cc JKnll, TH, GH, KF, TJ, JK, JKuehl, K

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2984 Shawano Avenue
Green Bay WI 54313-6727

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

February 7, 2014

RECEIVED
FEB 7 1 2014
BY:_____

FID 436003260
Manitowoc County
SW/Approvals

Mr. Ray Seegers
Waste Management of Wisconsin, Inc.
Ridgeview Recycling and Disposal Facility
6207 Hempton Lake Road
Whitelaw, WI 54247

SUBJECT: Plan of Operation Modification Approval for Multiple Items, Ridgeview Recycling and Disposal Facility (RDF), Whitelaw, Wisconsin, WDNR License No. 4292

Dear Mr. Seegers:

We have completed our review of your proposed plan of operation modification for multiple items including the landfill gas extraction system, closure cost estimate, environmental monitoring parameters and preventative action limit calculations. We have determined that it is consistent with Wisconsin's solid waste regulations. The plan modification is approved subject to chs. NR 500 to 538, Wis. Adm. Code, and previous approvals issued to this facility. Please include the attached approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

Landfill Gas Extraction System

The proposed plan modification included a request to allow a temporary gas collection and control system (GCCS) to satisfy the requirements for a GCCS in accordance with the air permit prior to achieving final waste grades within Cell 1. The temporary system consists of eleven gas extraction wells, GW-A through GW-K. The temporary gas wells are located at intermediate points between the permanent gas well locations. When final grades are reached, the permanent GCCS will be installed in accordance with the approved permanent gas extraction well system design. The temporary gas wells will comply with the monitoring requirements for the permanent gas extraction wells.

Other proposed modifications to the GCCS include:

- the use of horizontal gas collectors at expanded locations including various locations on top of the leachate collection system;
- a revised condensate drip leg design that was installed during the construction of Cell 2A and replaces the three individual straw drains that were originally approved;
- modifications to the perimeter gas header slope;
- placement of the gas header pipe above the geomembrane in the rooting zone of the final cover system;

- placement of gravel mounds beneath the gas well locations to connect the bottom of the gas well borehole to the leachate collection drainage blanket; and
- an alternative perforation pattern for the gas extraction wells.

Closure Cost Estimate

Condition 4 of the April 28, 2008 plan of operation approval required WMWI to recalculate the closure costs based on the largest open area allowed with the Organic Stability Plan. The April 28, 2008 approval granted an exemption that allows the placement of final cover to be delayed no more than 5 years after initially reaching final waste grades. This exemption does not allow WMWI to delay final cover until the entire site (60.3 acres) has reached final capacity as indicated in the Organic Stability Plan. Therefore, the revised closure cost estimate is based on the largest projected open area of 33.2 acres in accordance with s. NR 520.07, Wis. Adm. Code.

Environmental Monitoring

WMWI proposed changes to the gas well monitoring requirements, including the elimination of parameters for valve opening and carbon dioxide. The Department approves of the request to eliminate monitoring of valve opening; however, the request to eliminate monitoring of carbon dioxide is not approved. The Department believes the monitoring of carbon dioxide provides useful information regarding the balance of landfill gases during operation and long term care of the landfill.

Other approved minor changes to the environmental monitoring requirements are summarized in the following table.

Monitoring Schedule	Existing Parameter Code	Proposed Parameter Code
Lysimeter Monitoring	32 – leachate volume pumped	74064 - lysimeter discharge
Leachate Monitoring	95 – specific conductance	94 – specific conductance, field
	341 – COD	340 – COD, unfiltered
Landfill Gas Monitoring – Gas Probes	11 – temperature, air (not in GEMS)	21 – temperature, air
	46385 – wellhead pressure	46389 – soil gas pressure
	4189 – depth to groundwater (elevation in GEMS)	72002 – depth to top of groundwater
Combined Gas Flow	99599 – gas extracted, total monthly volume (not in GEMS)	98927 – gas extracted, total monthly volume
	99243 – sulfur, total reduced as S	99252 – sulfur, total reduced as SO_2

Dredge Disposal/Special Waste Plan

Your proposed plan modification included a request to rescind condition 2 of the May 9, 2011 amended conditional plan modification approval pertaining to the acceptance of dredge materials. The condition states that "The modifications to the Special Waste Plan encompassed by this approval are valid for 5 years following the date of this approval, unless the Department renews this approval upon application made by WMWI Ridgeview." This condition was also included in the original August 13, 2008 conditional plan modification approval. Since modifications to the Special Waste Management Plan were approved by the Department on January 31, 2011, the condition no longer appears necessary. The Department approves of your request and has rescinded the condition in this approval.

Additionally, it appears that Condition 11 of the August 13, 2008 was inadvertently left out of the May 9, 2011 amended approval. The condition required the testing of leachate for PCBs on a semi-annual basis.

The condition has been included in this approval. Some minor revisions were made to clarify that testing for PCBs in leachate only applies to landfill cells containing dredge material.

Preventative Action Limit (PAL) Calculations

The calculated dissolved organic carbon PALs proposed by the January 23, 2014 Ridgeview (license 4294) Plan Modification Addendum are approved with the exception of the proposed PAL for MW-209. The sample collected on June 4, 2009 for MW-209 has been determined to be an outlier and shall be removed from the dataset. Based on a recalculation of the remaining samples, the PAL for DOC at MW-209 shall be 6.0 mg/L.

You are reminded that approval by the Bureau of Waste and Materials Management does not relieve you of obligations to meet all other applicable federal, state, and local permits, zoning and regulatory requirements.

Please contact Valerie Joosten at 920-662-5486 or Joe Baeten at 920 662-5191 if you have questions regarding this approval.

Sincerely,

James A. Zellmer, P.E.
Waste & Materials Management Program Supervisor
Northeast Region

Attachments

CC: Dennis Gawronski, WDNR Owner Financial Responsibility Coordinator – via email
Randy Matty, WDNR NER Air Program – via email

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
PLAN OF OPERATION MODIFICATION APPROVAL FOR
THE
RIDGEVIEW RECYCLING AND DISPOSAL FACILITY
LICENSE # 4292

FINDINGS OF FACT

The Department finds that:

1. Waste Management of Wisconsin (WMWI) owns and operates a non-hazardous solid waste disposal facility located in portions of the SE ¼ and SW ¼ of Sec. 26, T20N, R22E, Town of Franklin, Manitowoc County, Wisconsin.

2. On April 28, 2008, the Department issued a Conditional Plan of Operation Approval for the Ridgeview Recycling & Disposal Facility (RDF) Southern Expansion.

3. On December 27, 2013, the Department received a plan of operation modification request from WMWI for the landfill gas extraction system, closure cost estimate and multiple items.

4. On January 7, 2014, the Department issued a request for additional information to WMWI regarding the plan of operation modification request.

5. On January 24, 2014, the Department received the total review fee of $1,650 for the plan of operation modification review.

6. The information submitted in connection with the modification requests includes:

    a. A letter and attachments from WMWI dated December 23, 2013 requesting approval of a plan modification for multiple items. An electronic copy was also provided via email. A professional engineer signed and sealed version of the submittal was received on January 29, 2014.

    b. A letter and attachments from WMWI dated January 22, 2014 in response to the Department's request for additional information. The submittal included a request to modify a condition of the May 9, 2011 and environmental monitoring parameter codes. A professional engineer signed and sealed version of the submittal was received on January 29, 2014.

    c. A letter and attachments from WMWI dated January 23, 2014, which included the calculated preventative action limits (PALs) for dissolved organic carbon. The letter indicated the submittal was an addendum to the December 23, 2013 plan modification request.

    d. A letter and attachments from WMWI dated February 3, 2014, which included the professional engineer and professional geologist certifications required by s. NR 500.05(4), Wis. Adm. Code. The letter also included an additional request for an alternative perforation pattern for the landfill gas extraction wells and revised dissolved organic carbon PAL calculations.

7. Additional documents considered in connection with the review of the modification request include the following:

   a. The Department's general files related to Ridgeview RDF, License # 4292.

   b. Wisconsin Landfill Air Emissions, Air/Waste Workgroup on Landfill Gas, WA1303.09, May 2007.

8. Additional facts relevant to the review of the plan of operation modification include:

   a. Temporary gas extraction wells, GW-A through GW-K have already been constructed.

   b. The December 6, 2012 construction documentation approval for Cell 2A did not approve a plan modification for a revised closure cost estimate that was submitted with the construction documentation report. The proposed cost estimate was based on closure costs for the largest open area constructed at the time (Cell 1 – 2A) and proposed that closure cost revisions be submitted for review as each liner was constructed.

   c. Section NR 520.07, Wis. Adm. Code requires the owner to estimate the total cost of closure in current dollars for the point in time during operation of the facility when the extent and manner of its operation make closure most expensive.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.30(6), Stats., to modify a plan of operation approval if the modification would not inhibit compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

2. The Department has authority to approve a plan of operation approval modification with special conditions if the conditions are needed to ensure compliance with chs. NR 500-538, Wis. Adm. Code.

3. The conditions of this approval are needed to ensure compliance with chs. NR 500 – 538, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has authority under ch. 289, Stats., to issue the following conditional plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION MODIFICATION APPROVAL

The Department hereby approves your plan of operation modification request for Ridgeview RDF Southern Expansion, subject to ch. NR 500 – 538, Wis. Adm. Code and the following conditions:

1. Condition 4 of the April 28, 2008 conditional plan of operation approval is hereby rescinded.

2. Revised proof of financial responsibility for closure shall be provided within 60 days of the date of this approval, in accordance with ch. NR 520, Wis. Adm. Code. The proof of financial responsibility shall be established based upon the approved closure costs contained in the attached table (Attachment 1).

3. The open area of the landfill shall not exceed 33.2 acres in accordance with the approved closure cost estimate.

4. The permanent gas extraction wells shall be installed upon reaching final waste grades in accordance with the April 28, 2008, conditional plan of operation approval and subsequent modifications.

5. The temporary gas extraction wells shall be monitored in accordance with the landfill gas monitoring requirements included herein until they are replaced with permanent gas extraction wells.

6. The environmental monitoring program shall include semi-annual testing of leachate for PCBs in accordance with the requirements of 40 CFR Part 761, s. 761.1(b).

   a. This modification becomes effective on the first sampling schedule after placement of dredged material into a landfill cell and only applies to the leachate sampling points located within cells that contain dredge material.
   b. Analyses shall be performed on representative leachate samples to include, at a minimum, the following specific PCB congeners: Nos. 8, 15, 26, 28, 37,44, 49, 52, 60, 66, 70, 74, 77, 81, 82, 87, 95, 99, 101, 105, 110, 114, 118, 123, 126, 128, 132, 138, 149, 151, 153, 156, 157, 158, 166, 167, 169, 170, 177, 180, 183, 187, 189, 201, and 206. An alternative list of specific PCB congeners may be approved by the Department in writing.
   c. The sum of the congeners found in the leachate samples shall be reported to the GEMS databases as Total PCBs. A summary of the analytical results shall be submitted to the Department's Northeast Region and Madison Offices. Upon notification from the Department the analytical results from the congener-specific analyses shall be submitted to the Department in hard copy and/or to the GEMS database.
   d. In addition to providing the results of this testing to the Department in accordance with the plan of operation approvals, and in addition to the notification requirements contained in the leachate treatment agreement between WMWI Ridgeview RDF and the Manitowoc Wastewater Treatment Plant, WMWI Ridgeview RDF shall provide the PCB test results to all wastewater treatment facilities receiving the leachate from the landfill within 15 days of receiving the results if the results identify total PCBs at a concentration greater than 1.5 μg/l.
   e. Based on the monitoring results, the Department may require pretreatment of the leachate or modify this approval.

7. Condition 2 of the May 9, 2011 amended conditional plan of operation approval is hereby rescinded.

8. Condition 24 of the April 28, 2008 conditional plan of operation approval is revised as follows:

   WMWI shall implement environmental monitoring at the Ridgeview Southern Expansion Landfill in accordance with the following schedules:

Schedule 1: Detection Groundwater Monitoring Program			
DNR ID	**Monitoring Well Name**	**Frequency**	**Parameters**
	Group A Wells:		
2 5 6	MW-201A MW-202R MW-203	Monthly for 2 years	04189 Groundwater Elevation
7 16 17 18 19 20 22 23 32 34 35 36 997 999	MW-203A MW-208 MW-208A MW-209 MW-209A MW-210A MW-212 MW-212A MW-224 MW-227[1] MW-228 MW-212C[4] Field Blank Trip Blank	Semi-annually (June and December)	00010 Field Temperature in °C 00094 Field Specific Conductance @ 25°C 00400 Field pH 00941 Chloride, Filtered 22413 Total Hardness, Filtered 39036 Total Alkalinity, Filtered 01020 Boron, Filtered 00950 Fluoride, Filtered 00608 Ammonia Nitrogen, Filtered 00946 Sulfate, Filtered 00930 Sodium , Filtered 00681 Dissolved Organic Carbon 04189 Groundwater Elevation Note sample odor (00001), color (00002), and turbidity (00003), if present
		Annually (June)	VOCs (NR 507, Appendix III)
	Group B Wells:		
10 11 12 13 14 15 24 25	MW-205[2] MW-205A[2] MW-206[3] MW-206A[3] MW-207[3] MW-207A[3] MW-213[2] MW-213A[2]	Monthly for two years then Semi-annually (unless abandoned) (June and December)	04189 Groundwater Elevation
	RCRA Subtitle D Wells:	Semi-annually (June and December)	Parameters listed in Group A plus VOCs (NR 507, Appendix III)
1 4 21 33	MW-201 MW-202A MW-211A MW-225		
	(1) Well shall be installed prior to placement of waste in Cell 2 (2) Well scheduled to be abandoned prior to excavation of the appropriate increment of Cell 2 (3) Well scheduled to be abandoned prior to excavation of the appropriate increment of Cell 3 (4) Well shall be installed prior to disturbance of soil or vegetation for sub-base of Cell 3		

Schedule 2: Surface Water Monitoring			
	DNR ID / Staff Gauge	**Frequency**	**Parameters**
850 851	SG-3 SG-4	Monthly for two years [not required in Jan., Feb., Dec.] Semi-annually thereafter (May and November)	99520 Surface water elevation
Schedule 3: Sedimentation Basins			
855	Sed. Basin B	Semi-annually (June and December) In the event of an overflow	94 Specific Conductance 400 pH 310 Biochemical Oxygen Demand
Schedule 4: Lysimeter Monitoring			
500 501 502 503	LSY-1 LSY-2 LSY-3 LSY-4	Monthly	74064 Lysimeter Discharge
		Semi-annually (June and December)	94 Specific Conductance 340 Chemical Oxygen Demand 400 pH, field 410 Alkalinity, Total 625 Nitrogen, Total Kjeldahl 900 Hardness, Total 929 Sodium, Total 940 Chloride, Total 951 Fluoride, Total 945 Sulfate, Total 1022 Boron, Total
		Annually(June)	VOCs per NR 507.30, Appendix III
Schedule 5: Leachate Quality Monitoring			
400 401 402 403	SRM-1 SRM-2 SRM-3 SRM-4	Monthly	32 Leachate Volume pumped (1000's of gallons)
		Semi-annually (June and December)	94 Specific Conductance, field 150 Total Suspended Solids 310 Biochemical Oxygen Demand 340 Chemical Oxygen Demand, unfiltered 400 pH, field 410 Alkalinity, Total 610 Nitrogen, Total Ammonia 625 Nitrogen, Total Kjeldahl 900 hardness, Total 929 Sodium, Total 940 Chloride, Total 951 Fluoride, Total 945 Sulfate, Total 1022 Boron, Total 1027 Cadmium, Total 1051 Lead, Total 1055 Manganese, Total 1147 Selenium, Total 39516 PCBs, Total * 71900 Mercury, Total 74010 Iron, Total VOCs per NR 507.30, Appendix II *PCB testing only applies to those cells that contain dredge material.
		annually	Semi-volatile compounds per NR 507.30, Appendix IV

Schedule 6: Leachate Head Monitoring			
600 601 602 603 604 605 606 607	LH-C1A LH-C1B LH-C2A LH-C2B LH-C3A LH-C3B LH-C4A LH-C4B	Quarterly (March/June/September/December) (reported semi-annually)	31 Depth of Leachate [from top to bottom in feet] 99423 Elevation, Leachate (Feet Above MSL)
Schedule 7: Landfill Gas Monitoring			
(DNR ID#)	**Sampling Point**	**Frequency**	**Parameters**
	Gas Probes	Quarterly (March/June/September/December) (reported semi-annually)	00021 Temperature, Air (°F) 00025 Barometric Pressure 46381 Barometric Pressure Trend, 46389 Soil Gas Pressure (in. of water) 72002 Depth to Top of Groundwater (from well casing top, ft.) 85547 Methane (% of dissolved gases) 85544 Carbon dioxide (% of dissolved gases) 85550 Oxygen (% of dissolved gases)
700 701 702 309	GPS-1 GPS-2 GPS-3 GP-10R (reported with data from lic. No. 3041)		
	Temporary Gas Extraction Wells	Monthly (reported semi-annually)	46385 Wellhead Pressure (applied vacuum in inches of water) 46382 Header Pressure (available vacuum in inches of water) 46388 Gas Temperature (°F) 99098 Gas Flow Rate (Cubic Feet/Minute) 85547 Methane (% of dissolved gases) 85544 Carbon dioxide (% of dissolved gases) 85550 Oxygen (% of dissolved gases) 99848 Balance gas (Other than O_2, CH_4, CO_2)
761 762 763 764 765 766 767 768 769 770 771	GW-A GW-B GW-C GW-D GW-E GW-F GW-G GW-H GW-I GW-J GW-K		
	Gas Extraction Wells		
705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730	GW01 GW02 GW03 GW04 GW05 GW06 GW07 GW08 GW09 GW10 GW11 GW12 GW13 GW14 GW15 GW16 GW17 GW18 GW19 GW20 GW21 GW22 GW23 GW24 GW25 GW26	Annual (reported w/ subsequent semi-annually results)	99423 Elevation, Leachate (Feet Above MSL) 00031 Leachate, depth in feet

731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760	GW27 GW28 GW29 GW30 GW31 GW32 GW33 GW34 GW35 GW36 GW37 GW38 GW39 GW40 GW41 GW42 GW43 GW44 GW45 GW46 GW47 GW48 GW49 GW50 GW51 GW52 GW53 GW54 GW55 GW56		
	Combined Gas Flow	Monthly (reported semi-annually) To be reported with data from 3041	46382 Header Pressure (inches of water) 46388 Gas Temperature (°F) 99098 Gas Flow Rate (Cubic Feet/Minute) 98927 Gas Extracted, Total Monthly Volume (1000 cf/month) 85547 Methane (% of dissolved gases) 85544 Carbon dioxide (% of dissolved gases) 85550 Oxygen (% of dissolved gases) 99848 Balance gas (Other than O_2, CH_4, CO_2)
		Annual (reported w/subsequent semi-annual)	99252 Sulfur, Total Reduced (PPMV as SO_2) VOCs, Landfill Gas

Schedule 8: Surface Settlement Monitoring			
DNR ID#	**Sampling Point**	**Frequency**	**Parameters**
	Point ID numbers to be assigned if settlement hubs are used	Annually	99422 Land Surface Elevation (feet relative to MSL)

9. Condition 28 of the April 28, 2008 Conditional Plan of Operation approval are superseded and replaced with the table on the following page. The table incorporates the PALs and ACLs that were approved in the April 25, 2013 plan of operation modification approval.

		PARAMETER ABBREVIATION									
		COND, FIELD @25	FILTERED ALKALINITY $CaCO_3$	DISS. NH_3-N	DISS. SODIUM (Na)	TOT. FILTERED HARDNESS	DISS. ORGANIC CARBON	COD	DISS. ARSENIC (As)	DISS. NO2+ NO3	DISS. MANGANESE (Mn)
		94	*39036*	*608*	*930*	*22413*	*681*	*341*	*100*	*631*	*1056*
POINT NAME	WDNR ID	**PAL**							**ACL**		
MW-201	1	870	440	2.1	24	450	11		3.1	4.5	
MW-201A	2			2.3			3.6		4.8	5.9	
MW-202A	4	990	450	2.1	17	490	4.7		2.4	9.5	
MW-202R	5	860	400	2.1		410	9.5			1.5	
MW-203	6	980	390	2.1	19	480	11		2.6	14	
MW-203A	7	940	400	2.1	16	470	5.3			17	
MW-208	16	880	360	2.1	17	440	5.2		3.5	14	
MW-208A	17	880	370	2.1	20	430	6.3		2.1	8.5	
MW-209	18	730	320	2.1	17	370	6.0		2.8		
MW-209A	19	720	320		16	360	11		5.8	4.2	
MW-210A	20	960	410	2.1	16	480	12		2.4	11	
MW-211A	21	950	400	2.1	16	480	5.3		2.3	9.2	
MW-212	22	730	350	2.2	15	380	4.2		8.2		
MW-212A	23	750	330	2.1	28	380	4.3		1.3	4.1	
MW-212C	36	1400	730		15	930	11	30		5.3	
MW-224	32	1200	450	2.1		520	4.3			14	
MW-225	22	870	410	2.1	22	680	3.2		9.5	6.8	150
MW-228	35	1100	440		17	520	8.5	30		13	

This approval is based on the information available to the Department as of the date of approval. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the Department may ask you to provide further information relating to this activity. Likewise, the Department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes and administrative codes establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. You have 30 days after the decision is mailed or otherwise served by the Department to file your petition with the appropriate circuit court and serve the petition on the Department. The petition shall name the Department of Natural Resources as the respondent.

Dated: February 7, 2014

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

James A. Zellmer, P.E.
Waste & Materials Management Program Supervisor
Northeast Region

Valerie Joosten, P.E.
Waste & Materials Management Engineer
Northeast Region

Joseph Baeten
Hydrogeologist
Northeast Region

Attachment 1
Ridgeview Southern Expansion
Closure Cost Estimate (based on 33.2 acres)

Item	Quantity	Units	Cost per Unit	Cost
Gas Wells Installation	31	Each	$5,089	$157,800
Gas System Laterals and Header Pipe Installation	1	Lump sum	$108,603	$108,600
Soil Barrier (2 feet)	107,125	cubic yards	$3.18	$340,700
GCL	1,446,192	square feet	$0.504	$728,900
Super Gripnet Liner	1,446,192	square feet	$0.616	$890,900
Nonwoven Geotextile	1,446,192	square feet	$0.16	$231,400
Soil Rooting Layer (2.5 feet)	133,907	cubic yards	$3.56	$476,700
Topsoil Layer (6 inches)	26,781	cubic yards	$5.06	$135,500
Seed, Fertilizer, and Mulch	33.2	acres	$2,100	$69,700
Engineering, Documentation, and Certification	1	Lump sum	$264,172	$264,200
Diversion berms	7,300	linear feet	$12.50	$91,300
Toe drains	1	Lump sum	$27,500	$27,500
Downslope pipes	2	Each	$20,587	$41,200
Subtotal				**$3,564,400**
Add 10% Contingency				$356,400
Total				**$3,920,800**

Notes:

1. Costs are rounded to the nearest $100.
2. Closure costs are based on a worst case scenario of 33.2 acres requiring final closure.