1. Facility Name:	**Great River Energy – Elk River Station**
2. Facility Address:	**17845 Highway 10 East** **Elk River, MN 55330**
3. AQ Facility ID No.:	**14100003**
4. AQ File No.:	
5. Standard Industrial Classification (SIC):	**4953 – Waste Combustor** **4911 – Peaking Station**
6. Date Submitted:	**June 13, 2007**
7. Completed by:	Rich Hardegger / Barr Engineering
8. Contact Phone:	(952) 832-2629

Purpose
This worksheet is provided to help describe the assumptions made to determine dispersion factors within the air emissions risk evaluation. This worksheet will act as a completeness checklist. If the requested data or forms are not included, please describe why they are not included, and indicate if substitutes are provided.

Information Requested for All Submittals

9. Does the modeling include any point sources? **X Yes** **☐ No**

10. Does the modeling include any fugitive sources? **☐ Yes** **X No**

11. Dispersion factors are from:
- ☐ RASS Look-Up Table
- ☐ DISPERSE
- X Other (specify)

Modeling used AERMOD V07026

12. Enter the maximum terrain variation (meters) (as applicable):

Within 10m of shortest stack: N/A with AERMOD	**☐ Yes**
Within 100m of shortest stack: N/A with AERMOD	**☐ Yes**
Within 1000m of shortest stack: N/A with AERMOD	**☐ Yes**
Within 10m of lowest fugitive source: N/A with AERMOD	**☐ Yes**
Within 100m of lowest fugitive source: N/A with AERMOD	**☐ Yes**
Within 1000m of lowest fugitive source: N/A with AERMOD	**☐ Yes**

13. Stacks/Vents (if applicable)

Are all stacks considered?	**X Yes**	**☐ No**
Were any stacks merged?	**☐ Yes**	**X No**
Were stacks merged per MPCA DISPERSE guidance? N/A	**☐ Yes**	**☐ No**
Does the shortest modeled stack height in the RASS equal the shortest height on Form GI-04?	**X Yes**	**☐ No**

14. Fugitive Emission Sources (if applicable)

Are there any onsite paved roads?	**X Yes**	**☐ No**
Are there any onsite unpaved roads?	**☐ Yes**	**X No**
Are there any onsite storage/surge piles?	**☐ Yes**	**X No**
Are there any onsite material handling operations?	**X Yes**	**☐ No**
Are there any other types of onsite fugitive sources?	**☐ Yes**	**X No**
Does the modeling consider all onsite fugitive sources?	**☐ Yes**	**X No**
Does the modeling consider most onsite fugitive sources?	**☐ Yes**	**X No**

15. Stack Parameters (modeled values should match Form GI-04 values unless merged):

Modeled Stacks and Stack Parameters (see example below):

Model ID & Form GI-04 SV_ID_No.	RASS Stack ID number	Stack Height (meters)	Stack Temperature (Kelvin)	Stack Velocity (m/sec)	Stack Diameter (meters)
1 SV004		38	422	30	2.44
2 SV011		15	338	20	0.25
3 SV012		27	826	45	5.70
4 TK01		8.9	0 (Ambient)	0.01	1.00
5 TK02		8.9	0 (Ambient)	0.01	1.00
6 TK03		12	0 (Ambient)	0.01	1.00

Note: There are no merged stacks in the modeling

16. Fugitive Source Release Heights and Area Coverage (if applicable).
Please indicate in Table 7 if any fugitive/area source was modeled as a point source

Model ID & Form GI-05D FS_ID_No.	RASS Stack ID number	Release Height (meters)	Area Coverage (m^2)	Brief Description of Fugitive Source
1				
2				
3				

Supplemental Information Requested when using other modeling (e.g., AERMOD with Q/Critical Health Index (CHI) sums)

17. Dispersion model and version number (e.g., AERMOD 04300):
AERMOD 07026

18. Model options (e.g., DFAULT, CONC, FLAT, ELEV, RURAL, URBAN):
DFAULT, CONC, ELEV, RURAL

19. If urban (URBANOPT), please indicate: (N/A, used RURAL)

Population:
Roughness height (meters):
Population rationale

Full Metropolitan Statistical Area (MSA)?	☐ **Yes**	☐ **No**
Full Micropolitan Statistical Area (MSA)?	☐ **Yes**	☐ **No**
Partial Metropolitan Statistical Area (MSA)?	☐ **Yes**	☐ **No**
Partial Micropolitan Statistical Area (MSA)?	☐ **Yes**	☐ **No**
Other (specify):	☐ **Yes**	☐ **No**

Roughness height rationale (e.g., project site estimated via National Land Cover Data (NLCD) with MPCA Land Use Land Cover (LULC) parameterizations):

20. Indicate POLLUTID, AVERTIME, MULTYEAR, and HnH selections:

LAKES Multichem option was used to generate results of multiple pollutants at the same time
High 1st High selected for 1 hour averaging period over a combined five year time period.
High 1st High selected for monthly averaging period over a combined five year time period.
Maximum Annual Average was calculated for five individual years.

21. Terrain (DEM) Data: None, 1-degree, 7.5 minute, mix, other (specify): 1 degree DEM data

22. MPCA Meteorological Data (if applicable)

MPCA AERMET zip filename (e.g., RS435945.ZIP): MSP8690.zip
PROFBASE Elevation (meters): 254.2

23. Other Meteorological Data (if applicable):

Surface meteorological station:
Upper air meteorological station:
Years of meteorological data:
Land Use Land Cover (LULC) data source:
Explain how LULC was parameterized:
PROFBASE Elevation (meters):

24. Does the modeling calculate high-first-high (H1H) values?	**X Yes**	☐ **No**
25. Does the RASS only use H1H values?	**X Yes**	☐ **No**
26. Is a CD-ROM included with all modeling input/output files (AERMOD, BPIP-PRIME)?	**X Yes**	☐ **No**

27. Other comments to help understand the modeling (e.g., describe receptor grids, BPIP, etc.):

The building inputs used for the BPIP analysis were from the Elk River Peaking Station 2002 Title V Modeling. The receptor grid had 25 meter spacing along the property boundary, 50 meter spaced Cartesian grid out to 500 meters, and a 200 meter polar grid with a radius of 4 km.

FOR MPCA USE ONLY

PLEASE DO NOT COMMENT IN THE FOLLOWING SECTIONS

MPCA Dispersion Modeler:
Date received:
Date completed:
Other dates of importance:

Comments

1. **Items 1-8 (all submittals)**

2. **Items 9-12 (DISPERSE Section)**

3. **Items 13-21 (Other/ERER Section)**

Questions (add sample responses from past projects)

4. **Summarize site dispersion modeling. See Impact Analysis Form for example**.

5. **If refined modeling was not done, why? Discuss with team why this should be considered?**

6. **Are the criteria pollutants compared to the AAQS using "high first high" modeled concentrations (rather than the regulatory standard)? If not, what was used? Provide comments on why any of the pollutants exceed a ratio greater than 1.0 with their AAQS. Should further modeling be done?**

7. **Does (or can) the modeling show where the maximum modeled concentration is for acute? Chronic?**

8. **How accurate is the dispersion model to the actual site dispersion? What are the factors impacting the accuracy?**

9. **Is there a reason to consider that the presence of "flagpole" receptors which may experience higher concentrations than the maximum ground level concentrations? Why?**

10. **Additional comments or concerns:**