

# Appendix A. Known Bugs and Updates

## General

Problem	Type
1. SMK_MAXERROR and SMK_MAXWARNING do not work for most errors and warnings	bug
2. Update all NetCDF file opens to ensure that FDESC3Ds are overwritten when they are different. This may require aborting if they are different and having the user delete the file. Currently, if settings are changed that are stored in FDESC3D, they will not be overwritten if the file already exists. <sup>4</sup>	bug
3. For multi-line WARNINGS and ERROR, have something that you can grep easily to create a list of records	change
4. In default point sources script, wording for “controls” in merge-for-point for MARKETPEN and SPC_INPUT	change
5. Update time zone names in include file to include all global time zones	change
6. Add "Reading..." and "Processing..." messages to more subroutines. Sometimes this will require a Firsttime section.	change
7. Parsline routine could better be a logical so make programs so that they never abort in Parsline routine.	change
8. History field in I/O API files needs to be initialized	change
9. Update needed to support 80-character pollutant and species names	change
10. Update needed to permit an unlimited number of pollutants and species	change
11. Update pollutants list reader to support multiple names for the same pollutant code	bug
12. The number of characters for SMOKE input and output file names including paths is limited to 256 characters by the I/O API library. This is not a bug but a limitation of SMOKE.	limitation

### ***Library routines***

Problem	Type
1. May be a problem reading and assigning state-specific PSIs using the xreftbl.f routine. This would affect Premobl, Temporal, and Emisfac for mobile sources when using VMT	possible bug

### ***Smkinven***

Problem	Type
1. Add day- and hour-specific data import for area and mobile sources	change
2. All dropped emissions are labeled with units of tons/year, regardless of whether the dropped emission values are actually tons/year or not. For example, the dropped EMS-95 point source emissions are in tons/day, but labeled as tons/year.	bug
3. When using EMS-95 format for mobile sources, VMT data might not be matched properly by SCC.	bug

### ***Grwinven***

Problem	Type
1. Projections are not data specific, causing SPEEED to be grown the same as VMT.	change

### ***Grdmat***

Problem	Type
2. Update code to use “out-of-grid” surrogate fractions for counties that are on the border. Use these to create a report of emissions in the county not included in the grid.	change
3. Fix full-SCC assignment of surrogates. Currently, only fields for road class and vehicle type are used.	change
4. Add use of gridding surrogates names file for messages and reports	change

5. Add call to read the link definitions file, and implement using it	change
6. Add Adjmv routine to permit mobile-source adjustments using the gridding matrix	change
7. Add reports at end of genmgmat and genagmat routines	change
8. For gridding statistics, add cell (and FIPS codes?) associated with the maximum number and minimum number of sources per cell. Add the minimum non-zero sources per cell.	change

### ***Spcmat***

Problem	Type
<p>1. If output species names are changed and written to an existing output file, the names do not get changed in the output file. This is a consequence of the I/O API and that it does not check the header descriptions to make sure that they are the same. An update should be made to SMOKE do this, is possible.</p> <p>In the meantime, the solution to this possible problem is to manually delete the ASMAT, MSMAT, or PSMAT files, when changing features of the chemical mechanism.</p>	bug
2. Abort when there are missing fields in the speciation profiles file. Currently, if the final column is missing, the program will continue, and put -inf in the speciation matrix!	bug

### ***Cntlmat***

Problem	Type
1. SIC-based assignments of controls do not work	bug
2. Program does not work for mobile sources	bug

### ***Temporal***

Problem	Type
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1. Use of default PSIs are not working for MPLIST file (reported by RWDI).	bug
2. The ATSUP file and it's use in Smkreport does not work properly when temporal profiles are assigned by pollutant. The reports from Smkreport are only valid when no pollutant-specific temporal profiles are used.	bug
3. Temporal profiles and cross-references are still requested if all inputs are hour-specific	bug
4. Month-specific adjustments do not work for EPS2.0 inputs	bug
5. Add method used for setting day-of-week factors to the output file description	change
6. Update to permit emission factors for any source category	update

### **Laypoint**

Problem	Type
1. Instrument Laypoint to be able to give the number of sources per grid cell for each of the layer fractions cases. Also create a file that has the stability classes per grid cell per hour, and/or the plume rise "cases" per source per hour.	update

### **Emisfac**

Problem	Type
1. Although no problems have been identified as a result, the Lnblnk routine in the Mobile5b library preempts the Lnblnk routine in libftn.so. The name of this subroutine should be changed to prevent any potential problems	change
2. Can the environment variables SMK_MINT_MIN, etc. be updated to only be evaluated one time instead of two?	Change
3. Put all of the mobile5-specific common block and block data declarations into an include file	change
4. Update to permit importing of emission factors from tables.	change

### **Premobl**

Problem	Type
1. Update to use Wrdaysmsg routine	change
2. Chkfulldy routine: the ending hour check should be re-done in such a way that the last day is a “day” when all of the sources have at least 1 hour during that day. With the current code, if ETIME = 120000 and ENDDAYHR = 50000, no missing hours would be reported, but really 24-7=17 missing hours should have been reported for that day	bug

### ***Smkmerge***

Problem	Type
1. Update to automatically use mass-based or mole-based speciation matrix, depending on requested units.	change
2. Improve formatting of reports so that it is more feasible to do even more pollutants and species and not have the width of the reports get very, very large	change
3. Add option to output reports for only the states with non-zero emissions	change
4. Update to permit mass estimate of state totals from mole-based merge	change
5. Only the non-controlled merges have been thoroughly tested. Point source multiplicative control shave been tested.	testing
6. Update to permit mole/mass based at same time. Estimated conversion of mass to mole and mole to mass.	change
7. Update report structure to handle large numbers (more than 15-20) pollutants or species at the same time.	change

### ***Mrggrid***

1. Update to allow factors to be applied uniformly over the grid.	change
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