Comments received from Dave Allen on June 24, 2011 regarding mercury deposition patterns

During the panel's public meeting, several panel members commented that the mercury deposition patterns, due to US EGUs, reported in Figures 2-3 and 2-4 of the Mercury TSD, appeared qualitatively different than deposition maps that the panel members were familiar with. Figures 2-3 and 2-4 are reproduced below.

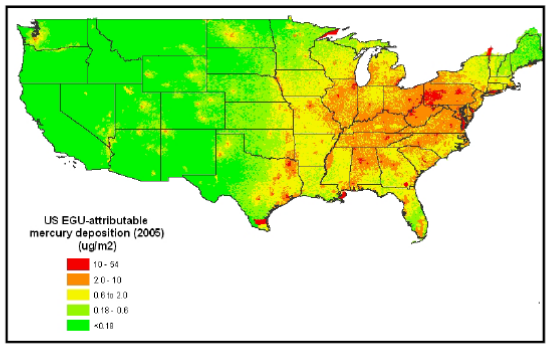


Figure 2-3. U.S. EGU-attributable mercury deposition by watershed (2005)

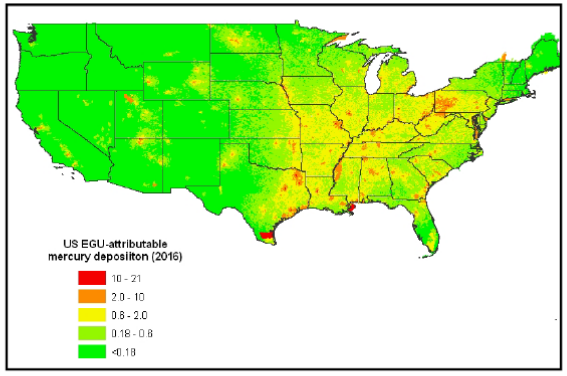


Figure 2-4. U.S. EGU-attributable mercury deposition by watershed (2016)

One of the unusual features in these Figures (but not the only one) is the very high rates of deposition predicted for southern Texas, particularly in 2016. This feature is unusual, at least in part, because other parts of the report do not indicate any EGU mercury deposition hot spots in this region. For example, Figures G-1 and G-2 (reproduced on the next page) in Appendix G show no excess deposition due to EGUs in this region.

Figure G-1. Excess Local Deposition in 2005

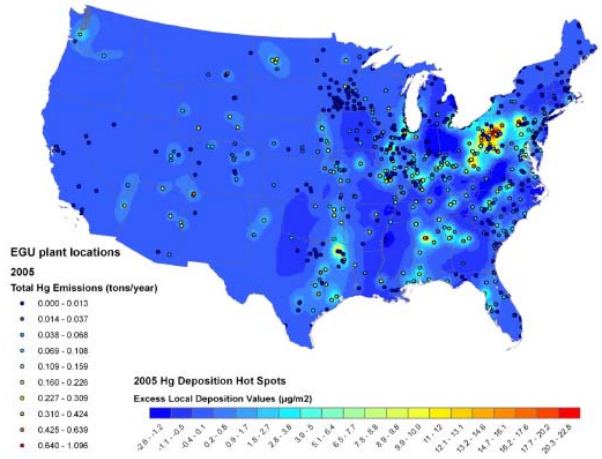
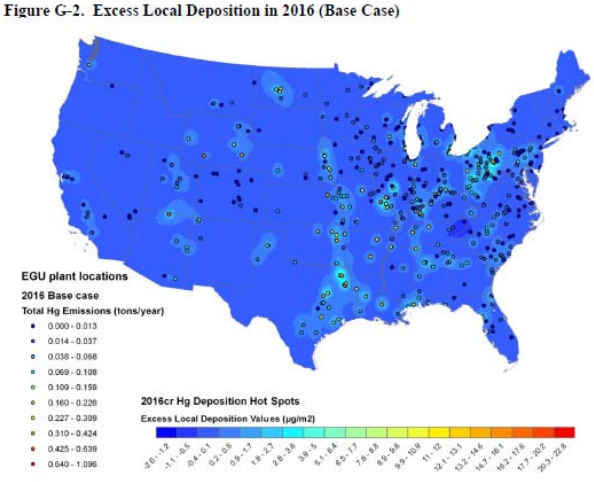
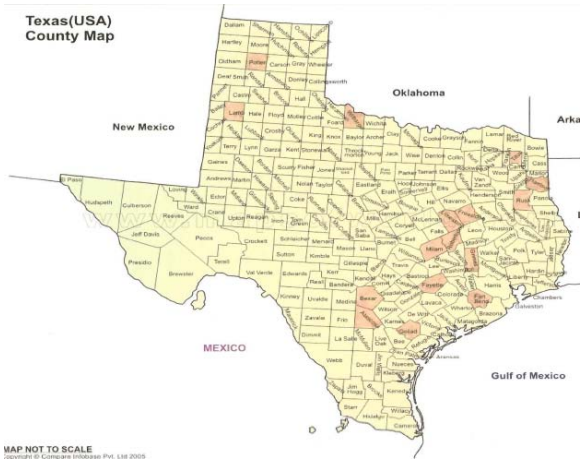


Figure G-2. Excess Local Deposition in 2016 (Base Case)



Further analysis by the panel of Hg emissions reported in e-Grid showed no EGU mercury sources in this region. The counties in which there are Hg emissions in Texas, reported through e-Grid, are highlighted in the Figure below. None are located in the region reported as a Hg deposition hot spot. The Table that follows lists emissions from individual EGUs in Texas, reported through e-Grid.



Plant name	DOE/EIA ORIS plant or facility code	eGRID subregion acronym	Plant county name	Plant latitude	Plant longitude	Plant primary fuel	Plant primary coal/oil/gas/ other fossil fuel category	Plant nameplate capacity (MW)	Plant annual net generation (MWh)	Plant annual Hg emissions (lbs)	Plant annual Hg output emission rate (lb/GWh)
Big Brown	3497.0	ERCT	Freestone	31.8206	-96.0561	LIG	COAL	1,186.8	8,549,082.0	435.64	0.0510
Coleto Creek	6178.0	ERCT	Goliad	28.7087	-97.2083	SUB	COAL	600.4	5,103,360.0	163.22	0.0320
Fayette Power Project	6179.0	ERCT	Fayette	29.9172	-96.7506	SUB	COAL	1,690.0	11,059,426.0	769.75	0.0696
Gibbons Creek	6136.0	ERCT	Grimes	30.6167	-96.0778	SUB	COAL	453.5	3,595,378.0	287.14	0.0799
Harrington	6193.0	SPSO	Potter	35.2972	-101.7475	SUB	COAL	1,080.0	7,458,711.0	285.43	0.0383
J K Spruce	7097.0	ERCT	Bexar	29.3064	-98.3203	SUB	COAL	566.0	4,190,501.0	9.22	0.0022
J T Deely	6181.0	ERCT	Bexar	29.3072	-98.3228	SUB	COAL	932.0	5,915,821.0	497.18	0.0840
Limestone	298.0	ERCT	Limestone	31.4108	-96.2617	LIG	COAL	1,849.8	12,759,023.0	969.25	0.0760
Martin Lake	6146.0	ERCT	Rusk	32.2597	-94.5703	LIG	COAL	2,379.6	18,250,189.0	1,409.38	0.0772
Monticello	6147.0	ERCT	Titus	33.0917	-95.0417	SUB	COAL	1,980.0	14,807,478.0	2,153.27	0.1454
Oklaunion	127.0	ERCT	Wilbarger	34.0833	-99.1769	SUB	COAL	720.0	4,346,022.0	170.60	0.0393
Pirkey	7902.0	SPSO	Harrison	32.4607	-94.4852	LIG	COAL	721.0	4,993,144.0	945.43	0.1893
San Miguel	6183.0	ERCT	Atascosa	28.7094	-98.4722	LIG	COAL	410.0	2,850,653.0	131.46	0.0461

Sandow No 4	6648.0	ERCT	Milam	30.5642	-97.0639	LIG	COAL	590.6	4,303,896.0	293.58	0.0682
Sandow Station	52071.0	ERCT	Milam	30.5642	-97.0639	LIG	COAL	363.0	2,554,977.0	N/A	N/A
Tolk	6194.0	SPSO	Lamb	34.1847	-102.5686	SUB	COAL	1,136.0	7,418,825.0	150.15	0.0202
Twin Oaks Power One	7030.0	ERCT	Robertson	31.0978	-96.6922	LIG	COAL	349.2	2,490,416.0	32.40	0.0130
W A Parish	3470.0	ERCT	Fort Bend	29.4828	-95.6311	SUB	COAL	3,969.0	19,688,218.7	584.08	0.0297
Welsh	6139.0	SPSO	Titus	33.0583	-94.8458	SUB	COAL	1,674.0	9,537,745.0	462.21	0.0485

Facility highlighted in yellow, located in northeast Texas, has the highest Hg emissions in the United States, as reported through e-Grid.

Since e-Grid showed no EGU Hg emissions in the region of south Texas with the predicted Hg deposition hot spot, shown in Figures 2-3 and 2-4, TRI Hg emission reports were retrieved for the counties where the deposition hot spot was predicted. The results are summarized below (refer to map on previous page for county names)

- Counties in the "hot spot" that have no reported TRI data:
  - Brooks, Duval, Jim Wells, Kenedy, Refugio, Starr, Willacy, Zapata.
- Counties in the "hot spot" that have reported TRI data, but do not have mercury or mercury compounds released:
  - Bee, Hidalgo, Jim Hogg, Kleberg, McMullen, Webb.
- Counties in the "hot spot" that have reported TRI data, and have mercury or mercury compounds released:
  - Live Oak:
    - 1 Refinery.
    - Total Hg = 18 Ib.
    - Does not exist in the Electric power system database.
  - Nueces:
    - 10 Refineries and 2 Minerals plant.
    - Total Hg = 140 Ib.
    - Exist in the Electric power system database.
    - Total capacity for all sources = 1235.1 MW.
    - Energy source for all sources = Natural Gas.
  - San Patricio:

- 1 plant (Sherwin Alumina LP.).
- Standard Industrial Classification (SIC) = 2819 (primary metals).
- Total Hg = **1084** Ib.
- Capacity = 24MW.
- Energy source = Purchased steam.
- Does not exist in the Electric power system database.

It may be possible that the Alumina plant (primary metals) has been misclassified as an EGU.

There are other points on the map where panel members noted anomalies. These should be similarly investigated and the report updated as appropriate. This issue deserves further attention because the deposition calculation is the starting point for the calculations in the TSD and inaccuracies in the interpretation of the deposition will propagate throughout the analysis