STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Greenskies Clean Energy, LLC petition for a declaratory ruling for the proposed construction, maintenance and operation of a 3.0-megawatt-AC solar photovoltaic electric generating facility on two parcels at the Elmridge Golf Course located to the east and west of North Anguilla Road at the intersection with Elmridge Road, Stonington, Connecticut, and associated electrical interconnection.	**Petition No. 1410** **September 29, 2020**

SUPPLEMENTAL PRE-FILED TESTIMONY OF STEVEN D. TRINKAUS

Q21. Please state your name for the record.

A21. On the same date that I submitted my pre-filed testimony in this matter, Greenskies (or I believe more accurately, an affiliated company) filed a post-hearing brief in Petition 1347A, in which I am also an expert witness. That brief contained some heavy criticism of me for not running my own calculations to support my arguments about the inadequacy of the stormwater controls proposed by the developer on that docket. I am submitting this supplemental testimony to provide the calculations here and to make sure that the Council has the information it needs to consider this petition.

Q22. Why didn't you do your own calculations in the other matter?

A22. Frankly, I don't see running those calculations as necessary to support my testimony; it's the responsibility of the design engineer to show that his or her calculations support the design. I am not testifying as the design engineer in these matters. It also takes a few hours to do this exercise, as again, I was not the designer for the project, which means that I do not have all of the raw data plugged into my software already. In representing non-profit citizen groups, spending extra hours on something like that can be cost-prohibitive.

Q23. What calculations did you run here?

A23. I run the numbers for both runoff volume and peak rate based on the assumption that the solar panels are impervious. Based on my earlier pre-filed testimony, the panels should have been considered impervious, both based on general principles of engineering and the fact that the petitioner did not satisfy the requirements of Appendix I to the General Permit that would otherwise permit it to consider the panels to be pervious. I looked at the five post-development watershed areas which contain solar panels, incorporated the impervious area associated with the panels in each, and calculated the peak rate and runoff volume for the 2-year storm.

Q24. What were the results of your calculations?

A24. My results are shown in the chart below. Petitioner numbers are those submitted/used by Greenskies in its design (assuming the panels are pervious), and SDT numbers are my results (assuming the panels are impervious).

Watershed	Petitioner peak rate	SDT peak rate	Petitioner volume	SDT volume	% change peak rate	% change volume
PR-1A	6.22	9.25	0.797 ACRE-FEET	1.038 ACRE FEET	48%	30%
PR-1C	5.92	7.56	0.886 ACRE-FEET	0.945 ACRE FEET	28%	6.6%
PR-02	1.59	2.18	0.246 ACRE-FEET	0.268 ACRE FEET	37%	8.9%
PR-03	3.15	4.13	0.493 ACRE FEET	0.528 ACRE FEET	31%	7.1%
PR-08	3.49	5.57	0.372 ACRE FEET	0.534 ACRE FEET	59%	43%

Q25. What do these numbers tell us?

A25. As the watershed area are quite variable, and some of the off-site areas have very little impervious area, the impervious area associated with panels does not make a big change in the runoff volume. However, in those watersheds (PR-1A, PR-08) which include large portions of the solar array, both the increases in peak rate and runoff volume are substantial

when the panels are considered impervious. The peak rate changes here are all significant, and are very similar to what I found when I did the same sort of calculations in connection with the failure of the Antares site in East Lyme. There, I found an average increase of 40%. The numbers here are similar, ranging from 28% up to 59%.

Q26. What does an increase in peak rate mean?

A26. It means that the basins, as currently designed, will discharge higher rates of runoff than stated in the petition. As there are no calculations which show infiltration will occur, there will be higher rates of runoff volumes also being discharged from the two stormwater basins.

The statements above are true and accurate to the best of my knowledge.

Steven Trinkaus

Steven Trinkaus

9/29/2020

Date

CERTIFICATION

I hereby certify that a copy of the foregoing document was delivered by e-mail to the following service list:

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