0.0697
Propane	0.0551
t-1,2-Dichloroethene	0.0308
Toluene - No Co-disposal	0.4082
Toluene - Co-disposal	1.7791
Trichloroethylene	0.0418
Vinyl chloride	0.0518
Xylenes	0.1447
Total VOC	1.8038
Total HAP	1.1954

Table 3: Inputs for Columbia Central Class III Landfill

Year	Input Units (short tons/year)	Calculated Units (Mg/year)
1974	4758	4325
1975	4758	4325
1976	4758	4325
1977	4758	4325
1978	4758	4325
1979	4758	4325
1980	4758	4325
1981	4758	4325
1982	4758	4325
1983	4758	4325
1984	4758	4325
1985	4758	4325
1986	4758	4325
1987	4758	4325
1988	4758	4325
1989	4758	4325
1990	4758	4325
1991	4758	4325
1992	4758	4325
1993	4758	4325

Table 4: Peak Emission Results for Columbia Central Class III Landfill

Pollutants	Emission (tons/yr)
Methane	125.8
Carbon dioxide	938.2
NMOC	5.4
1,1,1-Trichloroethane	0.00100
1,1,2,2-Tetrachloroethane	0.00290
1,1-Dichloroethane	0.00373
1,1-Dichloroethene	0.00030
1,2-Dichloroethane	0.00064
1,2-Dichloropropane	0.00032
2-Propanol	0.04714
Acetone	0.00638
Acrylonitrile	0.00524
Benzene - No Co-disposal	0.00233
Benzene - Co-disposal	0.01348
Bromodichloromethane	0.00797
Butane	0.00456
Carbon disulfide	0.00069
Carbon Monoxide	0.06151
Carbon tetrachloride	0.00001
Carbonyl sulfide	0.00046
Chlorobenzene	0.00044
Chlorodifluoromethane	0.00176
Chloroethane	0.00132
Chloroform	0.00006
Chloromethane	0.00095
Dichlorobenzene	0.00048
Dichlorodifluoromethane	0.03034
Dichlorofluoromethane	0.00420
Dichloromethane	0.01865
Dimethyl sulfide	0.00760
Ethane	0.41977
Ethanol	0.01951
Ethyl mercaptan	0.00224
Ethylbenzene	0.00766
Ethylene dibromide	0.00000
Fluorotrichloromethane	0.00164
Hexane	0.00892
Hydrogen sulfide	0.01924
Mercury (total)	0.00000
Methyl ethyl ketone	0.00803
Methyl isobutyl ketone	0.00298
Methyl mercaptan	0.00189
Pentane	0.00373

HAP
VOC
HAP/VOC



Table 4 Continued: Emission Results for Columbia Central Class III Landfill

Pollutants	Emission (tons/yr)
Perchloroethylene	0.0096
Propane	0.0076
t-1,2-Dichloroethene	0.0043
Toluene - No Co-disposal	0.0564
Toluene - Co-disposal	0.2457
Trichloroethylene	0.0058
Vinyl chloride	0.0072
Xylenes	0.0200
Total VOC	0.2491
Total HAP	0.1651

Winfield Solid Waste Facility Landfill Emission Calculations

Waste & Daily Cover Class I:	1909907 tons
Waste & Daily Cover Class III:	554636 tons
Total Waste Mass Class I:	1638700 tons
Total Waste Mass Class III:	504164 tons
Total Waste Mass (tons):	2142864 tons
Daily Cover Class I (%):	85.8 %
Daily Cover Class III (%):	90.9 %
Avg. Disposal Rate Class I:	37622 tons/yr
Avg. Disposal Rate Class III:	10503 tons/yr
LandGem Version:	3.02
Emission Factor Reference:	AP-42 (1998)
Landfill Startup:	1992
Projected Landfill Closure:	2040

Table 5: Inputs for Winfield Class I Landfill

Year	Input Units (short tons/year)	Calculated Units (Mg/year)
1992	37622	34202
1993	37622	34202
1994	37622	34202
1995	37622	34202
1996	37622	34202
1997	37622	34202
1998	37622	34202
1999	37622	34202
2000	37622	34202
2001	37622	34202
2002	37622	34202

Table 5 Continued: Inputs for Winfield Class I Landfill

Year	Input Units (short tons/year)	Calculated Units (Mg/year)
2004	37622	34202
2005	37622	34202
2006	37622	34202
2007	37622	34202
2008	37622	34202
2009	37622	34202
2010	37622	34202
2011	37622	34202
2012	37622	34202
2013	37622	34202
2014	37622	34202
2015	37622	34202
2016	37622	34202
2017	37622	34202
2018	37622	34202
2019	37622	34202
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2025	37622	34202
2026	37622	34202
2027	37622	34202
2028	37622	34202
2029	37622	34202
2030	37622	34202
2031	37622	34202
2032	37622	34202
2033	37622	34202
2034	37622	34202
2035	37622	34202
2036	37622	34202
2037	37622	34202
2038	37622	34202
2039	37622	34202
2040	37622	34202

Table 6: Peak Emission Results for Winfield Class I Landfill

Pollutants	Emission (tons/yr)
Methane	3908
Carbon dioxide	10724
NMOC	168
1,1,1-Trichloroethane	0.0312
1,1,2,2-Tetrachloroethane	0.0900
1,1-Dichloroethane	0.1158
1,1-Dichloroethene	0.0094
1,2-Dichloroethane	0.0198
1,2-Dichloropropane	0.0099
2-Propanol	1.4647
Acetone	0.1981
Acrylonitrile	0.1629

HAP
VOC
HAP/VOC



Benzene - No Co-disposal	0.072
Benzene - Co-disposal	0.419
Bromodichloromethane	0.248
Butane	0.142
Carbon disulfide	0.022
Carbon Monoxide	1.911
Carbon tetrachloride	0.000
Carbonyl sulfide	0.014
Chlorobenzene	0.014
Chlorodifluoromethane	0.055
Chloroethane	0.041
Chloroform	0.002
Chloromethane	0.030
Dichlorobenzene	0.015
Dichlorodifluoromethane	0.943
Dichlorofluoromethane	0.130
Dichloromethane	0.580

Table 6 Continued: Emission Results for Winfield Class I Landfill

Pollutants	Emission (tons/yr)
Dimethyl sulfide	0.2362
Ethane	13.0422
Ethanol	0.6063
Ethyl mercaptan	0.0696
Ethylbenzene	0.2380
Ethylene dibromide	0.0001
Fluorotrichloromethane	0.0509
Hexane	0.2772
Hydrogen sulfide	0.5979
Mercury (total)	0.0000

Methyl ethyl ketone	0.2495
Methyl isobutyl ketone	0.0927
Methyl mercaptan	0.0586
Pentane	0.1160
Perchloroethylene	0.2990
Propane	0.2364
t-1,2-Dichloroethene	0.1323
Toluene - No Co-disposal	1.7510
Toluene - Co-disposal	7.6327
Trichloroethylene	0.1793
Vinyl chloride	0.2223
Xylenes	0.6208
Total VOC	7.7387
Total HAP	5.1284

Table 7: Inputs for Winfield Class III Landfill

Year	Input Units (short tons/year)	Calculated Units (Mg/year)
1992	10503	9549
1993	10503	9549
1994	10503	9549
1995	10503	9549
1996	10503	9549
1997	10503	9549
1998	10503	9549
1999	10503	9549
2000	10503	9549
2001	10503	9549
2002	10503	9549
2003	10503	9549
2004	10503	9549

Table 7 Continued: Inputs for Winfield Class III Landfill

Year	Input Units (short tons/year)	Calculated Units (Mg/year)
2005	10503	9549
2006	10503	9549
2007	10503	9549
2008	10503	9549
2009	10503	9549
2010	10503	9549
2011	10503	9549
2012	10503	9549
2013	10503	9549
2014	10503	9549

2015	10503	9549
2016	10503	9549
2017	10503	9549
2018	10503	9549
2019	10503	9549
2020	10503	9549
2021	10503	9549
2022	10503	9549
2023	10503	9549
2024	10503	9549
2025	10503	9549
2026	10503	9549
2027	10503	9549
2028	10503	9549
2029	10503	9549
2030	10503	9549
2031	10503	9549
2032	10503	9549
2033	10503	9549
2034	10503	9549
2035	10503	9549
2036	10503	9549
2037	10503	9549
2038	10503	9549
2039	10503	9549
2040	10503	9549

Table 8: Peak Emission Results for Winfield Class III Landfill

Pollutants	Emission (tons/yr)
Methane	1091.174
Carbon dioxide	2993.925
NMOC	46.901
1,1,1-Trichloroethane	0.009
1,1,2,2-Tetrachloroethane	0.025
1,1-Dichloroethane	0.032
1,1-Dichloroethene	0.003
1,2-Dichloroethane	0.006
1,2-Dichloropropane	0.003
2-Propanol	0.409
Acetone	0.055
Acrylonitrile	0.045
Benzene - No Co-disposal	0.020
Benzene - Co-disposal	0.117
Bromodichloromethane	0.069
Butane	0.040

HAP
VOC
HAP/VOC



Carbon disulfide	0.006
Carbon Monoxide	0.534
Carbon tetrachloride	0.000
Carbonyl sulfide	0.004
Chlorobenzene	0.004
Chlorodifluoromethane	0.015
Chloroethane	0.011
Chloroform	0.000
Chloromethane	0.008
Dichlorobenzene	0.004
Dichlorodifluoromethane	0.263
Dichlorofluoromethane	0.036
Dichloromethane	0.162
Dimethyl sulfide	0.066
Ethane	3.641
Ethanol	0.169
Ethyl mercaptan	0.019

Table 8 Continued: Emission Results for Winfield Class III Landfill

Pollutants	Emission (tons/yr)
Ethylbenzene	0.0664
Ethylene dibromide	0.0000
Fluorotrichloromethane	0.0142
Hexane	0.0774
Hydrogen sulfide	0.1669
Mercury (total)	0.0000
Methyl ethyl ketone	0.0697
Methyl isobutyl ketone	0.0259
Methyl mercaptan	0.0164
Pentane	0.0324
Perchloroethylene	0.0835
Propane	0.0660
t-1,2-Dichloroethene	0.0369
Toluene - No Co-disposal	0.4889
Toluene - Co-disposal	2.1309
Trichloroethylene	0.0501
Vinyl chloride	0.0621
Xylenes	0.1733
Total VOC	2.1605
Total HAP	1.4318

Combined Landfill Emission Calculations

Year	Input Units (short tons/year)	Calculated Units (Mg/year)
1974	39214	35649.45201
1975	39214	35649.45201
1976	39214	35649.45201
1977	39214	35649.45201
1978	39214	35649.45201
1979	39214	35649.45201
1980	39214	35649.45201
1981	39214	35649.45201
1982	39214	35649.45201
1983	39214	35649.45201
1984	39214	35649.45201
1985	39214	35649.45201
1986	39214	35649.45201
1987	39214	35649.45201
1988	39214	35649.45201
1989	39214	35649.45201
1990	39214	35649.45201
1991	39214	35649.45201
1992	48125	43750.21561
1993	48125	43750.21561
1994	48125	43750.21561
1995	48125	43750.21561
1996	48125	43750.21561
1997	48125	43750.21561
1998	48125	43750.21561
1999	48125	43750.21561
2000	48125	43750.21561
2001	48125	43750.21561
2002	48125	43750.21561
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2006	48125	43750.21561
2007	48125	43750.21561
2008	48125	43750.21561
2009	48125	43750.21561
2010	48125	43750.21561
2011	48125	43750.21561
2012	48125	43750.21561
2013	48125	43750.21561
2014	48125	43750.21561

2015	48125	43750.21561
2016	48125	43750.21561
2017	48125	43750.21561
2018	48125	43750.21561
2019	48125	43750.21561
2020	48125	43750.21561
2021	48125	43750.21561
2022	48125	43750.21561
2023	48125	43750.21561
2024	48125	43750.21561
2025	48125	43750.21561
2026	48125	43750.21561
2027	48125	43750.21561
2028	48125	43750.21561
2029	48125	43750.21561
2030	48125	43750.21561
2031	48125	43750.21561
2032	48125	43750.21561
2033	48125	43750.21561
2034	48125	43750.21561
2035	48125	43750.21561
2036	48125	43750.21561
2037	48125	43750.21561
2038	48125	43750.21561
2039	48125	43750.21561
2040	48125	43750.21561

Table 10: Peak Emission Results for Combined Landfills

Pollutants	Emission (tons/yr)
Methane	5228
Carbon dioxide	14344
NMOC	225
1,1,1-Trichloroethane	0.042
1,1,2,2-Tetrachloroethane	0.120
1,1-Dichloroethane	0.155
1,1-Dichloroethene	0.013
1,2-Dichloroethane	0.026
1,2-Dichloropropane	0.013
2-Propanol	1.959

HAP
VOC
HAP/VOC



Table 10 Continued: Peak Emission Results for Combined Landfills

Pollutants	Emission (tons/yr)
Acetone	0.2650
Acrylonitrile	0.2179
Benzene - No Co-disposal	0.0967
Benzene - Co-disposal	0.5601
Bromodichloromethane	0.3311
Butane	0.1894
Carbon disulfide	0.0288
Carbon Monoxide	2.5562
Carbon tetrachloride	0.0004
Carbonyl sulfide	0.0192
Chlorobenzene	0.0183
Chlorodifluoromethane	0.0733
Chloroethane	0.0547
Chloroform	0.0023
Chloromethane	0.0395
Dichlorobenzene	0.0201
Dichlorodifluoromethane	1.2611
Dichlorofluoromethane	0.1744
Dichloromethane	0.7752
Dimethyl sulfide	0.3159
Ethane	17.4453
Ethanol	0.8110
Ethyl mercaptan	0.0932
Ethylbenzene	0.3183
Ethylene dibromide	0.0001
Fluorotrichloromethane	0.0681
Hexane	0.3708
Hydrogen sulfide	0.7998
Mercury (total)	0.0000
Methyl ethyl ketone	0.3337
Methyl isobutyl ketone	0.1241
Methyl mercaptan	0.0784
Pentane	0.1552
Perchloroethylene	0.4000
Propane	0.3161
t-1,2-Dichloroethene	0.1769
Toluene - No Co-disposal	2.3422
Toluene - Co-disposal	10.2095
Trichloroethylene	0.2398
Vinyl chloride	0.2974
Xylenes	0.8304
Total VOC	10.3513
Total HAP	6.8598