

**Appendix F-3: EPA/FLM/Stakeholder Outreach
and Presentations: F-3i - F-3o**

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**Appendix F-3i - VISTAS Presentation to MJOs, April 21,
2020**

VISTAS Regional Haze Project Update



Regional Planning Organization Briefing
April 21, 2020

Initial VISTAS Emissions Updates

- Used EPA's 2011 base year emissions without change
- Updated EPA's Initial 2028 projection year emissions
 - EGU and major non-EGU sources
 - Removed Clean Power Plan assumptions
 - VISTAS – Adjusted for changes in fuels and facility operating plans
 - Non-VISTAS – Used ERTAC 2.7opt



Outline

- Background Information
- 2028 Emissions Updates
- Revised 2028 PSAT Stacked Bar Charts
- Four Factor Analysis
- Next Steps & Schedule

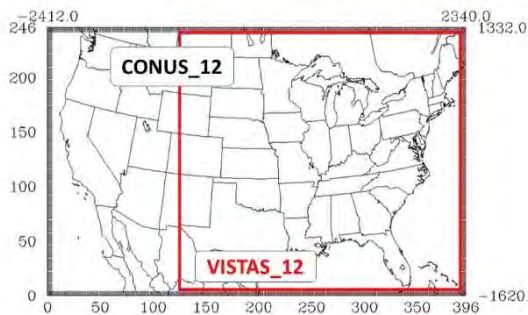


VISTAS vs. EPA Updated 2028 Emission Projections

- The table below compares the 2028 point emissions used by VISTAS vs. the latest 2028fh emissions used by EPA (projected from 2016). The emissions below are extracted from the VISTAS 12 modeling domain which covers the Eastern U.S.

Pollutant	VISTAS 2028 (tpy)	New EPA 2028 (tpy)	Change (tpy)	Change (%)
NOx	2,641,463.83	2,108,115.50	533,348.33	20.19%
SO2	2,574,542.02	1,400,287.10	1,174,254.92	45.61%

VISTAS Modeling Domains



Old ERTAC (2.7opt) vs. New ERTAC (16.0)

SO2	16.0 2028	2.7opt 2028	Δ SO2	Δ SO2 (%)
CENSARA	367,683.7	760,828.2	-393,144.5	-51.67%
LADCO	266,047.0	379,577.5	-113,530.5	-29.91%
MANE-VU	78,657.0	196,672.6	-118,015.6	-60.01%
VISTAS	161,502.5	273,582.1	-112,079.6	-40.97%
TOTAL	976,471.2	1,783,376.5	-806,905.3	-45.25%

NOx	16.0 2028	2.7opt 2028	Δ NOx	Δ NOx (%)
CENSARA	244,499.3	354,795.1	-110,295.8	-31.09%
LADCO	166,429.4	198,966.9	-32,537.4	-16.35%
MANE-VU	56,315.3	83,432.5	-27,117.2	-32.50%
VISTAS	200,791.1	270,615.7	-69,824.6	-25.80%
TOTAL	840,973.6	1,166,663.1	-325,689.5	-27.92%

VISTAS CC/TAWG Conclusions

- 2028 emission updates are necessary
 - VISTAS States** – States will:
 - Update 2028 major source emissions projections (SO₂, NO_x, PM_{2.5}, PM₁₀, NH₃, CO) at the facility and unit level
 - Add any new sources of significance
 - LADCO States** – SESARM will:
 - Replace ERTAC_2.7 with ERTAC_16.1 based on LADCO input
 - All Other States** – SESARM will:
 - Replace ERTAC_2.7 with ERTAC_16.0
 - Verify accuracy of large SO₂ and NO_x source emissions projections via contact with surrounding states/RPOs and update emissions as needed
- Additional 2028 air quality modeling is needed

2028 SO₂ Comparison

State/RPO	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
AL	87,111.28	59,056.98	-32.1%	15,480.96	8,365.96	-46.0%	71,630.32	50,691.02	-29.2%
FL	63,501.23	52,982.68	-16.6%	28,547.41	24,004.67	-15.9%	34,953.82	28,978.01	-17.1%
GA	37,065.83	36,166.09	-2.4%	18,473.28	17,573.54	-4.9%	18,592.55	18,592.55	0.0%
KY	75,140.26	65,636.83	-12.6%	56,262.06	49,585.95	-11.9%	18,878.20	16,050.88	-15.0%
MS	75,140.26	8,405.06	-88.8%	6,984.57	3,236.28	-53.7%	14,249.74	5,168.78	-63.7%
NC	35,232.88	24,347.18	-30.9%	19,734.80	9,971.47	-49.5%	15,498.08	14,775.71	-4.7%
SC	29,600.85	29,601.25	0.0%	10,593.79	10,695.34	0.9%	18,907.05	18,905.91	-0.6%
TN	23,447.58	21,057.17	-10.2%	12,114.30	10,030.04	-17.2%	11,333.28	11,027.13	-2.7%
VA	19,839.18	18,551.32	-6.5%	3,264.09	1,976.23	-39.5%	16,575.09	16,575.09	0.0%
WV	63,404.07	53,715.79	-15.3%	57,828.67	47,744.49	-17.4%	5,575.41	5,971.30	7.1%
CENSARA	1,012,946.59	621,321.29	-38.7%	773,625.13	382,000.34	-50.6%	239,321.46	239,320.75	-0.0%
LADCO	860,186.42	498,171.62	-42.1%	444,936.99	282,492.18	-36.4%	215,679.44	215,679.44	0.0%
MANE-VU	270,810.83	149,439.76	-44.8%	203,601.43	95,074.20	-53.3%	67,145.39	54,365.55	-19.0%
WRAP	182,121.89	135,483.18	-25.6%	136,955.17	90,316.46	-34.1%	45,166.72	45,166.73	0.0%
TOTAL	2,581,643.20	1,773,936.20	-31.3%	1,788,132.63	1,032,667.35	-42.2%	793,510.56	741,268.85	-6.6%

Additional Modeling-Related Tasks

- Emissions processing
- Updated 2028 CAMx modeling (VISTAS_12)
- Updated 2028 visibility projections
- Documentation

2028 NO_x Comparison

State/RPO	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
AL	80,389.97	70,824.72	-11.9%	26,895.35	20,008.14	-25.6%	53,494.61	50,816.58	-5.0%
FL	68,006.19	70,010.40	2.9%	26,250.73	25,049.80	-4.6%	41,755.45	44,960.50	7.7%
GA	67,197.50	65,885.55	-2.0%	25,899.67	24,587.73	-5.1%	41,297.83	41,297.83	0.0%
KY	66,240.03	62,130.83	-6.2%	36,781.72	32,695.94	-11.1%	29,458.31	29,434.89	-0.1%
MS	52,159.32	46,853.62	-10.2%	13,279.53	12,208.89	-8.1%	38,879.79	34,644.73	-11.1%
NC	65,863.57	58,933.80	-10.5%	27,842.23	20,977.65	-24.7%	38,021.74	37,956.15	-0.2%
SC	36,051.31	36,170.87	0.3%	10,522.78	10,707.42	1.8%	25,528.53	25,463.44	-0.3%
TN	45,879.07	42,954.25	-6.4%	10,086.01	7,814.13	-22.5%	35,793.06	35,140.12	-1.8%
VA	43,210.19	41,671.99	-3.6%	11,973.97	10,435.77	-12.8%	31,236.22	31,236.22	0.0%
WV	65,054.07	68,206.77	4.8%	46,721.77	49,874.15	6.7%	18,332.30	18,332.62	0.0%
CENSARA	903,979.83	791,307.59	-12.3%	802,706.66	720,182.46	-9.9%	101,273.19	101,273.19	0.0%
LADCO	548,866.24	491,345.02	-10.2%	244,035.26	186,513.52	-23.6%	304,831.49	304,831.49	0.0%
MANE-VU	244,280.15	222,991.41	-9.1%	103,465.15	82,176.41	-20.9%	140,815.00	140,815.00	0.0%
WRAP	367,819.80	301,433.41	-18.0%	187,944.97	126,558.55	-32.7%	179,874.83	174,874.86	-2.8%
TOTAL	2,649,998.14	2,370,804.22	-10.5%	1,159,405.80	879,790.66	-24.1%	1,490,592.35	1,491,013.55	0.0%

Updated 2028 Point Emissions

Revised 2028 PSAT Stacked Bar Charts (Original and Adjusted)

PSAT Source Apportionment Modeling

- Quantifies visibility impacts from individual point sources, source sectors, and geographic regions
- NOx and SO₂ tagging
- Used for further evaluation of AOI results
- Refines information on contributions to visibility impairment
- Can be used to adjust future year visibility projections to account for additional emission controls
- VISTAS contract with ERG allows for up to 250 tags

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Revised State/RPO PSAT Results

• Revised EGU Sulfate PSAT Results

$$= \text{Original EGU Sulfate PSAT Results} * \text{SO}_2 \text{ EGU Ratio}$$

$$\text{where, SO}_2 \text{ EGU Ratio} = \frac{\text{(Revised EGU SO}_2 \text{ emissions)}}{\text{(Original EGU SO}_2 \text{ emissions)}}$$

• Revised NEGU Sulfate PSAT Results

$$= \text{Original NEGU Sulfate PSAT Results} * \text{SO}_2 \text{ NEGU Ratio}$$

$$\text{where, SO}_2 \text{ NEGU Ratio} = \frac{\text{(Revised NEGU SO}_2 \text{ emissions)}}{\text{(Original NEGU SO}_2 \text{ emissions)}}$$

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PSAT SO₂ and NOx Tags (209)

Round 1 (122 tags)

- Total SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- Total NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ tags for individual VISTAS facilities = 50 tags
- NOx tags for individual VISTAS facilities = 20 tags

Round 2 (87 tags)

- Non-EGU point SO₂ for 10 individual VISTAS states + 3 RPOs = 13 tags
- Non-EGU point NOx for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ and NOx for N/S/W/E boundaries = 8 tags
- SO₂ tags for individual VISTAS facilities = 10 tags
- NOx tags for individual VISTAS facilities = 16 tags
- SO₂ tags for individual non-VISTAS facilities = 17 tags
- NOx tags for individual non-VISTAS facilities = 10 tags

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Revised State/RPO PSAT Results

• Revised EGU Nitrate PSAT Results

$$= \text{Original EGU Nitrate PSAT Results} * \text{NOx EGU Ratio}$$

$$\text{where, NOx EGU Ratio} = \frac{\text{(Revised EGU NOx emissions)}}{\text{(Original EGU NOx emissions)}}$$

• Revised NEGU Nitrate PSAT Results

$$= \text{Original NEGU Nitrate PSAT Results} * \text{NOx NEGU Ratio}$$

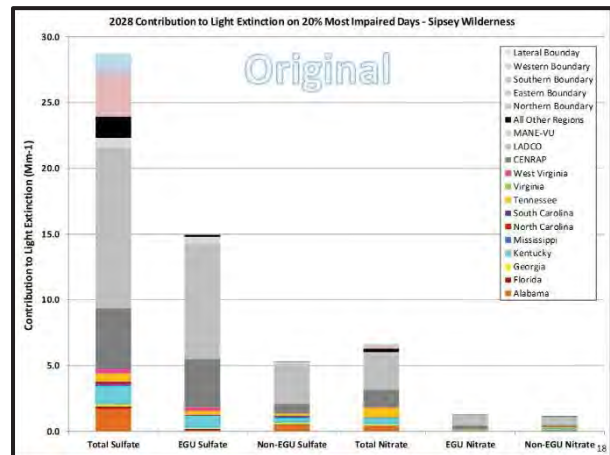
$$\text{where, NOx NEGU Ratio} = \frac{\text{(Revised NEGU NOx emissions)}}{\text{(Original NEGU NOx emissions)}}$$

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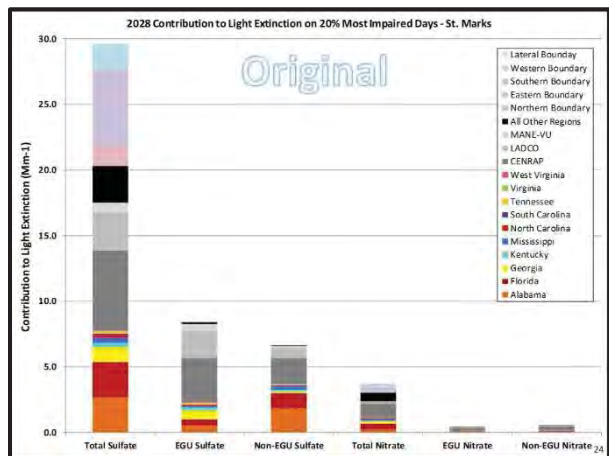
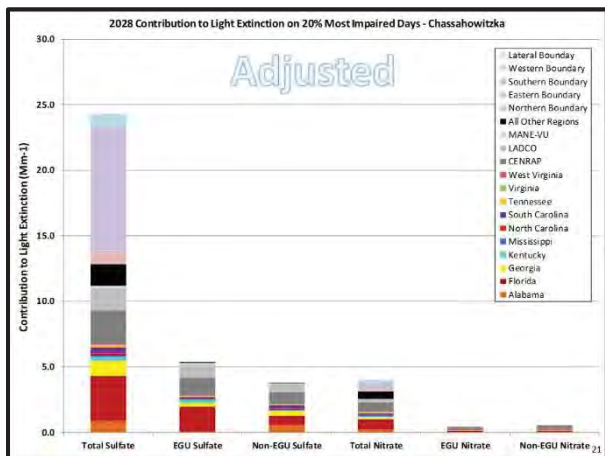
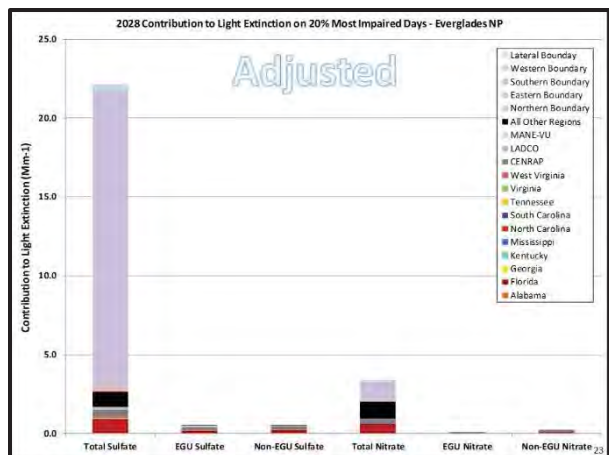
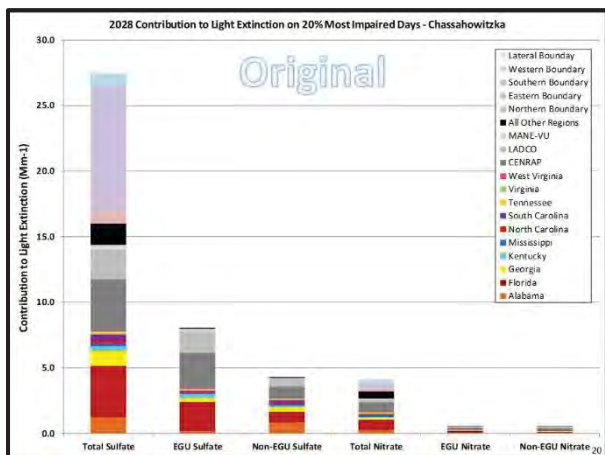
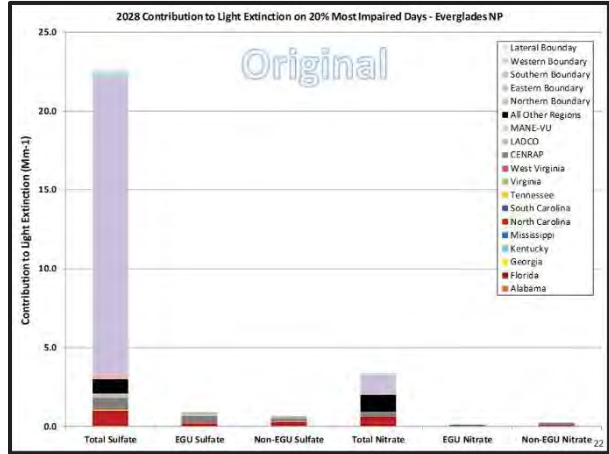
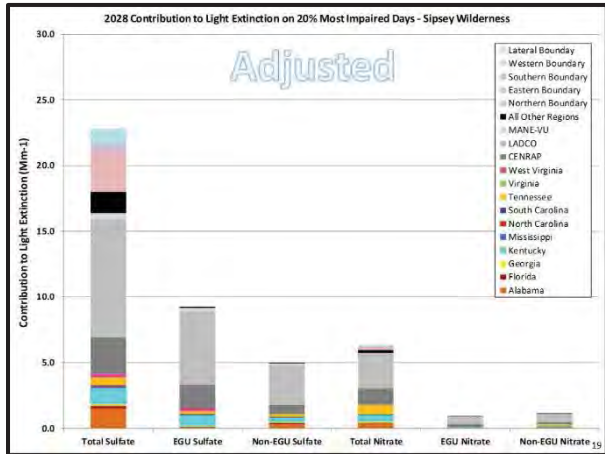
PSAT Adjustment Ratios

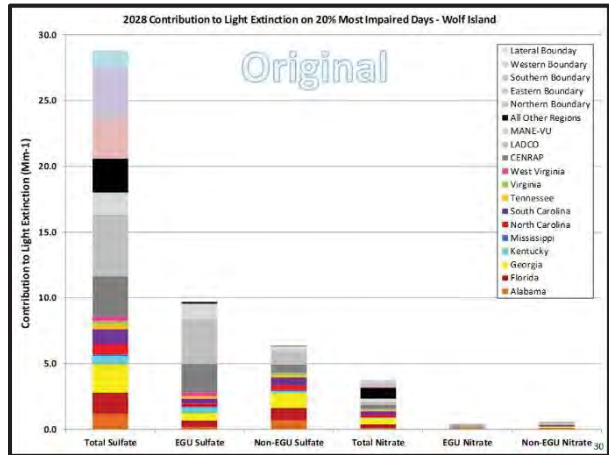
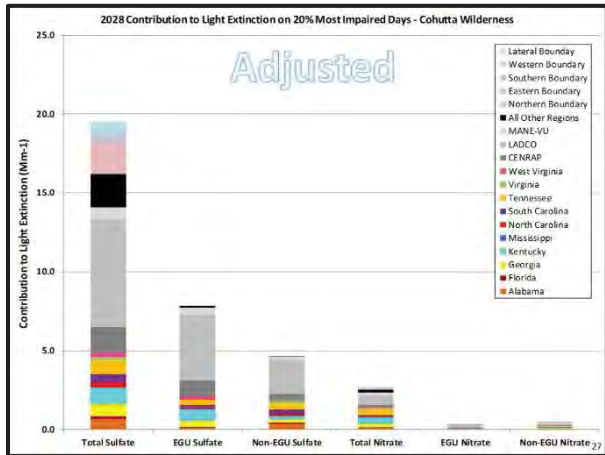
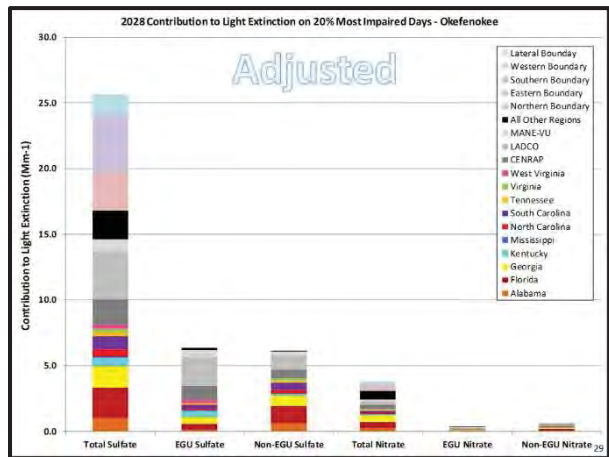
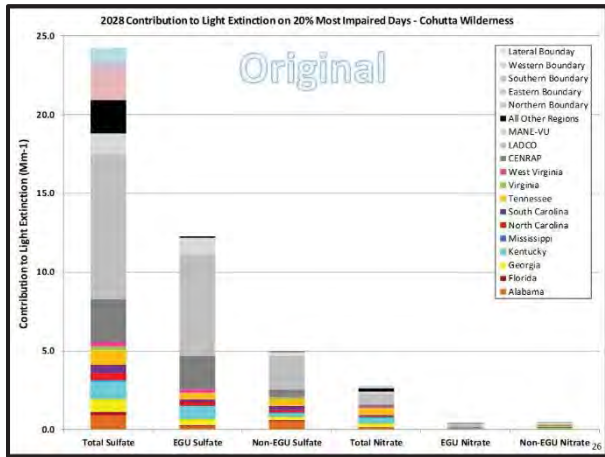
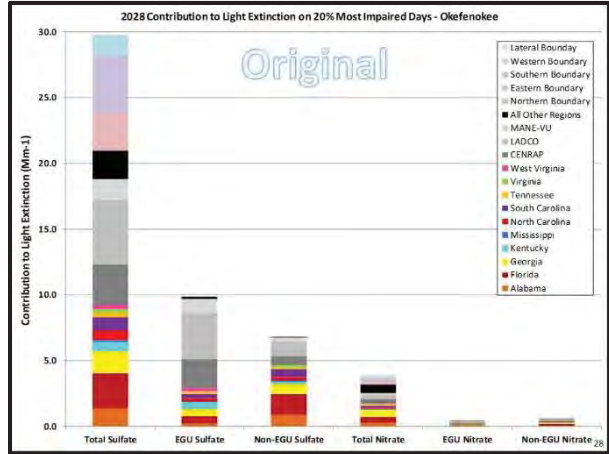
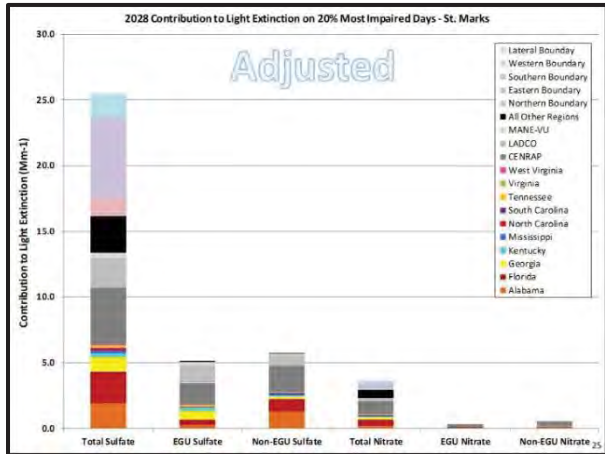
State/RPO	SO ₂ EGU Ratio	SO ₂ NEGU Ratio	NOx EGU Ratio	NOx NEGU Ratio
AL	0.540	0.708	0.744	0.950
FL	0.841	0.829	0.954	1.077
GA	0.951	1.000	0.949	1.000
KY	0.881	0.850	0.889	0.999
MS	0.463	0.363	0.668	1.023
NC	0.485	0.953	0.753	0.998
SC	1.000	1.000	1.018	0.997
TN	0.828	0.973	0.775	0.982
VA	0.605	1.000	0.872	1.000
WV	0.826	1.071	1.067	1.000
CENSARA	0.494	1.000	0.706	1.000
LADCO	0.636	1.000	0.764	1.000
MANE-VU	0.467	0.810	0.794	1.000

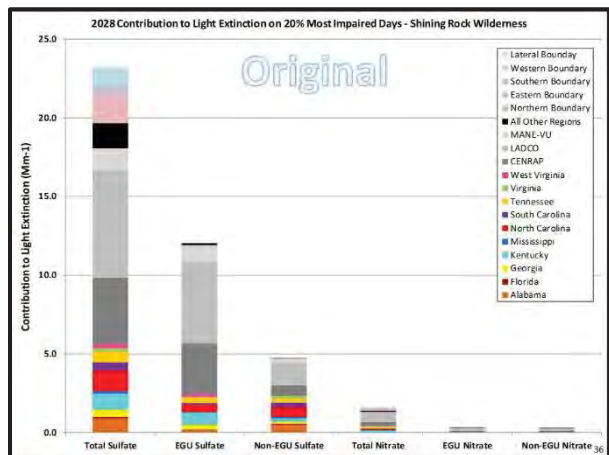
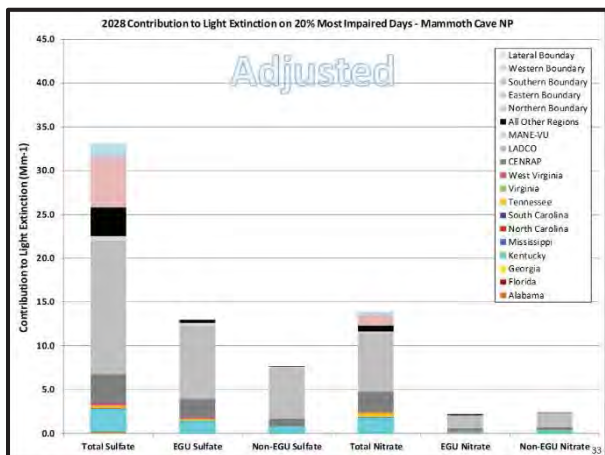
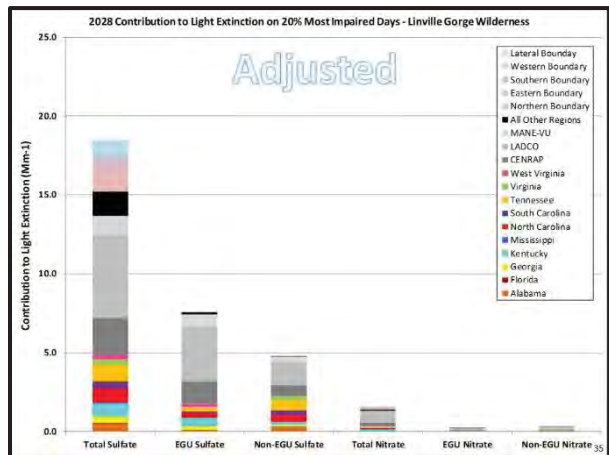
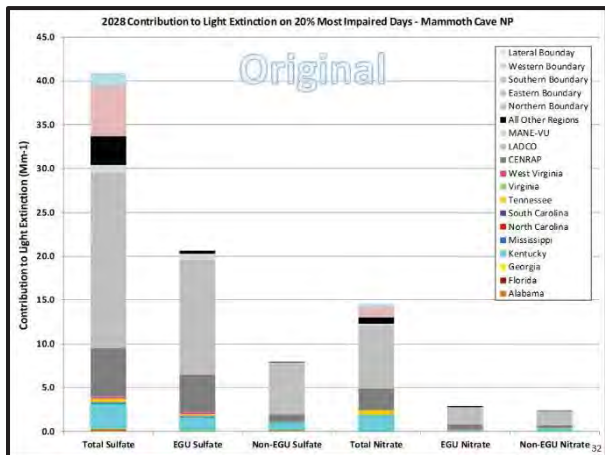
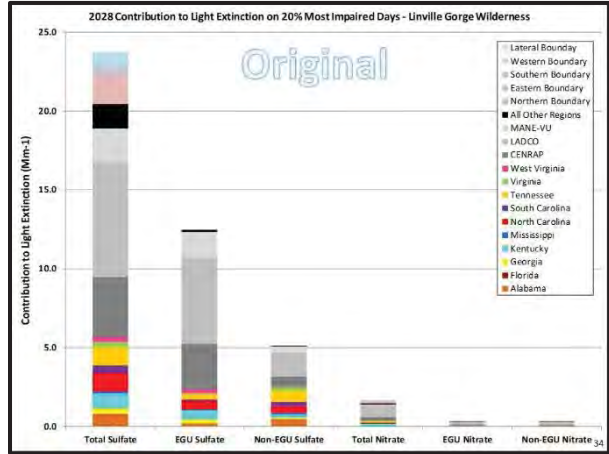
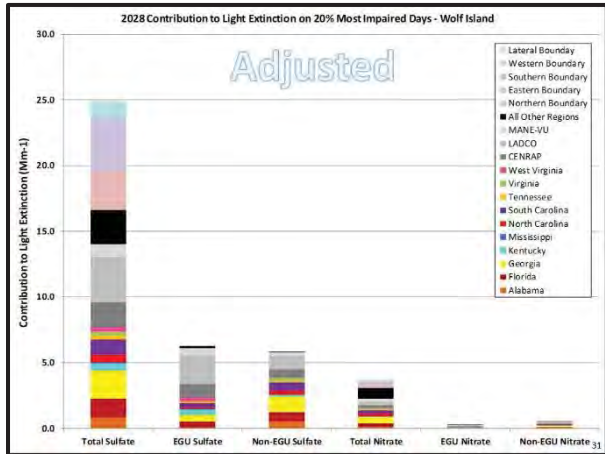
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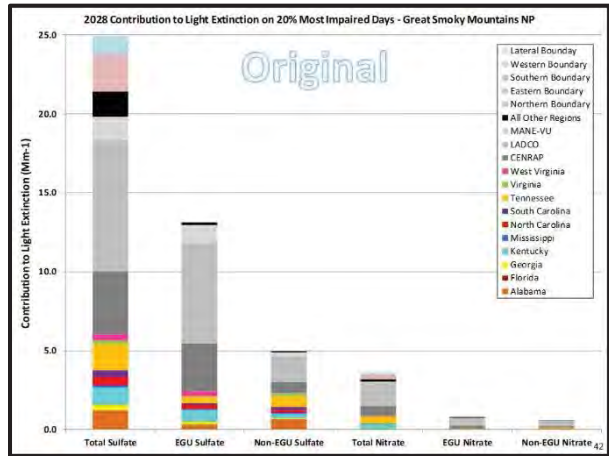
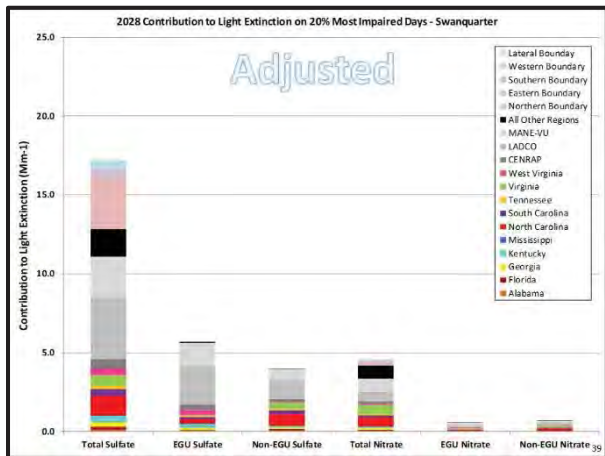
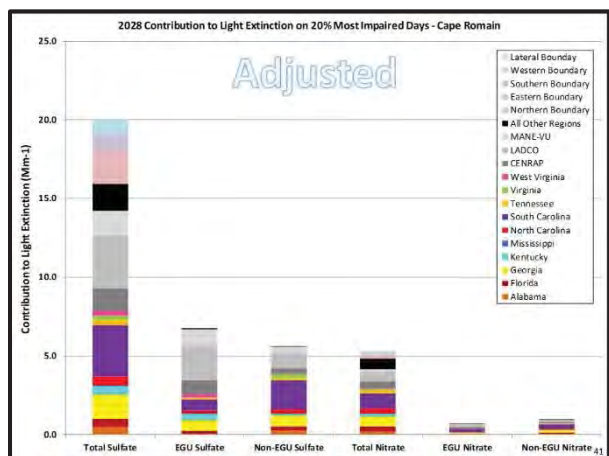
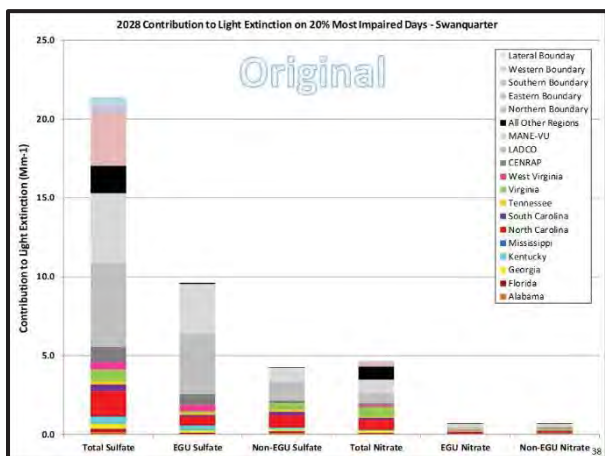
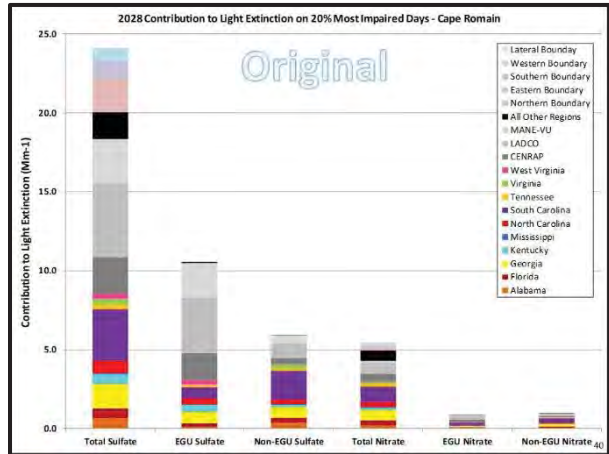
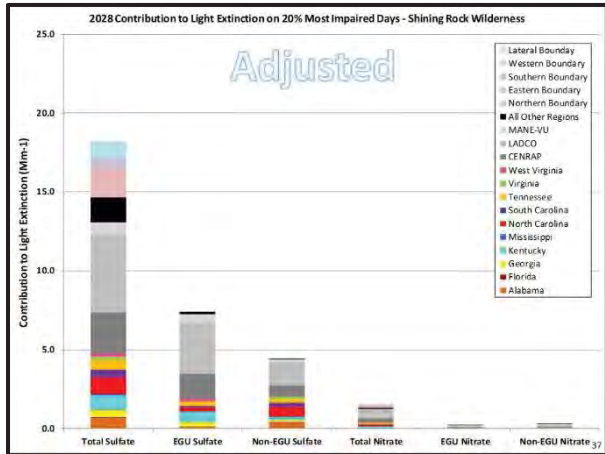


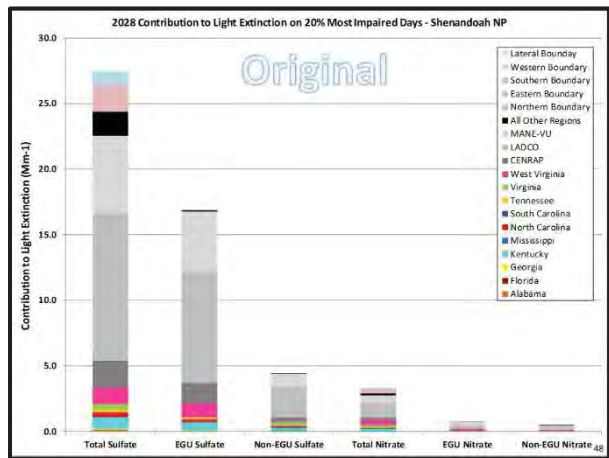
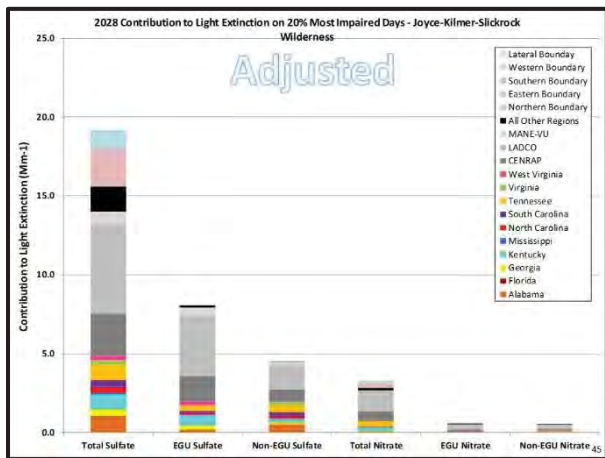
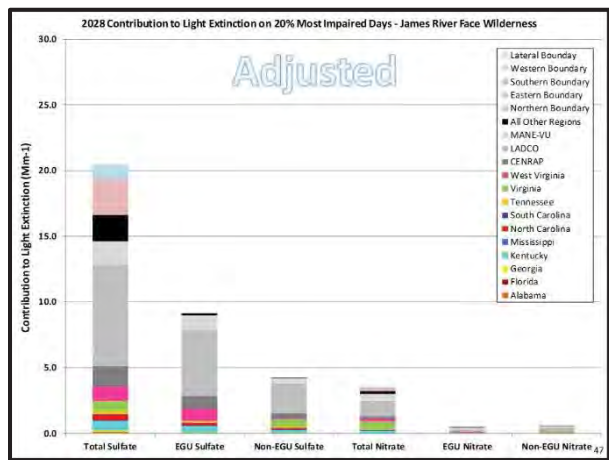
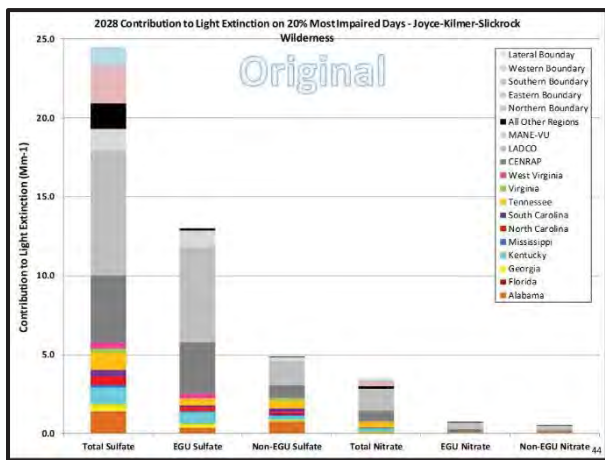
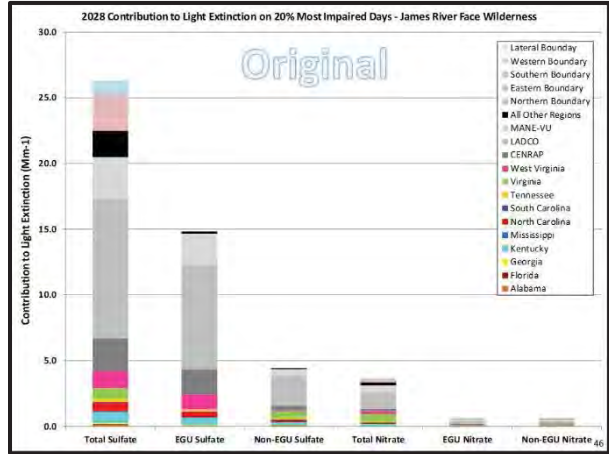
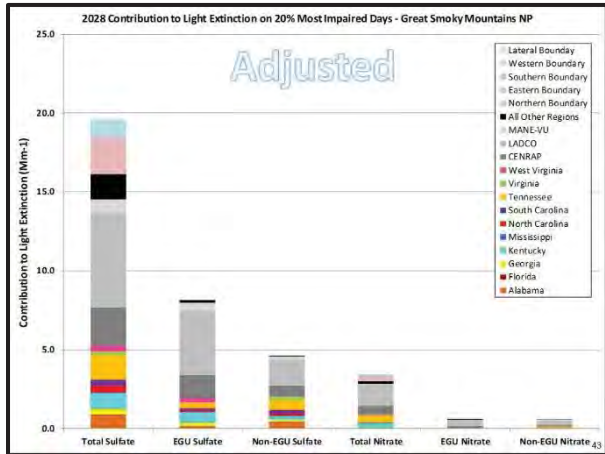
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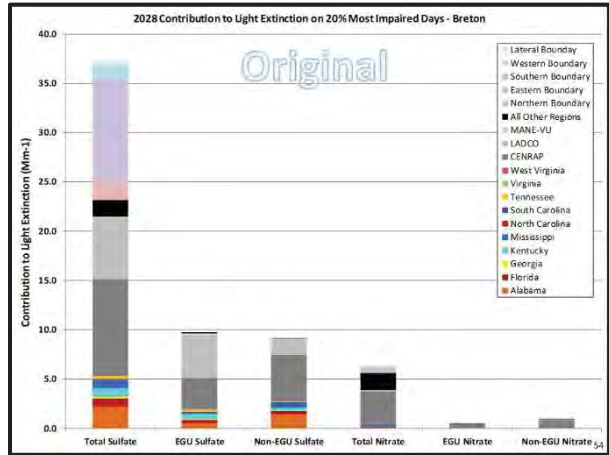
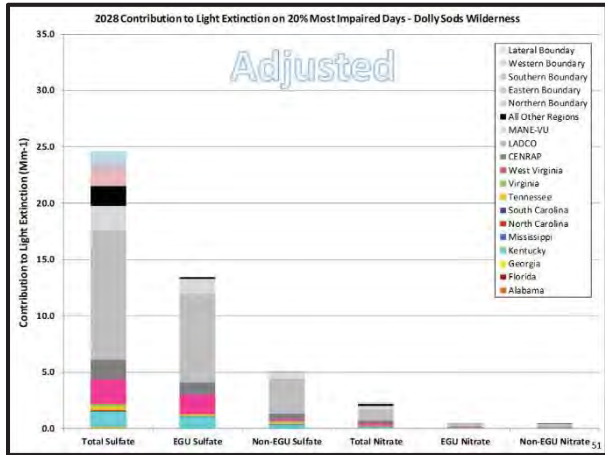
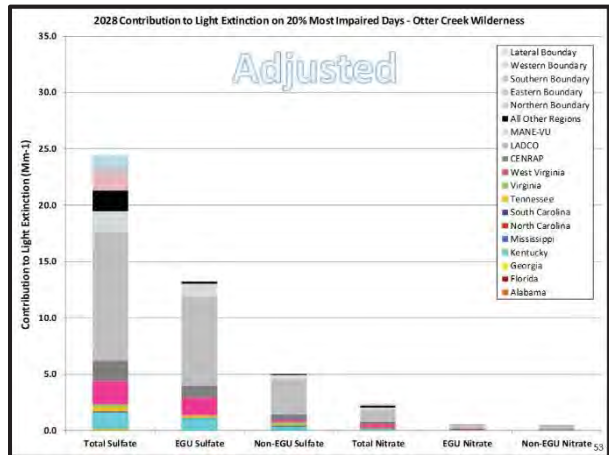
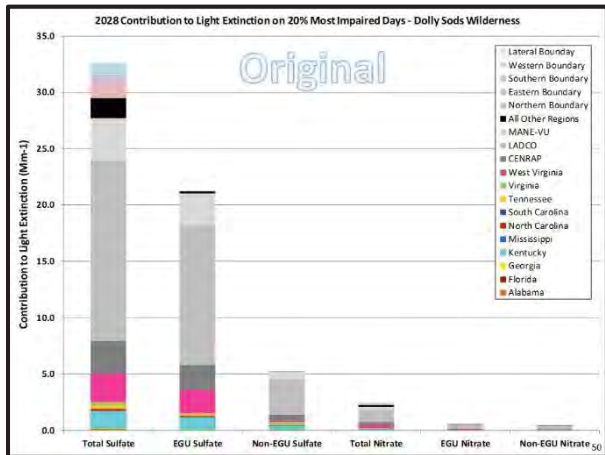
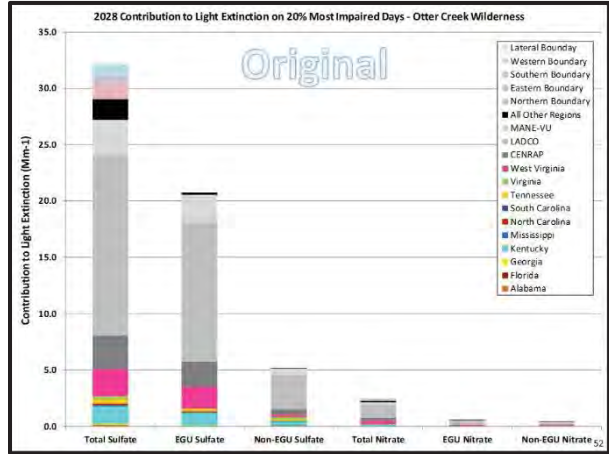
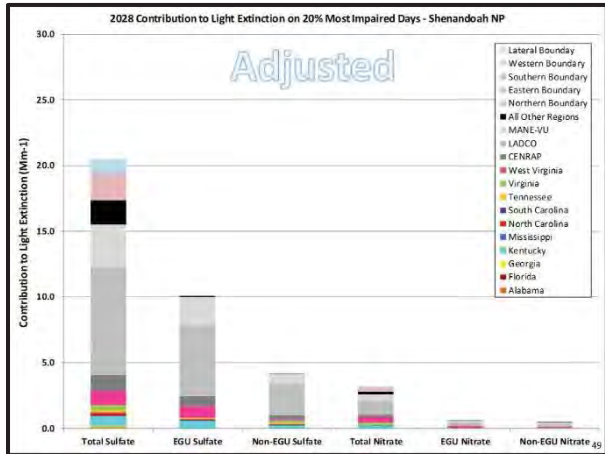


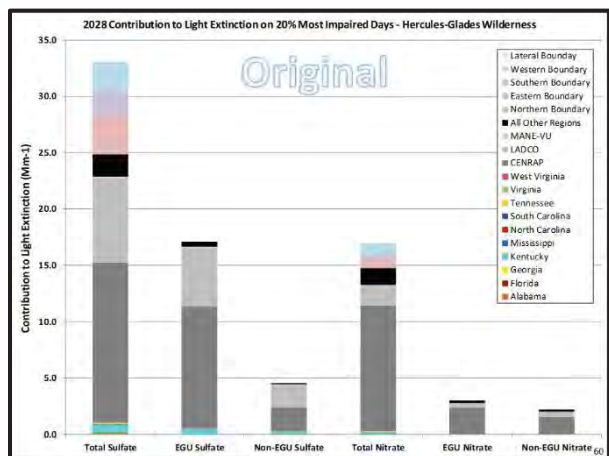
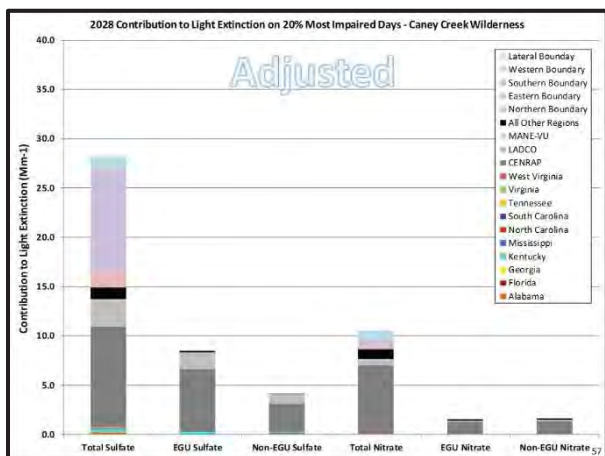
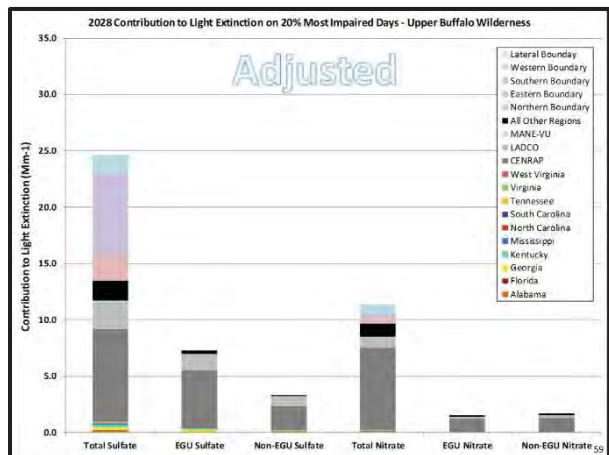
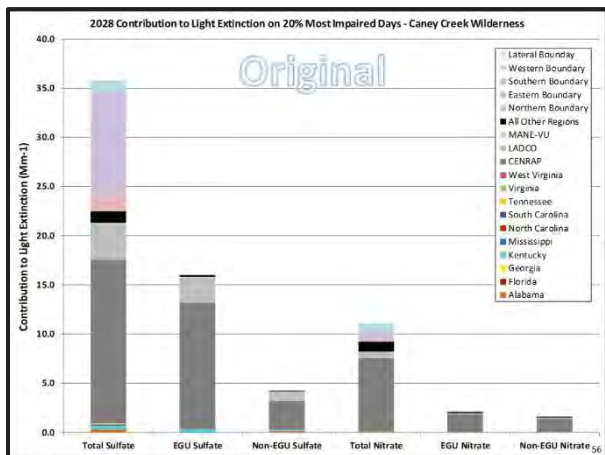
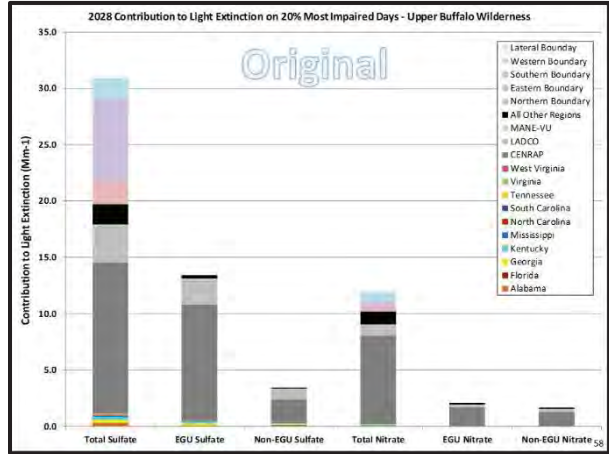
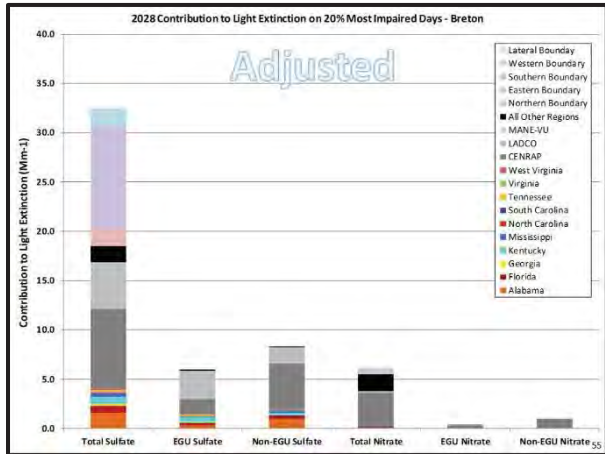


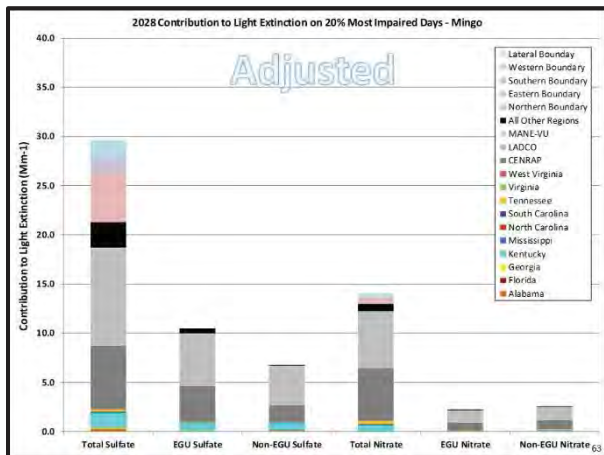
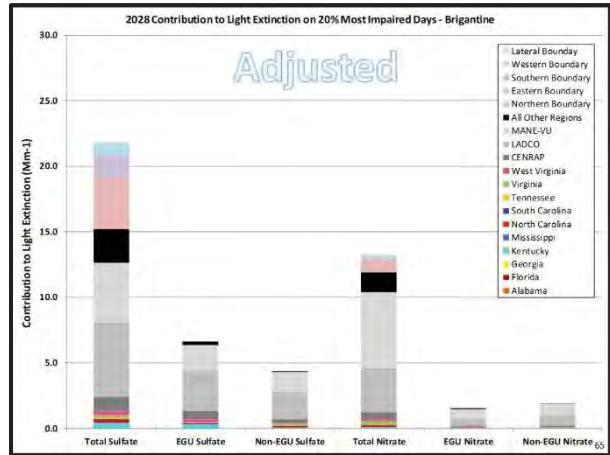
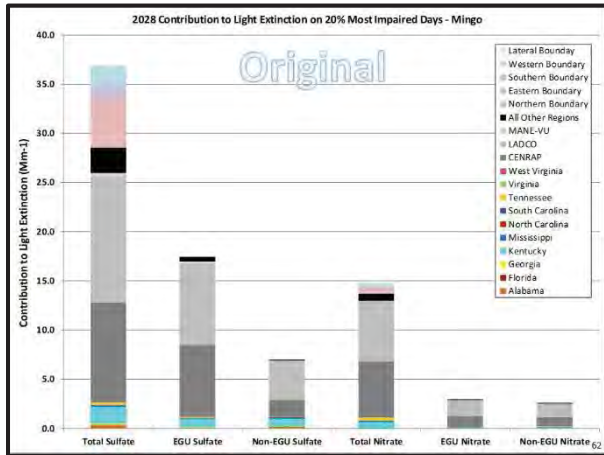
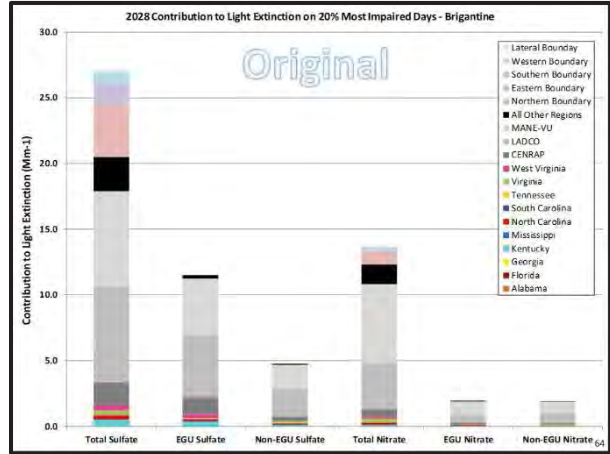
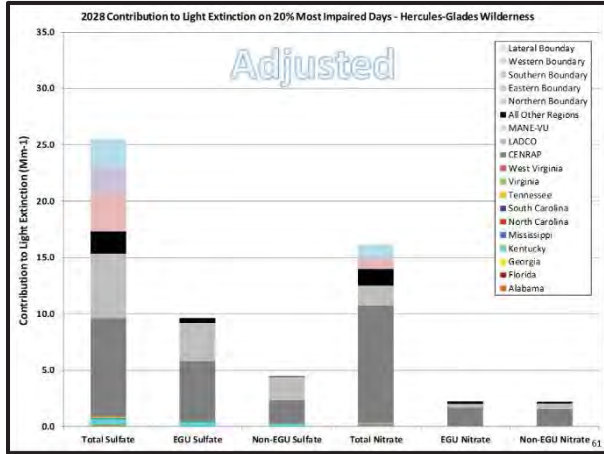












Four Factor Analysis

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Four-Factor Analysis Screening Approach

1. The VISTAS four-factor analysis approach is based on an initial AOI screening ($Q/d * EWRT$) to rank facilities based on their sulfate and nitrate contributions at each Class I area.
2. These rankings were used to identify 87 individual facilities for PSAT tagging. PSAT tagging was used to determine the nitrate and sulfate contributions from each facility at each Class I area in the VISTAS_12 domain.
3. Each individual VISTAS state will apply a PSAT contribution threshold based on the facility sulfate and facility nitrate impacts (separately, not combined) divided by the total impact of sulfate + nitrate from all point sources to determine which sources may need to be considered for a four-factor analysis.
 - If sulfate contribution $\geq 1.00\%$ → SO₂ Four-Factor Analysis
 - If nitrate contribution $\geq 1.00\%$ → NO_x Four-Factor Analysis

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Area of Influence (AOI) Analysis

- Evaluates emissions (Q), distance to Class I area (d), and extinction weighted residence time (EWRT) in model grid cells (point) or counties (source categories)
- Formula: $(Q/d)*EWRT$
- Establishes each county's and each facility's contribution to light extinction at each Class I area on the 20% most impaired days
- Can use contributions to rank and screen facilities for the 4-factor analysis
- Georgia Example:
 - Sources in Georgia, used $\geq 2\%$ threshold
 - Sources outside Georgia, used $\geq 4\%$ threshold

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Why 1% Threshold?

- In the Round 1 Regional Haze SIPs, many VISTAS states used the AOI approach and a 1% threshold on a Unit basis.
 - We are using the AOI/PSAT approach and a $\geq 1.00\%$ PSAT threshold based on a Facility basis.
 - This will pull in more facilities compared to a Unit basis.
- This approach results in a reasonable number of sources that can be evaluated with limited state resources and focuses on the sources with the largest impacts.

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AOI Point Contributions for COHU

State	FACILITY NAME	DISTANCE (km)	NO _x 2020 (tons/year)	SO ₂ 2020 (tons/year)	NO _x Contribution	SO ₂ Contribution
GA	Gsa Power Company - Plant Bowen	78.0	6,643.3	10,453.4	1.15%	19.94%
IN	INDIANA MICHIGAN POWER CO. AEP - ROCKPORT	410.1	8,806.8	30,536.3	0.13%	4.65%
GA	International Paper - Rome	87.4	1,773.4	1,791.0	0.18%	4.66%
IN	Edison	487.1	12,280.3	23,117.2	0.10%	2.21%
IN	INDIANA ROKES POWER & LIGHT - PETERSBURG	477.0	10,655.3	18,141.9	0.16%	2.18%
KY	Fairbass Valley Authority (TVA) - Shawnee Fossil Plant	457.2	7,007.3	19,504.7	0.07%	2.18%
TN	TVA KINGSTON FOSSIL PLANT	124.0	1,687.4	1,886.1	0.13%	2.17%
OH	General James M. Gavin Power Plant (0827010056)	512.0	8,122.5	41,595.8	0.02%	1.71%
TN	TVA CUMBERLAND FOSSIL PLANT	327.0	4,916.5	8,427.3	0.09%	1.98%
KY	Big Rivers Electric Corp. - Wilson Station	359.0	1,113.9	6,934.2	0.01%	1.07%
OH	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	454.6	7,150.0	22,133.9	0.05%	1.05%
GA	Gsa Power Company - Plant Wansley	156.8	2,052.5	4,856.0	0.04%	1.00%
KY	KY Utilities Co. - Ghent Station	441.5	7,939.9	10,169.3	0.08%	1.05%
IL	Jopka Steam	466.9	4,706.1	20,509.3	0.02%	1.04%
GA	Molokan Industries Inc	21.0	66.5	77.1	0.07%	1.02%
TN	EASTMAN CHEMICAL COMPANY	269.8	6,900.3	6,420.2	0.05%	0.95%
MO	AMEREN MISSOURI LABADIE PLANT	695.4	3,685.5	11,740.3	0.01%	0.96%
IL	Newton	564.0	1,534.9	10,631.6	0.01%	0.91%
GA	Chemical Products Corporation	71.9	19.5	513.8	0.00%	0.89%
IN	INDIANA KENTUCKY ELECTRIC CORPORATION	441.8	6,188.5	9,038.1	0.04%	0.76%

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HYSPLIT Trajectories

- Trajectories were run using NAM-12 meteorology for the 20% most impaired days in 2011-2016 at 44 Class I areas.
 - Trajectories were run with starting heights of 100, 500, 1,000, and 1,500 meters.
 - Trajectories were run 72 hours backwards in time for each height at each location.
 - Trajectories were run with start times of 12AM (midnight of the start of the day), 6AM, 12PM, 6PM, and 12AM (midnight at the end of the day) local time.
- 44 Class I areas x 6 years x 24 days/year x 4 heights x 5 start times = **126,720 trajectories**

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AOI Point Contributions for OKEF

State	FACILITY NAME	DISTANCE (km)	NO _x 2020 (tons/year)	SO ₂ 2020 (tons/year)	NO _x Contribution	SO ₂ Contribution
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC.	71.5	112.4	2,745.0	0.03%	14.61%
FL	ROCKTENN CP, LLC	64.8	2,316.8	2,606.7	0.88%	12.81%
FL	JEA	65.6	651.8	2,094.5	0.18%	6.60%
FL	SEMPRIDE ELECTRIC COOPERATIVE, INC.	121.4	917.8	3,713.4	0.07%	3.25%
FL	BFF CHEMICAL HOLDINGS, INC.	45.8	37.7	898.9	0.01%	3.25%
FL	RAYONIER PERFORMANCE FIBERS LLC	63.4	2,327.1	562.0	0.90%	2.82%
GA	International Paper - Savannah	178.9	1,560.7	3,945.4	0.08%	2.81%
FL	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	153.5	1,830.7	1,520.4	0.14%	2.18%
FL	HESSSENZ LLC	59.8	66.3	569.5	0.02%	1.96%
FL	DUKE ENERGY FLORIDA, INC. (DEF)	205.0	2,489.8	5,306.4	0.06%	1.40%
AL	LANIER'S PAPER	384.0	121.7	7,951.1	0.00%	1.11%
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	197.2	351.5	1,860.2	0.01%	1.05%
GA	Gsa Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.05%	1.02%
GA	Brunswick Cellulose Inc	79.3	1,554.3	294.2	0.34%	1.01%
SC	ALUMAK OF SOUTH CAROLINA	222.7	106.1	3,751.7	0.00%	0.97%
GA	PCA Wadega Mill	112.7	1,032.6	485.7	0.09%	0.85%
SC	SANTER COOPER CROSS GENERATING STATION	348.1	3,273.5	4,281.2	0.05%	0.85%
FL	CITY OF GAINESVILLE GRU	111.7	410.0	881.4	0.03%	0.79%
SC	KAPSTONE CHARLESTON KRAFT LLC	314.9	2,355.8	1,863.7	0.06%	0.65%
GA	Gsa Power Company - Plant Wansley	403.7	2,052.5	4,856.0	0.02%	0.63%

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AOI Point Contributions for WOLF

State	FACILITY NAME	DISTANCE (km)	NOx_2028 (tons/year)	SO2_2028 (tons/year)	NOx Contribution	SO2 Contribution
GA	Brunswick Cellulose Inc.	27.9	1,554.5	294.2	2.36%	9.84%
FL	ROCK TENN CP, LLC	74.9	2,316.8	2,606.7	0.39%	3.56%
GA	International Paper - Savannah	85.9	1,560.7	3,945.4	0.24%	7.53%
FL	JEA	105.1	651.8	2,094.5	0.09%	4.43%
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	109.9	351.5	1,860.2	0.03%	2.63%
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC.	173.6	112.4	2,745.0	0.01%	1.97%
SC	SANTEE COOPER CROSS GENERATING STATION	223.0	108.1	3,751.7	0.00%	1.64%
FL	RAYONIER PERFORMANCE FIBERS LLC	77.4	2,327.1	565.0	0.38%	1.79%
FL	SEMINOLE ELECTRIC COOPERATIVE, INC.	181.4	817.8	3,713.4	0.02%	1.77%
OH	General Jamat M. Gavin Power Plant (0427010036)	845.3	8,122.5	41,595.8	0.02%	1.71%
SC	SANTEE COOPER CROSS GENERATING STATION	251.0	3,273.5	4,281.2	0.07%	1.59%
GA	Southern States Phosphate & Fertilizer	84.1	1.0	997.1	0.00%	1.55%
FL	IFF CHEMICAL HOLDINGS, INC.	118.5	37.7	898.9	0.00%	1.22%
FL	DUKE ENERGY FLORIDA, INC. (DEF)	296.6	2,489.8	5,306.4	0.04%	1.19%
GA	Ga Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.03%	1.08%
GA	Savannah Sugar Refinery	89.9	521.6	582.0	0.00%	1.06%
SC	INTERNATIONAL PAPER EASTOVER	288.7	1,780.1	3,212.9	0.01%	0.95%
GA	Ga Power Company - Plant McManus	27.1	72.2	30.1	0.14%	0.93%
SC	KAPSTONE CHARLESTON KRAFT LLC	213.6	2,355.8	1,863.7	0.03%	0.89%
PA	GENON NE MGMT CO/KEYSTONE STA	1,048.6	6,578.5	56,935.2	0.01%	0.84%

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PSAT Source Apportionment Modeling

- Quantifies visibility impacts from individual point sources, source sectors, and geographic regions
- NOx and SO₂ tagging
- Used for further evaluation of AOI results
- Refines information on contributions to visibility impairment
- Can be used to adjust future year visibility projections to account for additional emission controls
- VISTAS contract with ERG allows for up to 250 tags

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Georgia Tagging for PSAT

- Sources in Georgia (≥ 2% threshold)**
 - Ga Power Company – Plant Bowen
 - International Paper – Rome (aka TEMPLE INLAND)
 - International Paper – Savannah
 - Brunswick Cellulose Inc
 - Georgia-Pacific Consumer Products LP (Savannah River Mill)
- Sources outside Georgia (≥ 4% threshold)**
 - INDIANA MICHIGAN POWER DBA AEP ROCKPORT (IN)
 - ROCK TENN CP, LLC (FL)
 - JEA (FL)

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PSAT SO₂ and NOx Tags (209)

Round 1 (122 tags)

- Total SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- Total NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ tags for individual VISTAS facilities = 50 tags
- NOx tags for individual VISTAS facilities = 20 tags

Round 2 (87 tags)

- Non-EGU point SO₂ for 10 individual VISTAS states + 3 RPOs = 13 tags
- Non-EGU point NOx for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ and NOx for N/S/W/E boundaries = 8 tags
- SO₂ tags for individual VISTAS facilities = 10 tags
- NOx tags for individual VISTAS facilities = 16 tags
- SO₂ tags for individual non-VISTAS facilities = 17 tags
- NOx tags for individual non-VISTAS facilities = 10 tags

→ 87 Total Facility Tags (both SO₂ and NOx)

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AOI Screening Summary

State	Threshold	Notes
AL	2%	Sulfate only
FL	5%	Sulfate or nitrate, plus Gulf Crist, Mosaic Bartow, Mosaic New Wales, and Mosaic Riverview
GA	2% - 4%	Sulfate or nitrate, 2% threshold for GA facilities, 4% threshold for facilities outside GA
KY	2%	Sulfate or nitrate
MS	2%	Sulfate or nitrate
NC	3%	Sulfate + nitrate
SC	2% - 5%	2% for sulfate, 5% for nitrate, plus Santee Cooper Winyah, International Paper Georgetown, and SCE&G Williams
TN	3%	Sulfate + nitrate, plus CEMEX
VA	2%	Sulfate + nitrate
WV	0.2%	Sulfate or nitrate

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Facility Tags (AL, FL, GA)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 (TPY)	NOx (TPY)
AL	VISTAS	01097-949811	Alzo Nobel Chemicals Inc	3,135.72	20.72
AL	VISTAS	01097-105611	Ala Power - Barry	6,033.17	2,275.76
AL	VISTAS	01119-102871	American Midstream Chattahoochee, LLC	3,105.39	426.87
AL	VISTAS	01071-101871	DRUMMOND COMPANY, INC.	2,562.17	1,228.53
AL	VISTAS	01053-744021	Escambia Operating Company LLC	18,574.39	849.32
AL	VISTAS	01053-485111	Escambia Operating Company LLC	8,589.80	149.64
AL	VISTAS	01103-100011	Nucor Steel Decatur LLC	170.23	331.24
AL	VISTAS	01105-985711	Sanders Lead Co	7,551.06	121.71
AL	VISTAS	01097-106161	Union Oil of California - Chunchula Gas Plant	2,573.15	349.23
FL	VISTAS	12119-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	1,320.44	1,830.72
FL	VISTAS	12086-900111	ENVEK CONSTRUCTION MATERIALS FL, LLC	29.50	910.30
FL	VISTAS	12017-640611	DUKE ENERGY FLORIDA, INC. (DEF)	5,306.41	2,489.83
FL	VISTAS	12086-900011	FLORIDA POWER & LIGHT (PTF)	13.05	170.61
FL	VISTAS	12033-752711	GULF POWER - Crist	2,637.69	2,998.36
FL	VISTAS	12086-352771	HOMESTEAD CITY UTILITIES	0.00	97.09
FL	VISTAS	12031-640211	JEA	2,094.48	651.79
FL	VISTAS	12105-717211	MOSAIC FERTILIZER LLC	7,900.67	310.44
FL	VISTAS	12052-716811	MOSAIC FERTILIZER, LLC	3,034.06	159.71
FL	VISTAS	12105-919811	MOSAIC FERTILIZER, LLC	4,425.36	141.02
FL	VISTAS	12089-845611	RAYONIER PERFORMANCE FIBERS LLC	961.97	2,327.10
FL	VISTAS	12089-793711	ROCK TENN CP LLC	2,608.72	2,316.77
FL	VISTAS	12005-535411	ROCK TENN CP LLC	2,590.88	1,404.89
FL	VISTAS	12119-273171	TALLAHASSEE CITY PURDOM GENERATING STA.	2.86	121.46
FL	VISTAS	12057-338611	TAMPA ELECTRIC COMPANY (TEC)	6,084.36	2,865.03
FL	VISTAS	12086-899911	TASMAC AMERICA LLC	9.38	879.70
FL	VISTAS	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	3,187.77	112.41
GA	VISTAS	13127-3721011	Brunswick Cellulose Inc	294.20	1,554.51
GA	VISTAS	13015-281011	Ga Power Company - Plant Bowen	10,453.41	6,643.32
GA	VISTAS	13103-536311	Georgia-Pacific Consumer Products LP (Savannah River Mill)	1,860.18	351.52
GA	VISTAS	13051-3679811	International Paper - Savannah	3,945.38	1,560.73
GA	VISTAS	13115-539311	TEMPLE INLAND	1,791.00	1,779.33

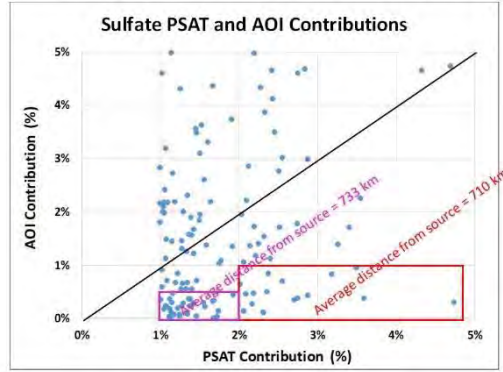
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Facility Tags (KY, MS, NC, SC, TN, VA)

Facility State	Facility RPD	FACILITY_ID_STD	FACILITY_NAME STD	SO2 (TPY)	NOx (TPY)
KY	VISTAS	21183-546111	Big Rivers Electric Corp. - Wilson station	8,324.18	1,131.55
KY	VISTAS	21091-752411	Century Aluminum of KY LLC	5,044.18	597.66
KY	VISTAS	21177-5196711	Tennessee Valley Authority - Paradise Fossil Plant	3,011.01	3,114.52
KY	VISTAS	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	19,504.79	7,007.24
MS	VISTAS	28059-6584111	Pharos Products Company, Paragoula Refinery	781.69	1,534.12
MS	VISTAS	28059-6251011	Mississippi Power Company, Plant Victor / Daniel	231.92	3,829.72
NC	VISTAS	37887-7920511	Blue Ridge Paper Products - Canton Mill	1,127.07	2,992.37
NC	VISTAS	37117-8609311	Dominar Paper Company, LLC	187.45	1,796.49
NC	VISTAS	37035-8370411	Duke Energy Carolinas, LLC - Marshall Steam Station	4,139.21	7,511.31
NC	VISTAS	37013-8479311	PCS Phosphate Company, Inc. - Aurora	4,845.90	495.58
NC	VISTAS	37023-8513011	BGL Carbon LLC	261.64	21.69
SC	VISTAS	45011-4634911	ALLIANCE OF SOUTH CAROLINA	3,791.69	108.66
SC	VISTAS	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	2,787.52	2,031.26
SC	VISTAS	45019-4973611	KAPSTONE CHARLESTON KRAFT LLC	1,863.65	2,355.82
SC	VISTAS	45011-4120411	SANTEE COOPER CROSS GENERATING STATION	4,281.17	3,273.87
SC	VISTAS	45043-6652011	SANTEE COOPER WINYAM GENERATING STATION	2,286.86	1,772.53
SC	VISTAS	45015-8306711	SC&G WILLIAMS	392.48	992.73
TN	VISTAS	47091-4979911	Cemex - Knoxville Plant	121.47	711.50
TN	VISTAS	47181-3982111	EASTMAN CHEMICAL COMPANY	6,420.18	6,900.81
TN	VISTAS	47105-4129211	PATE & LYLE, Loudon	472.78	883.25
TN	VISTAS	47001-6196011	IVA BULL RUN FOSSIL PLANT	622.54	964.16
TN	VISTAS	47181-4979311	IVA CUMBERLAND FOSSIL PLANT	8,427.33	4,816.82
TN	VISTAS	47145-4979111	IVA KINGSTON FOSSIL PLANT	1,886.09	1,687.58
VA	VISTAS	51027-4034811	Jewell Coke Company LLP	5,090.95	520.17
VA	VISTAS	51250-5798711	Meadwestvaco Packaging Resource Group	2,115.31	1,985.69
VA	VISTAS	51029-5039811	Roanoke Cement Company	2,290.17	1,972.57

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Sulfate AOI vs. Sulfate PSAT (≥ 1.00%)



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Facility Tags (WV, AR, MO, MD, PA, IL, IN, OH)

Facility State	Facility RPD	FACILITY_ID_STD	FACILITY_NAME STD	SO2 (TPY)	NOx (TPY)
WV	VISTAS	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	10,082.94	11,830.88
WV	VISTAS	54049-4846511	AMERICAN BITUMINOUS POWER-GRANT TOWN PNT	2,210.25	2,445.10
WV	VISTAS	54079-4878911	APPALACHIAN POWER COMPANY - JOHN F. AMOS PLANT	10,986.24	4,878.10
WV	VISTAS	54023-6257011	Dominion Resources, Inc. - MOUNT STORM POWER STATION	2,123.64	1,984.14
WV	VISTAS	54041-6900311	EQUITRANS - COPLEY RUN CS 70	0.10	511.06
WV	VISTAS	54083-6790711	FILES CREEK 6C-340	0.15	643.25
WV	VISTAS	54019-6790511	FLANDY 6C-340	0.16	483.29
WV	VISTAS	54093-6827811	KINGSFORD MANUFACTURING COMPANY	16.90	140.88
WV	VISTAS	54061-1632011	LONGVIEW POWER	2,313.79	1,556.57
WV	VISTAS	54013-6902311	MITCHELL PLANT	5,727.49	2,719.62
WV	VISTAS	54061-6773611	MONONGAHELA POWER CO. - FORT MARTIN POWER	4,881.87	13,743.52
WV	VISTAS	54073-4782811	MONONGAHELA POWER CO. - PLEASANTS POWER STA	16,817.43	5,497.37
WV	VISTAS	54081-6773811	MORGANTOWN ENERGY ASSOCIATES	828.64	655.58
AR	CENRAP	05051-1594111	ENERGY ARKANSAS INC. INDEPENDENCE PLANT	32,050.48	14,133.80
MO	CENRAP	29143-5363811	NEW MADRID POWER PLANT-MARSTON	16,781.71	4,394.10
MD	MAINE-VU	28001-7763811	Luke Paper Company	22,659.84	3,607.00
PA	MAINE-VU	42005-3866111	GENONNE MOUNT CO/KEYSTONE STA	56,939.23	6,578.67
PA	MAINE-VU	42063-3005211	HOMER CITY GEN LP/ CENTER TWP.	11,885.70	5,215.94
PA	MAINE-VU	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	8,880.28	2,254.64
IL	Midwest RPC	17127-7808911	Jopka Steam	20,509.28	4,706.25
IN	Midwest RPC	18129-8181311	Alcoa Warner Power Pk Age Div of Al	9,071.28	11,158.85
IN	Midwest RPC	18031-7363111	Gibson	23,117.23	12,280.34
IN	Midwest RPC	18147-8017211	INDIANA MICHIGAN POWER DBA AEP - ROCKPORT	30,536.33	8,806.77
IN	Midwest RPC	18129-7804011	INDIANAPOLIS POWER & LIGHT - PETERSBURG	18,141.98	10,645.27
IN	Midwest RPC	18129-8166511	Bigeco AB Brown South Indiana Gas & Ele	7,644.70	1,578.59
OH	Midwest RPC	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	7,460.79	2,467.31
OH	Midwest RPC	39031-8010811	Conesville Power Plant (0616000000)	6,154.23	9,957.87
OH	Midwest RPC	39031-8094111	Duke Energy Ohio, Vm. N. Zomer Station (1413090154)	22,133.90	7,149.67
OH	Midwest RPC	39033-8148511	General James M. Gavin Power Plant (0627010056)	41,595.81	8,122.51
OH	Midwest RPC	39033-7983011	Dyno Valley Electric Corp. - Vyger Creek Station (0627000003)	1,400.14	9,143.84

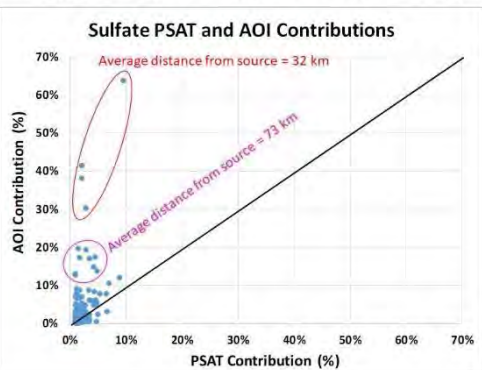
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AOI vs. PSAT Summary

- AOI tends to overestimate impacts for facilities near the Class I area.
- AOI tends to underestimate impacts for facilities far away from the Class I area.
 - AOI uses 72-hour back trajectories, sulfate can last for weeks and travel hundreds to thousands of km.
- PSAT is the most reliable modeling tool for tracking facility contributions to visibility impairment at Class I areas.

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Sulfate AOI vs. Sulfate PSAT (≥ 1.00%)



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Four-Factor Analysis Screening Approach

- The updated 2028 CAMx modeling will impact the **total sulfate and total nitrate impacts** from all sources at each Class I area since the SO₂ and NO_x emissions have decreased.
- However, the **individual sulfate and total nitrate impacts** from the individual 87 tagged facilities should not change unless a facility has reduced or increased SO₂ and/or NO_x emissions.
- Therefore, the percent contribution (facility sulfate impact/total impact of all point sources of sulfate + nitrate) will increase since the denominator will decrease; however, the order of the rankings from largest impact to smallest impact should not change unless one of those facilities reduced or increased emissions.

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Four-Factor Analysis Screening Approach

- Due to the amount of resources already invested in the AOI and PSAT analysis, **VISTAS plans to continue with our original approach** for determining which sources will require a four-factor analysis.
- In cases where emissions decreased or increased at individual facilities being considered for a four-factor analysis, the facility contributions will be adjusted to be consistent with the lower/higher facility emissions before comparing to the PSAT contribution threshold.
- **EPA verbally stated this should be okay 2/6/2020.**

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Revised Facility Nitrate PSAT Results

- **Revised Facility Nitrate PSAT Results = Original Facility Nitrate PSAT Results * NOx Ratio_Facility * Ratio_Class_I_Area**

$$\text{where, NOx Ratio_Facility} = \frac{\text{(Revised facility NOx emissions)}}{\text{(Original facility NOx emissions)}}$$

$$\text{where, Ratio_Class_I_Area} = \frac{\text{(Original sulfate + nitrate point contribution)}}{\text{(Revised sulfate + nitrate point contribution)}}$$

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Original Facility PSAT Contributions

- **Original Facility Sulfate PSAT Contributions (%)**

$$\frac{\text{Facility Sulfate PSAT Contributions (Mm}^{-1}\text{)}}{\text{Total Sulfate + Nitrate Point Contribution (Mm}^{-1}\text{)}}$$
- **Original Facility Nitrate PSAT Contributions (%)**

$$\frac{\text{Facility Nitrate PSAT Contributions (Mm}^{-1}\text{)}}{\text{Total Sulfate + Nitrate Point Contribution (Mm}^{-1}\text{)}}$$

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Facility Ratios (AL, FL, GA)

Facility State	Facility BPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 Ratio	NOx Ratio
AL	VISTAS	01097-740611	Alexis Kober Chemicals Inc.	1.000	1.000
AL	VISTAS	01097-105611	Ala Power - Barry	1.000	1.000
AL	VISTAS	01129-1028711	American Midstream Partners, LLC	0.000	0.000
AL	VISTAS	01073-1018711	DRUMMOND COMPANY, INC.	1.000	1.000
AL	VISTAS	01053-7440211	Eucambia Operating Company LLC	1.000	1.000
AL	VISTAS	01053-985111	Eucambia Operating Company LLC	1.000	1.000
AL	VISTAS	01103-1000111	Nucor Steel Operator LLC	1.000	1.000
AL	VISTAS	01109-989711	Smelter Lead Co	1.000	1.000
AL	VISTAS	01097-1061611	Union Oil of California - Chunchula Gas Plant	0.000	0.000
FL	VISTAS	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	1.000	1.000
FL	VISTAS	12086-900211	EMEX CONSTRUCTION MATERIALS FL, LLC.	1.000	1.000
FL	VISTAS	12017-640011	DUKE ENERGY FLORIDA, INC. (DEF)	1.000	1.000
FL	VISTAS	12086-900011	FLORIDA POWER & LIGHT (FPL)	1.000	1.000
FL	VISTAS	12039-752711	SULF POWER - Crist	1.000	1.000
FL	VISTAS	12086-912111	HOMESTEAD CITY UTILITIES	1.000	1.000
FL	VISTAS	12031-640211	JEA	1.000	1.000
FL	VISTAS	12105-717711	MOSAIC FERTILIZER LLC	1.000	1.000
FL	VISTAS	12057-716411	MOSAIC FERTILIZER, LLC	1.000	1.000
FL	VISTAS	12105-919611	MOSAIC FERTILIZER, LLC	1.000	1.000
FL	VISTAS	12086-845811	RAYONIER PERFORMANCE FIBERS LLC	1.000	1.000
FL	VISTAS	12089-753711	ROCK TENN CP, LLC	1.000	1.000
FL	VISTAS	12059-939411	ROCKTENN CP, LLC	1.000	1.000
FL	VISTAS	12128-2731711	TALAHASSEE CITY PURDOM GENERATING STA.	1.000	1.000
FL	VISTAS	12057-538811	TAMPA ELECTRIC COMPANY (TEC)	1.000	1.000
FL	VISTAS	12086-899911	TARIMAC AMERICA, LLC	1.000	1.000
FL	VISTAS	12047-789711	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	1.000	1.000
GA	VISTAS	13127-371011	Brunswick Cellulose Inc	1.000	1.000
GA	VISTAS	13015-2813011	Sa Power Company - Plant Bowen	1.000	1.000
GA	VISTAS	13103-536311	Georgia Pacific Consumer Products LP (Savannah River Mill)	1.000	1.000
GA	VISTAS	13031-3679811	International Paper - Savannah	1.000	1.000
GA	VISTAS	13111-539311	TEMPLE INLAND	1.000	1.000

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Revised Facility Sulfate PSAT Results

- **Revised Facility Sulfate PSAT Results = Original Facility Sulfate PSAT Results * SO2 Ratio_Facility * Ratio_Class_I_Area**

$$\text{where, SO}_2 \text{ Ratio_Facility} = \frac{\text{(Revised facility SO}_2 \text{ emissions)}}{\text{(Original facility SO}_2 \text{ emissions)}}$$

$$\text{where, Ratio_Class_I_Area} = \frac{\text{(Original sulfate + nitrate point contribution)}}{\text{(Revised sulfate + nitrate point contribution)}}$$

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Facility Ratios (KY, MS, NC, SC, TN, VA)

Facility State	Facility BPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 Ratio	NOx Ratio
KY	VISTAS	21103-516111	Big River Electric Corp - Wilson Station	1.000	1.000
KY	VISTAS	21091-752411	Century Aluminum and PLY LLC	1.000	1.000
KY	VISTAS	21177-5156711	Tennessee Valley Authority - Paradise Fossil Plant	1.000	1.000
KY	VISTAS	21140-6697011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1.000	1.000
MS	VISTAS	28059-834811	Chevron Products Company - Pascagoula Refinery	1.000	1.000
MS	VISTAS	28059-8251011	Mississippi Power Company, Plant Victor J Daniel	1.000	1.000
NC	VISTAS	37028-7920311	Blue Ridge Paper Products - Canton Mill	1.000	1.000
NC	VISTAS	37117-2049311	Dumlar Paper Company, LLC	1.000	1.000
NC	VISTAS	37039-8170411	Duke Energy Carolinas, LLC - Marshall Steam Station	1.000	1.000
NC	VISTAS	37013-8479311	PCS Phosphate Company, Inc. - Aurora	1.000	1.000
NC	VISTAS	37029-8512011	BGL Carbon LLC	1.000	1.000
SC	VISTAS	45015-424811	ALUMINA OF SOUTH CAROLINA	1.000	1.000
SC	VISTAS	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	1.000	1.000
SC	VISTAS	45015-497611	KAPSTONE CHARLESTON KRAFT LLC	1.000	1.000
SC	VISTAS	45015-4119411	SANTEC COOPER ENERGY GENERATING STATION	1.000	1.000
SC	VISTAS	45043-6465811	SANTEC COOPER WYMAN GENERATING STATION	1.000	1.000
SC	VISTAS	45015-8306711	SCE&G WILLIAMS	1.000	1.000
TN	VISTAS	42793-4979911	Cemex - Knoxville Plant	1.000	1.000
TN	VISTAS	47101-1982111	EASTMAN CHEMICAL COMPANY	1.000	1.000
TN	VISTAS	47105-4129211	FATE & LVE, Loudon	1.000	1.000
TN	VISTAS	47001-8196011	TVA BULL RUN FOSSIL PLANT	1.000	1.000
TN	VISTAS	47113-4979311	TVA CUMBERLAND FOSSIL PLANT	1.000	1.000
TN	VISTAS	47145-4979111	TVA KINGSTON FOSSIL PLANT	1.000	1.000
VA	VISTAS	51027-4034811	Jewelitt Coke Company LP	1.000	1.000
VA	VISTAS	51080-2789711	Meadowstave Packaging Resource Group	1.000	1.000
VA	VISTAS	51023-5039811	Roanoke Cement Company	1.000	1.000

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St Marks Wilderness Area

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
GA	19015-2818011	Ge Power Company - Plant Bowen	452.9	0.38%	0.59%	0.83%	0.01%	0.03%	0.03%	
FL	12005-535411	ROCKTENN CP LLC	140.8	8.54%	3.38%	8.69%	0.24%	0.59%	0.13%	
AL	01109-865711	Random Lead Co	255.9	3.06%	0.82%	1.12%	0.00%	0.00%	0.00%	
Facilities That Dropped Off After REVISION										
AL	01099-1006112	Ala Power - Burnt	392.1	1.67%	1.43%	0.97%	0.03%	0.02%	0.02%	
AL	01053-7440211	Escambia Operating Company LLC	325.6	5.95%	3.53%	0.96%	0.01%	0.00%	0.00%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	908.4	0.33%	1.67%	0.80%	0.00%	0.01%	0.01%	
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,251.0	0.29%	1.29%	0.63%	0.01%	0.00%	0.00%	
AL	01053-3851111	Escambia Operating Company LLC	315.0	0.00%	1.68%	0.02%	0.00%	0.00%	0.00%	

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Wolf Island Wilderness

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
FL	12089-753711	ROCK TENN CP, LLC	74.9	8.56%	1.79%	2.33%	0.39%	0.11%	0.14%	
GA	19015-2818011	Ge Power Company - Plant Bowen	458.1	1.08%	1.78%	2.33%	0.63%	0.04%	0.03%	
GA	13117-371011	Brunswick Cellulose Inc	27.9	8.84%	1.84%	1.76%	2.84%	0.10%	0.13%	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	845.3	1.71%	2.51%	1.72%	0.02%	0.02%	0.02%	
GA	13051-3679811	International Paper - Savannah	85.9	7.93%	1.18%	1.34%	0.24%	0.07%	0.09%	
SC	45015-4120411	Santee Cooper Cross Generating Station	251.0	1.99%	0.99%	1.40%	0.69%	0.06%	0.08%	
FL	12081-4402111	FEA Plant	105.1	4.48%	0.96%	1.29%	0.59%	0.33%	0.36%	
SC	45015-4834911	ALUMAX OF SOUTH CAROLINA	233.6	1.84%	0.95%	1.29%	0.00%	0.01%	0.01%	
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,048.0	0.84%	2.37%	1.15%	0.01%	0.01%	0.01%	
Facilities That Dropped Off After REVISION										
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	876.1	0.07%	1.25%	0.76%	0.00%	0.02%	0.02%	
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	173.6	1.97%	1.05%	0.67%	0.01%	0.01%	0.01%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	899.0	0.37%	1.38%	0.64%	0.00%	0.02%	0.03%	

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Cohutta Wilderness Area

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	512.0	1.71%	3.41%	3.44%	0.02%	0.05%	0.07%	
GA	19015-2818011	Ge Power Company - Plant Bowen	78.0	19.58%	1.96%	2.13%	1.19%	0.03%	0.04%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	2.18%	1.05%	1.44%	6.07%	0.01%	0.02%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	410.1	4.68%	2.84%	1.37%	0.13%	0.03%	0.04%	
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	454.6	1.05%	2.06%	2.51%	0.06%	0.03%	0.04%	
TN	47143-8982311	EASTMAN CHEMICAL COMPANY	289.8	8.89%	8.92%	1.23%	0.69%	0.07%	0.09%	
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	802.1	0.14%	2.06%	1.04%	0.00%	0.01%	0.01%	
IN	18051-7363111	Gibson	487.1	2.31%	1.35%	1.03%	0.10%	0.02%	0.02%	
Facilities That Dropped Off After REVISION										
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	477.0	2.18%	1.19%	0.84%	0.16%	0.03%	0.02%	
TN	47345-4978111	TVA WINSTON FOSSIL PLANT	124.0	2.17%	1.10%	0.94%	0.13%	0.06%	0.02%	

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Mammoth Cave NP

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	118.0	16.88%	3.57%	1.63%	2.60%	0.26%	0.33%	
IN	18051-7363111	Gibson	198.2	5.21%	2.16%	1.53%	1.20%	0.35%	0.33%	
KY	21145-6037011	Big Rivers Electric Corp - Wilson Station	89.9	6.72%	1.07%	1.43%	0.37%	0.08%	0.08%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	233.6	1.60%	0.86%	1.19%	0.15%	0.14%	0.19%	
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	312.2	0.66%	1.29%	0.16%	0.04%	0.07%	0.09%	
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	182.9	3.09%	0.95%	1.04%	0.56%	0.04%	0.27%	
Facilities That Dropped Off After REVISION										
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	256.1	1.21%	1.43%	0.89%	0.14%	0.11%	0.12%	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	406.5	1.45%	1.15%	0.81%	0.04%	0.02%	0.02%	
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	496.6	0.30%	1.15%	0.65%	0.04%	0.05%	0.02%	
IN	18173-8183111	ALCOA WARRICK POWER PLT AGC DIV OF AL	136.1	2.00%	1.03%	0.40%	0.74%	0.82%	0.30%	
IN	18129-8165111	Sigeco AB Brown South Indiana Gas & Ele	162.9	2.73%	1.16%	0.00%	0.27%	0.06%	0.00%	

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Okefenokee Wilderness Area

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	71.5	14.63%	4.32%	2.77%	0.69%	0.02%	0.01%	
GA	19015-2818011	Ge Power Company - Plant Bowen	458.1	1.02%	1.74%	2.30%	0.05%	0.04%	0.05%	
FL	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	193.3	2.18%	1.84%	2.16%	0.14%	0.11%	0.14%	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	909.1	0.46%	2.19%	1.51%	0.01%	0.01%	0.01%	
FL	12089-753711	ROCK TENN CP, LLC	84.8	12.82%	1.00%	1.31%	0.88%	0.11%	0.15%	
SC	45015-4120411	Santee Cooper Cross Generating Station	248.1	0.85%	0.89%	1.18%	0.05%	0.03%	0.04%	
GA	13051-3679811	International Paper - Savannah	178.9	2.81%	0.79%	1.04%	0.68%	0.09%	0.06%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	939.4	0.23%	0.78%	1.03%	0.00%	0.03%	0.04%	
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,129.0	0.46%	2.09%	1.02%	0.01%	0.01%	0.01%	
Facilities That Dropped Off After REVISION										
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	921.9	0.09%	1.34%	0.83%	0.00%	0.01%	0.01%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	915.7	0.55%	1.40%	0.65%	0.01%	0.02%	0.03%	

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Linville Gorge Wilderness Area

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
TN	47143-8982311	EASTMAN CHEMICAL COMPANY	31.9	19.21%	2.87%	4.05%	0.68%	0.07%	0.10%	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	329.2	5.90%	4.67%	5.16%	0.04%	0.01%	0.02%	
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	567.3	0.94%	1.49%	1.82%	0.00%	0.00%	0.00%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.28%	0.95%	1.34%	0.90%	0.01%	0.02%	
TN	47143-8979311	TVA CUMBERLAND FOSSIL PLANT	516.6	0.11%	0.85%	1.28%	0.90%	0.03%	0.01%	
GA	19015-2818011	Ge Power Company - Plant Bowen	340.9	0.33%	0.80%	1.13%	0.62%	0.00%	0.00%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	503.5	1.18%	2.22%	1.10%	0.01%	0.07%	0.09%	
IN	18051-7363111	Gibson	582.3	0.67%	1.35%	1.07%	0.01%	0.07%	0.07%	
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	688.6	0.03%	1.11%	1.04%	0.00%	0.00%	0.00%	
VA	51073-4034911	Jewell Tube Company LLP	1,449.4	5.34%	0.73%	1.05%	0.61%	0.00%	0.00%	
Facilities That Dropped Off After REVISION										
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	456.4	0.29%	1.43%	0.86%	0.00%	0.01%	0.00%	
MD	24001-7763811	Luke Paper Company	451.8	0.23%	1.37%	0.84%	0.00%	0.00%	0.00%	
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	550.5	0.36%	1.12%	0.82%	0.01%	0.07%	0.05%	
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	380.1	2.82%	1.00%	0.66%	0.03%	0.02%	0.03%	

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Shining Rock Wilderness Area

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	397.3	1.39%	3.26%	2.41%	0.01%	0.01%	0.01%
KY	21145-6097011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	579.4	0.47%	1.16%	1.63%	0.01%	0.02%	0.02%
TN	47163-4979311	TVA CUMBERLAND FOSSIL PLANT	454.1	0.54%	0.93%	1.31%	0.02%	0.01%	0.02%
GA	13015-2813011	Oa Power Company - Plant Bowen	241.6	1.70%	0.92%	1.29%	0.07%	0.01%	0.01%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	625.2	0.36%	1.37%	1.28%	0.00%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	473.3	0.70%	2.55%	1.27%	0.01%	0.07%	0.09%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	657.6	0.49%	2.36%	1.23%	0.00%	0.00%	0.00%
IN	18051-7363111	Gibson	554.2	0.29%	1.55%	1.23%	0.01%	0.07%	0.07%
NC	37047-7920311	Blue Ridge Paper Products - Canton Mill	16.9	41.29%	2.14%	1.04%	6.89%	0.07%	0.10%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	406.7	1.37%	1.59%	1.05%	0.03%	0.01%	0.01%
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	783.3	0.13%	1.74%	1.04%	0.00%	0.01%	0.01%
TN	47163-4979311	EASTMAN CHEMICAL COMPANY	136.8	4.43%	0.74%	1.04%	0.49%	0.02%	0.02%
Facilities That Dropped Off After REVISION									
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	529.0	0.18%	1.12%	0.82%	0.01%	0.11%	0.08%
IL	17127-7808911	Joppe Steam	582.4	0.23%	1.07%	0.59%	0.00%	0.01%	0.00%

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Great Smoky Mountains NP

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	400.5	2.25%	5.10%	3.73%	0.04%	0.02%	0.02%
KY	21145-6097011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	465.8	1.34%	0.94%	1.32%	0.02%	0.06%	0.08%
TN	47163-4979311	EASTMAN CHEMICAL COMPANY	160.1	6.01%	0.88%	1.23%	0.19%	0.04%	0.05%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	688.2	0.11%	2.31%	1.19%	0.00%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	375.5	4.66%	2.42%	1.19%	0.21%	0.19%	0.25%
IN	18051-7363111	Gibson	456.3	1.25%	1.34%	1.05%	0.07%	0.27%	0.27%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	360.0	1.64%	1.50%	0.96%	0.09%	0.02%	0.02%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	435.6	1.48%	1.08%	0.78%	0.12%	0.29%	0.20%
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	675.9	0.19%	1.22%	0.72%	0.02%	0.01%	0.00%
TN	47163-4979311	TVA KINGSTON FOSSIL PLANT	60.0	7.38%	1.23%	0.38%	0.71%	0.08%	0.03%

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Swanquarter Wilderness Area

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	640.2	3.00%	6.66%	3.41%	0.08%	0.08%	0.09%
NC	37013-8479311	PCS Phosphate Company, Inc - Aurora	93.9	87.89%	3.16%	3.02%	0.57%	0.83%	0.66%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	651.5	1.77%	2.74%	2.01%	0.06%	0.03%	0.06%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	659.6	0.35%	1.00%	1.86%	0.02%	0.03%	0.06%
MD	24001-7763811	Lula Paper Company	512.5	0.43%	2.88%	1.75%	0.02%	0.05%	0.07%
WV	54039-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	568.6	0.67%	1.19%	1.71%	0.08%	0.00%	0.12%
PA	42063-3005211	POWER CITY GEN 151 CENTER TWP	620.1	0.55%	1.27%	1.36%	0.05%	0.05%	0.07%
WV	54079-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	625.7	0.84%	1.22%	1.17%	0.07%	0.09%	0.09%
GA	13015-2813011	Oa Power Company - Plant Bowen	810.6	0.15%	0.74%	1.03%	0.00%	0.02%	0.03%
NC	37117-8048811	Domtar Paper Company, LLC	89.0	2.27%	0.72%	1.00%	1.02%	0.14%	0.20%
Facilities That Dropped Off After REVISION									
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	1,005.3	0.34%	1.69%	0.83%	0.02%	0.03%	0.04%

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Joyce Kilmer-Slickrock Wilderness

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	425.1	4.73%	4.60%	3.45%	0.05%	0.01%	0.01%
KY	21145-6097011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	472.8	0.84%	0.99%	1.39%	0.69%	0.07%	0.10%
TN	47163-4979311	EASTMAN CHEMICAL COMPANY	179.2	9.88%	0.93%	1.80%	0.16%	0.02%	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	711.0	0.73%	2.17%	1.17%	0.00%	0.00%	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	391.2	4.33%	2.27%	1.12%	0.14%	0.16%	0.22%
GA	13015-2813011	Oa Power Company - Plant Bowen	166.2	3.61%	0.79%	1.11%	0.10%	0.01%	0.01%
IN	18051-7363111	Gibson	471.7	2.00%	1.29%	1.02%	0.11%	0.21%	0.21%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	385.1	3.63%	1.53%	1.00%	0.06%	0.03%	0.01%
Facilities That Dropped Off After REVISION									
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	674.4	1.58%	1.36%	0.81%	0.05%	0.02%	0.01%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	453.0	2.16%	1.00%	0.72%	0.14%	0.23%	0.16%
TN	47163-4979311	TVA KINGSTON FOSSIL PLANT	79.7	7.86%	1.24%	0.30%	0.57%	0.10%	0.03%

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Cape Romain Wilderness

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
SC	45015-4973611	KAPSTONE CHARLESTON KRAFT LLC	29.3	30.18%	2.86%	0.73%	2.74%	0.25%	0.33%
GA	13015-2813011	Oa Power Company - Plant Bowen	806.2	0.38%	2.71%	3.93%	0.01%	0.10%	0.14%
SC	45015-4849811	ALLUMAX OF SOUTH CAROLINA	39.1	17.87%	1.79%	2.33%	0.83%	0.02%	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	857.1	0.30%	4.74%	2.26%	0.00%	0.01%	0.01%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	68.8	6.97%	1.73%	2.23%	0.43%	0.21%	0.27%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	701.0	0.84%	3.18%	2.17%	0.00%	0.03%	0.04%
OH	45049-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	37.4	4.31%	1.26%	1.64%	0.83%	0.11%	0.15%
SC	45043-6452811	SANTEE COOPER WINTAH GENERATING STATION	51.4	4.60%	1.02%	1.33%	0.38%	0.13%	0.17%
GA	13015-3879811	International Paper - Savannah	164.1	1.76%	0.99%	1.38%	0.64%	0.05%	0.06%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	776.2	0.11%	1.14%	0.69%	0.00%	0.04%	0.04%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	858.3	0.06%	1.18%	0.54%	0.00%	0.07%	0.08%

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James River Face Wilderness

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	270.2	7.66%	5.44%	4.04%	0.14%	0.08%	0.11%
WV	54039-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	207.6	2.76%	2.51%	1.65%	0.38%	0.12%	0.14%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	306.4	1.35%	1.92%	3.61%	0.04%	0.02%	0.06%
OH	54079-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	248.0	3.87%	2.33%	2.26%	0.15%	0.03%	0.03%
WV	54079-4789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	223.5	3.50%	2.46%	1.89%	0.13%	0.05%	0.11%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	317.1	2.98%	2.88%	1.51%	0.06%	0.03%	0.04%
VA	51180-5798711	Meadwestvaco Packaging Resources Group (0627000003)	46.8	12.64%	1.02%	1.49%	1.14%	0.15%	0.22%
OH	39053-7983011	Ohio Valley Electric Corp., Nigger Creek Station (0627000003)	270.0	0.83%	0.66%	1.18%	0.16%	0.04%	0.04%
WV	54051-6802311	MICHELLE PLANT	359.8	0.68%	0.97%	1.04%	0.03%	0.02%	0.04%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	435.2	1.89%	1.39%	0.92%	0.05%	0.05%	0.06%
IN	18051-7363111	Gibson	729.4	0.59%	1.02%	0.82%	0.03%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	663.5	0.56%	1.33%	0.66%	0.03%	0.01%	0.02%

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Shenandoah NP

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
PA	42005-386611	GENON NE MGMT CO/KEYSTONE STA	249.8	11.83%	8.89%	8.81%	2.00%	0.05%	0.06%	
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (064105002)	269.6	1.53%	2.32%	4.50%	0.06%	0.05%	0.12%	
WV	54039-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	189.7	4.60%	2.75%	4.14%	0.99%	0.37%	0.46%	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	323.4	5.25%	4.88%	3.75%	0.14%	0.10%	0.14%	
WV	54079-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	265.0	4.97%	2.20%	2.20%	0.24%	0.18%	0.23%	
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	230.4	2.60%	1.56%	1.78%	0.13%	0.04%	0.06%	
MD	24001-7763811	Luke Paper Company	118.4	6.90%	2.20%	1.41%	0.23%	0.09%	0.14%	
PA	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	215.5	1.80%	1.00%	1.12%	0.04%	0.02%	0.02%	
WV	54051-6902311	MITCHELL PLANT	281.8	1.44%	0.88%	1.01%	0.13%	0.06%	0.16%	
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	324.1	0.43%	0.55%	1.01%	0.16%	0.06%	0.06%	
Facilities That Dropped Off After REVISION										
WV	54052-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	184.4	2.41%	1.06%	0.97%	2.27%	0.47%	0.60%	
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	505.4	1.31%	1.28%	0.87%	0.13%	0.05%	0.06%	
WV	54079-6789211	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	295.6	2.09%	1.04%	0.84%	0.09%	0.05%	0.19%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	755.8	0.71%	1.46%	0.76%	0.03%	0.02%	0.03%	

Non-VISTAS Class I Areas

- Only two VISTAS facilities have a contribution ≥ 1.00% at any non-VISTAS Class I Area
- ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON (WV)
 - Moosehorn Wilderness EDM (1.06% sulfate)
- Tennessee Valley Authority (TVA) - Shawnee Fossil Plant (KY)
 - Caney Creek Wilderness Area (1.09% sulfate)
 - Hercules-Glades Wilderness Area (1.95% sulfate)
 - Mingo Wilderness Area (1.47% sulfate)
 - Great Gulf Wilderness Area (1.03% sulfate)
 - Presidential Range-Dry River Wilderness (1.03% sulfate)

Dolly Sods Wilderness

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
WV	54031-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	83.6	18.58%	4.94%	7.18%	1.86%	0.26%	0.31%	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	233.8	7.62%	6.56%	4.88%	0.10%	0.03%	0.05%	
WV	54079-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	163.9	4.64%	4.82%	4.18%	0.16%	0.07%	0.10%	
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (064105002)	163.3	1.36%	2.14%	4.02%	0.03%	0.01%	0.03%	
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	416.9	1.40%	2.25%	1.49%	0.02%	0.04%	0.05%	
WV	54051-6902311	MITCHELL PLANT	144.2	1.45%	1.28%	1.42%	0.07%	0.02%	0.05%	
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	172.8	4.12%	2.43%	1.27%	0.01%	0.00%	0.00%	
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	234.9	0.62%	0.66%	1.18%	0.11%	0.02%	0.02%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	219.5	8.56%	1.45%	1.14%	0.11%	0.01%	0.08%	
WV	54051-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	79.8	6.53%	1.27%	1.13%	1.07%	0.18%	0.23%	
KY	21145-6017011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	847.6	0.12%	0.74%	1.05%	0.00%	0.03%	0.02%	
Facilities That Dropped Off After REVISION										
IN	18073-7362111	INDIANAPOLIS POWER & LIGHT - PETERSBURG ROCKPORT	729.5	0.04%	1.24%	0.99%	0.02%	0.04%	0.04%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	676.3	0.44%	1.93%	0.97%	0.01%	0.02%	0.02%	
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	682.6	0.18%	1.05%	0.77%	0.02%	0.06%	0.02%	
OH	39012-4010811	Conexville Power Plant (0610000000)	242.3	0.73%	1.09%	0.00%	0.12%	0.08%	0.02%	

VISTAS Facilities ≥ 1.00%

State	FACILITY_ID_STD	FACILITY_NAME_STD	IMPACTED CLASS I AREAS
AL	01025-801711	Landers Land Co	CHAS, SAMA
FL	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	OKEF
FL	12017-640611	DUKE ENERGY FLORIDA, INC. (DEF)	CHAS
FL	12013-640211	JEK	WOLF
FL	12105-717711	MOSEAC FERTILIZER LLC	EVER
FL	12105-919811	MOSEAC FERTILIZER, LLC	EVER
FL	12089-753711	ROCK TREN CO, LLC	OKEF, WOLF
FL	12005-535411	ROCKTENN CP LLC	SAMA
FL	12057-338611	TAMPA ELECTRIC COMPANY (TEC)	CHAS, EVER
FL	12086-899911	TARMAC AMERICA LLC	EVER
FL	12047-769711	WHITE SPRING AGRICULTURAL CHEMICALS INC	OKEF
GA	13127-3721011	Brunswick Cellulose Inc	WOLF
GA	13015-2613011	Ea Power Company - Plant Bowen	CHAS, COHU, JSR, LIGO, OKEF, ROMA, SAMA, SHRO, SWAN, WOLF
GA	13051-3679811	International Paper - Savannah	OKEF, ROMA, WOLF
KY	21183-5561611	Big Rivers Electric Corp. - Wilson Station	MACA, SIPS
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	CACR, CHAS, COHU, DOSO, GRM, GRM, HESL, JSR, LIGO, MACA, MINGO, OKEF, OTRC, PRES, SHRO, SIPS
NC	37087-7920511	Blue Ridge Paper Products - Canton Mill	SHRO
NC	37117-8049311	Dominar Paper Company, LLC	SWAN
NC	37013-8479311	PCC Phosphate Company, Inc. - Aurora	SWAN
SC	45015-4834911	ALLUMAX OF SOUTH CAROLINA	ROMA, WOLF
SC	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	ROMA
SC	45019-4979611	KAYSTONE CHARLESTON BRIFT LLC	ROMA
SC	45013-4120411	SANTEE COOPER CROSS GENERATING STATION	OKEF, ROMA, WOLF
SC	45043-6652811	SANTEE COOPER WINYAH GENERATING STATION	ROMA
TN	47163-5982111	BASTIMAX CHEMICAL COMPANY	COHU, GRM, JSR, LIGO, SHRO
TN	47161-4979311	TYVA CLUMBERLAND FOSSIL PLANT	LIGO, SHRO, SIPS
VA	51027-4034811	Jewel Cell Company LP	LIGO
VA	51580-5786711	Meadowlands Packaging Resources Group	JARI
WV	54031-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	DOSO, JARI, MOOS, OTRC, SHEN, SWAN
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	DOSO, JARI, OTRC
WV	54013-6402111	MITCHELL PLANT	DOSO, JARI, OTRC, SHEN
WV	54051-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	DOSO, OTRC
WV	54079-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	DOSO, JARI, OTRC, SHEN, SWAN

Otter Creek Wilderness

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
WV	54031-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	72.8	17.37%	4.49%	6.91%	1.81%	0.26%	0.31%	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	214.2	10.46%	7.08%	5.25%	0.18%	0.04%	0.06%	
WV	54079-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	148.3	8.13%	4.99%	4.24%	0.30%	0.08%	0.12%	
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (064105002)	162.7	1.94%	2.03%	3.81%	0.05%	0.02%	0.04%	
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	397.5	1.12%	2.40%	1.58%	0.02%	0.06%	0.06%	
WV	54051-6902311	MITCHELL PLANT	136.8	1.56%	1.40%	1.56%	0.06%	0.08%	0.09%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	198.0	4.36%	1.67%	1.31%	0.12%	0.02%	0.04%	
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	215.3	0.85%	0.71%	1.27%	0.20%	0.02%	0.02%	
KY	21145-6017011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	826.5	0.18%	0.77%	1.09%	0.00%	0.01%	0.02%	
IN	18051-7363111	Gibson	709.7	0.24%	1.27%	1.01%	0.01%	0.05%	0.05%	
WV	54051-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	82.7	4.98%	1.14%	1.00%	0.92%	0.20%	0.24%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	655.7	0.84%	2.01%	1.00%	0.01%	0.03%	0.04%	
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	186.5	3.73%	1.91%	1.00%	0.03%	0.00%	0.00%	
Facilities That Dropped Off After REVISION										
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	663.0	0.23%	1.07%	0.79%	0.02%	0.04%	0.03%	
OH	39012-4010811	Conexville Power Plant (0610000000)	232.8	1.12%	1.07%	0.00%	0.17%	0.08%	0.02%	

Non-VISTAS Facilities ≥ 1.00%

State	FACILITY_ID_STD	FACILITY_NAME_STD	IMPACTED CLASS I AREAS
AR	05063-1093411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	SHRO
IN	18031-7363111	Gibson	COHU, GRM, JSR, LIGO, MACA, OTRC, SHRO, SIPS
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	COHU, GRM, JSR, LIGO, MACA, OTRC, SHRO, SIPS
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	MACA, SIPS
MD	24001-7763811	Luke Paper Company	SHEN, SWAN
MO	29143-5636811	NEW MADRID POWER PLANT-MARSTON	LIGO, MACA, SHRO, SIPS
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (064105002)	DOSO, JARI, OTRC, SHEN, SWAN
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	COHU, DOSO, JSR, OTRC, SHRO
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	COHU, DOSO, GRM, JARI, JSR, LIGO, OKEF, OTRC, ROMA, SHEN, SHRO, SIPS, SWAN, WOLF
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	DOSO, JARI, OTRC, SHEN
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	COHU, DOSO, GRM, JARI, JSR, LIGO, OKEF, OTRC, ROMA, SHEN, SHRO, SWAN, WOLF
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	SHEN, SWAN
PA	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	SHEN

EPA Guidance (August 20, 2019)

- Many facilities already have effective emission control technologies in place. States will consider control options for these facilities on a case-by-case basis.
 - “For the purpose of SO₂ control measures, an EGU that has add-on flue gas desulfurization (FGD) and that meets the applicable alternative SO₂ emission limit of the 2012 Mercury Air Toxics Standards (MATS) rule for power plants. The two limits in the rule (0.2 lb/MMBtu for coal-fired EGUs or 0.3 lb/MMBtu for EGUs fired with oil-derived solid fuel) are low enough that it is unlikely that an analysis of control measures for a source already equipped with a scrubber and meeting one of these limits would conclude that even more stringent control of SO₂ is necessary to make reasonable progress.”
 - “For the purposes of SO₂ and NO_x control measures, a combustion source (e.g., an EGU or industrial boiler or process heater) that, during the first implementation period, installed a FGD system that operates year-round with an effectiveness of at least 90 percent or by the installation of a selective catalytic reduction system that operates year-round with an overall effectiveness of at least 90 percent (in both cases calculating the effectiveness as the total for the system, including any bypassed flue gas), on a pollutant-specific basis.”

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Remaining VISTAS Work Schedule

Task	Schedule
2028 Point Emissions Updates	Completed
2028 Emissions Processing	Late April, 2020
2028 CAMx Modeling	Late June, 2020
2028 Visibility Projections	Mid-July, 2020
2028 Deposition Projections	Mid-July, 2020
Final Reports and Documentation	Late July, 2020
Website Updates and Postings	Late July, 2020
End of Contract	September 30, 2020
Regional Haze SIPs Due to EPA	July 31, 2021

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Additional Considerations

- The final list of four-factor analysis sources will be determined in consultation with the FLMs, EPA, other states, and stakeholders.
- Some VISTAS states may perform additional four-factor analyses for sources not listed on Slide 113.
- States will verify projected SO₂ and NO_x emissions with facilities. PSAT results can be adjusted to match.
- Some states may allow their facilities to take a permit limit that will result in adjusted PSAT impacts below the 1.00% threshold in lieu of performing a four-factor analysis.
- The large number of coal-fired EGU retirements and fuel switching from coal to natural gas needs to be considered along with the sources selected for the four-factor analysis. States should not be penalized for early action.

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Contacts for Further Information

- For general, technical, and SIP-related questions, contact the TAWG and CC Chairs:
 - TAWG – Randy Strait (randy.strait@ncdenr.gov)
 - CC – Jim Boylan (james.boylan@dnr.ga.gov)
- For general, contract, and funding questions, contact the Project Manager:
 - John Hornback (hornback@metro4-sesarm.org)



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Next Steps and Schedule

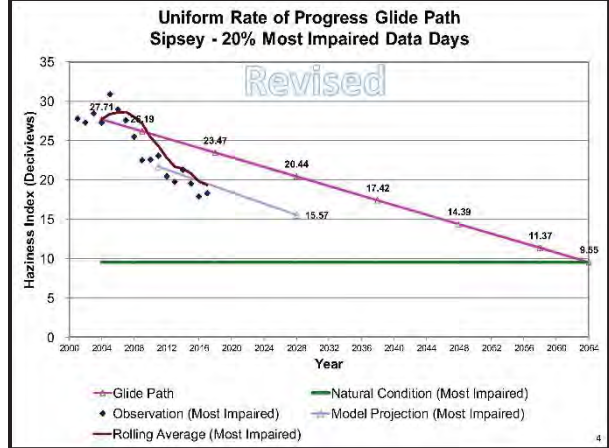
117

**Appendix F-3j - VISTAS Regional Haze Project Update to
FLMs, EPA OAQPS, Region 3, Region 4, MJOs May 11,
2020**

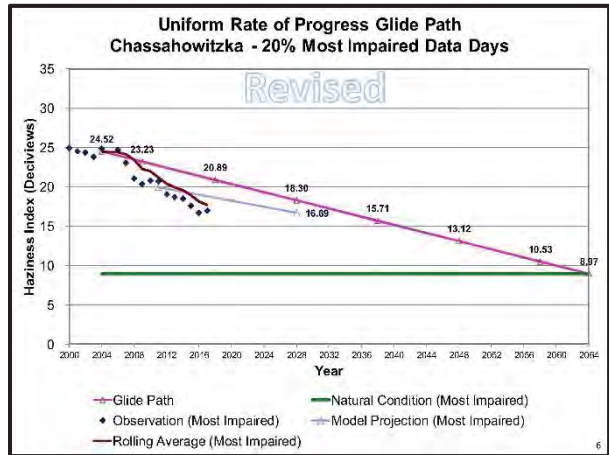
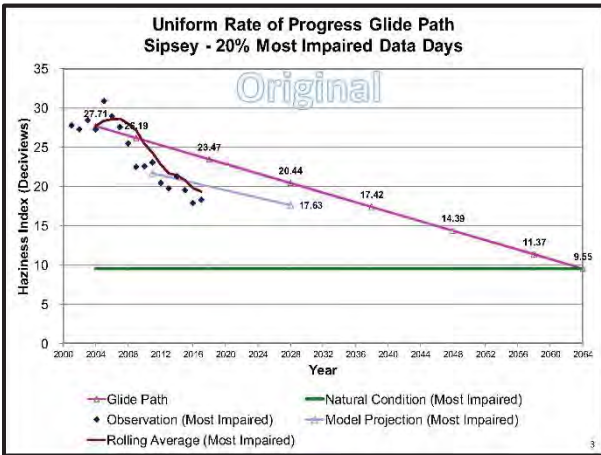
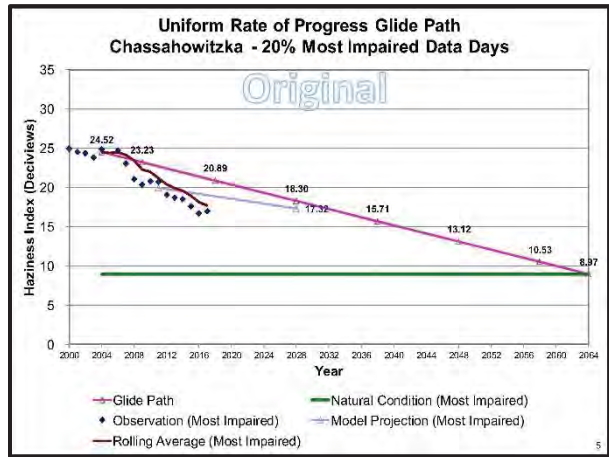
VISTAS Regional Haze Project Update, Part 1 URP Glide Path Adjustments

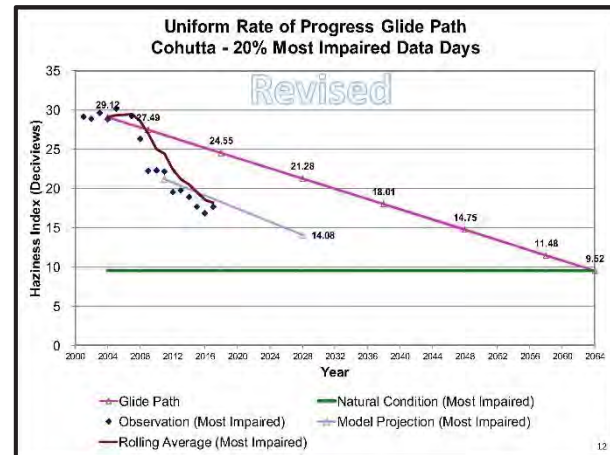
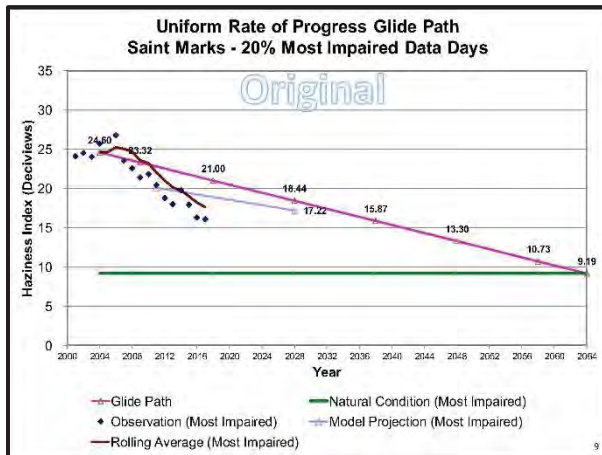
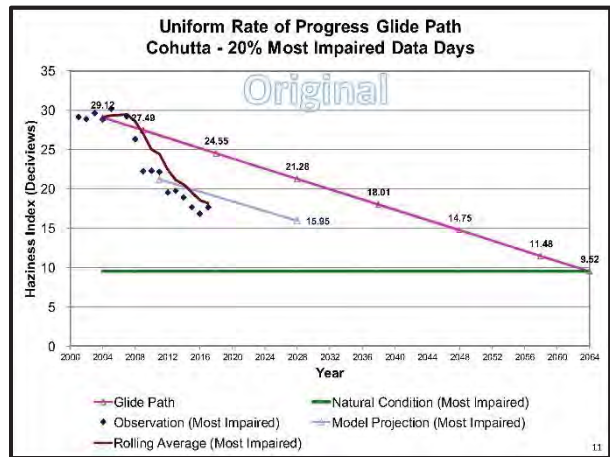
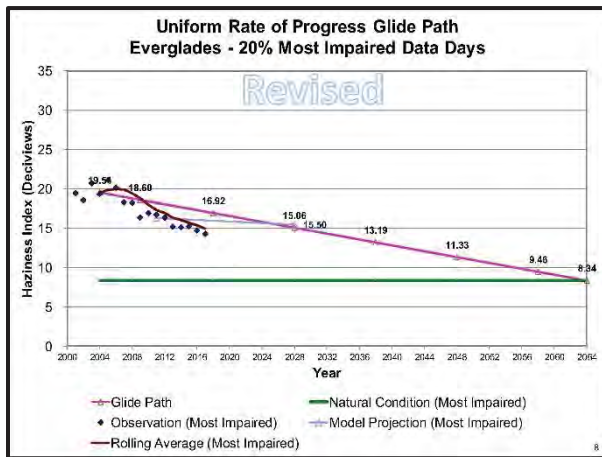
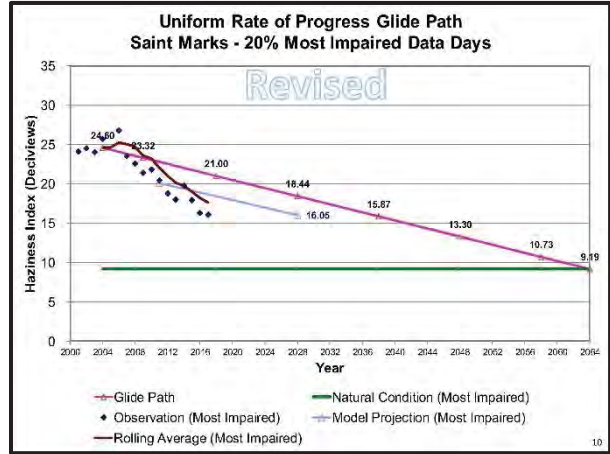
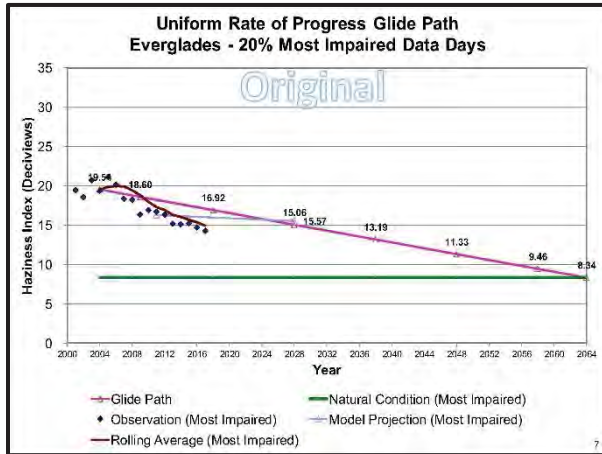


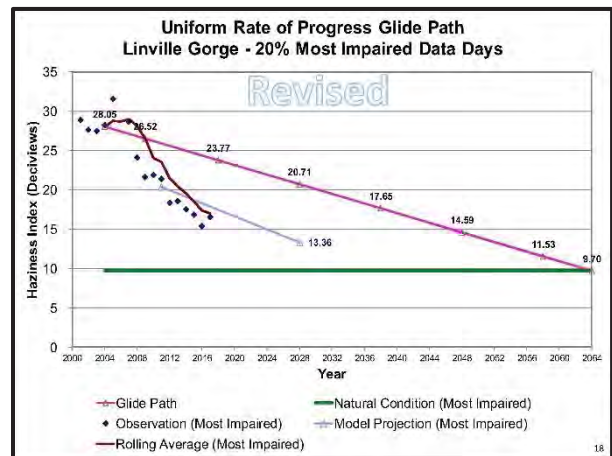
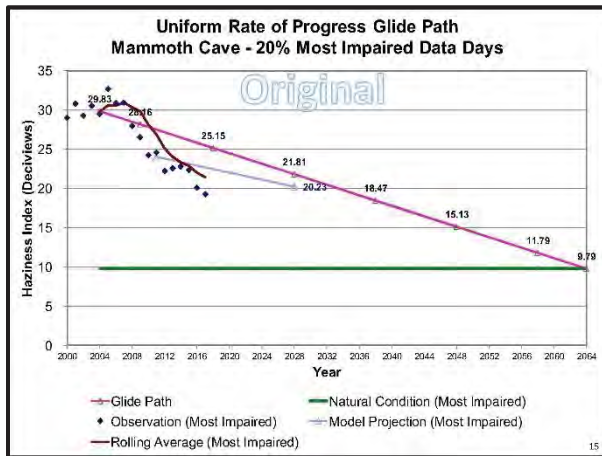
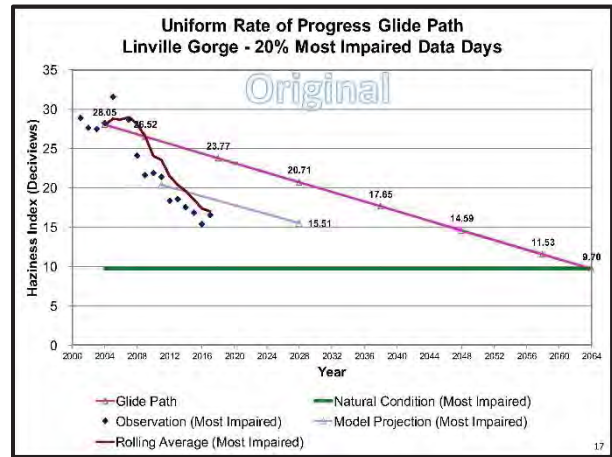
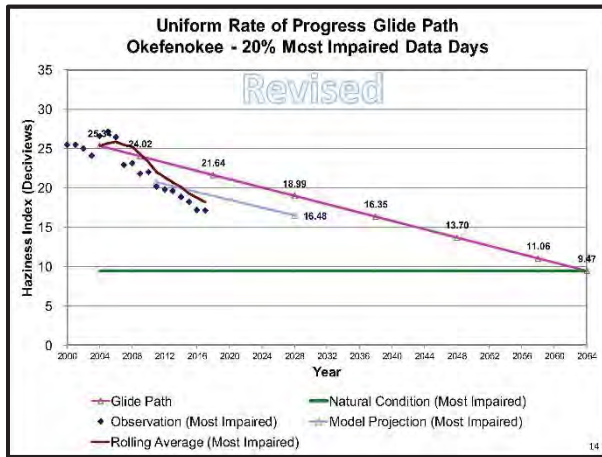
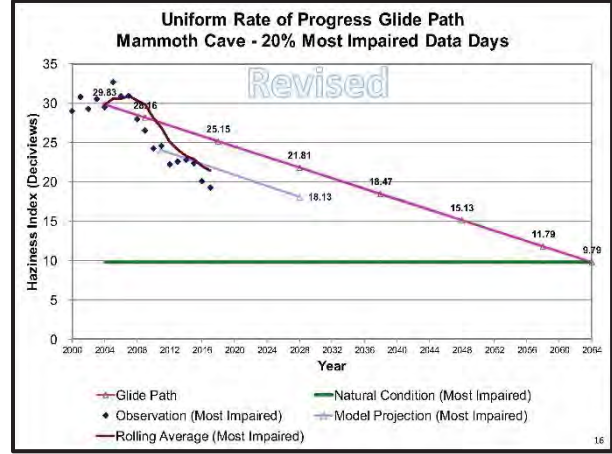
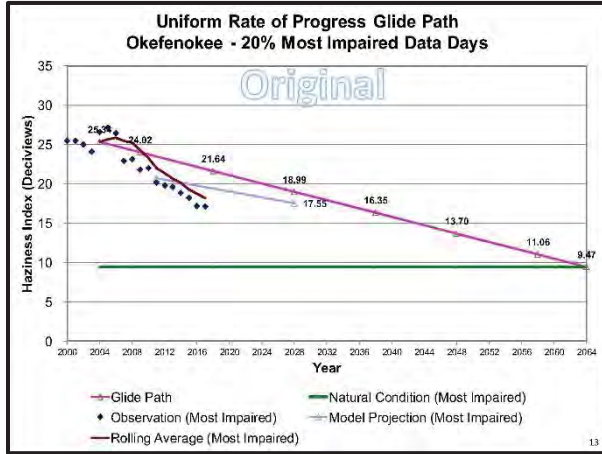
FLM/EPA Briefing
Jim Boylan
May 11, 2020

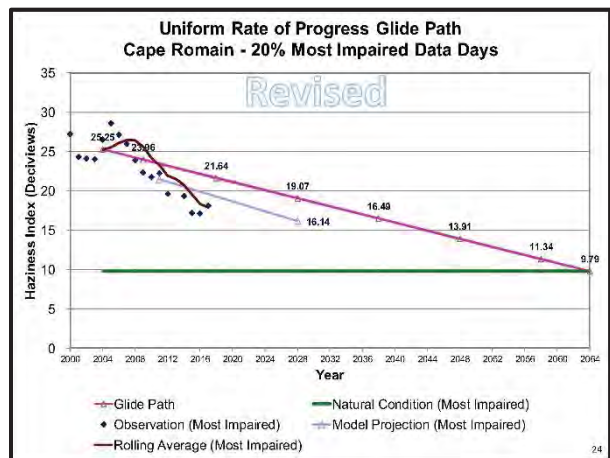
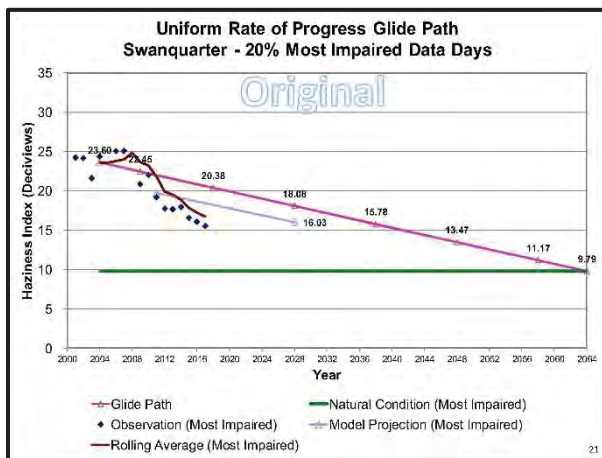
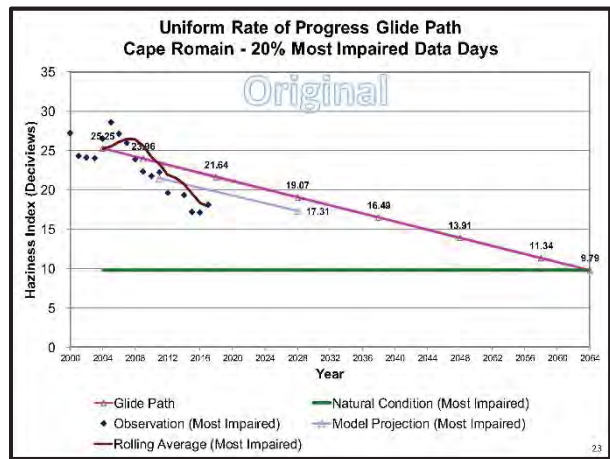
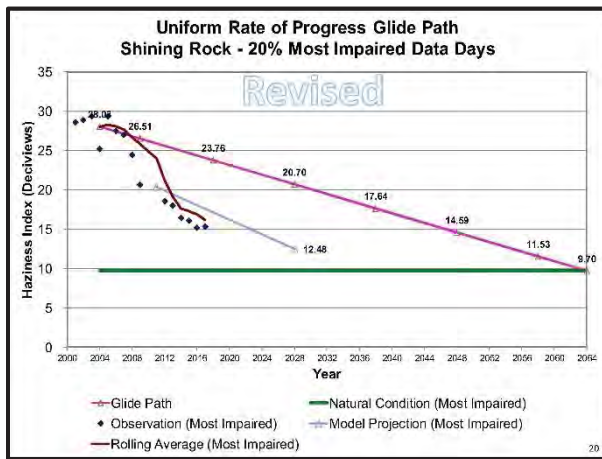
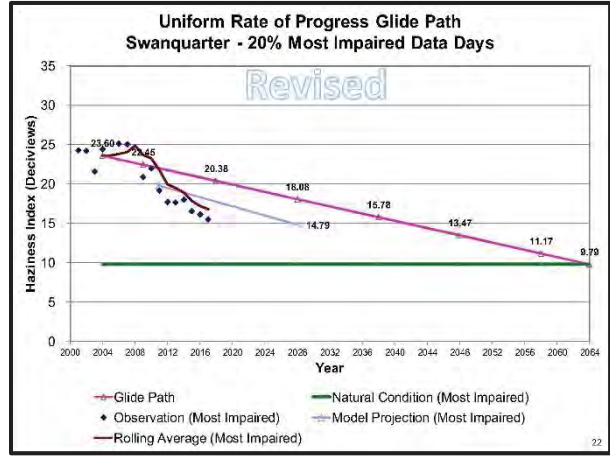
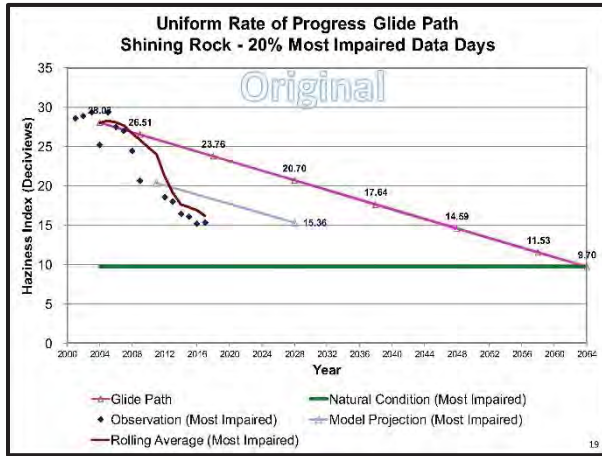


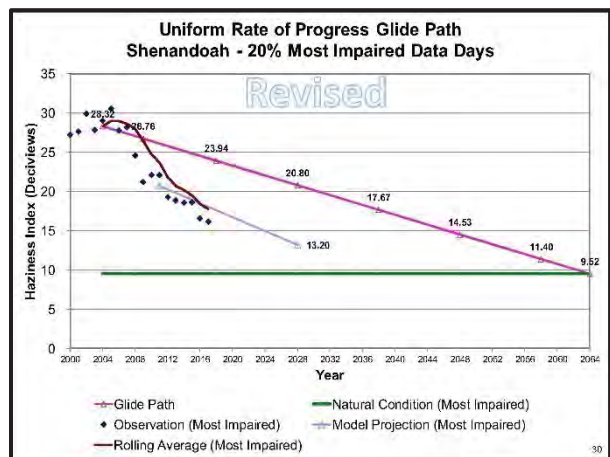
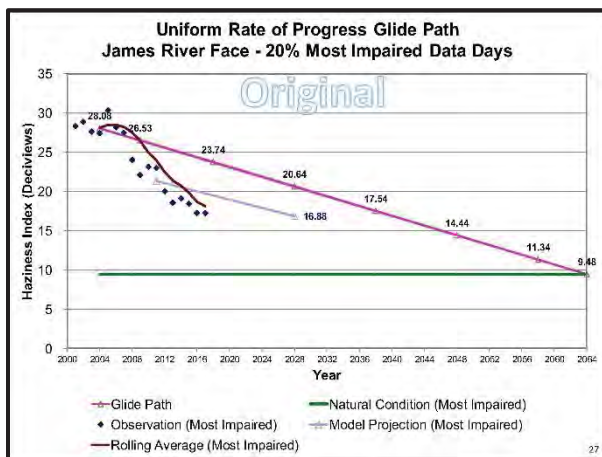
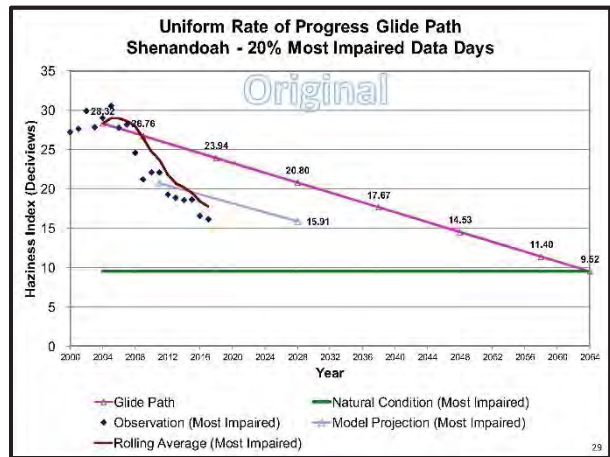
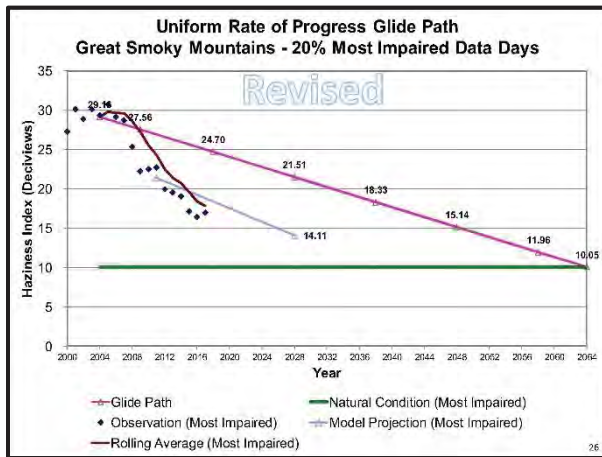
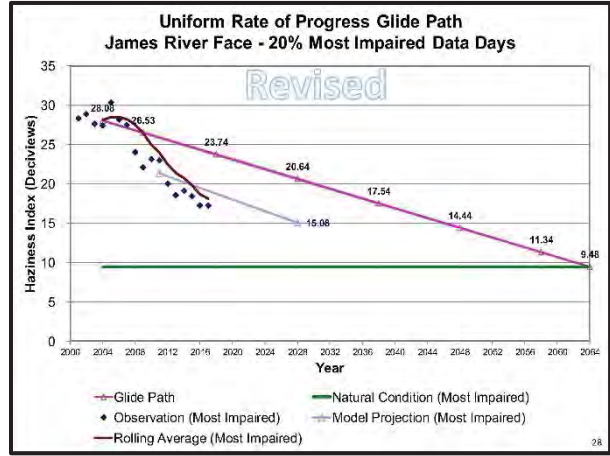
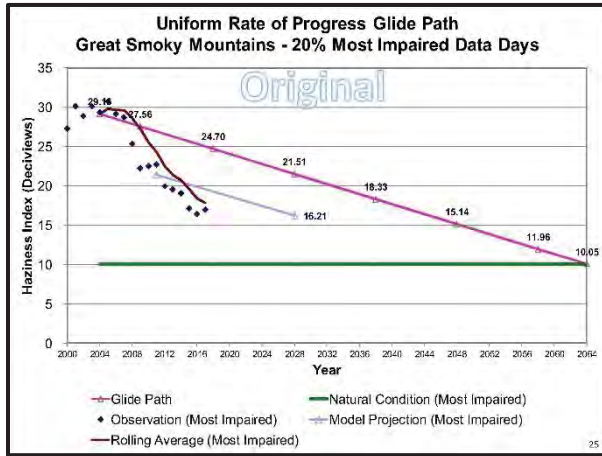
ORIGINAL AND REVISED 2028 MODEL PROJECTIONS

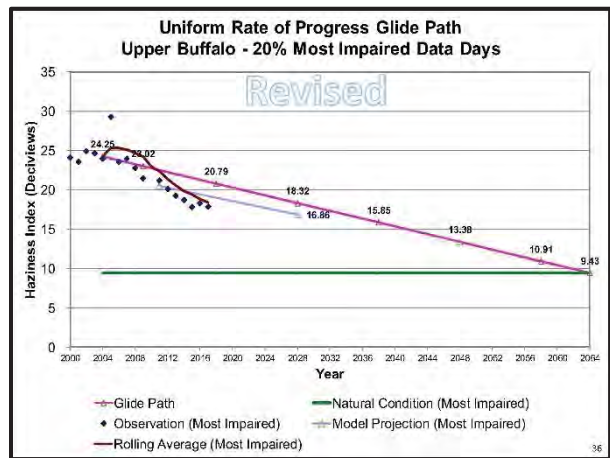
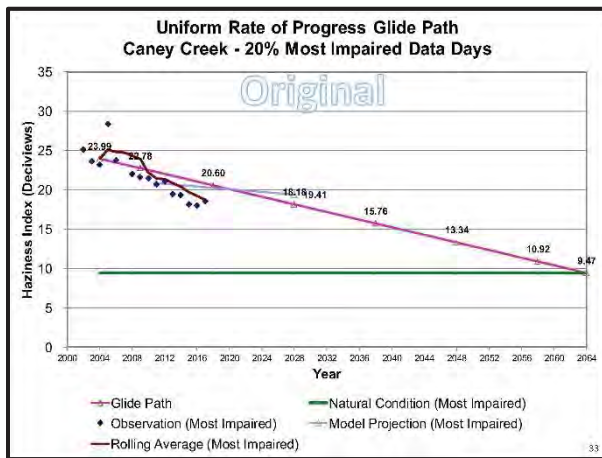
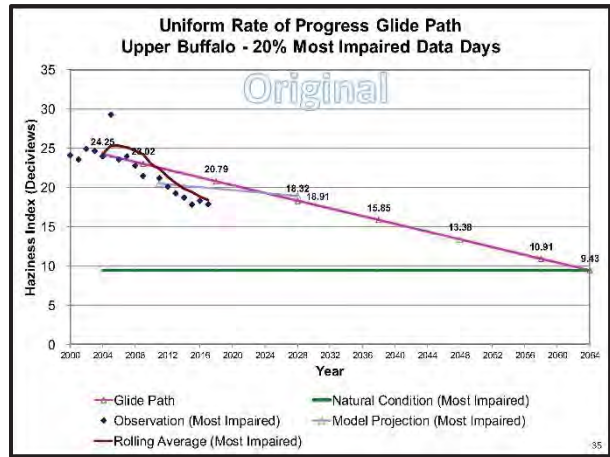
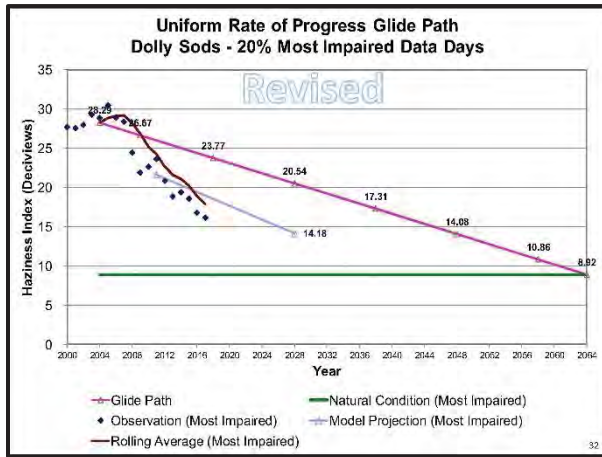
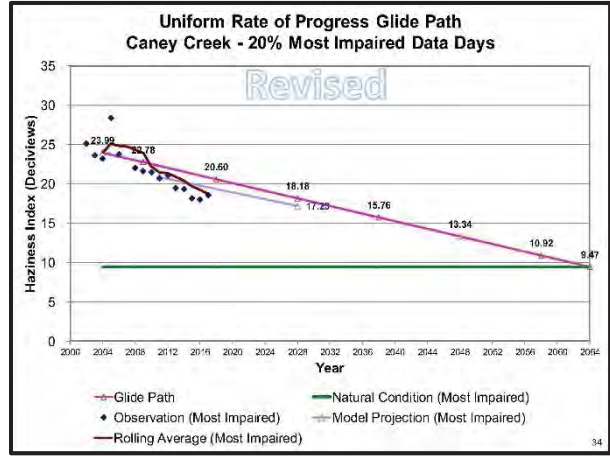
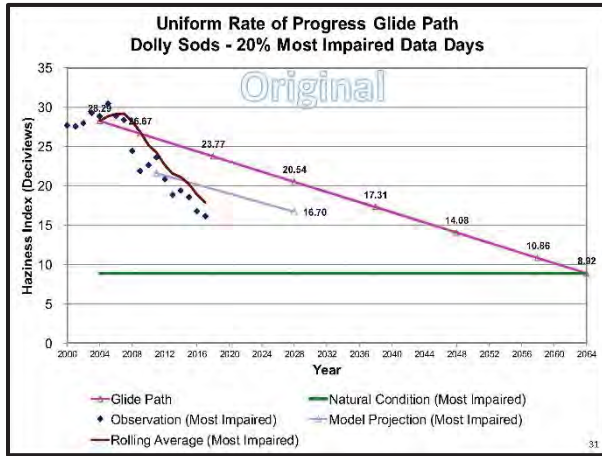


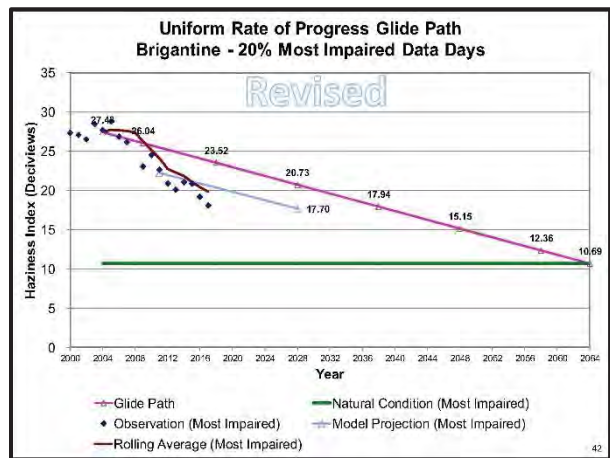
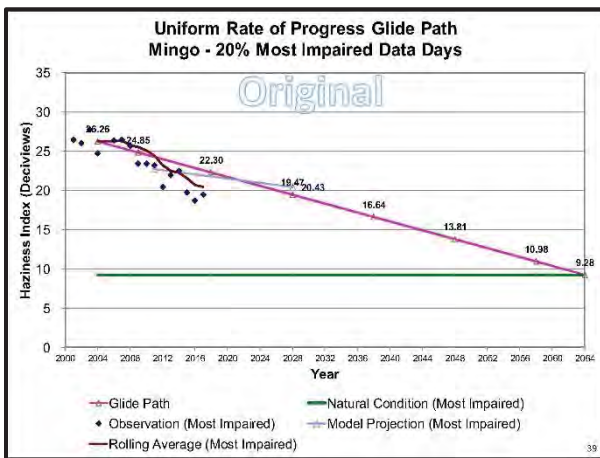
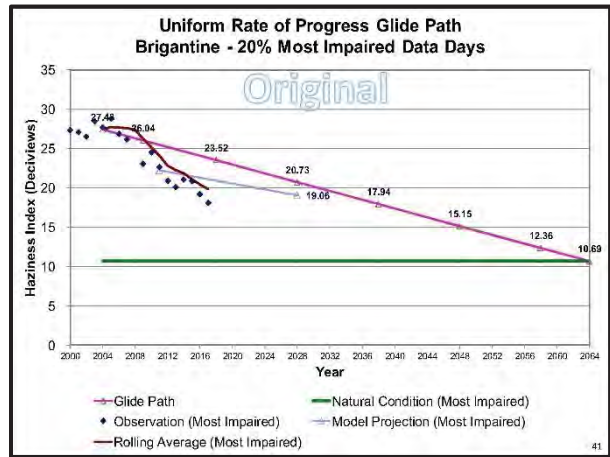
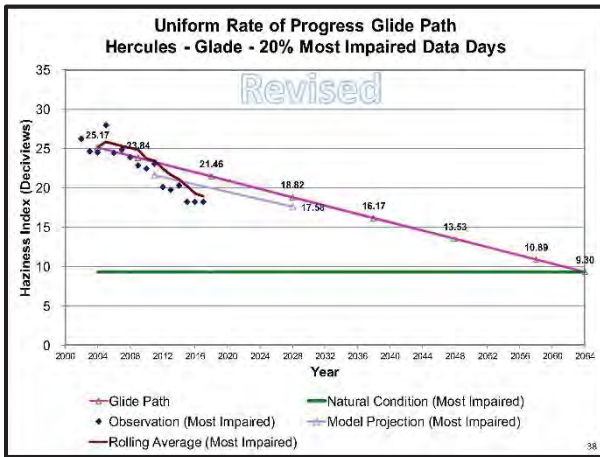
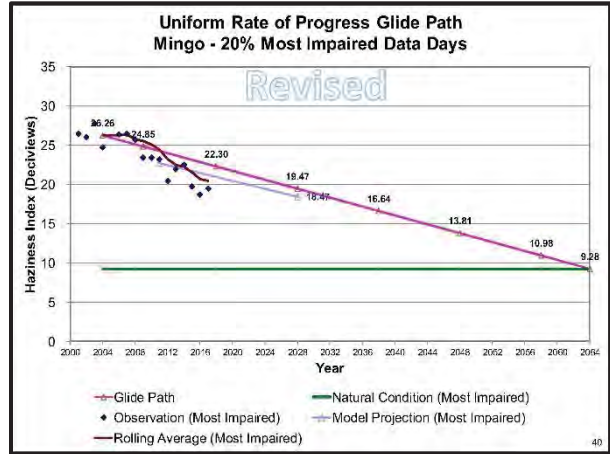
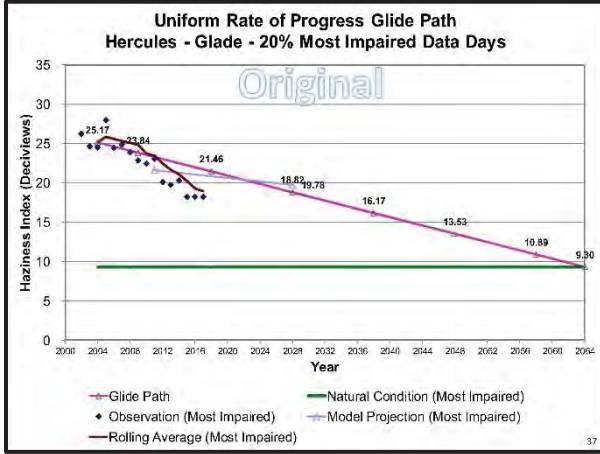












Contacts for Further Information

- For general, technical, and SIP-related questions, contact the TAWG and CC Chairs:
 - TAWG – Randy Strait (randy.strait@ncdenr.gov)
 - CC – Jim Boylan (james.boylan@dnr.ga.gov)
- For project and contract management questions, contact the Project Manager:
 - John Hornback (hornback@metro4-sesarm.org)



VISTAS Regional Haze Project Update – Part 2



FLM/EPA Briefing
Jim Boylan
May 11, 2020

VISTAS Class I Areas

VISTAS FEDERAL CLASS I AREAS	
AL – Sipsey Wilderness Area (SIPS)	USDA Forest Service
FL – Chassahowitzka Wilderness Area (CHAS)	USDI Fish and Wildlife Service
FL – Everglades National Park (EVER)	USDI National Park Service
FL – Saint Marks Wilderness Area (SAMA)	USDI Fish and Wildlife Service
GA – Cohutta Wilderness Area (COHU)	USDA Forest Service
GA – Okefenokee Wilderness Area (OKEF)	USDI Fish and Wildlife Service
GA – Wolf Island Wilderness Area (WOLF)*	USDI Fish and Wildlife Service
KY – Mammoth Cave National Park (MACA)	USDI National Park Service
NC – Linville Gorge Wilderness Area (LIGO)	USDA Forest Service
NC – Shining Rock Wilderness Area (SHRO)	USDA Forest Service
NC – Swainquarter Wilderness Area (SWAN)	USDI Fish and Wildlife Service
SC – Cape Romain Wilderness Area (ROMA)	USDI Fish and Wildlife Service
TN/NC – Great Smoky Mountains National Park (GRSM)	USDI National Park Service
TN/NC – Joyce Kilmer-Slickrock Wilderness Area (JOYC)	USDA Forest Service
VA – James River Face Wilderness Area (JARI)	USDA Forest Service
VA – Shenandoah National Park (SHEN)	USDI National Park Service
WV – Dolly Sods Wilderness Area (DOSD)	USDA Forest Service
WV – Otter Creek Wilderness Area (OTCR)*	USDA Forest Service

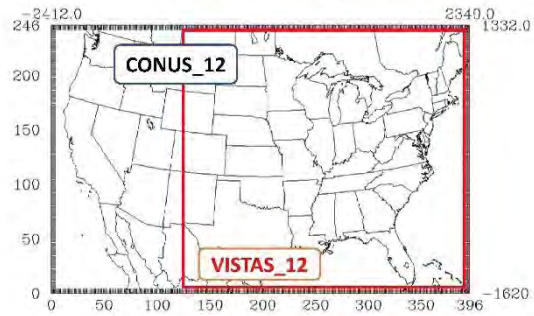
*This Class I Area does not have an IMPROVE monitor and will be represented by measurement data from a nearby Class I Area with an IMPROVE monitor.

Outline

- Background Information
- 2028 Emissions Updates
- Revised 2028 PSAT Stacked Bar Charts
- Reasonable Progress Analysis
- Next Steps & Schedule



VISTAS Modeling Domains



Class I Areas of Interest to VISTAS States



Initial VISTAS Emissions Updates

- Used EPA's 2011 base year emissions without change
- Updated EPA's Initial 2028 projection year emissions
 - EGU and major non-EGU sources
 - Removed Clean Power Plan assumptions
 - VISTAS – Adjusted for changes in fuels and facility operating plans
 - Non-VISTAS – Used ERTAC 2.7opt



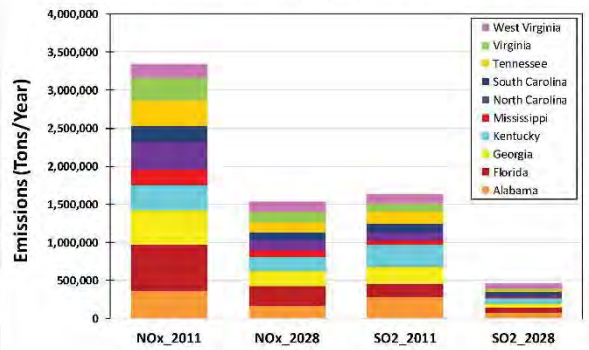
VISTAS vs. EPA Updated 2028 Emission Projections

- The table below compares the 2028 point emissions used by VISTAS vs. the latest 2028fh emissions used by EPA (projected from 2016). The emissions below are extracted from the VISTAS 12 modeling domain which covers the Eastern U.S.

Pollutant	VISTAS 2028 (tpy)	New EPA 2028 (tpy)	Change (tpy)	Change (%)
NOx	2,641,463.83	2,108,115.50	-533,348.33	-20.19%
SO2	2,574,542.02	1,400,287.10	-1,174,254.92	-45.61%

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VISTAS States Emissions: 2011 vs. 2028



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Old ERTAC (2.7opt) vs. New ERTAC (16.0)

SO2	16.0_2028	2.7opt_2028	Δ SO2	Δ SO2 (%)
CENSARA	367,683.7	760,828.2	-393,144.5	-51.67%
LADCO	266,047.0	379,577.5	-113,530.5	-29.91%
MANE-VU	78,657.0	196,672.6	-118,015.6	-60.01%
VISTAS	161,502.5	273,582.1	-112,079.6	-40.97%
TOTAL	976,471.2	1,783,376.5	-806,905.3	-45.25%

NOx	16.0_2028	2.7opt_2028	Δ NOx	Δ NOx (%)
CENSARA	244,499.3	354,795.1	-110,295.8	-31.09%
LADCO	166,429.4	198,966.9	-32,537.4	-16.35%
MANE-VU	56,315.3	83,432.5	-27,117.2	-32.50%
VISTAS	200,791.1	270,615.7	-69,824.6	-25.80%
TOTAL	840,973.6	1,166,663.1	-325,689.5	-27.92%

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Additional Modeling-Related Tasks

- Emissions processing
- Updated 2028 CAMx modeling (VISTAS_12)
- Updated 2028 visibility projections
- Documentation

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VISTAS CC/TAWG Conclusions

- 2028 emission updates are necessary
 - VISTAS States** – States will:
 - Update 2028 major source emissions projections (SO₂, NOx, PM_{2.5}, PM₁₀, NH₃, CO) at the facility and unit level
 - Add any new sources of significance
 - LADCO States** – SESARM will:
 - Replace ERTAC_2.7 with ERTAC_16.1 based on LADCO input
 - All Other States** – SESARM will:
 - Replace ERTAC_2.7 with ERTAC_16.0
 - Verify accuracy of large SO₂ and NOx source emissions projections via contact with surrounding states/RPOs and update emissions as needed
- Additional 2028 air quality modeling is needed

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Updated 2028 Point Emissions

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2028 SO₂ Comparison

State/RPO	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
AL	87,111.28	59,056.98	-32.2%	15,489.96	8,365.96	-46.0%	71,620.32	50,691.02	-29.2%
FL	63,501.23	52,982.68	-16.6%	28,547.41	24,004.67	-15.9%	34,953.82	28,978.01	-17.1%
GA	37,055.83	36,166.09	-2.4%	18,473.28	17,573.54	-4.9%	18,582.55	18,592.55	0.0%
KY	75,140.26	65,636.83	-12.8%	56,262.06	49,585.95	-11.9%	18,878.20	16,050.88	-15.0%
MS	21,234.31	8,405.06	-60.4%	6,984.57	3,236.28	-53.7%	14,249.74	5,168.78	-63.7%
NC	35,232.88	24,347.18	-30.9%	19,734.80	9,571.47	-51.3%	15,498.08	14,775.71	-4.7%
SC	29,600.85	29,601.25	0.0%	10,693.79	10,695.94	0.0%	18,907.05	18,905.31	-0.1%
TN	23,447.58	21,057.17	-10.2%	12,134.30	10,030.04	-17.2%	11,313.28	11,027.13	-2.7%
VA	19,835.18	18,551.32	-6.5%	3,264.09	1,976.23	-39.5%	16,575.09	16,575.09	0.0%
WV	63,404.07	53,715.79	-15.3%	57,828.67	47,744.49	-17.4%	5,575.41	5,971.30	7.1%
CENSARA	1,012,946.59	821,321.29	-18.7%	773,625.33	382,000.54	-50.6%	239,321.46	239,320.75	-0.0%
LADCO	660,186.42	498,171.62	-24.5%	484,506.98	282,492.18	-41.6%	215,679.44	215,679.44	0.0%
MANNE-VU	270,810.83	149,439.76	-44.8%	209,261.83	95,074.20	-53.9%	67,147.30	54,365.55	-19.0%
WRAP	182,121.89	135,483.18	-25.6%	136,935.17	90,316.46	-34.1%	45,366.72	45,166.73	-0.4%
TOTAL	2,581,643.20	1,773,936.20	-31.3%	1,788,132.63	1,032,667.35	-42.2%	793,510.56	741,268.85	-6.6%

PSAT Source Apportionment Modeling

- Quantifies visibility impacts from individual point sources, source sectors, and geographic regions
- NOx and SO₂ tagging
- Used for further evaluation of AOI results
- Refines information on contributions to visibility impairment
- Can be used to adjust future year visibility projections to account for additional emission controls
- VISTAS contract with ERG allows for up to 250 tags

2028 NOx Comparison

State/RPO	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
AL	80,589.97	70,824.72	-11.9%	26,895.35	20,008.14	-25.6%	53,694.61	50,816.58	-5.0%
FL	88,006.19	70,010.40	-20.9%	26,250.73	25,049.90	-4.6%	41,755.45	44,960.50	7.7%
GA	67,197.50	65,885.55	-2.0%	25,899.67	24,587.73	-5.1%	41,297.83	41,297.83	0.0%
KY	66,240.03	62,130.83	-6.2%	36,781.72	32,695.94	-11.1%	29,458.31	29,434.89	-0.1%
MS	52,159.32	46,853.62	-10.2%	16,279.53	12,208.89	-24.8%	33,879.79	34,644.73	2.3%
NC	85,863.97	58,933.89	-31.5%	27,842.23	20,977.65	-24.7%	38,021.74	37,956.15	-0.2%
SC	36,051.31	36,170.87	0.3%	10,622.78	10,707.42	1.0%	25,328.53	25,463.44	4.9%
TN	45,879.07	42,954.25	-6.4%	10,086.01	7,814.13	-22.5%	35,793.06	35,140.12	-1.8%
VA	43,210.19	41,671.99	-3.6%	11,974.97	10,435.77	-12.8%	31,235.22	31,236.22	0.0%
WV	65,054.07	68,200.77	4.8%	46,721.77	49,874.15	6.7%	18,332.30	18,326.62	-0.3%
CENSARA	903,979.85	791,397.59	-12.5%	382,706.66	270,182.46	-29.4%	521,273.19	521,215.14	-0.1%
LADCO	548,866.74	491,345.00	-10.5%	244,035.26	186,513.52	-23.8%	304,831.49	304,831.49	0.0%
MANNE-VU	244,280.15	222,991.41	-9.2%	109,465.13	82,178.41	-24.8%	140,815.02	140,815.02	0.0%
WRAP	352,819.80	301,433.41	-14.6%	187,984.97	126,538.55	-32.7%	174,834.83	174,896.86	0.4%
TOTAL	2,649,998.14	2,370,804.22	-10.5%	1,159,405.80	879,790.66	-24.1%	1,490,592.35	1,491,013.55	0.3%

PSAT SO₂ and NOx Tags (209)

Round 1 (122 tags)

- Total SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- Total NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ tags for individual VISTAS facilities = 50 tags
- NOx tags for individual VISTAS facilities = 20 tags

Round 2 (87 tags)

- Non-EGU point SO₂ for 10 individual VISTAS states + 3 RPOs = 13 tags
- Non-EGU point NOx for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ and NOx for N/S/W/E boundaries = 8 tags
- SO₂ tags for individual VISTAS facilities = 10 tags
- NOx tags for individual VISTAS facilities = 16 tags
- SO₂ tags for individual non-VISTAS facilities = 17 tags
- NOx tags for individual non-VISTAS facilities = 10 tags

Revised 2028 PSAT Stacked Bar Charts (Original and Adjusted)

PSAT Adjustment Ratios

State/RPO	SO ₂ EGU Ratio	SO ₂ NEGU Ratio	NOx EGU Ratio	NOx NEGU Ratio
AL	0.540	0.708	0.744	0.950
FL	0.841	0.829	0.954	1.077
GA	0.951	1.000	0.949	1.000
KY	0.881	0.850	0.889	0.999
MS	0.463	0.363	0.668	1.023
NC	0.485	0.953	0.753	0.998
SC	1.000	1.000	1.018	0.997
TN	0.828	0.973	0.775	0.982
VA	0.605	1.000	0.872	1.000
WV	0.826	1.071	1.067	1.000
CENSARA	0.494	1.000	0.706	1.000
LADCO	0.636	1.000	0.764	1.000
MANNE-VU	0.467	0.810	0.794	1.000

Revised State/RPO PSAT Results

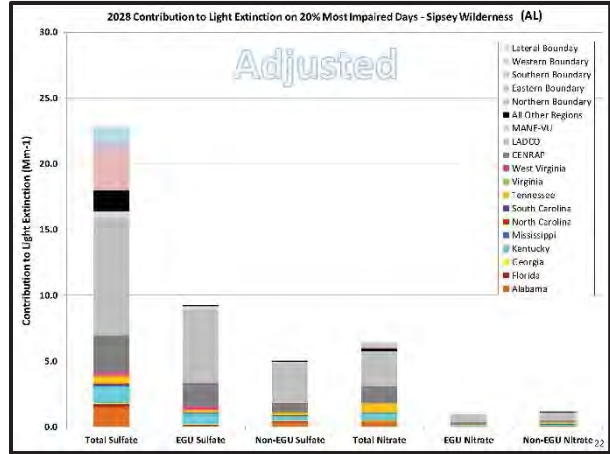
- Revised EGU Sulfate PSAT Results
= Original EGU Sulfate PSAT Results * SO₂ EGU Ratio

$$\text{where, SO}_2 \text{ EGU Ratio} = \frac{(\text{Revised EGU SO}_2 \text{ emissions})}{(\text{Original EGU SO}_2 \text{ emissions})}$$

- Revised NEGU Sulfate PSAT Results
= Original NEGU Sulfate PSAT Results * SO₂ NEGU Ratio

$$\text{where, SO}_2 \text{ NEGU Ratio} = \frac{(\text{Revised NEGU SO}_2 \text{ emissions})}{(\text{Original NEGU SO}_2 \text{ emissions})}$$

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Revised State/RPO PSAT Results

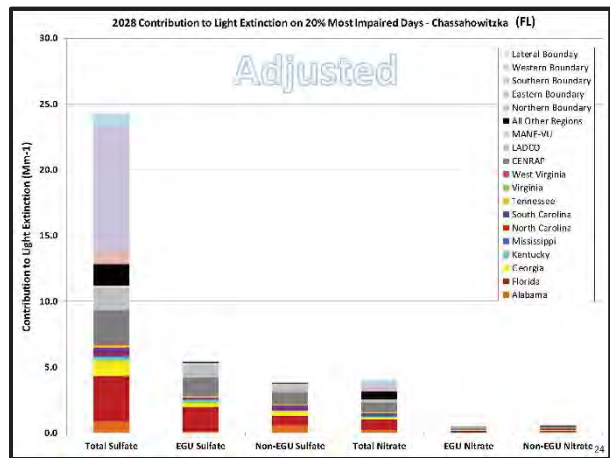
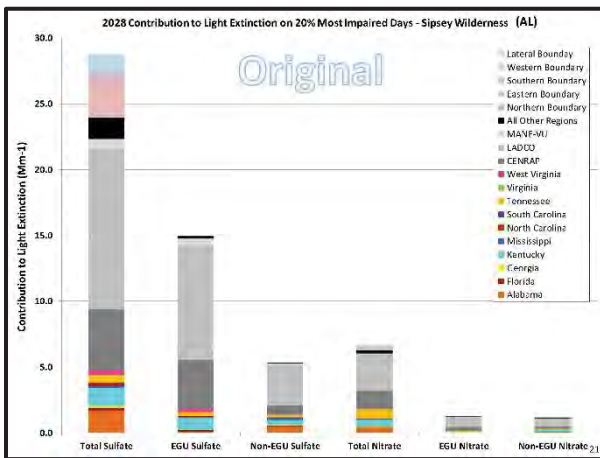
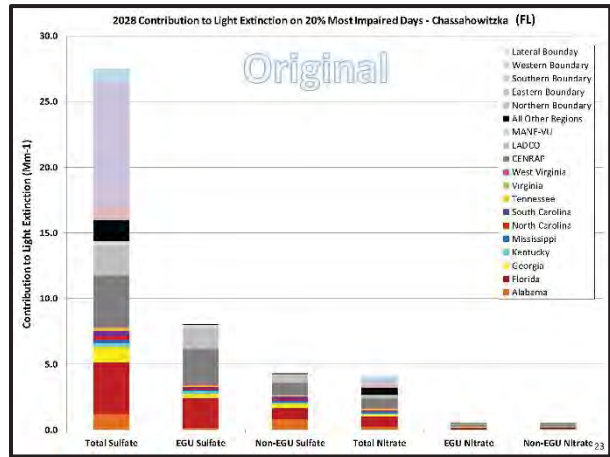
- Revised EGU Nitrate PSAT Results
= Original EGU Nitrate PSAT Results * NO_x EGU Ratio

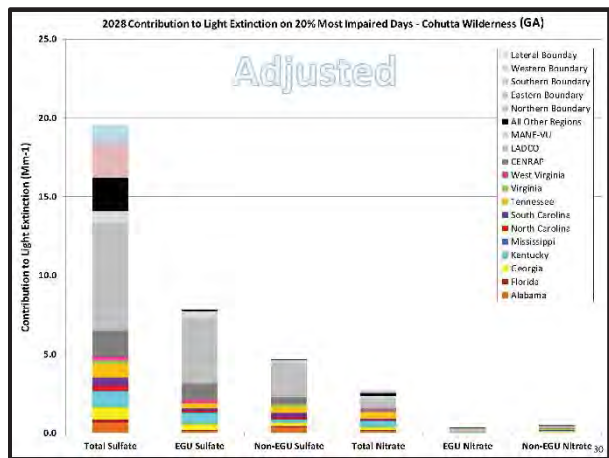
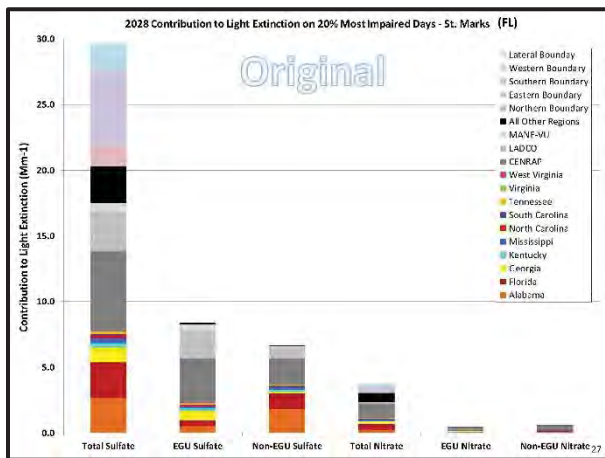
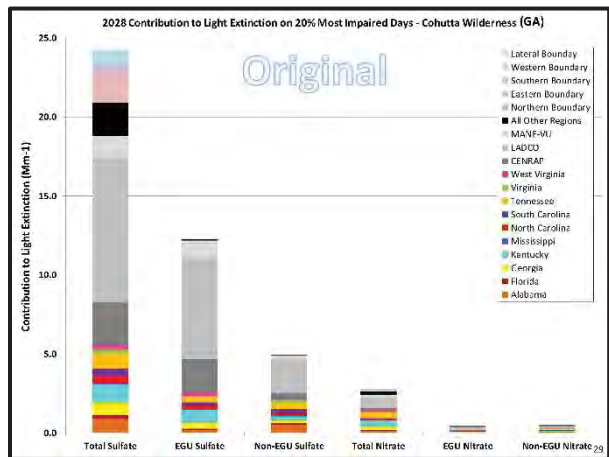
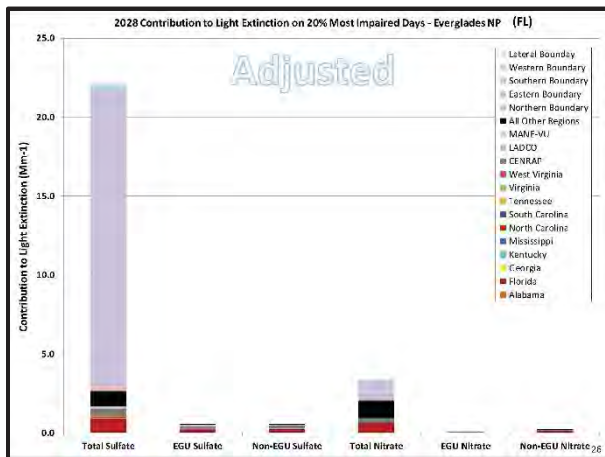
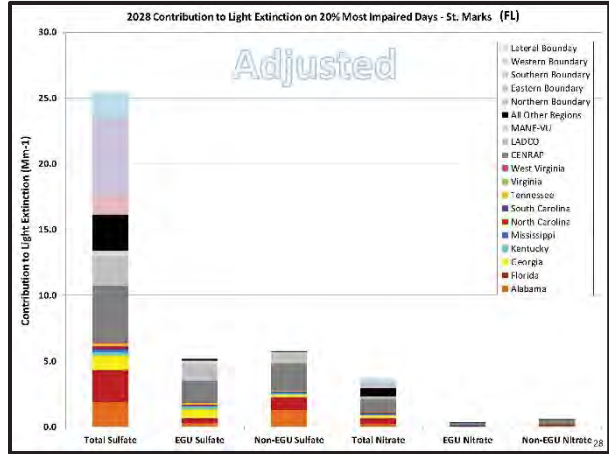
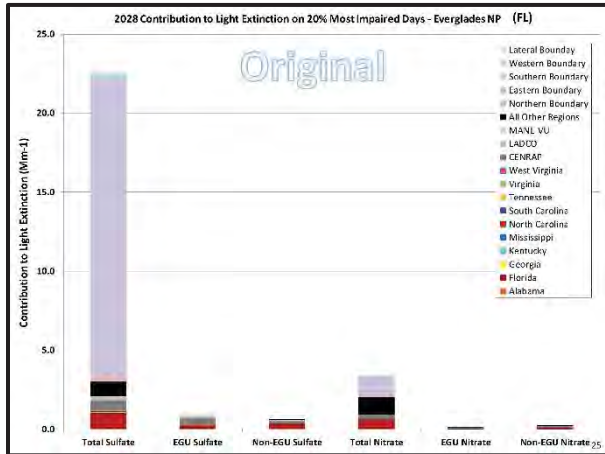
$$\text{where, NO}_x \text{ EGU Ratio} = \frac{(\text{Revised EGU NO}_x \text{ emissions})}{(\text{Original EGU NO}_x \text{ emissions})}$$

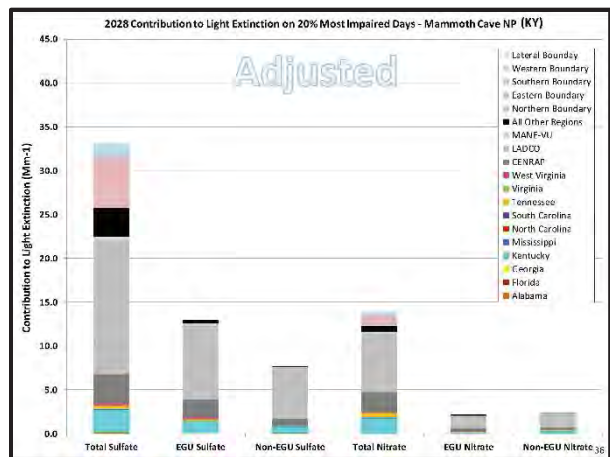
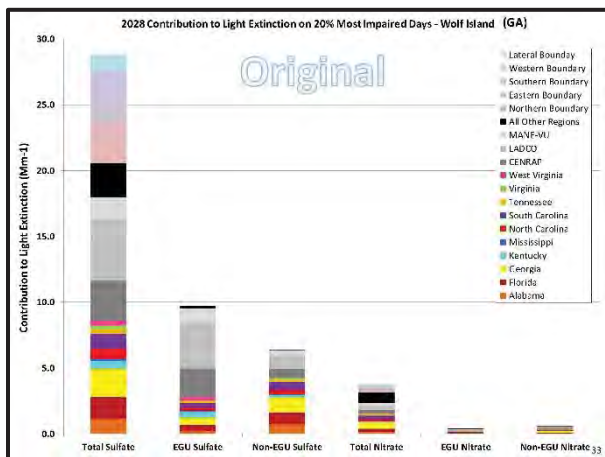
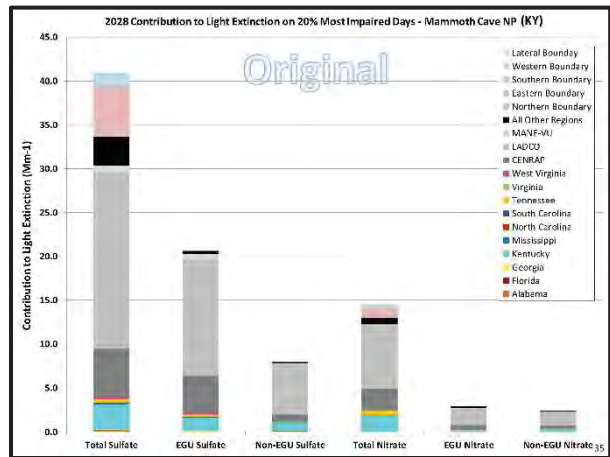
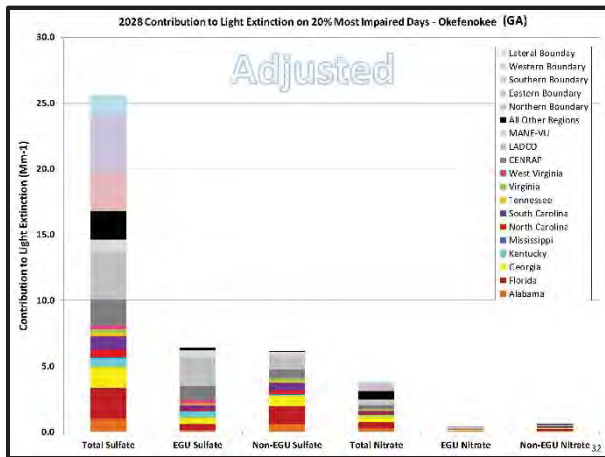
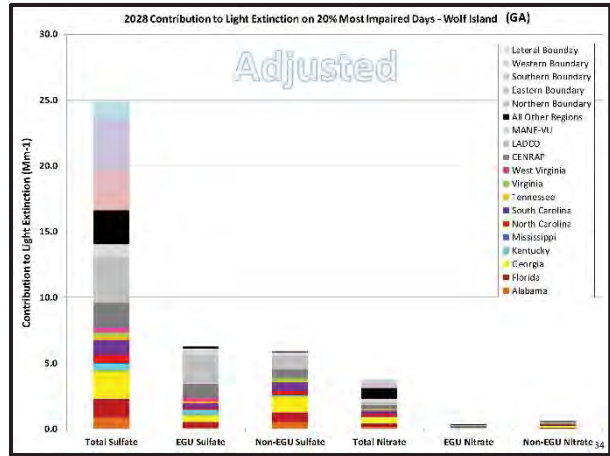
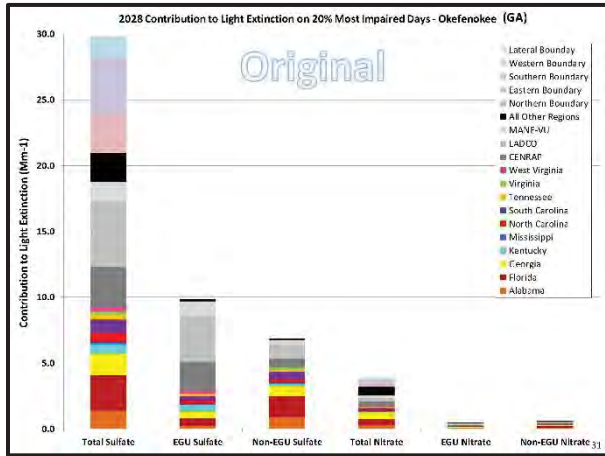
- Revised NEGU Nitrate PSAT Results
= Original NEGU Nitrate PSAT Results * NO_x NEGU Ratio

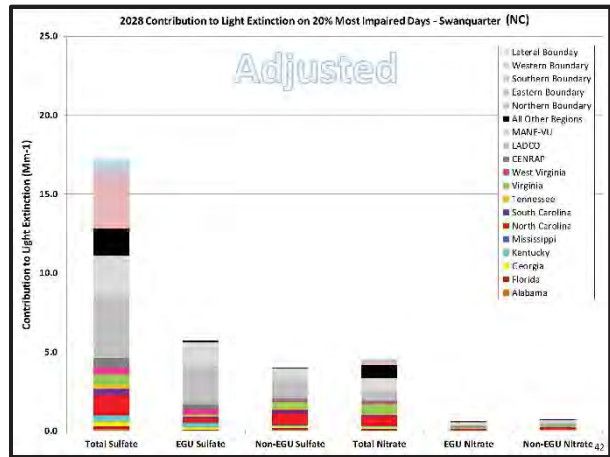
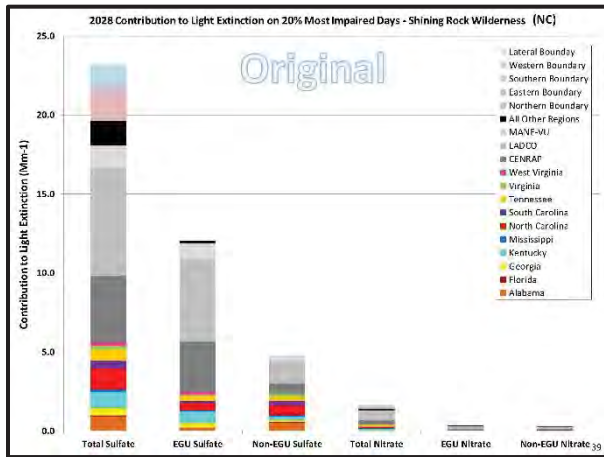
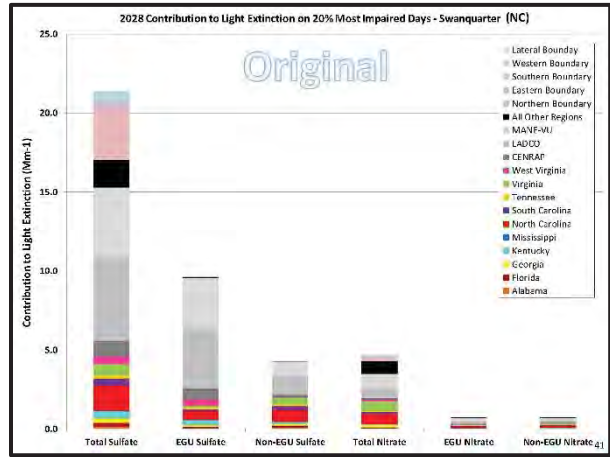
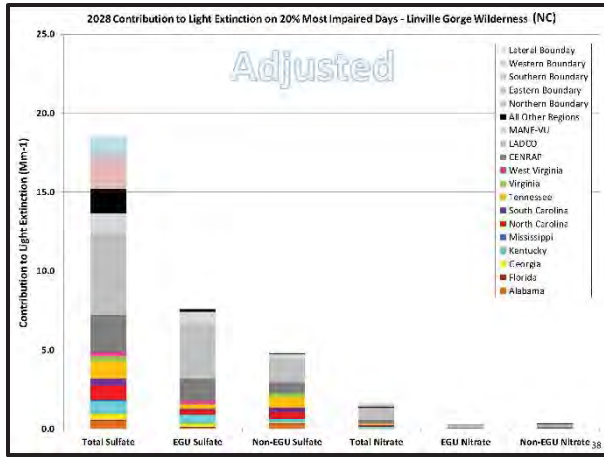
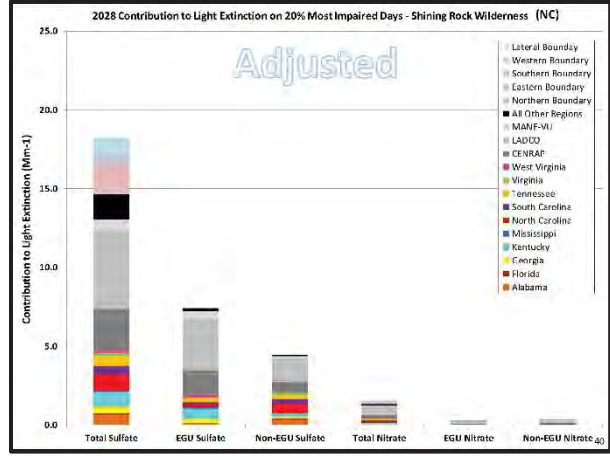
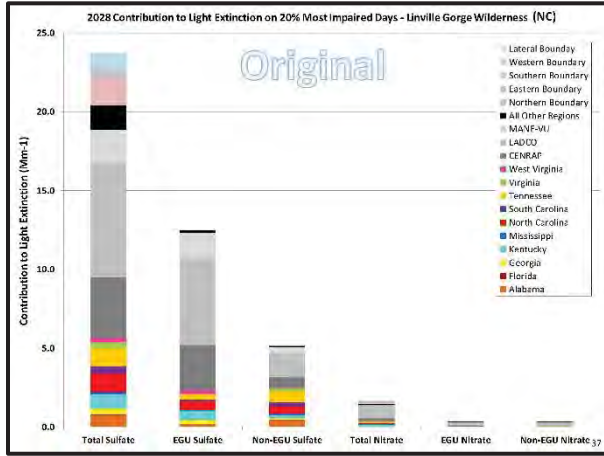
$$\text{where, NO}_x \text{ NEGU Ratio} = \frac{(\text{Revised NEGU NO}_x \text{ emissions})}{(\text{Original NEGU NO}_x \text{ emissions})}$$

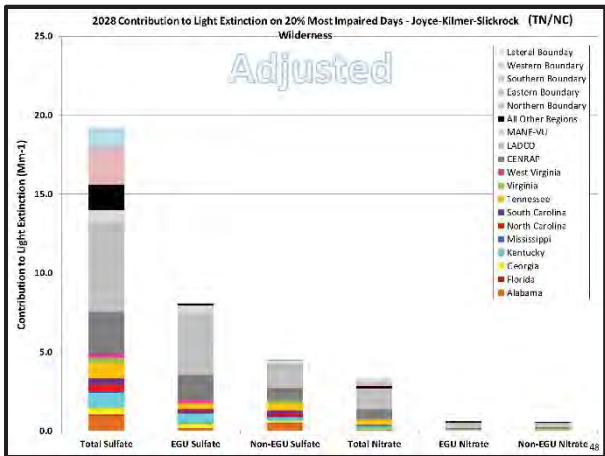
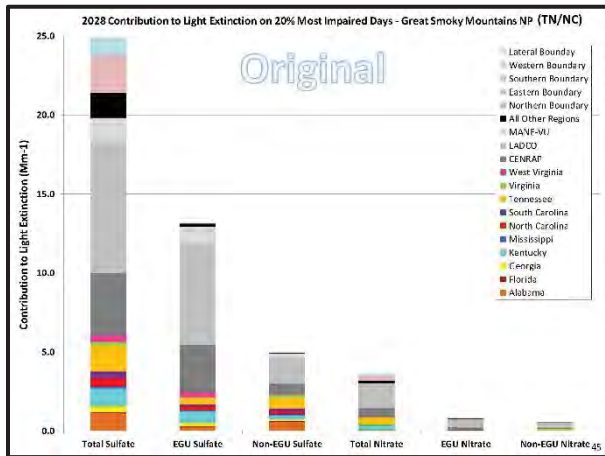
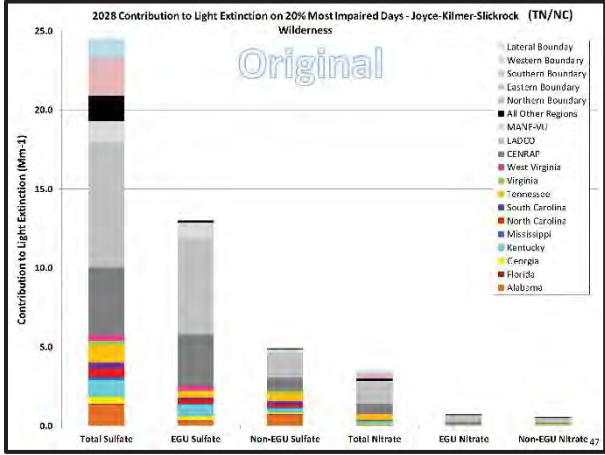
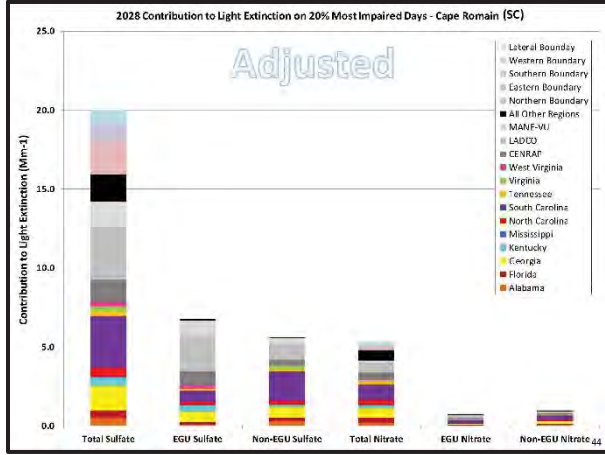
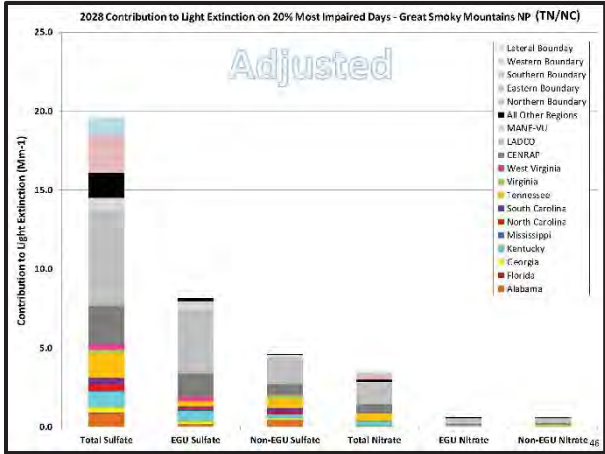
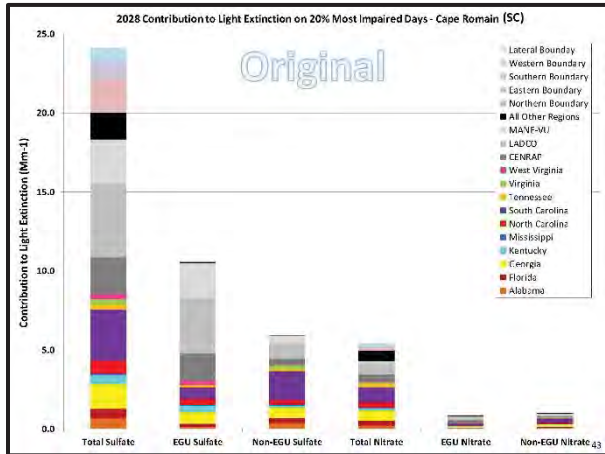
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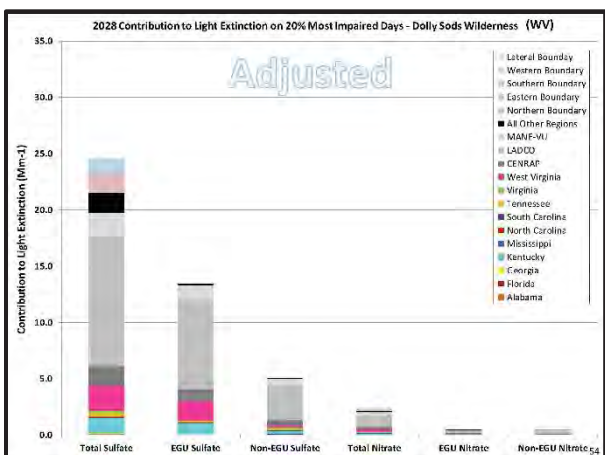
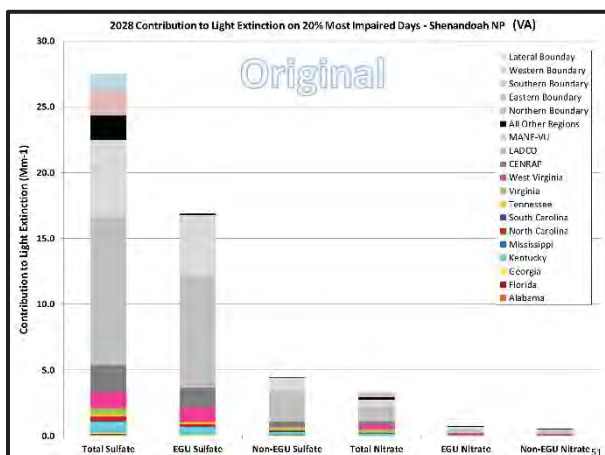
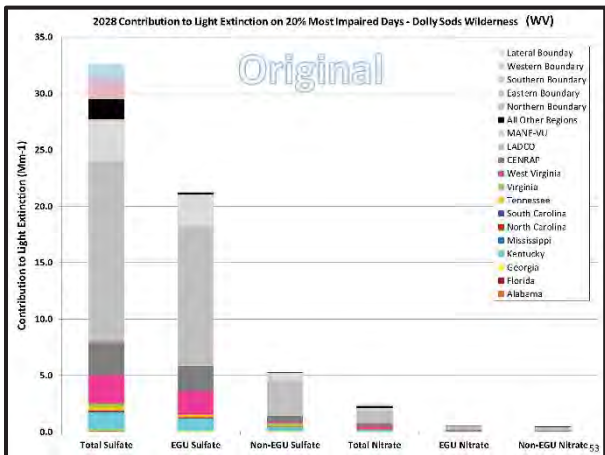
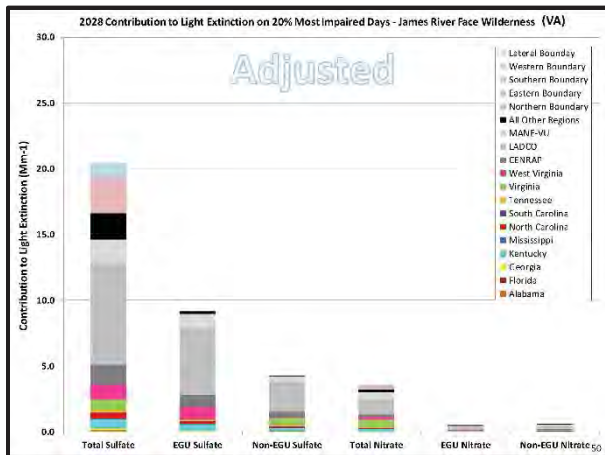
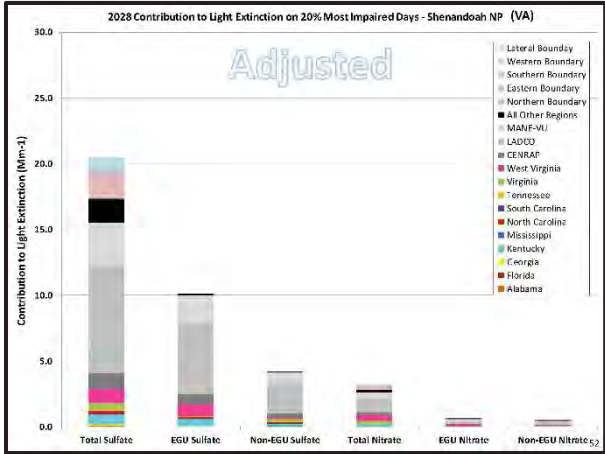
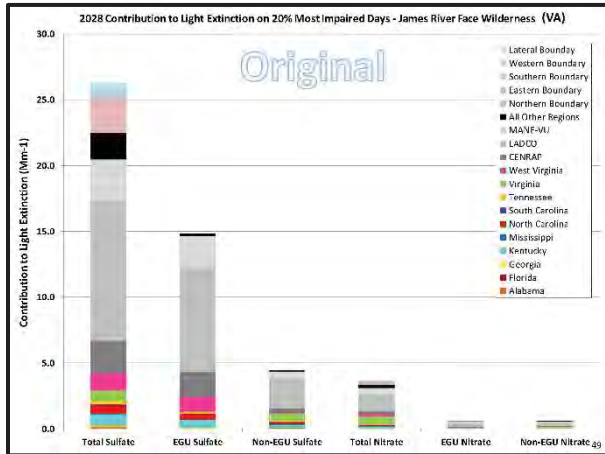


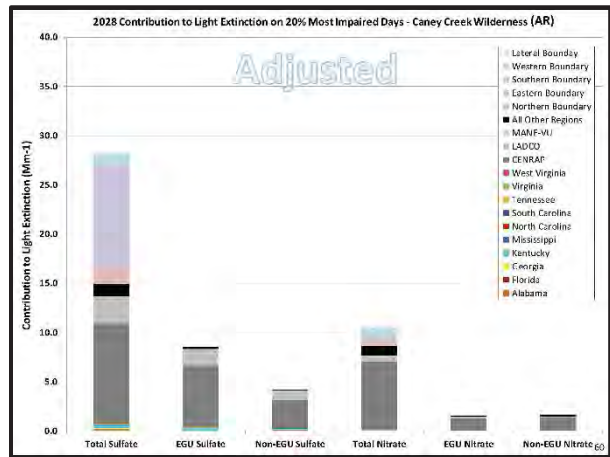
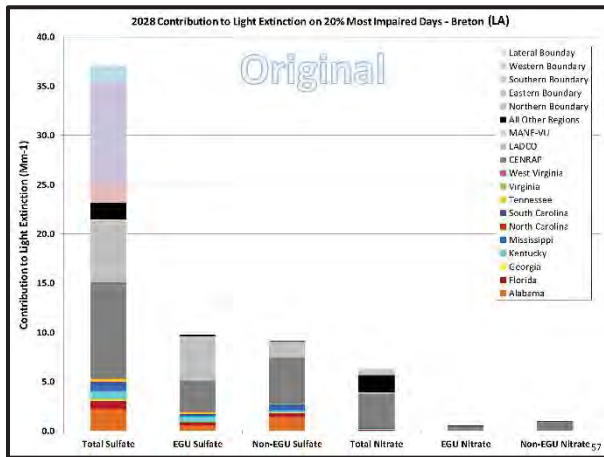
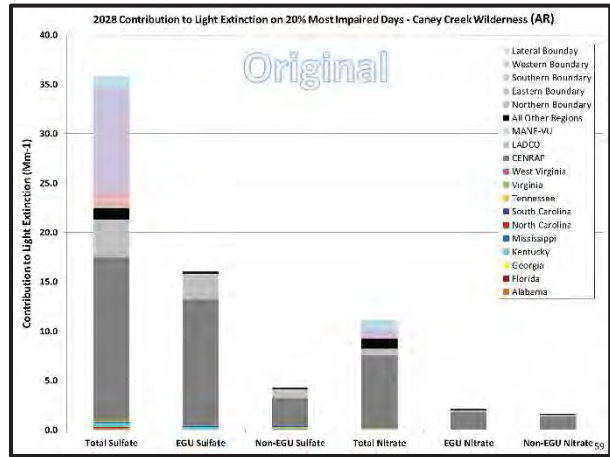
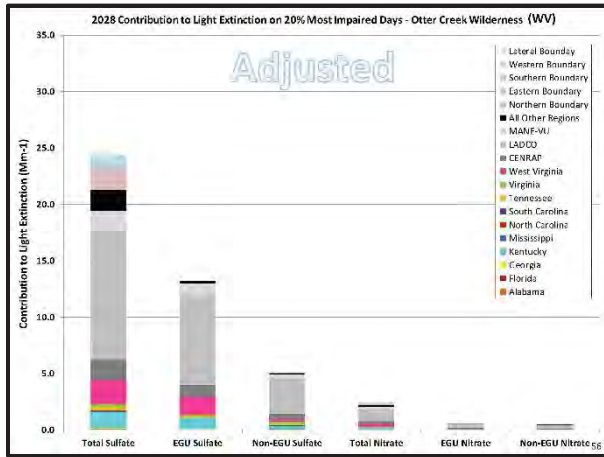
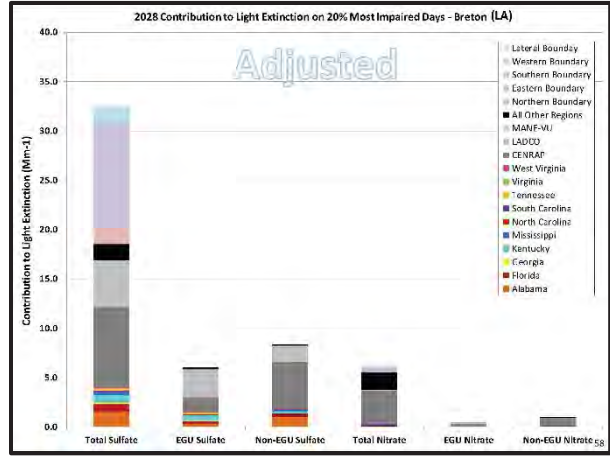
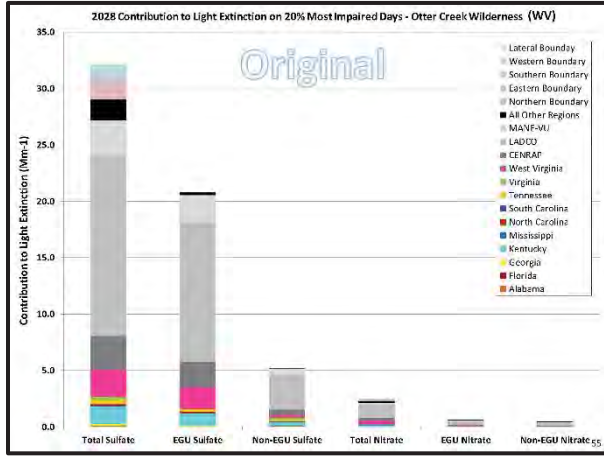


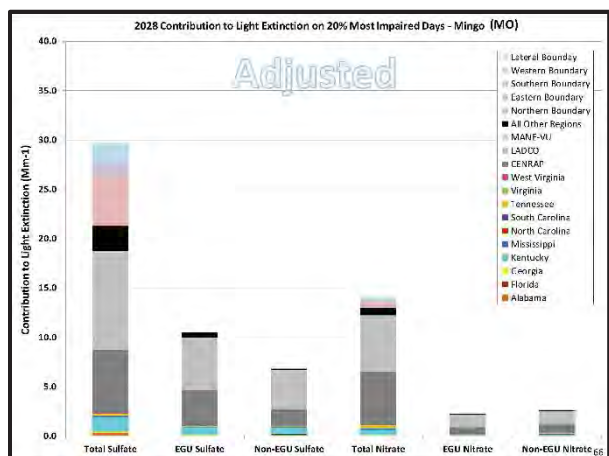
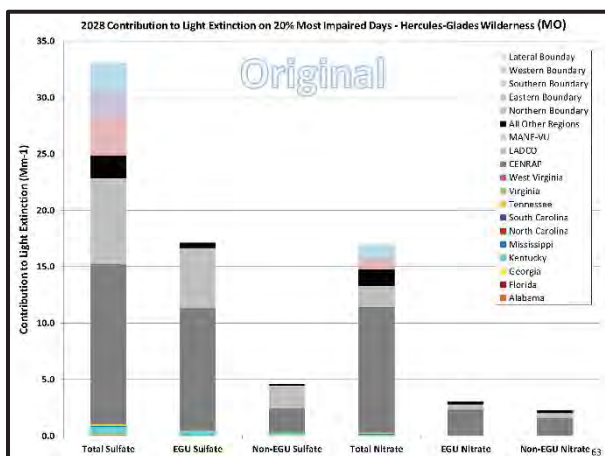
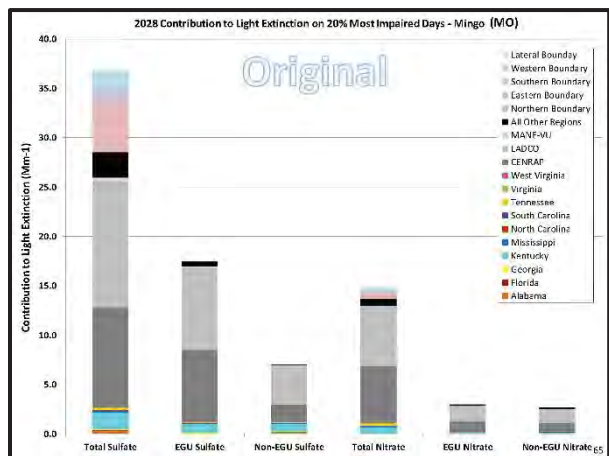
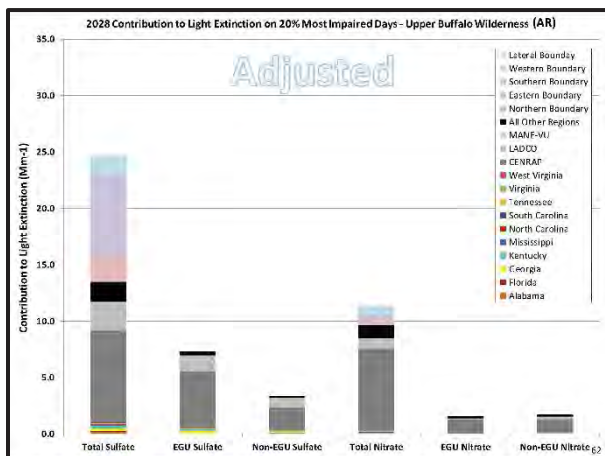
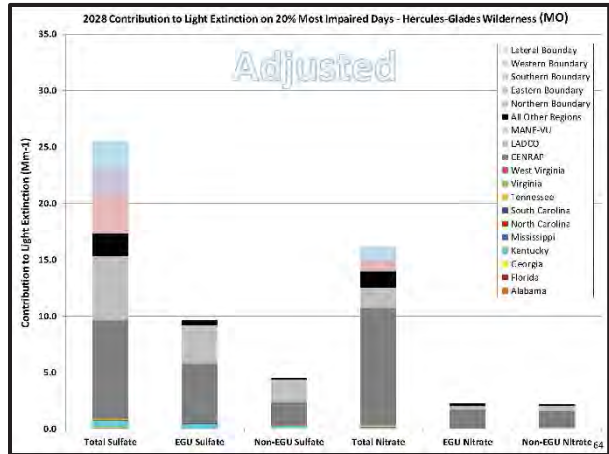
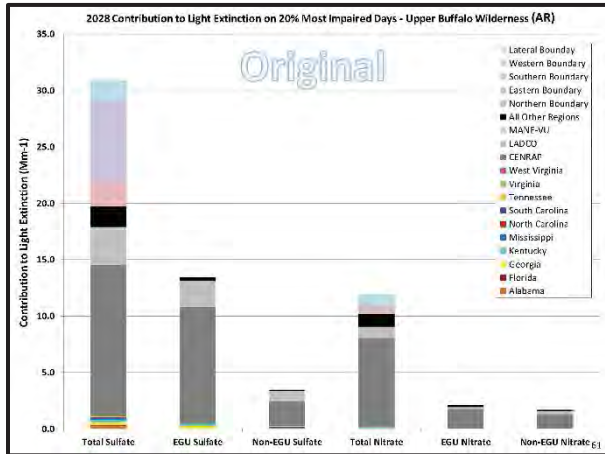


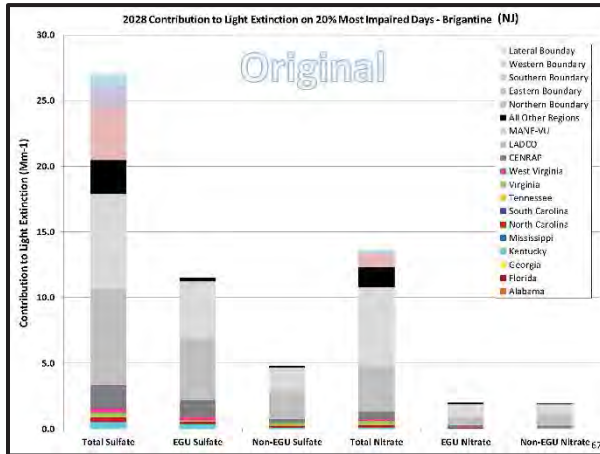






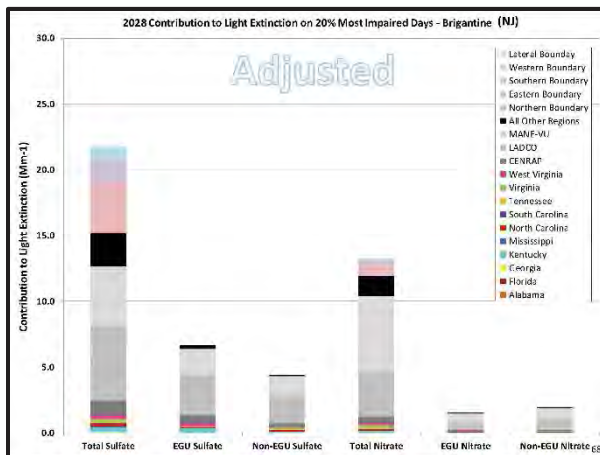






Reasonable Progress Screening Approach

1. The VISTAS reasonable progress work started with AOI screening (Q/d * EWRT) to rank facilities based on their sulfate and nitrate contributions at each Class I area.
2. These rankings were used to identify 87 individual facilities for PSAT tagging. PSAT tagging was used to determine the sulfate and nitrate contributions from each facility at each Class I area in the VISTAS_12 domain.
3. Each individual VISTAS state will apply a PSAT contribution threshold based on the facility sulfate and facility nitrate impacts (separately, not combined) divided by the total impact of sulfate + nitrate from all point sources to determine which sources may need to be considered for a four-factor analysis.
 - If sulfate contribution $\geq 1.00\%$ \rightarrow SO₂ Four-Factor Analysis
 - If nitrate contribution $\geq 1.00\%$ \rightarrow NO_x Four-Factor Analysis



Why 1% Threshold?

- In the Round 1 Regional Haze SIPs, many VISTAS states used the AOI approach and a 1% threshold on a Unit basis.
 - Round 2 uses the AOI/PSAT approach and a $\geq 1.00\%$ PSAT threshold based on a Facility basis.
 - This will pull in more facilities compared to a Unit basis.
 - Round 2 uses 2028 emissions (lower than 2018)
 - This will pull in facilities with smaller visibility impacts (in Mm⁻¹) compared to Round 1.
- This approach results in a reasonable number of sources that can be evaluated with limited state resources and focuses on the sources with the largest impacts.

Reasonable Progress Analysis

HYSPLIT Trajectories

- Trajectories were run using NAM-12 meteorology for the 20% most impaired days in 2011-2016 at 44 Class I areas.
 - Trajectories were run with starting heights of 100, 500, 1,000, and 1,500 meters.
 - Trajectories were run 72 hours backwards in time for each height at each location.
 - Trajectories were run with start times of 12AM (midnight of the start of the day), 6AM, 12PM, 6PM, and 12AM (midnight at the end of the day) local time.
- 44 Class I areas x 6 years x 24 days/year x 4 heights x 5 start times = **126,720 trajectories**

Area of Influence (AOI) Analysis

- Evaluates emissions (Q), distance to Class I area (d), and extinction weighted residence time (EWRT) in model grid cells (point) or counties (source categories)
- Formula: $(Q/d)*EWRT$
- Establishes each county's and each facility's contribution to light extinction at each Class I area on the 20% most impaired days
- Can use contributions to rank and screen facilities for the four-factor analysis
- Georgia Example:
 - Sources in Georgia, used $\geq 2\%$ threshold
 - Sources outside Georgia, used $\geq 4\%$ threshold

AOI Point Contributions for Wolf Island

State	FACILITY NAME	DISTANCE (km)	NOx_2026 (tens/year)	SO2_2026 (tons/year)	NOx Contribution	SO2 Contribution
GA	Brunswick Cellulose Inc	27.9	1,554.5	294.2	0.244	0.540
FL	ROCK TENN CP, LLC	74.9	2,316.8	2,636.7	0.395	0.555
GA	International Paper - Savannah	85.9	1,560.7	3,945.4	0.241	0.533
FL	JEA	105.1	651.8	2,091.5	0.096	0.483
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	109.9	351.5	1,860.2	0.035	0.631
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS INC	373.8	112.4	2,745.0	0.011	1.978
SC	ALLUMAX OF SOUTH CAROLINA	235.0	109.1	5,751.7	0.006	1.648
FL	RAYONIR PERFORMANCE FIBERS LLC	77.4	2,327.1	362.0	0.388	1.799
FL	SYNTHETIC FIBER COOPERATIVE, INC.	381.4	917.8	3,713.4	0.021	1.778
DH	General James M. Gavin Power Plant (062701009)	845.5	8,172.3	41,596.8	0.074	1.716
SC	SAWTEE COOPER CROSS GENERATING STATION	251.0	3,273.3	4,281.2	0.091	1.536
GA	Southern States Phosphate & Fertilizer	84.1	1.0	597.1	0.000	1.559
FL	FL CHEMICAL PRODUCTS, INC.	118.5	37.7	898.9	0.000	1.228
FL	DUKE ENERGY FLORIDA, INC. (DEFL)	296.6	2,489.8	5,306.4	0.048	1.199
GA	Ga Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.031	1.083
GA	Savannah Sugar Refinery	89.9	521.6	582.0	0.081	1.061
SC	INTERNATIONAL PAPER EASTOYON	288.7	1,780.3	3,211.9	0.058	0.958
GA	Ga Power Company - Plant McVenus	37.1	72.2	90.1	0.141	0.939
SC	CARPTONIC CHARLESTON BRAFF LLC	213.6	2,353.8	1,863.7	0.098	0.899
VA	GENNIN NW (GEMT) CO/FERTILIZER	1,048.6	6,578.5	56,939.2	0.011	0.845

AOI Point Contributions for Cohutta

State	FACILITY NAME	DISTANCE (km)	NOx_2026 (tens/year)	SO2_2026 (tons/year)	NOx Contribution	SO2 Contribution
GA	Ga Power Company - Plant Bowen	78.0	6,643.3	10,453.4	1.151	15.535
IN	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	410.1	8,806.8	30,536.3	0.134	4.881
GA	International Paper - Rome	87.4	1,773.4	1,791.0	0.188	4.666
IN	Clowco	487.1	12,290.3	23,117.2	0.104	2.316
IN	INDIANAPOLIS POWER & LIGHT INTERSUBING	477.0	10,663.3	18,141.9	0.165	2.185
KY	Tennessee Valley Authority (TVA) - Shawnee Royal Plant	457.2	7,037.3	19,504.7	0.074	2.182
TN	TKA & NCS/YN KESSEL PLANT	174.0	1,687.4	1,886.1	0.136	2.175
DH	General James M. Gavin Power Plant (062701006)	512.0	8,122.5	41,595.8	0.028	1.713
TN	IVA CUMBERLAND COSS PLANT	327.0	4,916.5	8,427.3	0.099	1.385
KY	Big Rivers Electric Corp - Wilson Station	380.0	1,151.9	6,034.2	0.018	1.071
DH	Duke Energy Ohio, WV, IL - Geneva Station (113300154)	454.6	7,150.0	23,133.9	0.062	1.056
GA	Ga Power Company - Plant Wausley	156.8	2,052.5	4,856.0	0.041	1.056
KY	CV Lighthouse Co - Lighthouse Station	441.5	7,939.9	10,169.3	0.084	1.055
IL	Joppe Steam	486.9	4,706.5	20,309.3	0.026	1.046
GA	Mohawk Industries Inc	32.0	46.5	77.1	0.075	1.026
TN	LOUISIANA CHEMICAL COMPANY	289.8	6,830.3	6,420.2	0.098	0.959
MO	AMEREN MISSOURI-LABADEE PLANT	695.4	9,683.3	41,740.3	0.018	0.916
IL	Newton	564.0	1,934.9	10,631.6	0.016	0.911
GA	Chemical Products Corporation	71.9	19.5	513.8	0.006	0.896
IN	INDIANA KENTUCKY FERTILIZER CORPORATION	441.4	6,188.5	9,038.1	0.091	0.768

Georgia Tagging for PSAT

- Sources in Georgia ($\geq 2\%$ threshold)
 - Ga Power Company - Plant Bowen
 - International Paper - Rome (aka TEMPLE INLAND)
 - International Paper - Savannah
 - Brunswick Cellulose Inc
 - Georgia-Pacific Consumer Products LP (Savannah River Mill)
- Sources outside Georgia ($\geq 4\%$ threshold)
 - INDIANA MICHIGAN POWER DBA AEP ROCKPORT (IN)
 - ROCK TENN CP, LLC (FL)
 - JE A (FL)

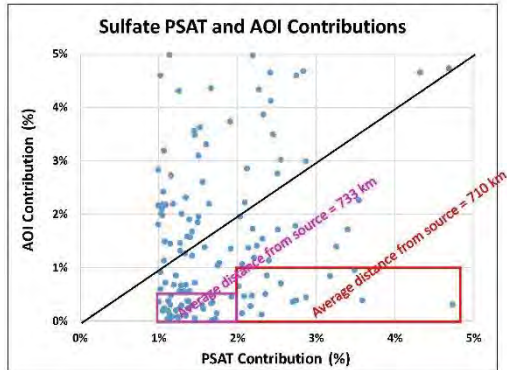
AOI Point Contributions for Okefenokee

State	FACILITY NAME	DISTANCE (km)	NOx_2026 (tens/year)	SO2_2026 (tons/year)	NOx Contribution	SO2 Contribution
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS INC	71.5	112.4	2,745.0	0.031	14.073
FL	ROCK TENN CP, LLC	64.8	2,316.8	2,636.7	0.388	11.474
FL	JEA	63.6	651.8	2,094.5	0.181	6.703
FL	SYNTHETIC FIBER COOPERATIVE, INC.	121.4	917.8	3,713.4	0.079	3.255
FL	FL CHEMICAL PRODUCTS, INC.	56.8	37.7	898.9	0.011	3.255
FL	RAYONIR PERFORMANCE FIBERS LLC	83.4	2,327.1	362.0	0.300	2.822
GA	International Paper - Savannah	178.5	1,560.7	3,945.4	0.289	2.818
FL	BUCKLEY FEDERAL LIGHTED PARTNERSHIP	153.5	1,830.7	1,520.4	0.181	2.185
FL	HESSMANZ LLC	59.8	86.3	389.5	0.023	1.961
FL	DUKE ENERGY FLORIDA, INC. (DEFL)	205.0	2,489.8	5,306.4	0.061	1.406
AL	Steadfast Coal Co	384.6	121.7	7,951.1	0.006	1.115
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	197.2	351.5	1,860.2	0.011	1.056
GA	Ga Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.058	1.029
GA	Brunswick Cellulose Inc	75.3	1,554.5	294.2	0.144	1.014
SC	ALLUMAX OF SOUTH CAROLINA	322.7	108.1	3,751.7	0.006	0.976
GA	JCA Valdosta Mill	112.7	1,032.6	485.7	0.095	0.833
SC	SAWTEE COOPER CROSS GENERATING STATION	349.1	3,273.3	4,281.2	0.059	0.828
FL	STY OF SAVANNAH LLC	113.7	410.0	381.4	0.035	0.792
SC	CARPTONIC CHARLESTON BRAFF LLC	314.5	2,353.8	1,863.7	0.084	0.666
GA	Ga Power Company - Plant Wausley	403.7	2,052.5	4,856.0	0.021	0.851

AOI Screening Summary

State	Threshold	Notes
AL	2%	Sulfate only
FL	5%	Sulfate or nitrate, plus Gulf Crist, Mosaic Bartow, Mosaic New Wales, and Mosaic Riverview
GA	2% - 4%	Sulfate or nitrate, 2% threshold for GA facilities, 4% threshold for facilities outside GA
KY	2%	Sulfate or nitrate
MS	2%	Sulfate or nitrate
NC	3%	Sulfate + nitrate
SC	2% - 5%	2% for sulfate, 5% for nitrate, plus Santee Cooper Winyah, International Paper Georgetown, and SCE&G Williams
TN	3%	Sulfate + nitrate, plus CEMEX
VA	2%	Sulfate + nitrate
WV	0.2%	Sulfate or nitrate

Sulfate AOI vs. Sulfate PSAT ($\geq 1.00\%$)



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Reasonable Progress Screening Approach

- Due to the amount of resources already invested in the AOI and PSAT analysis, **VISTAS plans to continue with our original reasonable progress analysis approach** for determining which sources will require a four-factor analysis.
- In cases where emissions decreased or increased at individual facilities being considered for a four-factor analysis, the facility contributions will be adjusted to be consistent with the lower/higher facility emissions before comparing to the PSAT contribution threshold.
- **EPA verbally stated this should be okay 2/6/2020.**

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AOI vs. PSAT Summary

- AOI tends to overestimate impacts for facilities near the Class I area.
- AOI tends to underestimate impacts for facilities far away from the Class I area.
 - AOI uses 72-hour back trajectories, sulfate can last for weeks and travel hundreds to thousands of km.
- PSAT is the most reliable modeling tool for tracking facility contributions to visibility impairment at Class I areas.

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Revised Facility Sulfate PSAT Results

- **Revised Facility Sulfate PSAT Results**
 = Original Facility Sulfate PSAT Results
 * SO_2 Ratio_Facility * Ratio_Class_I_Area

$$\text{where, } SO_2 \text{ Ratio_Facility} = \frac{\text{(Revised facility } SO_2 \text{ emissions)}}{\text{(Original facility } SO_2 \text{ emissions)}}$$

$$\text{where, Ratio_Class_I_Area} = \frac{\text{(Original sulfate + nitrate point contribution)}}{\text{(Revised sulfate + nitrate point contribution)}}$$

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Reasonable Progress Screening Approach

- The updated 2028 CAMx modeling will impact the **total sulfate and total nitrate impacts** from all sources at each Class I area since the SO_2 and NO_x emissions have decreased.
- However, the **individual sulfate and total nitrate impacts** from the individual 87 tagged facilities should not change unless a facility has reduced or increased SO_2 and/or NO_x emissions.
- Therefore, the percent contribution (facility sulfate impact/total impact of all point sources of sulfate + nitrate) will increase since the denominator will decrease; however, the order of the rankings from largest impact to smallest impact should not change unless one of those facilities reduced or increased emissions.

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Revised Facility Nitrate PSAT Results

- **Revised Facility Nitrate PSAT Results**
 = Original Facility Nitrate PSAT Results
 * NO_x Ratio_Facility * Ratio_Class_I_Area

$$\text{where, } NO_x \text{ Ratio_Facility} = \frac{\text{(Revised facility } NO_x \text{ emissions)}}{\text{(Original facility } NO_x \text{ emissions)}}$$

$$\text{where, Ratio_Class_I_Area} = \frac{\text{(Original sulfate + nitrate point contribution)}}{\text{(Revised sulfate + nitrate point contribution)}}$$

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Facility Ratios (AL, FL, GA)

Facility State	Facility RPD	FACILITY ID STD	FACILITY NAME STD	SO2 Ratio	NOx Ratio
AL	VSTAS	0101-648811	Ala. Mobile Chemicals, Inc.	1.000	1.000
AL	VSTAS	03027-1055333	Ala. Power - Barry	1.000	1.000
AL	VSTAS	01179-1026711	American Midstream Charters, LLC	0.000	0.000
AL	VSTAS	01073-1018711	ENVIROMIND CO2 PLANT, INC.	1.000	1.000
AL	VSTAS	01053-1482111	Parabola Operating Company LLC	0.000	1.000
AL	VSTAS	01053-885111	Escambia Operating Company LLC	0.000	0.000
AL	VSTAS	01163-1000011	Nucor Steel Decatur, LLC	1.000	1.000
AL	VSTAS	01098-885711	Smelter Lead Co	1.000	1.000
AL	VSTAS	01027-1061511	Union Oil of California - Chukchee Gas Plant	0.000	0.000
FL	VSTAS	12223-752411	BUCKEYE FLOUIDA, LIMITED PARTNERSHIP	1.000	1.000
FL	VSTAS	12088-800111	CEMEX CONSTRUCTION MATERIALS FL, LLC	1.000	1.000
FL	VSTAS	12018-648811	WALC ENERGY SERVICES, INC. (WALC)	1.000	1.000
FL	VSTAS	12088-980011	FLOUIDA POWER & LIGHT (FPL)	1.000	1.000
FL	VSTAS	12033-752711	COJ POWER - Coal	0.000	0.000
FL	VSTAS	12038-133711	DOMESTIC CITY (H) (F)	1.000	1.000
FL	VSTAS	12011-640711	IPA	1.000	1.000
FL	VSTAS	12105-217711	MOSAG FERTILIZER, LLC	1.000	1.000
FL	VSTAS	12057-216411	MOSAG FERTILIZER, LLC	1.000	1.000
FL	VSTAS	12105-819111	MOSAG FERTILIZER, LLC	1.000	1.000
FL	VSTAS	12088-845811	KAYNEER PERTO-MANAGE-TEBERS, LLC	1.000	1.000
FL	VSTAS	12088-753711	ROCKTECH CP, LLC	1.000	1.000
FL	VSTAS	12005-856811	ROCKTECH CP, LLC	1.000	1.000
FL	VSTAS	12129-278111	FLORISSIS CITY PHOSPHORUM GENERATING STA.	1.000	1.000
FL	VSTAS	12097-888611	FLORISSIS CITY PHOSPHORUM GENERATING STA.	1.000	1.000
FL	VSTAS	12088-800911	UNION-MERIDIAN, LLC	1.000	1.000
FL	VSTAS	12047-298111	WIT ENERGY SERVICES OPERATIONAL CHEMICALS, INC.	1.000	1.000
GA	VSTAS	13177-771011	Plant-walk Cellulose Inc.	1.000	1.000
GA	VSTAS	13015-781011	Co. Power Company - Plant Newton	1.000	1.000
GA	VSTAS	13177-753011	Georgia-Pacific Consumer Products LP (Savannah River VIII)	1.000	1.000
GA	VSTAS	13111-301911	General Atomics - Savannah	1.000	1.000
GA	VSTAS	13115-539111	PEWEE ISLAND	1.000	1.000

Class I Area Ratios

State	Class I Area	Ratio Class I Area
AL	Sipsey Wilderness Area (SIPS)	1.387
FL	Chassahowitzka Wilderness Area (CHAS)	1.375
FL	Everglades NP (LVLR)	1.246
FL	St Marks Wilderness Area (SAMA)	1.363
GA	Cohutta Wilderness Area (COHU)	1.369
CA	Deerhorn Wilderness Area (DHFF)	1.317
GA	Wolf Island Wilderness (WIDL)	1.313
KY	Mammoth Cave NP (VACA)	1.297
NC	Linville Gorge Wilderness Area (LUGO)	1.313
NC	Shining Rock Wilderness Area (SRW)	1.410
NC	Swain/Greene Wilderness Area (SAGR)	1.298
SC	Cape Roman Wilderness (ROMA)	1.302
TN/KC	Great Smoky Mountains NP (ERSM)	1.304
TN/KC	Joyce Kilmer-Slickrock Wilderness (DYCK)	1.401
VA	James River-Fox Wilderness (JRF)	1.418
VA	Shenandoah NP (SHLN)	1.454
WV	Dolly Sods Wilderness (DOSD)	1.417
WV	Otter Creek Wilderness (OTCR)	1.417
AR	Canev Creek Wilderness Area (CACR)	1.385
AR	Lager Indigo Wilderness Area (LIPBU)	1.306
LA	Drizin Wilderness (DRIZ)	1.306
ME	Acadia National Park (ACAD)	1.402
ME	Moosehorn Wilderness (MOWO)	1.417
MI	Silver Wilderness Area (SIFW)	1.368
MO	Florissant Glades Wilderness Area (FLGL)	1.450
MO	Mingo Wilderness Area (MING)	1.360
NH	Great Gulf Wilderness Area (GRGL)	1.453
NH	Presidential Range-Fox River Wilderness (PRFR)	1.461
VT	Morgan's Meadows Area (MORG)	1.391
VT	Lake Umbagog Wilderness (LULU)	1.471

Facility Ratios (KY, MS, NC, SC, TN, VA)

Facility State	Facility RPD	FACILITY ID STD	FACILITY NAME STD	SO2 Ratio	NOx Ratio
KY	VSTAS	21185-5861511	Big Levee Electric Corp. - Wilkes Station	1.000	1.000
KY	VSTAS	21051-752411	Century Aluminum of KY, LLC	0.000	1.000
KY	VSTAS	21177-6152111	Tennessee Valley Authority - Danville Fossil Plant	1.000	1.000
KY	VSTAS	21145-5037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1.000	1.000
MS	VSTAS	28019-8184111	Clowrie Products Company, Fertilizer Refinery	1.000	1.000
MS	VSTAS	28019-8251011	Mississippi Power Company - Plant Vicksburg - Janelle	1.000	1.000
NC	VSTAS	37027-702011	Blue Ridge Paper Products - Curran Mill	1.000	1.000
NC	VSTAS	37117-5049311	Dominion Paper Company, LLC	1.000	1.000
NC	VSTAS	37025-8570111	Duke Energy Carolinas, LLC - Marshall Steam Station	0.000	1.000
NC	VSTAS	37025-8729111	PG&E Industrial Company, Inc. - Aurora	1.000	1.000
NC	VSTAS	37023-8513011	SGI Carbon, LLC	1.000	1.000
SC	VSTAS	45015-4848411	ALLIANCE GAS SOUTH - EARGLE	1.000	1.000
SC	VSTAS	45043-658011	INTERNAT. NAT. PARKS DEVELOPMENT N/A	1.000	1.000
SC	VSTAS	45019-4821011	ROCKY MOUNTAIN COAL PROCESSING PLANT, LLC	1.000	1.000
SC	VSTAS	45015-4120411	SAWITTY COALFIELD CROSS-COUNTRY RAIL STATION	1.000	1.000
SC	VSTAS	45043-658011	SAWITTY COALFIELD WYVALEIGH GENERATING STATION	1.000	1.000
SC	VSTAS	45015-4848411	SC Gas Well Plant	1.000	1.000
TN	VSTAS	47029-4975911	Cemex - Knoxville Plant	1.000	1.000
TN	VSTAS	47163-3982111	EASTVAH CHEMICAL COMPANY	1.000	1.000
TN	VSTAS	47105-4522111	FATE & LUE, 20080	0.000	1.000
TN	VSTAS	47029-4975911	FVA RIVER FOSIL PLANT	1.000	0.668
TN	VSTAS	47163-4979311	FVA CUMBERLAND FOSSIL PLANT	1.000	0.668
VA	VSTAS	47163-4979311	FVA KINGSTON FOSSIL PLANT	1.000	0.668
VA	VSTAS	47029-4975911	General Atomics Company LLC	1.000	1.000
VA	VSTAS	51580-5798111	Massachusetts Psychological Resource Group	1.000	1.000
VA	VSTAS	61023-5039811	Ryanair General Company	1.000	1.000

EXAMPLE: New Madrid Power at SIPS

- Revised Facility Sulfate PSAT Results = Original Facility Sulfate PSAT Results * SO₂ Ratio_Facility * Ratio_Class_I_Area
- Original Facility Sulfate PSAT Results = 1.46%
- Revised Facility Sulfate PSAT Results = 1.46% * 0.665 (Slide 94) * 1.382 (Slide 95) = 1.34% (Slide 97)

Facility Ratios (WV, AR, MO, MD, PA, IL, IN, OH)

Facility State	Facility RPD	FACILITY ID STD	FACILITY NAME STD	SO2 Ratio	NOx Ratio
WV	VSTAS	54015-5717111	ALLIANCE GAS SOUTH SUPPLY, LLC - HARRISON	1.000	1.000
WV	VSTAS	54049-4884111	AMERICAN BRIDGEMAN POWER & LIGHT TOWNSHIP	1.000	1.000
WV	VSTAS	54019-2969111	APPA ACI USA POWER COMPANY - JOHN F. AMOS PLANT	1.000	1.000
WV	VSTAS	54015-5267011	Dominion Resources, Inc. - MOUNT STORM POWER STATION	1.000	1.000
WV	VSTAS	54041-2900111	FOURTRAMP - COAL FURNACE	1.000	1.000
WV	VSTAS	54015-2967011	PLUM CREEK COALMID	1.000	1.000
WV	VSTAS	54015-5790111	SLADY COALMID	1.000	1.000
WV	VSTAS	54015-5127111	UNION-BOND V. METALURGICAL COMPANY	1.000	1.000
WV	VSTAS	54015-5127111	LOWGROW POWER	1.000	1.000
WV	VSTAS	54015-5022111	WYCHELL PLANT	1.000	1.000
WV	VSTAS	54041-6779311	MONONGAHELA POWER CO. - FORT MARTIN POWER	0.000	0.613
WV	VSTAS	54015-4978111	MONONGAHELA POWER CO. - ALLEGANY POWERS VA	0.000	0.613
WV	VSTAS	54015-4978111	MONONGAHELA POWER CO. - MONONGAHELA POWER PLANT	0.000	0.613
AR	ENRPP	09025-1084411	GEN ENERGY SERVICES INC. - WINDY RIDGE PLANT	0.000	0.011
CO	CFRPA	79143-5161811	NEW MADRID POWER PLANT - MARSTON	0.000	0.011
MD	VA NE-VU	42025-3065111	Lock - River Company	0.000	1.000
PA	VA NE-VU	42025-3065111	SEMOYNE MOUNTAIN COINTEGRATED STATION	0.000	1.000
PA	VA NE-VU	42025-3065111	HOMER CITY GEN. (P) CENTER TWO	0.000	1.000
PA	VA NE-VU	42025-3065111	NBS WHO. ESAL GEN. SEWARD GEN STA	0.000	1.000
IL	Midwest RPO	17117-7605111	Joppe Steam	0.000	0.011
IN	Midwest RPO	18173-8183111	Alcoa Warlick Power - 70' Age Div of AL	0.000	0.011
IN	Midwest RPO	18011-7162111	Edison	0.000	0.011
IN	Midwest RPO	18141-8017111	INDIANA MICHIGAN POWER USA REP. (INDSPOH)	0.000	0.011
IN	Midwest RPO	18173-8183111	INDIANAPOLIS POWER & LIGHT - PETERSBURG	0.000	0.011
IN	Midwest RPO	18173-8183111	Keoka & Brown South Indiana Gas & Elec	0.000	0.011
IL	Midwest RPO	18021-8117111	Central Power Plant (Central Operating Company) (0541050002)	0.000	0.000
IL	Midwest RPO	18021-8100111	Central Power Plant (0510000000)	0.000	0.000
IL	Midwest RPO	19075-8794111	Plak - Energy Ohio 30m. - Lawrence Station (141000154)	0.000	0.011
OH	Midwest RPO	18015-3145511	General James M. Gavin Power Plant (062700005)	0.000	0.011
OH	Midwest RPO	18015-3145511	Ohio Valley Electric Corp. - Avon Creek Station (062700005)	0.000	0.011

Sipsey Wilderness Area (AL)

State	Facility ID	Facility Name	DISTANCE (mi)	Sulfate Adj %	Original Sulfate PSAT %	Final Revised Sulfate PSAT %	Other Adj %	Original Other PSAT %	Final Revised Other PSAT %
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	337.7	3.31%	1.63%	2.22%	0.57%	0.04%	0.05%
OH	39053-9148511	General James M. Gavin Power Plant (062700005)	690.9	0.38%	2.75%	1.99%	0.02%	0.09%	0.13%
IN	18147-8017211	INDIANA MICHIGAN POWER USA REP. (INDSPOH) PETERSBURG	398.4	5.72%	4.05%	1.59%	0.31%	0.23%	0.31%
IN	18051-7363111	Gibson	118.7	2.85%	1.22%	1.05%	0.27%	0.19%	0.18%
IN	18125-7362411	INDIANA POLYMER & LIGHT - PETERSBURG	464.4	1.72%	2.16%	1.37%	0.23%	0.23%	0.18%
TN	47161-4979311	FVA CUMBERLAND FOSSIL PLANT	328.8	3.18%	1.07%	1.33%	0.68%	0.13%	0.19%
MO	29143-5501811	NEW MADRID POWER PLANT - MARSTON	314.5	3.48%	1.40%	1.14%	0.26%	0.06%	0.07%
KY	21145-6037011	Big Rivers Electric Corp. - Wilson Station	348.5	3.89%	0.88%	1.29%	0.07%	0.04%	0.05%

Facilities That Dropped Off After REVISION

IL	17127-7808211	Joppe Steam	346.5	1.94%	1.51%	0.87%	0.75%	0.03%	0.02%
IN	18173-8183111	ALCOA - WARLICK POWER PLT AGC DIV OF AL	366.3	0.91%	1.07%	0.41%	0.63%	0.52%	0.19%

Sipsey Wilderness Area (AL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + H ₂ SO ₄ Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised PM ₁₀ PSAT %	FINAL Revised PM _{2.5} PSAT %
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	337.7	0.364	16.370	0.22%	0.305	16.370
OH	39053-8149511	General James M. Gavin Power Plant (6027070305)	690.9	0.327	16.370	1.99%	0.021	16.370
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	398.4	0.327	16.370	1.99%	0.050	16.370
IN	18051-7363111	Gibson	418.7	0.270	16.370	7.69%	0.029	16.370
IN	18125-7362411	INDIANA POLIS POWER & LIGHT - PETERSBURG	464.4	0.258	16.370	3.73%	0.026	16.370
TN	47161-4878311	TVA CLIMBERLAND FOSIL PLANT	228.8	0.242	16.370	3.35%	0.026	16.370
VO	29143-5361811	NLW MADRID POWLR PLANT - VARS'ON	314.5	0.220	16.370	1.44%	0.012	16.370
KY	21183-5561611	Big Rivers Electric Corp - Wilson Station	845.5	0.211	16.370	1.29%	0.008	16.370
Facilities That Dropped Off After REVISION								
IL	17127-7508911	Joppe Steam	342.5	0.124	16.370	0.82%	0.002	16.370
IN	18179-8183111	ALCOA - WARRICK POWER PLT AGC DIV OF AL	896.3	0.056	16.370	0.41%	0.012	16.370

Everglades NP (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + H ₂ SO ₄ Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised PM ₁₀ PSAT %	FINAL Revised PM _{2.5} PSAT %
FL	12057-5386111	TAMPA ELECTRIC COMPANY (TEC)	316.6	0.020	2.560	3.33%	0.080	0.000
FL	12105-9198111	MOSAIC FERTILIZER, LLC	304.7	2.21%	2.09%	2.62%	0.01%	0.00%
FL	12105-2177111	MOSAIC FERTILIZER LLC	303.3	2.26%	3.55%	2.60%	0.02%	0.00%
FL	12088-8999111	TARMAC AMERICA LLC	81.7	0.16%	0.17%	0.23%	2.02%	0.76%

Chassahowitzka Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + H ₂ SO ₄ Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised PM ₁₀ PSAT %	FINAL Revised PM _{2.5} PSAT %
FL	12017-6406111	DUKE ENERGY FLORIDA, INC. (DEF)	27.4	63.62%	9.55%	6.24%	1.95%	0.40%
GA	13015-2813011	Ea Power Company - Plant Bowen	637.2	0.03%	1.72%	2.28%	0.00%	0.02%
FL	12057-5386111	TAMPA ELECTRIC COMPANY (TEC)	106.8	4.73%	0.86%	1.28%	0.24%	0.05%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1,088.0	0.03%	0.76%	1.01%	0.00%	0.04%
AL	01109-9897111	Sanders Lead Co	471.2	0.15%	0.76%	1.00%	0.00%	0.01%
Facilities That Dropped Off After REVISION								
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	1,131.4	0.09%	1.47%	0.83%	0.00%	0.04%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	1,099.6	0.03%	1.13%	0.53%	0.00%	0.04%
AL	01053-7440211	Escambia Operating Company LLC	530.7	0.24%	1.57%	0.41%	0.00%	0.01%

Everglades NP (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + H ₂ SO ₄ Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised PM ₁₀ PSAT %	FINAL Revised PM _{2.5} PSAT %
FL	12057-5386111	TAMPA ELECTRIC COMPANY (TEC)	316.6	0.04%	1.33%	3.33%	0.00%	1.33%
FL	12105-9198111	MOSAIC FERTILIZER, LLC	304.7	0.03%	1.33%	2.62%	0.00%	1.33%
FL	12105-2177111	MOSAIC FERTILIZER LLC	303.3	0.03%	1.33%	2.60%	0.00%	1.33%
FL	12088-8999111	TARMAC AMERICA LLC	81.7	0.00%	1.33%	0.23%	0.03%	1.33%

Chassahowitzka Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + H ₂ SO ₄ Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised PM ₁₀ PSAT %	FINAL Revised PM _{2.5} PSAT %
FL	12017-6406111	DUKE ENERGY FLORIDA, INC. (DEF)	27.4	63.62%	10.09%	6.24%	0.33%	10.09%
GA	13015-2813011	Ea Power Company - Plant Bowen	637.2	0.23%	10.09%	2.28%	0.00%	10.09%
FL	12057-5386111	TAMPA ELECTRIC COMPANY (TEC)	106.8	9.12%	10.09%	1.28%	0.00%	10.09%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1,088.0	0.10%	10.09%	1.01%	0.00%	10.09%
AL	01109-9897111	Sanders Lead Co	471.2	0.10%	10.09%	1.00%	0.00%	10.09%
Facilities That Dropped Off After REVISION								
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	1,131.4	0.06%	10.09%	0.83%	0.00%	10.09%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	1,099.6	0.05%	10.09%	0.53%	0.00%	10.09%
AL	01053-7440211	Escambia Operating Company LLC	530.7	0.04%	10.09%	0.41%	0.00%	10.09%

St Marks Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + H ₂ SO ₄ Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised PM ₁₀ PSAT %	FINAL Revised PM _{2.5} PSAT %
GA	13015-2813011	Ea Power Company - Plant Bowen	452.5	0.38%	3.59%	4.89%	0.01%	0.03%
FL	14005-5354111	ROCKTENN CP LLC	140.8	8.54%	3.38%	4.80%	0.24%	0.09%
AL	01109-9897111	Sanders Lead Co	255.9	3.06%	0.82%	1.12%	0.00%	0.00%
Facilities That Dropped Off After REVISION								
AL	01097-1056111	High Tension Battery	381.1	1.67%	1.45%	0.97%	0.03%	0.02%
AL	01053-7440211	Escambia Operating Company LLC	375.6	5.95%	3.58%	0.96%	0.01%	0.02%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	908.4	0.13%	1.67%	0.80%	0.00%	0.01%
PA	42005-3664111	SPANGH NE AKONIT CO/BIFYSTONE STA	1,751.0	0.29%	1.29%	0.65%	0.01%	0.00%
AL	01053-9651111	Escambia Operating Company LLC	315.0	0.00%	1.68%	0.02%	0.00%	0.00%

St Marks Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGD Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGD Min ³ %	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %
GA	13015-2813011	Ea Power Company - Plant Bowen	452.5	0.574	11.729	0.89%	0.004	11.729	0.03%
FL	12005-535411	ROCKTECH CP LLC	140.8	0.540	11.729	0.60%	0.015	11.729	0.13%
AL	01109-985711	Sanders Lead Co	255.5	0.131	11.729	1.12%	0.000	11.729	0.00%
Facilities That Dropped Off After REVISION									
AL	01055-7440211	Escambia Operating Company LLC	383.1	0.114	11.729	0.97%	0.003	11.729	0.03%
AL	01055-7440211	Escambia Operating Company LLC	325.6	0.112	11.729	0.96%	0.000	11.729	0.02%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AFP ROCKPORT	908.4	0.094	11.729	0.80%	0.001	11.729	0.01%
PA	42005-3866111	SENON NE V.G.M/T CO/KEYSTONE STA	1,251.0	0.076	11.729	0.65%	0.000	11.729	0.00%
AL	01053-385111	Escambia Operating Company LLC	315.0	0.093	11.729	0.82%	0.000	11.729	0.00%

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Okefenokee Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGD Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGD Min ³ %	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	71.5	14.63%	4.32%	2.77%	0.03%	0.03%	0.04%
GA	13015-2813011	Ea Power Company - Plant Bowen	458.2	1.02%	1.74%	2.30%	0.05%	0.04%	0.05%
FL	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	155.2	2.16%	1.64%	2.16%	0.14%	0.11%	0.14%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	909.1	0.46%	2.15%	1.51%	0.02%	0.02%	0.01%
FL	12089-753711	ROCK TENN CP, LLC	64.8	12.82%	1.00%	1.31%	0.88%	0.13%	0.15%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	348.3	0.45%	0.89%	1.16%	0.05%	0.03%	0.04%
GA	13053-3679811	International Paper - Savannah	178.5	2.81%	0.79%	1.04%	0.08%	0.02%	0.03%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	939.4	0.23%	0.78%	1.07%	0.00%	0.03%	0.04%
PA	42005-3866111	SENON NE V.G.M/T CO/KEYSTONE STA	1,129.0	0.46%	2.05%	1.02%	0.03%	0.01%	0.01%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	971.9	0.09%	1.44%	0.83%	0.00%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AFP ROCKPORT	915.7	0.55%	1.40%	0.65%	0.01%	0.02%	0.03%

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Cohutta Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGD Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGD Min ³ %	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant: (0627010056)	512.0	1.73%	3.41%	2.49%	0.02%	0.05%	0.07%
GA	13015-2813011	Ea Power Company - Plant Bowen	78.0	19.58%	1.56%	2.13%	1.15%	0.03%	0.04%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	2.18%	1.05%	1.44%	0.07%	0.01%	0.02%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AFP ROCKPORT	410.1	4.68%	2.84%	1.37%	0.13%	0.08%	0.04%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	154.6	1.05%	2.06%	1.31%	0.06%	0.03%	0.04%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	269.8	0.98%	0.82%	1.25%	0.09%	0.07%	0.09%
PA	42005-3866111	SENON NE V.G.M/T CO/KEYSTONE STA	801.1	0.14%	2.06%	1.04%	0.00%	0.01%	0.01%
IN	18051-7363111	Cibola	487.1	2.31%	1.85%	1.03%	0.10%	0.02%	0.02%
Facilities That Dropped Off After REVISION									
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	477.0	2.18%	1.29%	0.84%	0.16%	0.02%	0.02%
TN	47145-4979111	TVA KINGSTON FOSSIL PLANT	124.0	2.17%	1.06%	0.34%	0.13%	0.06%	0.02%

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Okefenokee Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGD Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGD Min ³ %	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	71.5	0.372	13.40%	2.77%	0.002	13.40%	0.01%
GA	13015-2813011	Ea Power Company - Plant Bowen	458.2	0.308	13.40%	2.30%	0.007	13.40%	0.05%
FL	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	155.2	0.288	13.40%	2.16%	0.019	13.40%	0.14%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	909.1	0.203	13.40%	1.51%	0.002	13.40%	0.01%
FL	12089-753711	ROCK TENN CP, LLC	64.8	0.176	13.40%	1.31%	0.020	13.40%	0.15%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	348.3	0.158	13.40%	1.16%	0.006	13.40%	0.04%
GA	13053-3679811	International Paper - Savannah	178.5	0.140	13.40%	1.04%	0.008	13.40%	0.06%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	939.4	0.138	13.40%	1.07%	0.006	13.40%	0.04%
PA	42005-3866111	SENON NE V.G.M/T CO/KEYSTONE STA	1,129.0	0.137	13.40%	1.02%	0.002	13.40%	0.01%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	971.9	0.111	13.40%	0.83%	0.002	13.40%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AFP ROCKPORT	915.7	0.087	13.40%	0.65%	0.004	13.40%	0.02%

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Cohutta Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGD Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGD Min ³ %	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant: (0627010056)	512.0	0.322	13.22%	2.49%	0.009	13.22%	0.07%
GA	13015-2813011	Ea Power Company - Plant Bowen	78.0	0.282	13.22%	2.13%	0.005	13.22%	0.04%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	0.180	13.22%	1.44%	0.002	13.22%	0.02%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AFP ROCKPORT	410.1	0.181	13.22%	1.37%	0.005	13.22%	0.04%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	154.6	0.173	13.22%	1.31%	0.005	13.22%	0.04%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	269.8	0.165	13.22%	1.25%	0.012	13.22%	0.09%
PA	42005-3866111	SENON NE V.G.M/T CO/KEYSTONE STA	801.1	0.137	13.22%	1.04%	0.002	13.22%	0.01%
IN	18051-7363111	Cibola	487.1	0.137	13.22%	1.03%	0.003	13.22%	0.03%
Facilities That Dropped Off After REVISION									
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	477.0	0.111	13.22%	0.84%	0.003	13.22%	0.02%
TN	47145-4979111	TVA KINGSTON FOSSIL PLANT	124.0	0.085	13.22%	0.34%	0.002	13.22%	0.02%

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Wolf Island Wilderness (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGD Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGD Min ³ %	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %
FL	12089-753711	ROCK TENN CP, LLC	74.9	8.56%	1.79%	2.35%	0.39%	0.11%	0.14%
GA	13015-2813011	Ea Power Company - Plant Bowen	458.2	1.00%	1.78%	2.33%	0.03%	0.04%	0.05%
GA	13127-9721011	Bramwell Cellulose Inc	27.9	8.84%	1.84%	1.76%	2.34%	0.10%	0.13%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	845.3	1.71%	2.51%	1.73%	0.02%	0.02%	0.02%
GA	13053-3679811	International Paper - Savannah	85.9	7.53%	1.18%	1.54%	0.24%	0.07%	0.09%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	251.0	1.35%	0.99%	1.39%	0.09%	0.06%	0.08%
FL	12051-640211	IFA	109.1	4.45%	0.86%	1.39%	0.09%	0.03%	0.06%
SC	45015-4849411	ALLUMAX OF SOUTH CAROLINA	223.0	1.84%	0.95%	1.35%	0.00%	0.01%	0.01%
PA	42005-3866111	SENON NE V.G.M/T CO/KEYSTONE STA	1,048.6	0.84%	2.37%	1.12%	0.01%	0.01%	0.01%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	876.2	0.07%	1.25%	0.76%	0.00%	0.02%	0.02%
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	173.6	1.97%	1.05%	0.67%	0.01%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AFP ROCKPORT	899.0	0.37%	1.38%	0.64%	0.00%	0.02%	0.03%

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Wolf Island Wilderness (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT Min	FINAL Revised Sulfate PSAT Min + NSGQ Min	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % + NSGQ Min	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % + NSGQ Min	
FL	12089-753711	ROCK TENN CP, LLC	74.9	0.304	12.957	2.35%	0.018	12.957	0.14%	
GA	13015-281301	Ea Power Company - Plant Bowen	458.1	0.302	12.957	2.33%	0.007	12.957	0.05%	
GA	18127-872101	Brunswick Cellulose Inc	27.9	0.228	12.957	1.76%	0.017	12.957	0.13%	
OH	39053-814851	General James M. Gavin Power Plant (0627010056)	845.3	0.224	12.957	1.73%	0.003	12.957	0.02%	
GA	13051-367981	International Paper - Savannah	85.9	0.200	12.957	1.54%	0.012	12.957	0.09%	
SC	45015-412041	SANTYEE COOPER CROSS GENERATING STATION	251.0	0.168	12.957	1.30%	0.011	12.957	0.08%	
NL	12031-640211	GEA	106.1	0.167	12.957	1.30%	0.008	12.957	0.06%	
SC	45015-481961	ALLMAX OF SOUTH CAROLINA	223.0	0.162	12.957	1.25%	0.001	12.957	0.01%	
PA	42003-386611	SILMON NL V.G.V.T CO/KEYSTONE STA	1,048.8	0.149	12.957	1.15%	0.002	12.957	0.01%	
Facilities That Dropped Off After REVISION										
OH	39025-829432	Duke Energy Ohio, Wm. H. Zimmer Station (1413080154)	876.1	0.099	12.957	0.76%	0.002	12.957	0.02%	
FL	12047-769712	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	173.8	0.087	12.957	0.67%	0.001	12.957	0.01%	
IN	18147-801721	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	899.0	0.083	12.957	0.64%	0.009	12.957	0.03%	

Linville Gorge Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT Min	Nitrate AOI %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % + NSGQ Min	
TN	47163-898211	EASTMAN CHEMICAL COMPANY	81.9	19.21%	2.87%	4.05%	0.68%	0.07%	0.16%	
DH	39053-814851	General James M. Gavin Power Plant (0627010056)	379.2	5.90%	4.67%	3.46%	0.04%	0.01%	0.02%	
PA	42003-386611	SILMON NL V.G.V.T CO/KEYSTONE STA	367.5	0.34%	1.45%	1.83%	0.00%	0.00%	0.00%	
KY	21145-603701	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.28%	0.95%	1.34%	0.00%	0.01%	0.00%	
TN	47161-497911	TVA CLIMBERLAND FOSSIL PLANT	516.6	0.31%	0.95%	1.20%	0.00%	0.01%	0.01%	
GA	13015-281301	Ea Power Company - Plant Bowen	340.9	0.39%	0.80%	1.13%	0.02%	0.00%	0.00%	
IN	18147-801721	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	503.5	1.18%	2.22%	3.10%	0.03%	0.07%	0.09%	
IN	18051-736111	Gibson	582.3	0.67%	1.35%	1.07%	0.03%	0.07%	0.07%	
VO	29143-536311	NEW MADRID POWER PLANT-VARS'ON	688.8	0.03%	1.11%	1.04%	0.00%	0.00%	0.00%	
VA	51007-403481	Jowell Coke Company LLP	140.4	5.34%	0.33%	1.07%	0.03%	0.00%	0.00%	
Facilities That Dropped Off After REVISION										
AR	05063-108341	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	856.4	0.29%	1.43%	0.86%	0.00%	0.01%	0.00%	
MD	24001-776381	Luke Power Company	463.8	0.22%	1.37%	0.84%	0.00%	0.00%	0.00%	
IN	18125-738242	INDIANAPOLIS POWER & LIGHT PLT/ROSBURG	550.5	0.30%	1.23%	0.82%	0.01%	0.07%	0.05%	
OH	39025-829432	Duke Energy Ohio, Wm. H. Zimmer Station (1413080154)	380.2	2.82%	1.00%	0.66%	0.03%	0.02%	0.03%	

Mammoth Cave NP (KY)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % + NSGQ Min	
IN	18147-801721	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	118.0	16.88%	3.57%	2.68%	2.60%	0.26%	0.33%	
IN	18051-736311	Gibson	158.2	5.23%	2.16%	1.63%	1.20%	0.35%	0.33%	
KY	21145-356161	Big Rivers Electric Corp - Wilson Station	89.9	6.73%	1.07%	1.33%	0.37%	0.68%	0.06%	
KY	21145-603701	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	233.6	1.60%	0.86%	1.10%	0.15%	0.14%	0.19%	
VO	29143-536311	NEW MADRID POWER PLANT-VARS'ON	312.7	0.86%	1.29%	1.16%	0.04%	0.07%	0.09%	
IN	18125-738241	INDIANAPOLIS POWER & LIGHT PLT/ROSBURG	182.9	3.09%	1.00%	1.04%	0.96%	0.40%	0.27%	
Facilities That Dropped Off After REVISION										
OH	39025-829432	Duke Energy Ohio, Wm. H. Zimmer Station (1413080154)	256.1	1.21%	1.43%	0.89%	0.14%	0.11%	0.12%	
OH	39053-814851	General James M. Gavin Power Plant (0627010056)	406.5	1.45%	1.25%	0.81%	0.04%	0.02%	0.02%	
AR	05063-108341	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	498.6	0.30%	1.15%	0.65%	0.04%	0.05%	0.02%	
IN	18173-818112	ALCOA WARRICK POWER PLT AGC DIV OF AL	130.1	2.05%	1.03%	0.40%	1.74%	0.82%	0.30%	
IN	18123-816612	Especo AB Brown South Indiana Gas & Ele	162.9	2.73%	1.16%	0.00%	0.27%	0.68%	0.00%	

Linville Gorge Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % + NSGQ Min	
TN	47163-898211	EASTMAN CHEMICAL COMPANY	81.9	9.52%	12.88%	4.95%	0.01%	12.88%	0.16%	
DH	39053-814851	General James M. Gavin Power Plant (0627010056)	379.2	0.44%	12.86%	3.46%	0.00%	12.88%	0.07%	
PA	42003-386611	SILMON NL V.G.V.T CO/KEYSTONE STA	367.5	0.23%	12.88%	1.87%	0.00%	12.88%	0.09%	
KY	21145-603701	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.17%	12.88%	1.34%	0.00%	12.88%	0.03%	
TN	47161-497911	TVA CLIMBERLAND FOSSIL PLANT	516.6	0.15%	12.88%	1.20%	0.00%	12.88%	0.01%	
GA	13015-281301	Ea Power Company - Plant Bowen	340.9	0.14%	12.88%	1.13%	0.00%	12.88%	0.00%	
IN	18147-801721	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	503.5	0.14%	12.88%	1.10%	0.01%	12.88%	0.09%	
IN	18051-736111	Gibson	582.3	0.13%	12.88%	1.07%	0.00%	12.88%	0.07%	
VO	29143-536311	NEW MADRID POWER PLANT-VARS'ON	688.8	0.13%	12.88%	1.04%	0.00%	12.88%	0.00%	
VA	51007-403481	Jowell Coke Company LLP	140.4	0.13%	12.88%	1.07%	0.00%	12.88%	0.00%	
Facilities That Dropped Off After REVISION										
AR	05063-108341	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	856.4	0.11%	12.88%	0.86%	0.00%	12.88%	0.00%	
MD	24001-776381	Luke Power Company	463.8	0.10%	12.88%	0.84%	0.00%	12.88%	0.00%	
IN	18125-738242	INDIANAPOLIS POWER & LIGHT PLT/ROSBURG	550.5	0.10%	12.88%	0.82%	0.00%	12.88%	0.00%	
OH	39025-829432	Duke Energy Ohio, Wm. H. Zimmer Station (1413080154)	380.2	0.08%	12.88%	0.66%	0.00%	12.88%	0.03%	

Mammoth Cave NP (KY)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % + NSGQ Min	
IN	18147-801721	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	118.0	0.42%	25.289	1.68%	0.08%	25.289	0.33%	
IN	18051-736311	Gibson	158.2	0.41%	25.289	1.63%	0.08%	25.289	0.33%	
KY	21145-356161	Big Rivers Electric Corp - Wilson Station	89.9	0.36%	25.289	1.43%	0.02%	25.289	0.08%	
KY	21145-603701	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	233.6	0.29%	25.289	1.10%	0.04%	25.289	0.19%	
VO	29143-536311	NEW MADRID POWER PLANT-VARS'ON	312.7	0.28%	25.289	1.16%	0.02%	25.289	0.09%	
IN	18125-738241	INDIANAPOLIS POWER & LIGHT PLT/ROSBURG	182.9	0.26%	25.289	1.04%	0.06%	25.289	0.27%	
Facilities That Dropped Off After REVISION										
OH	39025-829432	Duke Energy Ohio, Wm. H. Zimmer Station (1413080154)	256.1	0.22%	25.289	0.89%	0.03%	25.289	0.12%	
OH	39053-814851	General James M. Gavin Power Plant (0627010056)	406.5	0.20%	25.289	0.81%	0.00%	25.289	0.02%	
AR	05063-108341	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	498.6	0.16%	25.289	0.65%	0.00%	25.289	0.02%	
IN	18173-818112	ALCOA WARRICK POWER PLT AGC DIV OF AL	130.1	0.10%	25.289	0.40%	0.07%	25.289	0.30%	
IN	18123-816612	Especo AB Brown South Indiana Gas & Ele	162.9	0.00%	25.289	0.00%	0.00%	25.289	0.00%	

Shining Rock Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % + NSGQ Min	
OH	39053-814851	General James M. Gavin Power Plant (0627010056)	379.2	1.39%	3.26%	2.11%	0.01%	0.01%	0.01%	
KY	21145-603701	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.47%	1.16%	1.62%	0.03%	0.02%	0.02%	
TN	47161-497911	TVA CLIMBERLAND FOSSIL PLANT	454.2	0.58%	0.93%	1.32%	0.02%	0.01%	0.01%	
GA	13015-281301	Ea Power Company - Plant Bowen	341.6	1.70%	0.95%	1.39%	0.07%	0.01%	0.01%	
VO	29143-536311	NEW MADRID POWER PLANT-VARS'ON	675.2	0.36%	1.37%	1.78%	0.00%	0.01%	0.01%	
IN	18147-801721	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	473.3	0.70%	2.55%	1.27%	0.01%	0.07%	0.09%	
PA	42003-386611	SILMON NL V.G.V.T CO/KEYSTONE STA	817.8	0.49%	2.36%	1.23%	0.00%	0.00%	0.00%	
IN	18051-736311	Gibson	554.2	0.29%	1.55%	1.23%	0.01%	0.07%	0.07%	
DH	39087-792051	Blue Ridge Paper Products - Canton Mill	16.9	41.29%	2.14%	1.90%	6.65%	0.07%	0.10%	
OH	39025-829432	Duke Energy Ohio, Wm. H. Zimmer Station (1413080154)	406.7	1.37%	1.50%	1.05%	0.03%	0.01%	0.01%	
AR	05063-108341	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	783.3	0.13%	1.74%	1.04%	0.00%	0.01%	0.01%	
TN	47163-898211	EASTMAN CHEMICAL COMPANY	126.5	4.43%	0.74%	1.04%	0.40%	0.02%	0.02%	
Facilities That Dropped Off After REVISION										
IN	18125-738242	INDIANAPOLIS POWER & LIGHT PLT/ROSBURG	529.0	0.18%	1.12%	0.87%	0.01%	0.15%	0.08%	
IL	17127-780891	Joppa Steam	582.4	0.23%	1.07%	0.59%	0.00%	0.01%	0.09%	

Shining Rock Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT %	FINAL Revised Sulfate PSAT % ESU + NSGDM	FINAL Revised Sulfate PSAT %	Nitrate AOI %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % ESU + NSGDM	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	397.3	0.297	12.313	2.01%	0.001	12.313	0.01%	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	573.4	0.261	12.313	1.63%	0.003	12.313	0.02%	0.02%
TN	47163-3982311	TVA CUMBERLAND FOSSIL PLANT	454.1	0.162	12.313	1.32%	0.002	12.313	0.02%	0.02%
GA	13015-2813011	Ea Power Company - Plant Bowen	241.6	0.159	12.313	1.30%	0.001	12.313	0.01%	0.01%
VA	29143-5363811	NFWM MADRID POWER PLANT-MARSTON	675.2	0.158	12.313	1.28%	0.001	12.313	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	473.3	0.156	12.313	1.27%	0.012	12.313	0.09%	0.09%
PA	42003-3866111	GLN/ON NL V.G.V.T CO/KEYSTONE STA	657.6	0.151	12.313	1.24%	0.000	12.313	0.00%	0.00%
IN	18051-7363111	Gibson	554.2	0.151	12.313	1.24%	0.008	12.313	0.07%	0.07%
NC	37087-7920511	Blue Ridge Paper Products - Carston Mill	16.9	0.133	12.313	1.06%	0.012	12.313	0.10%	0.10%
OH	39075-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	406.7	0.129	12.313	1.05%	0.002	12.313	0.01%	0.01%
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	783.3	0.129	12.313	1.04%	0.001	12.313	0.01%	0.01%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	326.6	0.128	12.313	1.04%	0.003	12.313	0.02%	0.02%
Facilities That Dropped Off After REVISION										
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT -PETRUSBURG	579.0	0.101	12.313	0.82%	0.010	12.313	0.08%	0.08%
IL	17127-7808911	Popo Steam	582.4	0.073	12.313	0.59%	0.000	12.313	0.00%	0.00%

Swanquarter Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT %	FINAL Revised Sulfate PSAT % ESU + NSGDM	FINAL Revised Sulfate PSAT %	Nitrate AOI %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % ESU + NSGDM	FINAL Revised Nitrate PSAT %
PA	42003-3866111	GEVON NE V.G.V.T CO/KEYSTONE STA	640.2	0.375	10.894	3.44%	0.003	10.894	0.03%	0.03%
NC	37013-8479311	PCS Phosphate Company, Inc. - Aurara (0627010056)	52.5	0.329	10.894	3.07%	0.007	10.894	0.06%	0.06%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	651.5	0.219	10.894	2.01%	0.005	10.894	0.05%	0.05%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	659.6	0.203	10.894	1.86%	0.007	10.894	0.06%	0.06%
MD	74001-7763811	Luke Paper Company	512.5	0.191	10.894	1.75%	0.008	10.894	0.07%	0.07%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-MARRISON	568.6	0.186	10.894	1.71%	0.013	10.894	0.12%	0.12%
PA	42003-3866111	GLN/ON NL V.G.V.T CO/KEYSTONE STA	620.1	0.151	10.894	1.38%	0.008	10.894	0.07%	0.07%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	625.7	0.127	10.894	1.17%	0.005	10.894	0.05%	0.05%
GA	13015-2813011	Ea Power Company - Plant Bowen	810.6	0.112	10.894	1.02%	0.003	10.894	0.03%	0.03%
NC	37117-8049311	Dorstar Paper Company, LLC	89.0	0.109	10.894	1.00%	0.022	10.894	0.20%	0.20%
Facilities That Dropped Off After REVISION										
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	1,005.3	0.097	10.894	0.83%	0.005	10.894	0.04%	0.04%

Joyce Kilmer-Slickrock Wilderness Area (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	Original Sulfate AOI %	FINAL Revised Sulfate PSAT %	FINAL Revised Sulfate PSAT % ESU + NSGDM	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % ESU + NSGDM
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	475.1	4.73%	4.69%	3.45%	0.05%	0.01%	0.01%	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	472.8	0.88%	0.99%	1.30%	0.05%	0.07%	0.10%	0.10%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	179.2	5.88%	0.93%	1.30%	0.16%	0.02%	0.02%	0.02%
PA	42003-3866111	GLN/ON NL V.G.V.T CO/KEYSTONE STA	711.0	0.27%	2.17%	1.12%	0.00%	0.00%	0.00%	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	391.2	4.33%	2.27%	2.12%	0.14%	0.10%	0.22%	0.22%
GA	13015-2813011	Ea Power Company - Plant Bowen	166.2	3.63%	0.79%	1.11%	0.10%	0.01%	0.01%	0.01%
IN	18051-7363111	Gibson	471.7	2.00%	1.29%	0.02%	0.11%	0.21%	0.21%	0.21%
OH	39023-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	385.1	3.63%	1.53%	1.00%	0.06%	0.01%	0.01%	0.01%
Facilities That Dropped Off After REVISION										
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	674.4	1.58%	1.36%	0.81%	0.05%	0.02%	0.02%	0.02%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT -PETRUSBURG	453.0	2.16%	1.00%	0.72%	0.14%	0.24%	0.16%	0.16%
TN	47143-4379111	TVA KINGSTON FOSSIL PLANT	73.7	7.86%	2.48%	0.39%	0.57%	0.10%	0.03%	0.03%

Cape Romain Wilderness Area (SC)

State	Facility ID	Facility Name	DISTANCE_m	Original Sulfate AOI %	FINAL Revised Sulfate PSAT %	FINAL Revised Sulfate PSAT % ESU + NSGDM	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % ESU + NSGDM
SC	45019-4973611	KEPSTONE CHARLESTON KRAFT LLC	29.3	30.18%	2.86%	3.73%	2.74%	0.25%	0.33%	0.33%
GA	13015-2813011	Ea Power Company - Plant Bowen	506.3	0.36%	2.71%	3.53%	0.01%	0.10%	0.14%	0.14%
NC	35015-4834911	ALUMAK OF SOUTH CAROLINA	39.1	17.07%	1.79%	2.33%	0.03%	0.02%	0.02%	0.02%
PA	42003-3866111	GLN/ON NL V.G.V.T CO/KEYSTONE STA	857.1	0.30%	4.74%	2.28%	0.00%	0.01%	0.01%	0.01%
SC	45015-4120411	Santee Cooper Cross Generating Station	89.8	6.57%	1.73%	2.25%	0.45%	0.21%	0.27%	0.27%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	701.0	0.84%	3.18%	2.17%	0.00%	0.03%	0.04%	0.04%
SC	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	57.4	4.31%	1.26%	1.64%	0.35%	0.11%	0.15%	0.15%
SC	45043-6652811	Santee Cooper Winwah Generating Station	51.4	4.60%	1.02%	1.31%	0.38%	0.13%	0.17%	0.17%
GA	13051-3679811	International Paper - Savannah	166.1	1.26%	0.89%	1.37%	0.04%	0.05%	0.06%	0.06%
Facilities That Dropped Off After REVISION										
OH	39023-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	776.2	1.14%	1.14%	0.69%	0.00%	0.04%	0.04%	0.04%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	868.3	0.06%	1.18%	0.54%	0.00%	0.07%	0.08%	0.08%

Swanquarter Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	Original Sulfate AOI %	FINAL Revised Sulfate PSAT %	FINAL Revised Sulfate PSAT % ESU + NSGDM	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % ESU + NSGDM
PA	42003-3866111	GLN/ON NL V.G.V.T CO/KEYSTONE STA	640.2	3.00%	6.66%	3.00%	0.08%	0.08%	0.07%	0.07%
NC	37013-8479311	PCS Phosphate Company, Inc. - Aurara (0627010056)	52.5	37.88%	2.16%	3.07%	0.57%	0.05%	0.06%	0.06%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	651.5	1.77%	2.74%	2.01%	0.06%	0.03%	0.05%	0.05%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	659.6	0.35%	1.00%	1.86%	0.02%	0.03%	0.06%	0.06%
MD	74001-7763811	Luke Paper Company	512.5	0.43%	2.88%	1.76%	0.02%	0.02%	0.07%	0.07%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-MARRISON	568.6	0.67%	1.19%	1.71%	0.08%	0.10%	0.12%	0.12%
PA	42003-3866111	GLN/ON NL V.G.V.T CO/KEYSTONE STA	620.1	0.55%	1.27%	1.36%	0.02%	0.01%	0.07%	0.07%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	625.7	0.64%	1.22%	1.17%	0.07%	0.03%	0.09%	0.09%
GA	13015-2813011	Ea Power Company - Plant Bowen	810.6	0.15%	0.74%	2.02%	0.00%	0.02%	0.03%	0.03%
NC	37117-8049311	Dorstar Paper Company, LLC	89.0	3.27%	0.22%	1.00%	1.02%	0.14%	0.20%	0.20%
Facilities That Dropped Off After REVISION										
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	1,005.3	0.34%	1.69%	0.83%	0.02%	0.03%	0.04%	0.04%

Cape Romain Wilderness Area (SC)

State	Facility ID	Facility Name	DISTANCE_m	Original Sulfate AOI %	FINAL Revised Sulfate PSAT %	FINAL Revised Sulfate PSAT % ESU + NSGDM	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised Nitrate PSAT % ESU + NSGDM
SC	45019-4973611	KEPSTONE CHARLESTON KRAFT LLC	29.3	30.18%	2.86%	3.73%	2.74%	0.25%	0.33%	0.33%
GA	13015-2813011	Ea Power Company - Plant Bowen	506.3	0.46%	14.02%	3.53%	0.01%	14.02%	0.14%	0.14%
NC	35015-4834911	ALUMAK OF SOUTH CAROLINA	39.1	0.327	14.02%	2.33%	0.007	14.02%	0.02%	0.02%
PA	42003-3866111	GLN/ON NL V.G.V.T CO/KEYSTONE STA	857.1	0.320	14.02%	2.28%	0.002	14.02%	0.01%	0.01%
SC	45015-4120411	Santee Cooper Cross Generating Station	89.8	0.316	14.02%	2.25%	0.038	14.02%	0.27%	0.27%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	701.0	0.305	14.02%	2.17%	0.005	14.02%	0.04%	0.04%
SC	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	57.4	0.230	14.02%	1.64%	0.024	14.02%	0.15%	0.15%
SC	45043-6652811	Santee Cooper Winwah Generating Station	51.4	0.187	14.02%	1.31%	0.044	14.02%	0.17%	0.17%
GA	13051-3679811	International Paper - Savannah	166.1	0.180	14.02%	1.30%	0.009	14.02%	0.06%	0.06%
Facilities That Dropped Off After REVISION										
OH	39023-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	776.2	0.097	14.02%	0.69%	0.006	14.02%	0.04%	0.04%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	868.3	0.076	14.02%	0.54%	0.012	14.02%	0.08%	0.08%

Great Smoky Mountains National Park (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Min ³	FINAL Revised Nitrate PSAT %	FINAL Revised SO ₂ + H ₂ SO ₄ Min ³	FINAL Revised SO ₂ + H ₂ SO ₄ %
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	400.5	0.570	13.816	3.73%	0.003	13.916	0.07%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	463.3	0.183	13.916	1.32%	0.011	13.916	0.08%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	160.3	0.170	13.916	1.22%	0.007	13.916	0.05%
PA	42003-3866111	GENON NE V.G.W.T CO/KEYSTONE STA	688.2	0.186	13.916	1.19%	0.001	13.916	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	375.5	0.186	13.916	1.19%	0.005	13.916	0.25%
IN	18051-7863111	Cibola	456.3	0.146	13.916	1.05%	0.017	13.916	0.27%
Facilities That Dropped Off After REVISION									
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	360.0	1.136	13.916	0.98%	0.002	13.916	0.02%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	425.6	0.109	13.916	0.78%	0.028	13.916	0.23%
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	675.9	0.100	13.916	0.72%	0.001	13.916	0.00%
TN	47145-4379111	TVA KINGSTON FOSSIL PLANT	60.0	0.084	13.916	0.38%	0.004	13.916	0.03%

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James River Face Wilderness Area (VA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Min ³	FINAL Revised Nitrate PSAT %	FINAL Revised SO ₂ + H ₂ SO ₄ Min ³	FINAL Revised SO ₂ + H ₂ SO ₄ %
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	270.2	7.66%	5.44%	4.04%	0.14%	0.08%	0.11%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	207.6	2.76%	2.51%	3.65%	0.36%	0.12%	0.14%
DH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	306.4	1.35%	1.92%	3.62%	0.04%	0.02%	0.06%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	248.0	3.87%	2.33%	2.26%	0.15%	0.03%	0.09%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	223.5	3.30%	2.46%	1.93%	0.13%	0.05%	0.11%
PA	42003-3866111	GENON NE V.G.W.T CO/KEYSTONE STA	337.1	2.88%	2.88%	3.51%	0.06%	0.03%	0.04%
VA	51580-5788711	MadWestwaco Packaging Resource Group	46.5	12.64%	1.02%	1.45%	1.18%	0.15%	0.22%
DH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	270.0	0.63%	0.66%	1.18%	0.16%	0.04%	0.04%
WV	54051-6902311	MITCHELL PLANT	269.6	0.68%	0.97%	1.05%	0.03%	0.02%	0.04%
Facilities That Dropped Off After REVISION									
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	435.2	1.89%	1.39%	0.97%	0.05%	0.05%	0.06%
IN	18051-7863111	Cibola	729.4	0.59%	1.07%	0.87%	0.02%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	663.5	0.56%	1.33%	0.66%	0.03%	0.01%	0.02%

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Great Smoky Mountains National Park (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Min ³	FINAL Revised Nitrate PSAT %	FINAL Revised SO ₂ + H ₂ SO ₄ Min ³	FINAL Revised SO ₂ + H ₂ SO ₄ %
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	400.5	7.75%	5.10%	3.73%	0.04%	0.07%	0.07%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	463.3	1.34%	0.94%	1.32%	0.03%	0.06%	0.08%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	160.3	6.03%	0.89%	1.22%	0.19%	0.04%	0.05%
PA	42003-3866111	GENON NE V.G.W.T CO/KEYSTONE STA	688.2	0.11%	2.31%	1.19%	0.00%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	375.5	4.66%	2.42%	1.19%	0.21%	0.19%	0.25%
IN	18051-7863111	Cibola	456.3	1.75%	1.34%	1.05%	0.07%	0.27%	0.27%
Facilities That Dropped Off After REVISION									
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	360.0	1.89%	1.50%	0.98%	0.09%	0.02%	0.02%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	425.6	1.48%	1.08%	0.78%	0.12%	0.23%	0.23%
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	675.9	0.19%	1.22%	0.72%	0.02%	0.02%	0.00%
TN	47145-4379111	TVA KINGSTON FOSSIL PLANT	60.0	7.38%	1.23%	0.38%	0.71%	0.08%	0.03%

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James River Face Wilderness Area (VA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Min ³	FINAL Revised Nitrate PSAT %	FINAL Revised SO ₂ + H ₂ SO ₄ Min ³	FINAL Revised SO ₂ + H ₂ SO ₄ %
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	270.2	0.582	14.40%	4.04%	0.016	14.40%	0.11%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	207.6	0.526	14.40%	3.65%	0.020	14.40%	0.14%
DH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	306.4	0.520	14.40%	3.62%	0.008	14.40%	0.06%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	248.0	0.325	14.40%	2.26%	0.007	14.40%	0.09%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	223.5	0.278	14.40%	1.93%	0.016	14.40%	0.11%
PA	42003-3866111	GENON NE V.G.W.T CO/KEYSTONE STA	337.1	0.217	14.40%	3.51%	0.005	14.40%	0.04%
VA	51580-5788711	MadWestwaco Packaging Resource Group	46.5	0.269	14.40%	1.45%	0.031	14.40%	0.22%
DH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	270.0	0.170	14.40%	1.18%	0.006	14.40%	0.04%
WV	54051-6902311	MITCHELL PLANT	269.6	0.156	14.40%	1.05%	0.006	14.40%	0.04%
Facilities That Dropped Off After REVISION									
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	435.2	0.133	14.40%	0.97%	0.009	14.40%	0.06%
IN	18051-7863111	Cibola	729.4	0.178	14.40%	0.87%	0.007	14.40%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	663.5	0.095	14.40%	0.66%	0.003	14.40%	0.02%

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Joyce Kilmer-Slickrock Wilderness Area (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Min ³	FINAL Revised Nitrate PSAT %	FINAL Revised SO ₂ + H ₂ SO ₄ Min ³	FINAL Revised SO ₂ + H ₂ SO ₄ %
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	475.1	0.473	13.694	3.45%	0.007	13.694	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	472.8	0.189	13.694	1.38%	0.014	13.694	0.10%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	179.2	0.178	13.694	1.30%	0.003	13.694	0.02%
PA	42003-3866111	GENON NE V.G.W.T CO/KEYSTONE STA	711.0	0.154	13.694	1.12%	0.000	13.694	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	391.2	0.154	13.694	1.12%	0.030	13.694	0.22%
GA	13015-2813011	Ba Power Company - Plant Bowen	166.2	0.152	13.694	1.11%	0.001	13.694	0.01%
IN	18051-7863111	Cibola	471.7	0.139	13.694	1.02%	0.029	13.694	0.21%
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	385.1	0.137	13.694	1.00%	0.002	13.694	0.01%
Facilities That Dropped Off After REVISION									
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	674.4	0.111	13.694	0.81%	0.001	13.694	0.01%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	452.0	0.099	13.694	0.72%	0.022	13.694	0.16%
TN	47145-4379111	TVA KINGSTON FOSSIL PLANT	73.7	0.054	13.694	0.39%	0.004	13.694	0.03%

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Shenandoah National Park (VA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Min ³	FINAL Revised Nitrate PSAT %	FINAL Revised SO ₂ + H ₂ SO ₄ Min ³	FINAL Revised SO ₂ + H ₂ SO ₄ %
PA	42003-3866111	GENON NE V.G.W.T CO/KEYSTONE STA	249.8	11.83%	8.85%	1.81%	0.10%	0.03%	0.08%
DH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	769.6	1.53%	2.32%	4.50%	0.06%	0.05%	0.12%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	189.7	4.60%	2.75%	4.14%	0.99%	0.37%	0.46%
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	323.4	5.25%	4.88%	3.75%	0.14%	0.10%	0.14%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	265.0	4.97%	2.20%	2.20%	0.24%	0.18%	0.28%
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	230.4	2.60%	1.56%	1.78%	0.13%	0.04%	0.06%
MD	24001-7763811	Wise Paper Company	118.4	8.30%	2.05%	1.47%	0.23%	0.09%	0.14%
PA	42063-3005211	WV WHITE SULFUR GRAN/FWARD CFN STA	715.5	1.80%	1.00%	1.17%	0.04%	0.02%	0.02%
WV	54051-6902311	MITCHELL PLANT	251.8	1.46%	0.88%	1.01%	0.11%	0.08%	0.16%
DH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	324.1	0.43%	0.53%	1.01%	0.16%	0.06%	0.06%
Facilities That Dropped Off After REVISION									
WV	54062-6773611	MONONGAHELA POWER CO- FORT MARTIN POWER	186.4	2.82%	1.00%	0.97%	1.27%	0.47%	0.62%
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	505.4	1.31%	1.28%	0.87%	0.11%	0.05%	0.06%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	265.6	2.09%	1.04%	0.84%	0.09%	0.05%	0.19%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	755.8	0.71%	1.46%	0.76%	0.03%	0.02%	0.03%

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Dolly Sods Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PPM %	FINAL Revised Sulfate PPM %	Nitrate AOI %	Original Nitrate PPM %	FINAL Revised Nitrate PPM %	
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	83.6	13.58%	4.94%	7.18%	1.36%	0.26%	0.31%	
O-	39013-8148511	General James M. Gavin Power Plant (06270-0055)	233.8	7.62%	6.56%	4.88%	0.10%	0.03%	0.05%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	163.9	4.64%	4.32%	4.19%	0.16%	0.07%	0.10%	
O-	39081-8113711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	163.9	1.36%	2.14%	4.02%	0.03%	0.01%	0.03%	
O-	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station ("413090-54)	416.9	1.40%	2.25%	3.49%	0.02%	0.04%	0.05%	
WV	54051-4902311	MITCHELL PLANT	144.2	1.45%	1.28%	3.42%	0.07%	0.02%	0.05%	
PA	42005-1866111	EDISON NF-MGMT CO/KYSTONE STA	172.8	4.12%	2.43%	3.27%	0.01%	0.00%	0.00%	
O-	39013-7983011	Duke Valley Electric Corp., Cigar Creek Station (0627000003)	234.9	0.62%	0.66%	1.18%	0.11%	0.02%	0.02%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	219.8	3.56%	1.45%	1.14%	0.11%	0.01%	0.03%	
WV	54061-6773611	MONONGAHELA POWER CO - FORT MARTIN POWER	75.8	6.53%	1.27%	1.13%	1.07%	0.18%	0.23%	
KY	21345-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	847.6	0.12%	0.74%	1.05%	0.00%	0.01%	0.02%	
Facilities That Dropped Off After REVISION										
IN	18202-7363111	Elbaun	729.5	0.04%	1.24%	0.99%	0.02%	0.04%	0.04%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	676.3	0.44%	1.93%	0.97%	0.01%	0.02%	0.03%	
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	682.6	0.16%	1.05%	0.77%	0.02%	0.04%	0.03%	
OH	39011-8010811	Kenesaw Power Plant (0616000000)	242.3	0.71%	1.09%	0.00%	0.17%	0.08%	0.00%	

Otter Creek Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PPM %	FINAL Revised Sulfate PPM %	Nitrate AOI %	Original Nitrate PPM %	FINAL Revised Nitrate PPM %	
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	72.8	17.37%	4.49%	6.51%	1.81%	0.26%	0.31%	
O-	39013-8148511	General James M. Gavin Power Plant (06270-0055)	214.2	10.46%	7.08%	5.25%	0.18%	0.04%	0.06%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	148.3	8.19%	4.39%	4.24%	0.30%	0.08%	0.12%	
O-	39081-8113711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	162.7	1.94%	2.03%	3.81%	0.05%	0.02%	0.04%	
O-	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station ("413090-54)	397.5	1.12%	2.40%	1.58%	0.02%	0.06%	0.06%	
WV	54051-4902311	MITCHELL PLANT	136.8	1.36%	1.40%	1.50%	0.08%	0.03%	0.05%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	198.0	4.36%	1.67%	1.11%	0.12%	0.02%	0.04%	
O-	39013-7983011	Duke Valley Electric Corp., Cigar Creek Station (0627000003)	215.3	0.85%	0.71%	1.27%	0.20%	0.02%	0.02%	
KY	21345-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	825.5	0.18%	0.77%	1.09%	0.00%	0.01%	0.02%	
IN	18013-7363111	Elbaun	709.7	0.24%	1.27%	2.01%	0.01%	0.03%	0.05%	
WV	54061-6773611	MONONGAHELA POWER CO - FORT MARTIN POWER	82.7	4.98%	1.14%	1.00%	0.92%	0.20%	0.24%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	656.7	0.64%	2.01%	1.00%	0.01%	0.03%	0.04%	
PA	42005-1866111	EDISON NF-MGMT CO/KYSTONE STA	186.5	1.73%	1.91%	2.00%	0.03%	0.00%	0.00%	
Facilities That Dropped Off After REVISION										
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	663.0	0.23%	1.07%	0.79%	0.02%	0.04%	0.03%	
OH	39011-8010811	Kenesaw Power Plant (0616000000)	232.8	1.12%	1.07%	0.00%	0.17%	0.08%	0.00%	

Shenandoah National Park (VA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PPM /Mm	FINAL Revised Nitrate PPM /Mm	FINAL Revised SO ₂ + NESHAP /Mm	FINAL Revised Nitrate PPM /Mm	FINAL Revised Nitrate PPM /Mm		
PA	42005-1866111	EDISON NF-MGMT CO/KYSTONE STA	249.8	0.74%	15.37%	6.61%	0.00%	15.37%	0.05%	
OH	39081-8113711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	269.6	0.60%	15.37%	4.50%	0.01%	15.37%	0.12%	
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	189.7	0.66%	15.37%	4.14%	0.07%	15.37%	0.46%	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	823.4	0.57%	15.37%	3.75%	0.07%	15.37%	0.14%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	265.0	0.39%	15.37%	2.20%	0.04%	15.37%	0.28%	
PA	42063-3005211	HOMER CITY GEN LFY CENTER TWP	230.4	0.27%	15.37%	3.78%	0.01%	15.37%	0.06%	
MD	24001-7763811	Luke Paper Company	118.4	0.21%	15.37%	3.41%	0.02%	15.37%	0.14%	
PA	42063-3005111	NRC WHOLESALE FGH/SWARD GEN STA	215.5	0.17%	15.37%	1.17%	0.00%	15.37%	0.02%	
WV	54051-4902311	MITCHELL PLANT	251.8	0.15%	15.37%	1.01%	0.02%	15.37%	0.06%	
OH	39053-7983011	Duke Valley Electric Corp., Cigar Creek Station (0627000003)	324.1	0.15%	15.37%	3.01%	0.00%	15.37%	0.06%	
Facilities That Dropped Off After REVISION										
WV	54061-6773611	MONONGAHELA POWER CO - FORT MARTIN POWER	184.4	0.14%	15.37%	0.97%	0.00%	15.37%	0.02%	
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	505.4	0.14%	15.37%	0.87%	0.00%	15.37%	0.06%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	256.6	0.13%	15.37%	0.84%	0.01%	15.37%	0.19%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	755.8	0.11%	15.37%	0.76%	0.00%	15.37%	0.03%	

Otter Creek Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PPM /Mm	FINAL Revised Nitrate PPM /Mm	FINAL Revised SO ₂ + NESHAP /Mm	FINAL Revised Nitrate PPM /Mm	FINAL Revised Nitrate PPM /Mm		
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	72.8	1.24%	19.07%	6.51%	0.95%	19.07%	0.31%	
O-	39013-8148511	General James M. Gavin Power Plant (06270-0055)	214.2	1.00%	19.07%	5.25%	0.01%	19.07%	0.06%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	148.3	0.80%	19.07%	4.24%	0.03%	19.07%	0.12%	
O-	39081-8113711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	162.7	0.72%	19.07%	3.81%	0.00%	19.07%	0.04%	
O-	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station ("413090-54)	397.5	0.30%	19.07%	1.58%	0.01%	19.07%	0.06%	
WV	54051-4902311	MITCHELL PLANT	136.8	0.29%	19.07%	1.50%	0.01%	19.07%	0.05%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	198.0	0.24%	19.07%	1.11%	0.00%	19.07%	0.04%	
O-	39013-7983011	Duke Valley Electric Corp., Cigar Creek Station (0627000003)	215.3	0.24%	19.07%	1.27%	0.00%	19.07%	0.02%	
KY	21345-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	825.5	0.20%	19.07%	1.09%	0.00%	19.07%	0.02%	
IN	18013-7363111	Elbaun	709.7	0.19%	19.07%	2.01%	0.00%	19.07%	0.05%	
WV	54061-6773611	MONONGAHELA POWER CO - FORT MARTIN POWER	82.7	0.19%	19.07%	1.00%	0.04%	19.07%	0.24%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	656.7	0.19%	19.07%	1.00%	0.00%	19.07%	0.04%	
PA	42005-1866111	EDISON NF-MGMT CO/KYSTONE STA	186.5	0.19%	19.07%	2.00%	0.00%	19.07%	0.00%	
Facilities That Dropped Off After REVISION										
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	663.0	0.15%	19.07%	0.79%	0.00%	19.07%	0.03%	
OH	39011-8010811	Kenesaw Power Plant (0616000000)	232.8	0.00%	19.07%	0.00%	0.00%	19.07%	0.00%	

Dolly Sods Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PPM /Mm	FINAL Revised Nitrate PPM /Mm	FINAL Revised SO ₂ + NESHAP /Mm	FINAL Revised Nitrate PPM /Mm	FINAL Revised Nitrate PPM /Mm		
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	83.6	1.39%	19.34%	7.18%	0.65%	19.34%	0.31%	
O-	39013-8148511	General James M. Gavin Power Plant (06270-0055)	233.8	0.94%	19.34%	4.88%	0.09%	19.34%	0.05%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	163.9	0.80%	19.34%	4.19%	0.03%	19.34%	0.10%	
O-	39081-8113711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	163.9	0.77%	19.34%	4.02%	0.00%	19.34%	0.03%	
O-	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station ("413090-54)	416.9	0.26%	19.34%	3.49%	0.01%	19.34%	0.05%	
WV	54051-4902311	MITCHELL PLANT	144.2	0.27%	19.34%	3.42%	0.00%	19.34%	0.05%	
PA	42005-1866111	EDISON NF-MGMT CO/KYSTONE STA	172.8	0.24%	19.34%	3.27%	0.00%	19.34%	0.00%	
O-	39013-7983011	Duke Valley Electric Corp., Cigar Creek Station (0627000003)	234.9	0.22%	19.34%	3.18%	0.00%	19.34%	0.02%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	219.8	0.22%	19.34%	3.14%	0.00%	19.34%	0.03%	
WV	54061-6773611	MONONGAHELA POWER CO - FORT MARTIN POWER	75.8	0.21%	19.34%	3.13%	0.04%	19.34%	0.23%	
KY	21345-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	847.6	0.20%	19.34%	3.05%	0.00%	19.34%	0.02%	
Facilities That Dropped Off After REVISION										
IN	18202-7363111	Elbaun	729.5	0.19%	19.34%	0.99%	0.00%	19.34%	0.04%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	676.3	0.18%	19.34%	0.97%	0.00%	19.34%	0.03%	
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	682.6	0.14%	19.34%	0.77%	0.00%	19.34%	0.03%	
OH	39011-8010811	Kenesaw Power Plant (0616000000)	242.3	0.00%	19.34%	0.00%	0.00%	19.34%	0.00%	

Non-VISTAS Class I Areas

- Only two VISTAS facilities have a contribution ≥ 1.00% at any non-VISTAS Class I Area
- **ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON (WV)**
 - Moosehorn Wilderness EDM (1.06% sulfate)
- **Tennessee Valley Authority (TVA) - Shawnee Fossil Plant (KY)**
 - Caney Creek Wilderness Area (1.09% sulfate)
 - Hercules-Glades Wilderness Area (1.95% sulfate)
 - Mingo Wilderness Area (1.47% sulfate)
 - Great Gulf Wilderness Area (1.03% sulfate)
 - Presidential Range-Dry River Wilderness (1.03% sulfate)

Non-VISTAS Facilities ≥ 1.00%

State	FACILITY_ID_STD	FACILITY_NAME STD	IMPACTED CLASS AREAS
IL	02025-1085411	PLANT A, WELLSVILLE, INDIANAPOLIS PLANT	SHR01
IN	18053-7361111	Bethon	COHU, GRWS, JOYC, LIGO, MACA, OTCR, SHR0, SIP5
IN	18142-8031711	INDIANA MICHIGAN POWER JOA PLANT (DC00001)	COHU, GRWS, JOYC, LIGO, MACA, OTCR, SHR0, SIP5
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	MACA, SIP5
MD	24003-7763511	Lake Pipe Company	SHR0, SWAN
MD	23014-5265911	HOWARD POWER PLANT MARSTON	JR01, MACA, SHR0, SIP5
OH	39031-8115711	Cardinal Power Plant Cardinal Operating Company (0641050002)	DO50, JAS, OTCR, SHR0, SWAN
OH	39025-8128311	Duke Energy Ohio, Win. h. Zimmer Station (1413000154)	COHU, DO50, JOYC, OTCR, SHR0
OH	18053-8148511	General Lucas V. Gwalt Power Plant (0507010006)	COHU, DO50, GRWS, JAS, JOYC, LIGO, OTCR, OTCR, ROMA, SHR0, SIP5, SWAN, WDFE
OH	18053-7683011	Duke Valley Electric Corp., Koger Creek Station (0527000200)	DO50, JAS, OTCR, SHR0
PA	42005-3865111	PCS ON HIGHT CONVEYOR STA	COHU, DO50, GRWS, JAS, JOYC, LIGO, OTCR, OTCR, ROMA, SHR0, SIP5, SWAN, WDFE
PA	42053-3081311	HEMPER CITY PLANT #2011111111	SHR0, SWAN
PA	42053-3081311	TRIG WHEELSULE 603/S/STWAWR400 VSTA	SHR0

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Additional Considerations

- The final list of four-factor analysis sources will be determined in consultation with the FLMs, EPA, other states, and stakeholders.
- Some VISTAS states may perform additional four-factor analyses for sources not listed on Slide 134.
- States will verify projected SO₂ and NO_x emissions with facilities. PSAT results can be adjusted to match.
- Some states may allow their facilities to take a permit limit that will result in adjusted PSAT impacts below the 1.00% threshold in lieu of performing a four-factor analysis.
- The large number of coal-fired EGU retirements and fuel switching from coal to natural gas need to be considered along with the sources selected for the four-factor analysis. States should not be penalized for early action.

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VISTAS Facilities ≥ 1.00%

State	FACILITY_ID_STD	FACILITY_NAME STD	IMPACTED CLASS AREAS
AL	01009-805711	Barbers Hill Co.	GRAS, SAMA
FL	12113-752411	FLORIDA FLORIDA LIMITED PARTNERSHIP	GRF0
FL	12077-240311	PLANT ENERGY FLORIDA, INCL. (DFP)	GRAS
FL	13014-844511	BER	WDFE
FL	11109-117211	POSSUM RIVER LLP, LLC	SHR0
FL	11109-918311	ROSMAR RESTAURANT, LLC	EVER
FL	11089-255111	ROCK TEND CO, LLC	JOYC, WDFE
FL	10005-255411	ROCKTEND CO, LLC	MACA
FL	12067-558511	SANPA ELECTRIC COMPANY (TEC)	GRAS, EVER
FL	12066-998111	AMMAC AMERICA, LLC	EVER
FL	12067-998111	AMMAC AMERICA, LLC	GRAS
GA	13127-3731011	Bioscience Cellulose Inc.	WDFE
GA	13015-2513011	Edison Power Company - Plant Bowen	GRAS, COHU, JOYC, LIGO, OTCR, ROMA, SAMA, SHR0, SWAN, WDFE
GA	13003-829811	International Paper - Stone Mountain	OTCR, ROMA, WDFE
GA	13023-935011	Kim Rivers Electric, Corp. - Wilson Station	MACA, SHR0
GA	13023-935011	Kim Rivers Electric, Corp. - Wilson Station	COHU, GRAS, OTCR, DO50, GRWS, JAS, JOYC, LIGO, MACA, OTCR, ROMA, SHR0, SIP5
NC	31067-753011	Blue Ridge Paper Products - Canton Mill	SHR0
NC	31117-804911	Essential Paper Company, LLC	SWAN
NC	31013-281911	HS Fibershare Company, Inc. - Ayuda	SWAN
NC	34016-284411	ALLIANCE OF SOUTH CAROLINA	ROMA, WDFE
SC	15013-3555811	INTERNATIONAL PAPER, SECURE DRY MILL	GRAS
SC	45018-4501811	LANSDOWN FIBER PAPER MILL	ROMA
SC	45018-4501811	SAN JOSE COOPER CROSS CONVERTING STATION	OTCR, ROMA, WDFE
SC	45018-4501811	SANTEE COOPER WINNIE GENERATING STATION	ROMA
TN	47089-2554311	ASTMATEL CHEMICAL COMPANY	COHU, GRWS, JOYC, LIGO, SHR0
TN	47021-827811	THE CUMBERLAND PULP PLANT	LIGO, SHR0, SIP5
VA	54012-5058511	Evans Cokes Company LLP	SHR0
VA	54012-5058511	Minerals Processing Plant, Richmond Group	SHR0
WV	54012-5058511	PLANT HEP ENERGY SERVICES LLC, ALUMINUM	DO50, JAS, MACA, OTCR, SHR0, SWAN
WV	54012-5058511	APPALACHIAN POWER COMPANY - EDWIN SANDS PLANT	DO50, JAS, OTCR
WV	54012-5058511	MITCHELL PLANT	DO50, JAS, OTCR, SHR0
WV	54012-5058511	PLANT HAZEL & POWER CO., FORT LAMAR POWER	DO50, OTCR
WV	54012-5058511	PLANT HAZEL & POWER CO., PLANTASANT POWER STA	DO50, JAS, OTCR, SHR0, SWAN

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Next Steps and Schedule

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EPA Guidance (August 20, 2019)

- Many facilities already have effective emission control technologies in place. States will consider control options for these facilities on a case-by-case basis.
 - “For the purpose of SO₂ control measures, an EGU that has add-on flue gas desulfurization (FGD) and that meets the applicable alternative SO₂ emission limit of the 2012 Mercury Air Toxics Standards (MATS) rule for power plants. The two limits in the rule (0.2 lb/MMBtu for coal-fired EGUs or 0.3 lb/MMBtu for EGUs fired with oil-derived solid fuel) are low enough that it is unlikely that an analysis of control measures for a source already equipped with a scrubber and meeting one of these limits would conclude that even more stringent control of SO₂ is necessary to make reasonable progress.”
 - “For the purposes of SO₂ and NO_x control measures, a combustion source (e.g., an EGU or industrial boiler or process heater) that, during the first implementation period, installed a FGD system that operates year-round with an effectiveness of at least 90 percent or by the installation of a selective catalytic reduction system that operates year-round with an overall effectiveness of at least 90 percent (in both cases calculating the effectiveness as the total for the system, including any bypassed flue gas), on a pollutant-specific basis.”

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Remaining VISTAS Work Schedule

Task	Schedule
2028 Point Emissions Updates	Completed *
2028 Emissions Processing	Completed *
2028 CAMx Modeling	Completed *
2028 Visibility Projections	Completed *
2028 Deposition Projections	Late-May/Early-June, 2020 *
Final Reports and Documentation	Late July, 2020
Website Updates and Postings	Late July, 2020
End of Contract	September 30, 2020
Regional Haze SIPs Due to EPA	July 31, 2021

* References technical work completion. Draft reports to follow.

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Contacts for Further Information

- For general, technical, and SIP-related questions, contact the TAWG and CC Chairs:
 - TAWG – Randy Strait (randy.strait@ncdenr.gov)
 - CC – Jim Boylan (james.boylan@dnr.ga.gov)
- For project and contract management questions, contact the Project Manager:
 - John Hornback (hornback@metro4-sesarm.org)



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State	Year	Ratio	Ratio	Ratio	Ratio
AL	2010	0.7148	0.7185	0.7148	0.7148
AL	2011	0.7148	0.7185	0.7148	0.7148
AL	2012	0.7148	0.7185	0.7148	0.7148
AL	2013	0.7148	0.7185	0.7148	0.7148
AL	2014	0.7148	0.7185	0.7148	0.7148
AL	2015	0.7148	0.7185	0.7148	0.7148
AL	2016	0.7148	0.7185	0.7148	0.7148
AL	2017	0.7148	0.7185	0.7148	0.7148
AL	2018	0.7148	0.7185	0.7148	0.7148
AL	2019	0.7148	0.7185	0.7148	0.7148
AL	2020	0.7148	0.7185	0.7148	0.7148
AL	2021	0.7148	0.7185	0.7148	0.7148
AL	2022	0.7148	0.7185	0.7148	0.7148
AL	2023	0.7148	0.7185	0.7148	0.7148
AL	2024	0.7148	0.7185	0.7148	0.7148
AL	2025	0.7148	0.7185	0.7148	0.7148
AL	2026	0.7148	0.7185	0.7148	0.7148
AL	2027	0.7148	0.7185	0.7148	0.7148
AL	2028	0.7148	0.7185	0.7148	0.7148
AL	2029	0.7148	0.7185	0.7148	0.7148
AL	2030	0.7148	0.7185	0.7148	0.7148

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Appendix B

Table of vehicle emissions coefficients for SO₂, EGU, NEGU, Non EGU, and Non NEGU for each state and year. Ratio indicates relative reduction, not relative to the baseline and ratio indicates a 1.0 ratio.

State/PO	SO ₂ Ratio	EGU Ratio	NEGU Ratio	Non EGU Ratio	Non NEGU Ratio
AL	0.7148	0.7185	0.7148	0.7148	0.7148
FL	0.841	0.879	0.854	0.854	0.854
GA	0.711	1.000	0.747	1.000	1.000
TX	0.881	0.858	0.860	0.858	0.858
MS	0.401	0.371	0.658	0.6	0.6
NC	0.895	0.895	0.971	0.998	0.998
SC	1.000	1.000	1.000	1.000	1.000
TN	0.818	0.871	0.775	0.881	0.881
VA	0.805	1.000	0.875	1.000	1.000
WV	0.826	0.826	0.826	1.000	1.000
CENSARA	0.484	1.000	0.705	1.000	1.000
LACED	0.733	1.000	0.741	1.000	1.000
MANE-VU	0.801	0.801	0.801	1.000	1.000

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Appendix C

Table of the vehicle emissions for SO₂, EGU, NEGU, Non EGU, and Non NEGU for each state and year. Ratio indicates relative reduction, not relative to the baseline and ratio indicates a 1.0 ratio.

State	Year	Ratio	Ratio	Ratio	Ratio
AL	2010	0.7148	0.7185	0.7148	0.7148
AL	2011	0.7148	0.7185	0.7148	0.7148
AL	2012	0.7148	0.7185	0.7148	0.7148
AL	2013	0.7148	0.7185	0.7148	0.7148
AL	2014	0.7148	0.7185	0.7148	0.7148
AL	2015	0.7148	0.7185	0.7148	0.7148
AL	2016	0.7148	0.7185	0.7148	0.7148
AL	2017	0.7148	0.7185	0.7148	0.7148
AL	2018	0.7148	0.7185	0.7148	0.7148
AL	2019	0.7148	0.7185	0.7148	0.7148
AL	2020	0.7148	0.7185	0.7148	0.7148
AL	2021	0.7148	0.7185	0.7148	0.7148
AL	2022	0.7148	0.7185	0.7148	0.7148
AL	2023	0.7148	0.7185	0.7148	0.7148
AL	2024	0.7148	0.7185	0.7148	0.7148
AL	2025	0.7148	0.7185	0.7148	0.7148
AL	2026	0.7148	0.7185	0.7148	0.7148
AL	2027	0.7148	0.7185	0.7148	0.7148
AL	2028	0.7148	0.7185	0.7148	0.7148
AL	2029	0.7148	0.7185	0.7148	0.7148
AL	2030	0.7148	0.7185	0.7148	0.7148

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**Appendix F-3k - VISTAS Regional Haze Project Update
Stakeholder Briefing May 20, 2020**

VISTAS Regional Haze Project Update



Stakeholder Briefing
Jim Boylan
May 20, 2020

VISTAS Organization

- State and Tribal Air Directors (STAD)
 - Policy Decisions
 - Michelle Walker Owenby (TN), Chair
- Coordinating Committee (CC)
 - Planning Recommendations
 - Jim Boylan (GA), Chair
- Technical Analysis Work Group (TAWG)
 - Technical Recommendations
 - Randy Strait (NC), Chair
- Project Manager
 - John Hornback (SESARM)

Outline

- Background Information
- 2028 Emissions Updates
- 2028 Model Projections
- Adjusted 2028 PSAT Stacked Bar Charts
- Reasonable Progress Screening Analysis
- Next Steps & Schedule



Class I Areas of Interest to VISTAS States



Regional Haze Background Information

- Initial round of regional haze SIPs were due December 17, 2007
- Regional haze SIPs for second planning period due July 31, 2021
- EPA revised regional haze regulations
 - 40 CFR Part 51 and 40 CFR Part 52
 - Revisions effective January 10, 2017
- Current EPA regional haze guidance
 - December 20, 2018 – Tracking Visibility Progress
 - August 20, 2019 – Regional Haze SIPs for the Second Planning Period

VISTAS Class I Areas

VISTAS FEDERAL CLASS I AREAS	
AL – Sipsey Wilderness Area (SIPS)	USDA Forest Service
FL – Chassahowitzka Wilderness Area (CHAS)	USDI Fish and Wildlife Service
FL – Everglades National Park (EVER)	USDI National Park Service
FL – Saint Marks Wilderness Area (SAMA)	USDI Fish and Wildlife Service
GA – Cohutta Wilderness Area (COHU)	USDA Forest Service
GA – Okefenokee Wilderness Area (OKEF)	USDI Fish and Wildlife Service
GA – Wolf Island Wilderness Area (WOLI)*	USDI Fish and Wildlife Service
KY – Mammoth Cave National Park (MACA)	USDI National Park Service
NC – Linville Gorge Wilderness Area (LIGO)	USDA Forest Service
NC – Shining Rock Wilderness Area (SHRO)	USDA Forest Service
NC – Swainquarter Wilderness Area (SWAN)	USDI Fish and Wildlife Service
SC – Cape Romain Wilderness Area (ROMA)	USDI Fish and Wildlife Service
TN/NC – Great Smoky Mountains National Park (GRSM)	USDI National Park Service
TN/NC – Joyce Kilmer-Slickrock Wilderness Area (JOYC)*	USDA Forest Service
VA – James River Face Wilderness Area (JARI)	USDA Forest Service
VA – Shenandoah National Park (SHEN)	USDI National Park Service
WV – Dolly Sods Wilderness Area (DOSO)	USDA Forest Service
WV – Otter Creek Wilderness Area (OTCR)*	USDA Forest Service

*This Class I Area does not have an IMPROVE monitor and will be represented by measurement data from a nearby Class I Area with an IMPROVE monitor.

VISTAS Air Quality Model

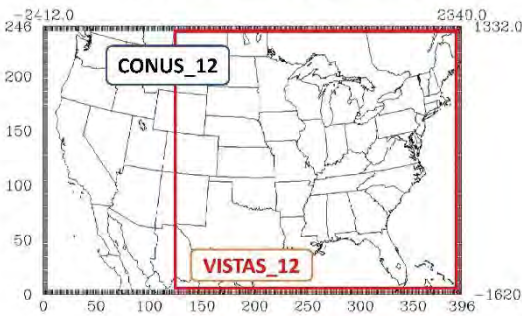
- Started with EPA's 2011/2028 modeling platform
 - Version 6.3el
 - CAMx v6.32
- Replaced CAMx v6.32 with CAMx v6.40
- Used 2011 meteorology
- Reasons for using EPA platform
 - Time limited
 - Budget limited
 - Most source sectors acceptably represented in EPA platform

Initial VISTAS vs. Updated EPA 2028 Emissions

- The table below compares the 2028 point emissions used by VISTAS vs. the latest 2028fh emissions used by EPA (projected from 2016). The emissions below are extracted from the VISTAS 12 modeling domain which covers the Eastern U.S.

Pollutant	VISTAS 2028 (tpy)	New EPA 2028 (tpy)	Change (tpy)	Change (%)
NOx	2,641,463.83	2,108,115.50	-533,348.33	-20.19%
SO2	2,574,542.02	1,400,287.10	-1,174,254.92	-45.61%

VISTAS Modeling Domains



Old ERTAC (2.7opt) vs. New ERTAC (16.0)

SO2	2.7opt 2028	16.0 2028	Δ SO2	Δ SO2
CENSARA	760,828.2	367,683.7	-393,144.5	-51.67%
LADCO	379,577.5	266,047.0	-113,530.5	-29.91%
MANE-VU	196,672.6	78,657.0	-118,015.6	-60.01%
VISTAS	273,582.1	161,502.5	-112,079.6	-40.97%
TOTAL	1,783,376.5	976,471.2	-806,905.3	-45.25%

NOx	2.7opt 2028	16.0 2028	Δ NOx	Δ NOx
CENSARA	354,795.1	244,499.3	-110,295.8	-31.09%
LADCO	198,966.9	166,429.4	-32,537.4	-16.35%
MANE-VU	83,432.5	56,315.3	-27,117.2	-32.50%
VISTAS	270,615.7	200,791.1	-69,824.6	-25.80%
TOTAL	1,166,663.1	840,973.6	-325,689.5	-27.92%

Initial VISTAS Emissions Updates

- Used EPA's 2011 base year emissions without change
- Updated EPA's Initial 2028 projection year emissions
 - EGU and major non-EGU sources
 - Removed Clean Power Plan assumptions
 - VISTAS – Adjusted for changes in fuels and facility operating plans
 - Non-VISTAS – Used ERTAC 2.7opt



VISTAS CC/TAWG Conclusions (January 2020)

1. 2028 emission updates are necessary
 - **VISTAS States** – States will:
 - Update 2028 major source emissions projections (SO₂, NOx, PM_{2.5}, PM₁₀, NH₃, CO) at the facility and unit level
 - Add any new sources of significance
 - **LADCO States** – SESARM will:
 - Replace ERTAC_2.7 with ERTAC_16.1 based on LADCO input
 - **All Other States** – SESARM will:
 - Replace ERTAC_2.7 with ERTAC_16.0
 - Verify accuracy of large SO₂ and NOx source emissions projections via contact with surrounding states/RPOs and update emissions as needed
2. Additional 2028 air quality modeling is needed

Additional Modeling-Related Tasks

- Emissions processing
- Updated 2028 CAMx modeling (VISTAS_12)
- Updated 2028 visibility projections
- Documentation

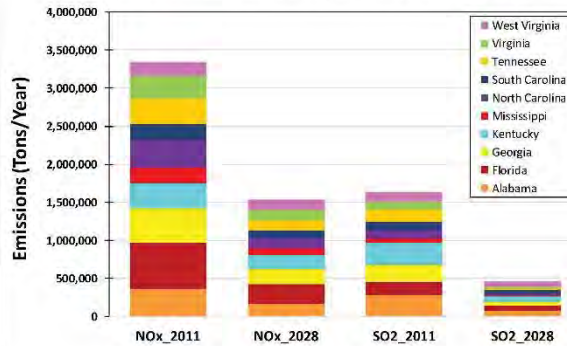
2028 EGU & NEGU NOx Comparison

State	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
AL	80,389.97	70,824.72	-11.9%	26,895.35	20,008.14	-25.6%	53,494.61	50,816.58	-5.0%
FL	68,006.19	70,010.40	2.9%	26,250.73	25,049.90	-4.6%	41,755.45	44,960.50	7.7%
GA	67,197.50	65,885.55	-2.0%	25,899.67	24,587.73	-5.1%	41,297.83	41,297.83	0.0%
KY	66,240.03	62,130.83	-6.2%	36,781.72	32,695.94	-11.1%	29,458.31	29,434.89	-0.1%
MS	52,159.37	46,853.62	-10.2%	18,279.53	12,208.89	-33.2%	33,879.79	34,644.73	2.3%
NC	65,863.97	58,933.80	-10.5%	27,642.23	20,977.65	-24.1%	38,021.74	37,956.15	-0.2%
SC	36,051.31	36,170.82	0.3%	10,522.78	10,707.42	1.8%	25,528.53	25,463.44	-0.3%
TN	45,879.07	42,554.25	-7.2%	10,086.01	7,824.13	-22.5%	35,793.06	35,140.12	-1.8%
VA	43,210.19	41,671.98	-3.6%	11,973.87	10,435.77	-12.8%	31,236.22	31,236.22	0.0%
WV	65,054.07	68,200.77	4.8%	46,721.77	49,874.15	6.7%	18,332.30	18,326.62	-0.0%
VISTAS	590,051.60	563,636.80	-4.5%	241,253.76	214,359.73	-11.1%	348,797.84	349,277.07	0.1%

RPO	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
VISTAS	590,051.60	563,636.80	-4.5%	241,253.76	214,359.73	-11.1%	348,797.84	349,277.07	0.1%
CENSARA	403,979.85	791,397.69	92.3%	362,706.66	270,182.46	-25.4%	523,273.19	521,215.14	-0.4%
LADCD	548,866.24	491,345.00	-10.5%	244,035.26	186,513.52	-23.6%	304,831.49	304,831.49	0.0%
MANE VU	244,280.15	222,991.41	-9.1%	103,465.15	82,176.41	-20.6%	140,815.00	140,815.00	0.0%
WRAP	362,819.80	301,433.41	-16.9%	187,944.97	126,558.55	-32.7%	174,874.83	174,874.83	0.0%
TOTAL	2,649,996.14	2,370,604.22	-10.5%	1,159,405.80	879,790.66	-24.1%	1,490,592.35	1,491,013.55	0.0%

Recent 2028 Emissions Updates

VISTAS States Emissions: 2011 vs. 2028

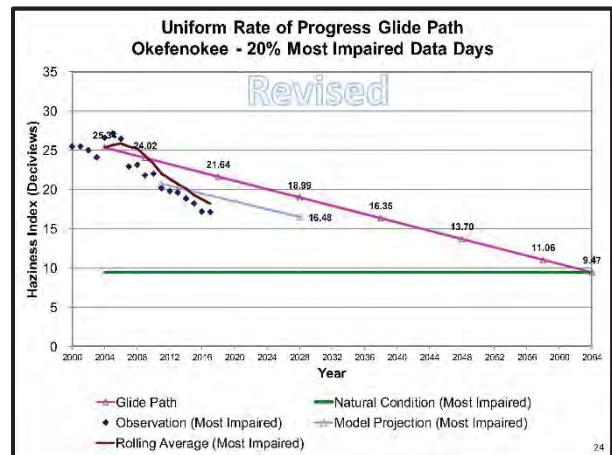
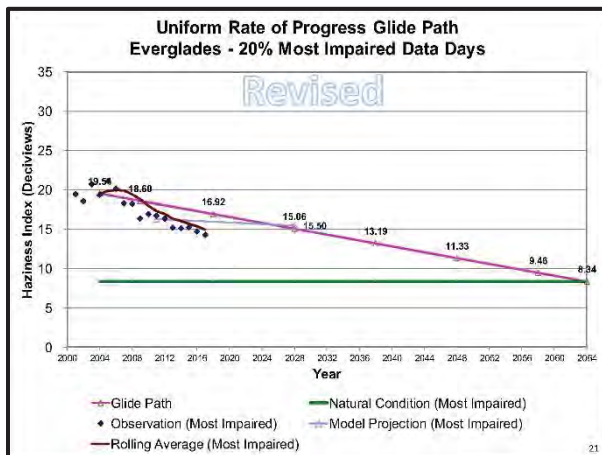
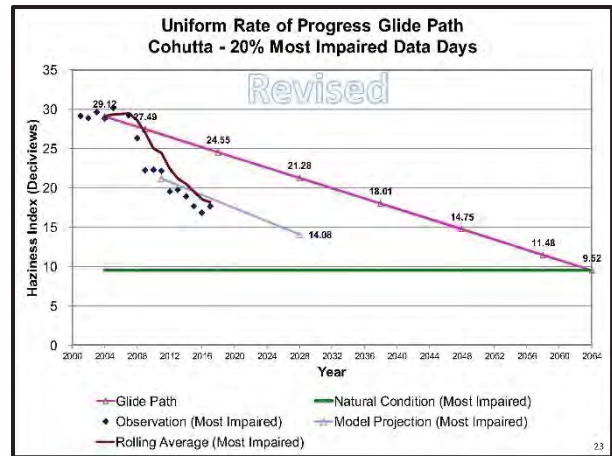
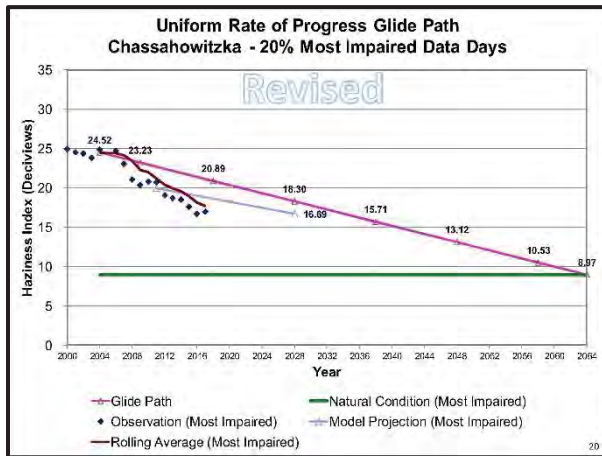
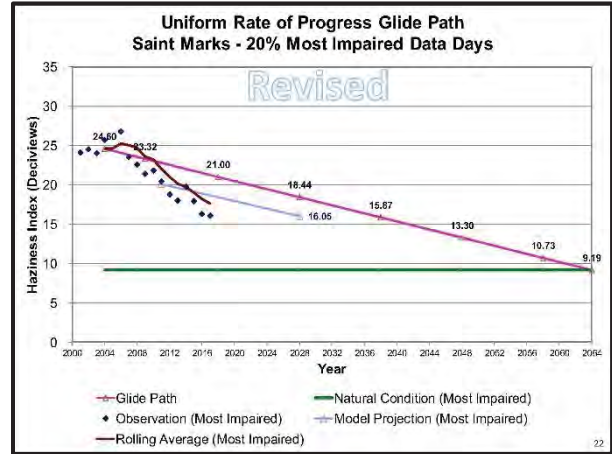
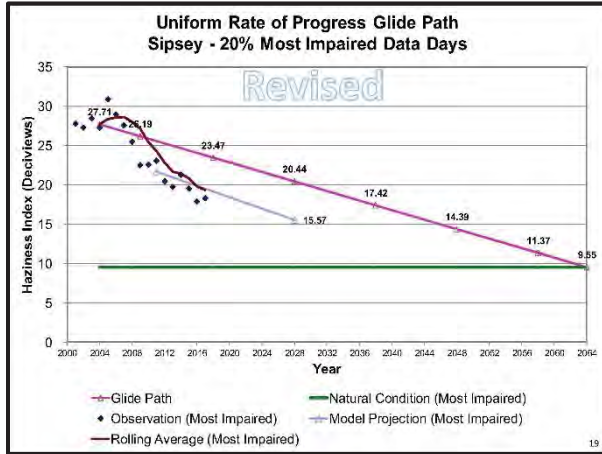


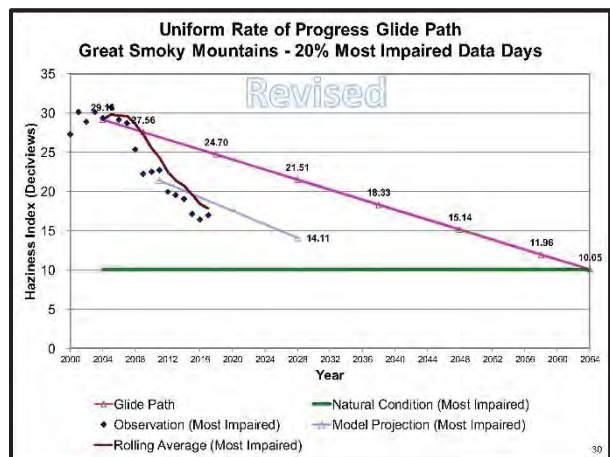
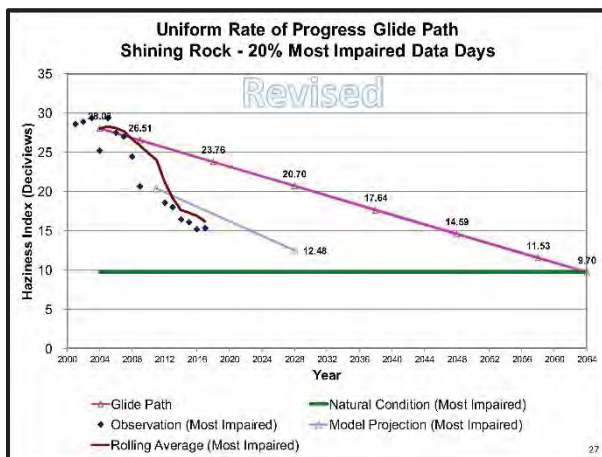
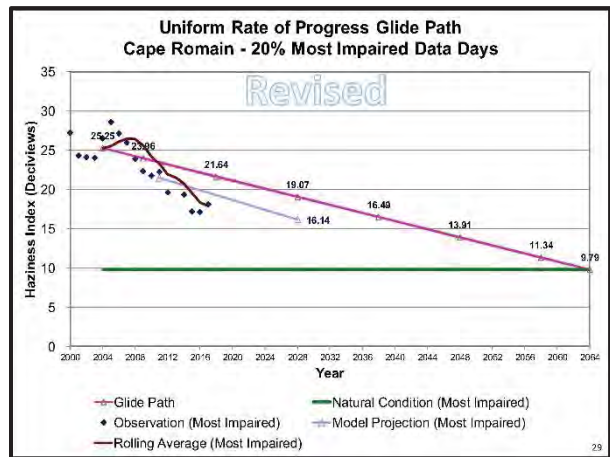
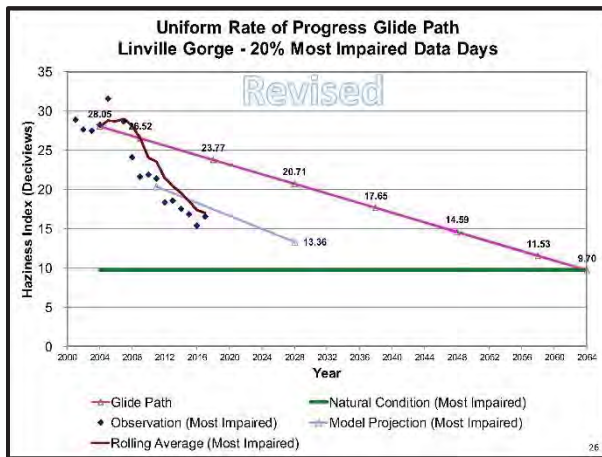
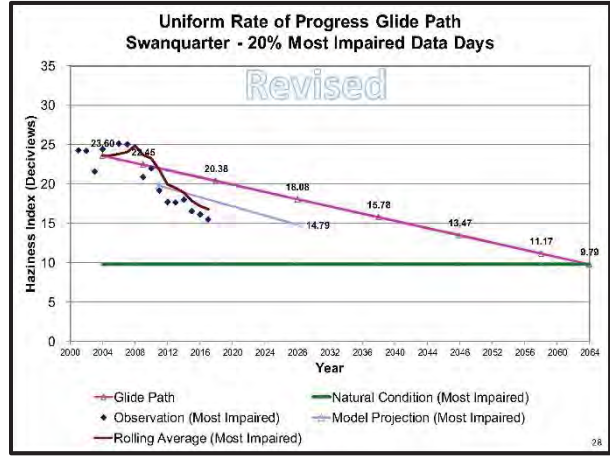
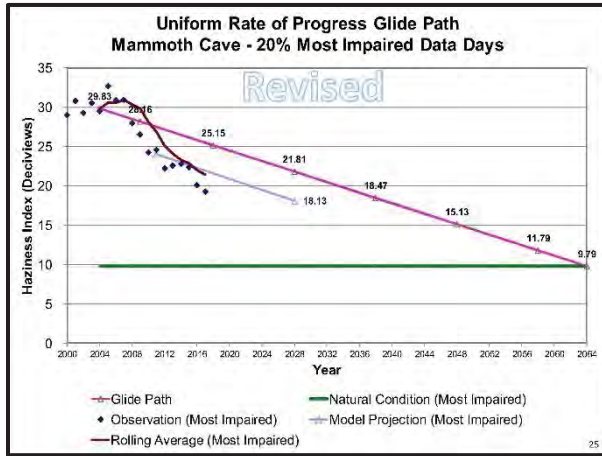
2028 EGU & NEGU SO2 Comparison

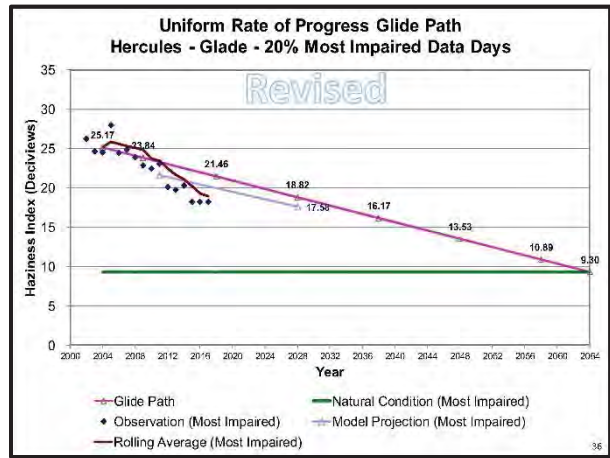
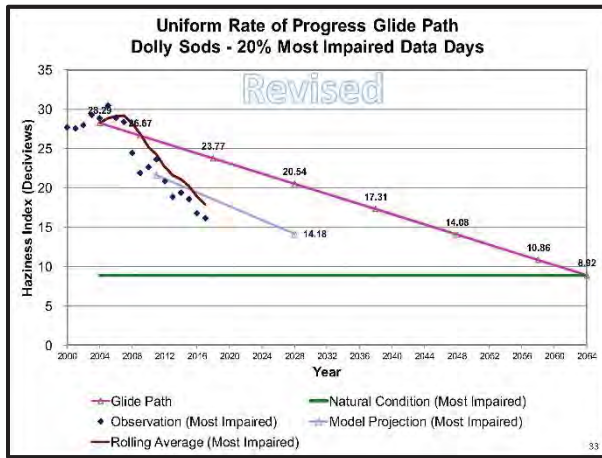
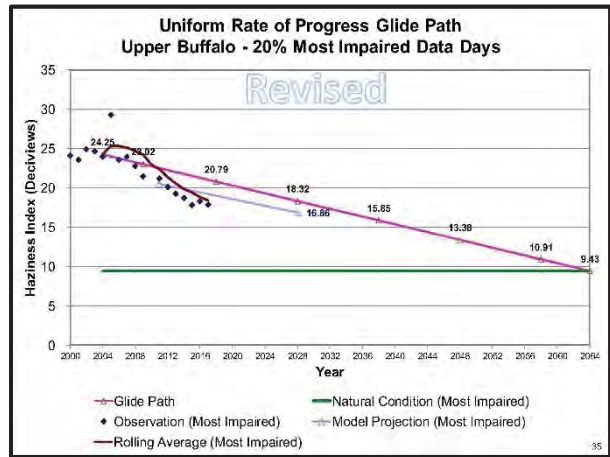
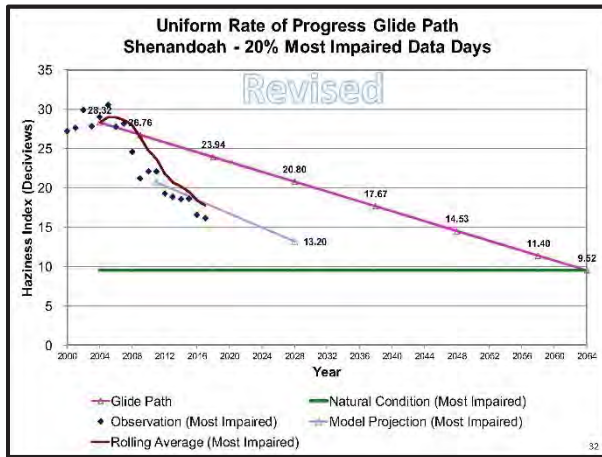
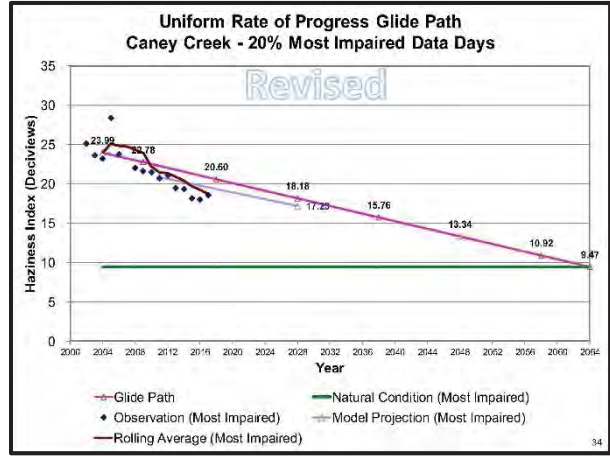
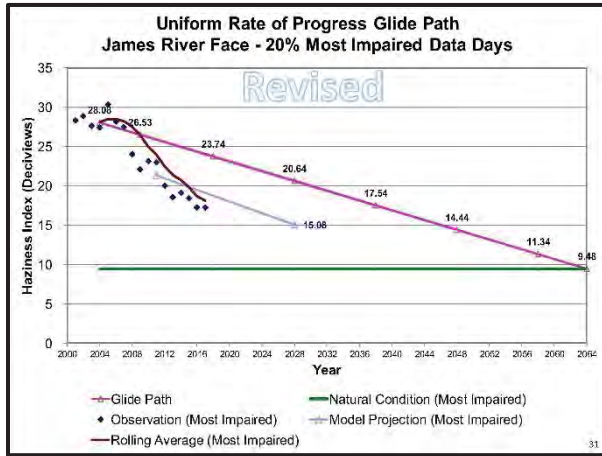
State	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
AL	87,111.28	59,056.98	-32.2%	15,480.96	8,365.96	-46.0%	71,630.32	50,691.02	-29.2%
FL	63,501.23	52,982.68	-16.6%	28,547.41	24,004.67	-15.9%	34,953.82	28,978.01	-17.1%
GA	37,065.83	36,166.09	-2.4%	18,473.28	17,573.54	-4.9%	18,592.55	18,592.55	0.0%
KY	75,140.26	65,636.83	-12.6%	56,262.06	49,585.95	-11.9%	18,878.20	16,050.88	-15.0%
MS	21,234.31	8,405.06	-60.4%	6,984.57	3,235.28	-53.7%	14,249.74	5,168.78	-63.7%
NC	35,232.88	24,347.18	-30.9%	19,734.80	9,571.47	-51.7%	15,498.09	14,775.71	-4.7%
SC	29,600.85	29,601.25	0.0%	10,693.79	10,695.34	0.0%	18,907.05	18,905.91	-0.0%
TN	23,447.58	21,057.17	-10.2%	12,134.30	10,030.04	-17.3%	11,313.28	11,027.13	-2.5%
VA	19,838.18	18,551.82	-6.5%	3,264.09	1,976.23	-39.5%	16,575.09	16,575.09	0.0%
WV	63,404.07	53,715.79	-15.3%	57,828.67	47,744.49	-17.4%	5,575.41	5,971.30	7.1%
VISTAS	455,577.46	369,520.35	-18.9%	229,383.91	182,783.96	-20.3%	226,193.55	186,736.39	-17.4%

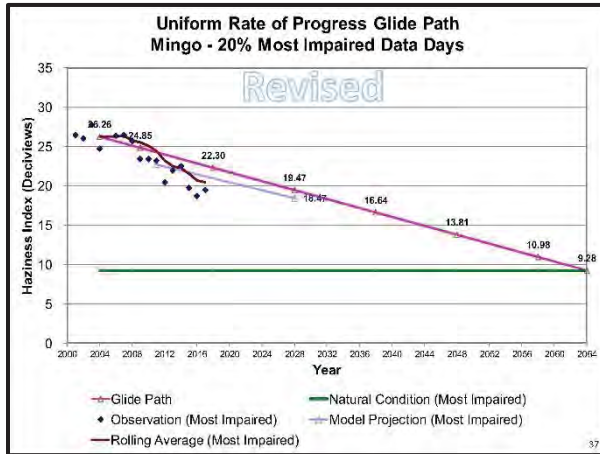
RPO	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
VISTAS	455,577.46	369,520.35	-18.9%	229,383.91	182,783.96	-20.3%	226,193.55	186,736.39	-17.4%
CENSARA	1,012,946.59	521,221.29	-48.7%	773,635.13	382,003.54	-50.6%	239,311.46	239,320.75	0.0%
LADCD	660,186.42	498,171.62	-24.5%	444,506.99	282,492.18	-36.4%	215,679.44	215,679.44	0.0%
MANE VU	270,810.83	149,439.76	-44.8%	203,661.43	95,074.20	-53.3%	67,149.39	54,365.55	-19.0%
WRAP	182,121.89	135,483.18	-25.6%	136,955.17	90,316.46	-34.1%	45,166.72	45,166.73	0.0%
TOTAL	2,581,643.20	1,773,936.20	-31.3%	1,788,132.63	1,032,667.35	-42.2%	793,510.56	741,268.85	-6.6%

2028 Model Projections

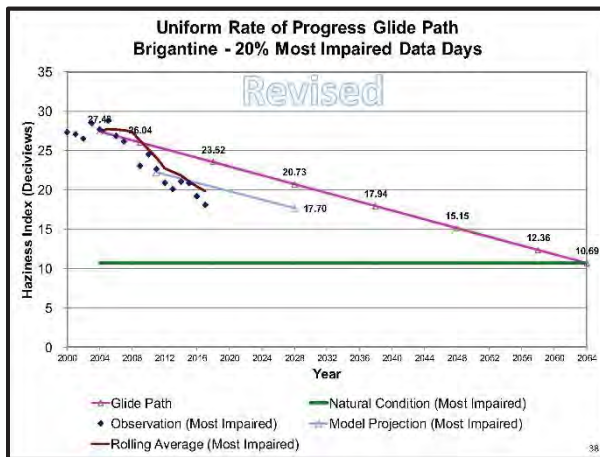








- ### PSAT Source Apportionment Modeling
- PSAT = Particulate Matter Source Apportionment Technology
 - Quantifies visibility impacts from individual point sources, source sectors, and geographic regions
 - NOx and SO₂ tagging
 - Used for further evaluation of AOI results
 - Refines information on contributions to visibility impairment
 - Can be used to adjust future year visibility projections to account for additional emission controls
 - VISTAS contract with ERG allows for up to 250 tags



- ### PSAT SO₂ and NOx Tags (209)
- Round 1 (122 tags)**
- Total SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
 - Total NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
 - EGU point SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
 - EGU point NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
 - SO₂ tags for individual VISTAS facilities = 50 tags
 - NOx tags for individual VISTAS facilities = 20 tags
- Round 2 (87 tags)**
- Non-EGU point SO₂ for 10 individual VISTAS states + 3 RPOs = 13 tags
 - Non-EGU point NOx for 10 individual VISTAS states + 3 RPOs = 13 tags
 - SO₂ and NOx for N/S/W/E boundaries = 8 tags
 - SO₂ tags for individual VISTAS facilities = 10 tags
 - NOx tags for individual VISTAS facilities = 16 tags
 - SO₂ tags for individual non-VISTAS facilities = 17 tags
 - NOx tags for individual non-VISTAS facilities = 10 tags

Adjusted 2028 PSAT Stacked Bar Charts

- ### Revised State/RPO PSAT Results
- Revised EGU Sulfate PSAT Results
 = Original EGU Sulfate PSAT Results * SO₂ EGU Ratio

$$\text{where, SO}_2 \text{ EGU Ratio} = \frac{(\text{Revised EGU SO}_2 \text{ emissions})}{(\text{Original EGU SO}_2 \text{ emissions})}$$
 - Revised NEGU Sulfate PSAT Results
 = Original NEGU Sulfate PSAT Results * SO₂ NEGU Ratio

$$\text{where, SO}_2 \text{ NEGU Ratio} = \frac{(\text{Revised NEGU SO}_2 \text{ emissions})}{(\text{Original NEGU SO}_2 \text{ emissions})}$$

Revised State/RPO PSAT Results

• Revised EGU Nitrate PSAT Results

= Original EGU Nitrate PSAT Results * NOx EGU Ratio

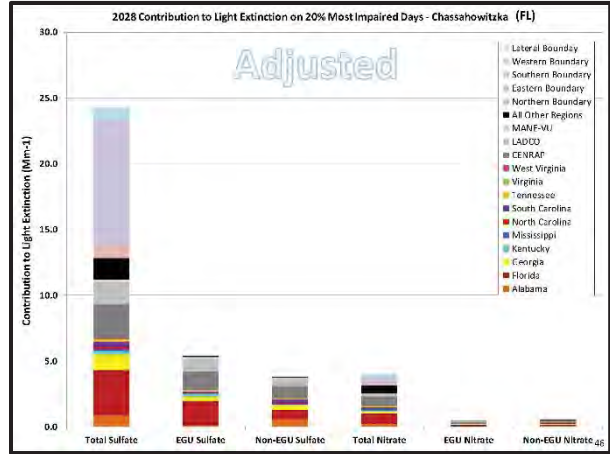
$$\text{where, NOx EGU Ratio} = \frac{(\text{Revised EGU NOx emissions})}{(\text{Original EGU NOx emissions})}$$

• Revised NEGU Nitrate PSAT Results

= Original NEGU Nitrate PSAT Results * NOx NEGU Ratio

$$\text{where, NOx NEGU Ratio} = \frac{(\text{Revised NEGU NOx emissions})}{(\text{Original NEGU NOx emissions})}$$

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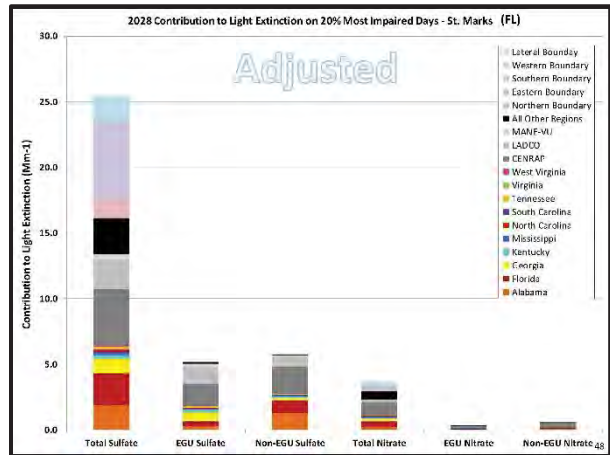
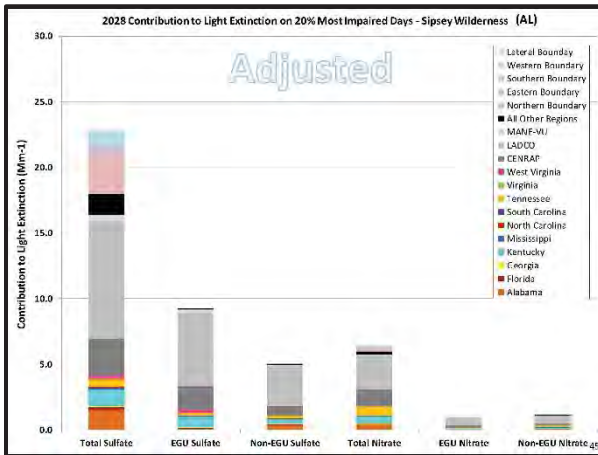
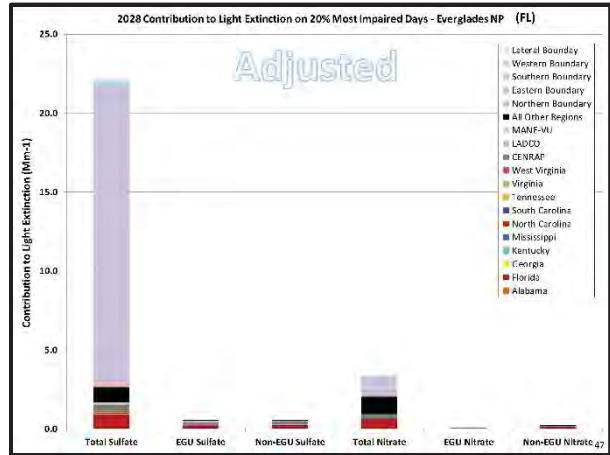
PSAT Adjustment Ratios

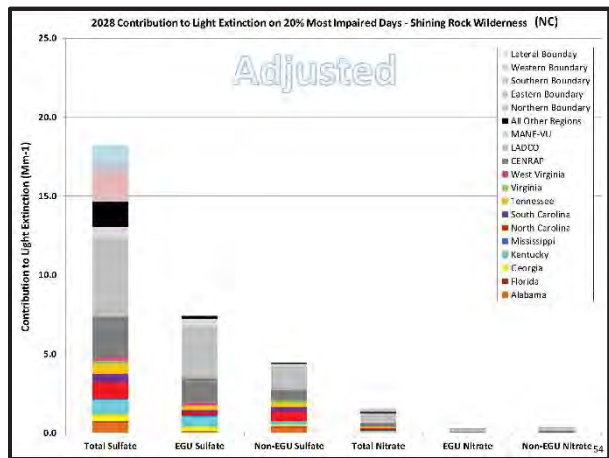
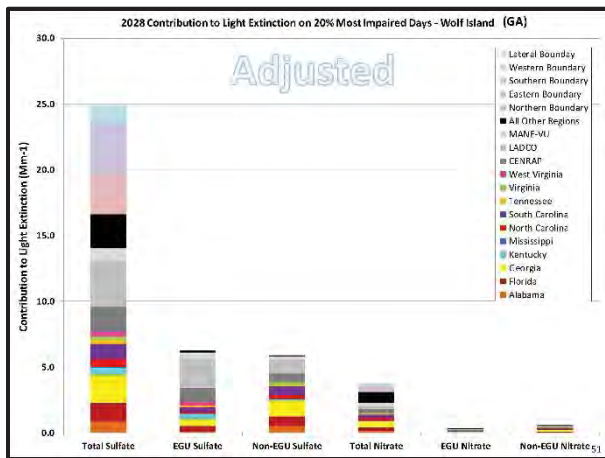
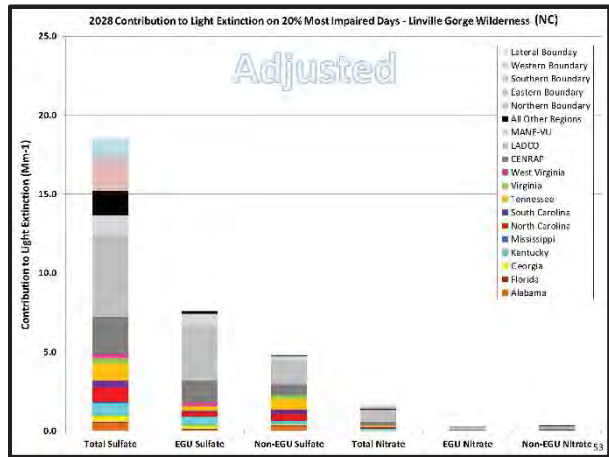
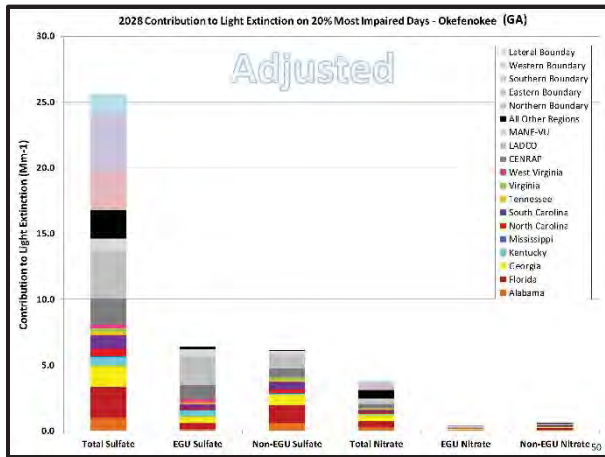
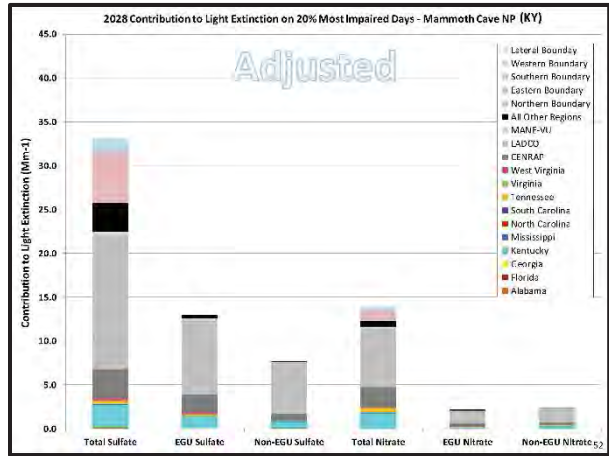
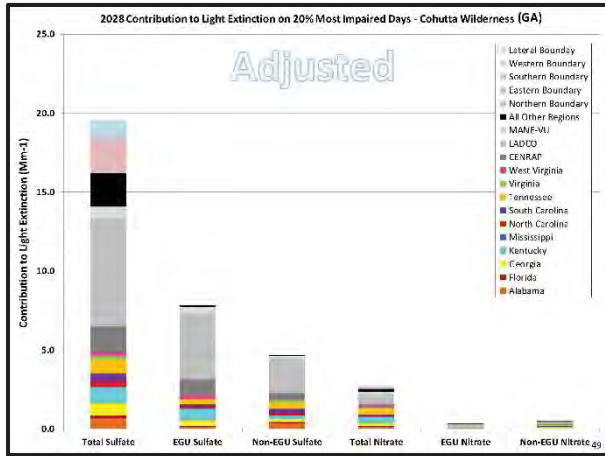
State/RPO	SO ₂ EGU Ratio	SO ₂ NEGU Ratio	NOx EGU Ratio	NOx NEGU Ratio
AL	0.540	0.708	0.744	0.950
FL	0.841	0.829	0.954	1.077
GA	0.951	1.000	0.949	1.000
KY	0.881	0.850	0.889	0.999
MS	0.463	0.363	0.668	1.023
NC	0.485	0.953	0.753	0.998
SC	1.000	1.000	1.018	0.997
TN	0.828	0.973	0.775	0.982
VA	0.605	1.000	0.872	1.000
WV	0.826	1.071	1.067	1.000
CENSARA	0.494	1.000	0.706	1.000
LADCO	0.636	1.000	0.764	1.000
MANE-VU	0.467	0.810	0.794	1.000

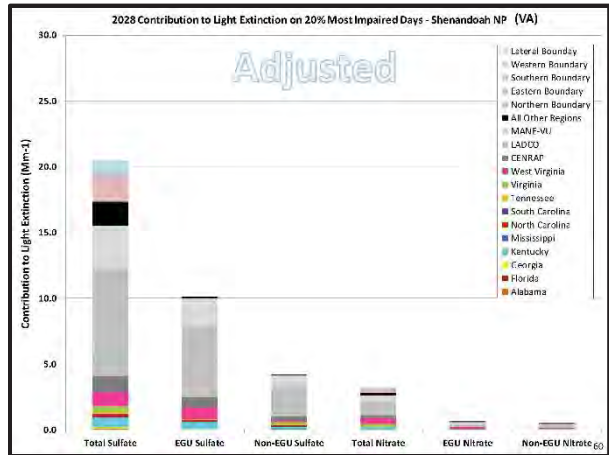
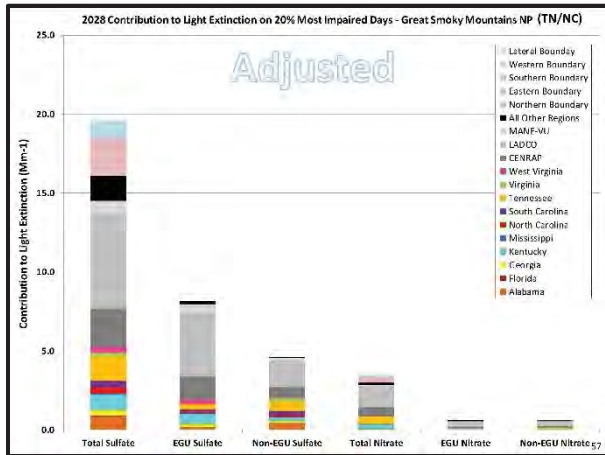
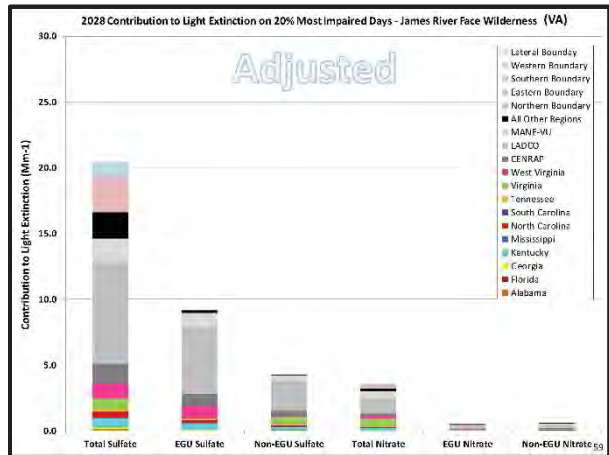
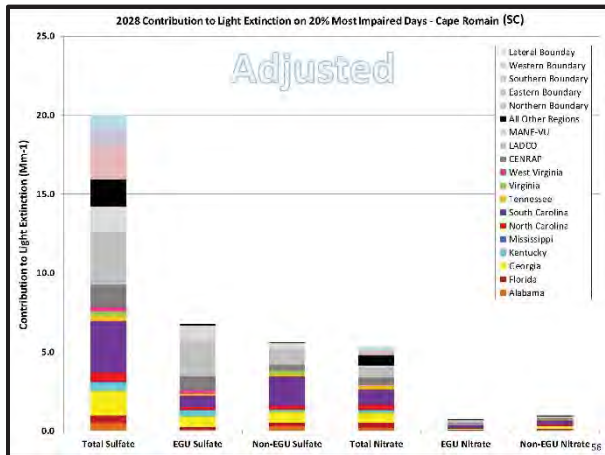
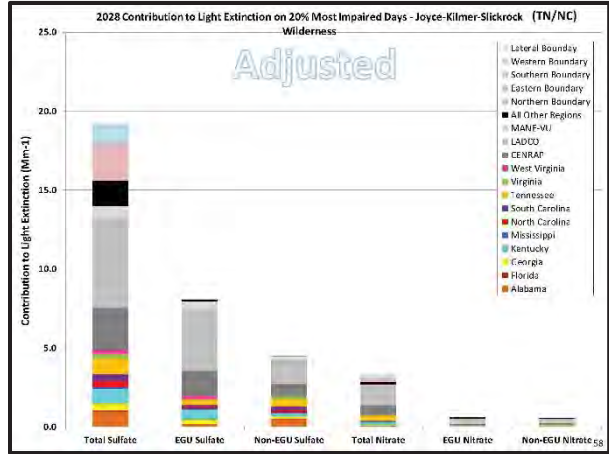
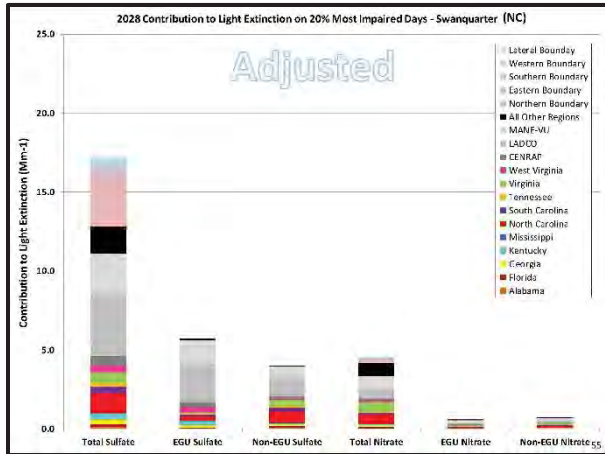
For detailed calculations, see [Handout - Roadmap](#) located at:

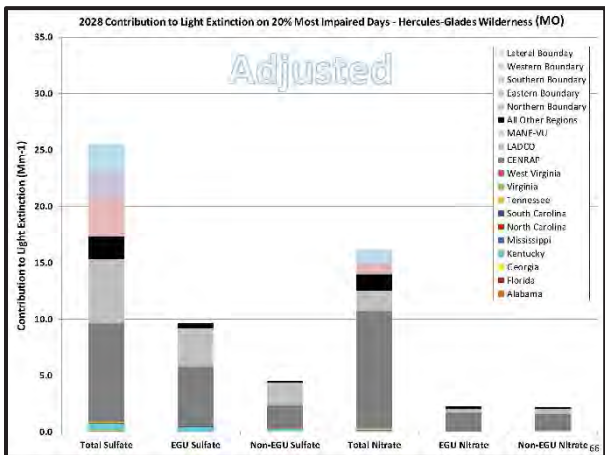
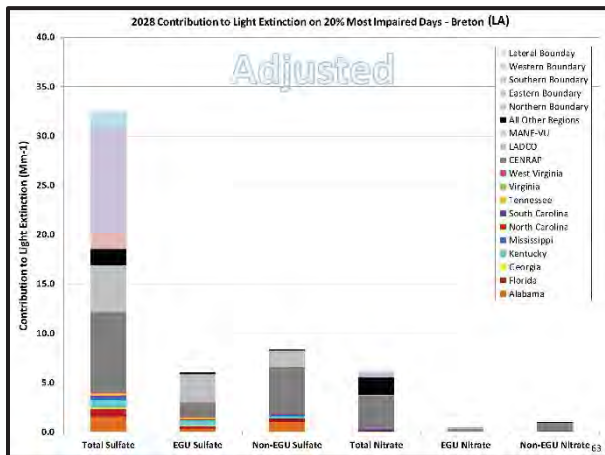
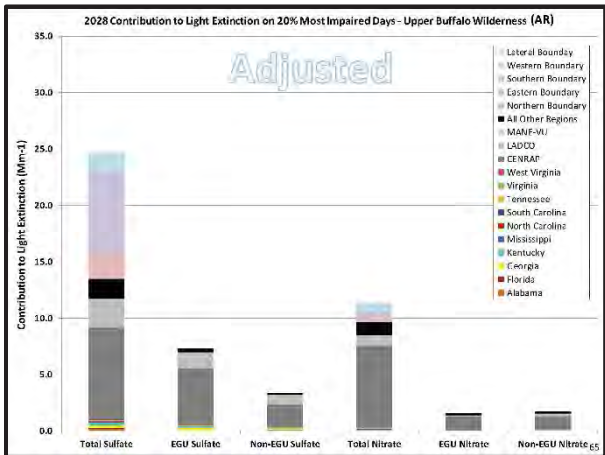
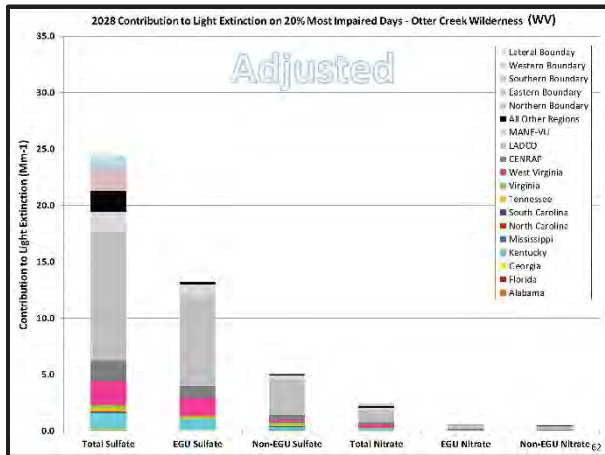
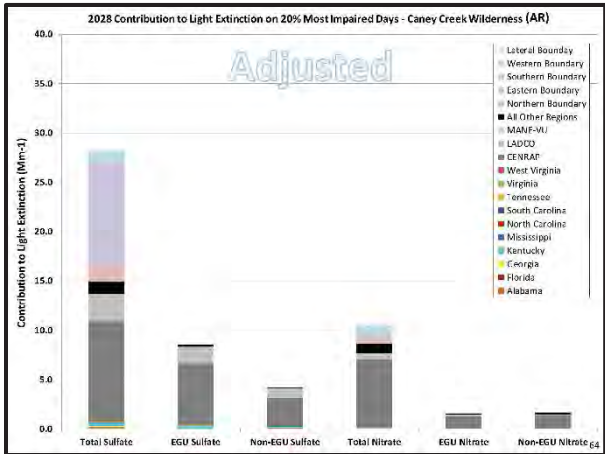
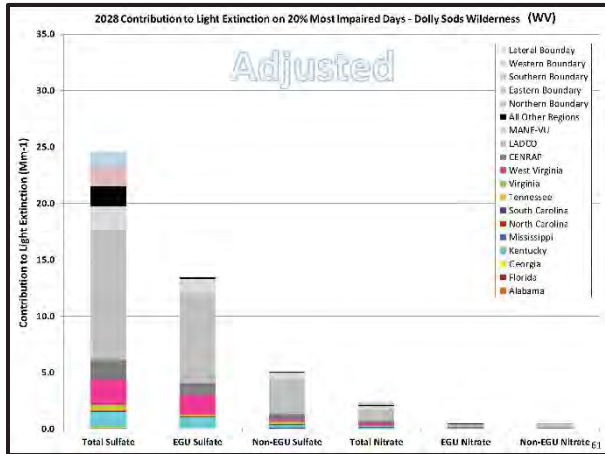
<https://www.metro4-sesarm.org/content/vistas-regional-haze-program>

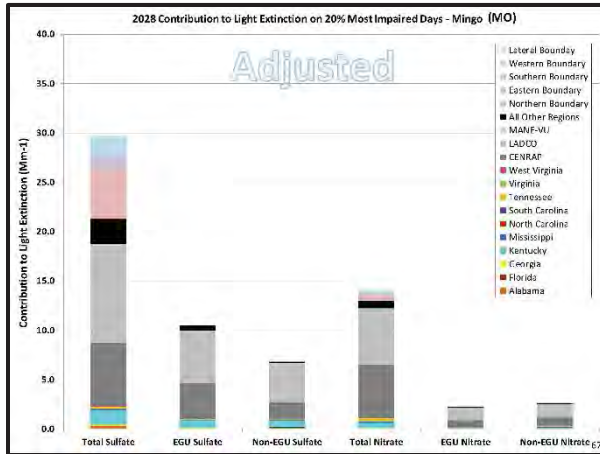
44





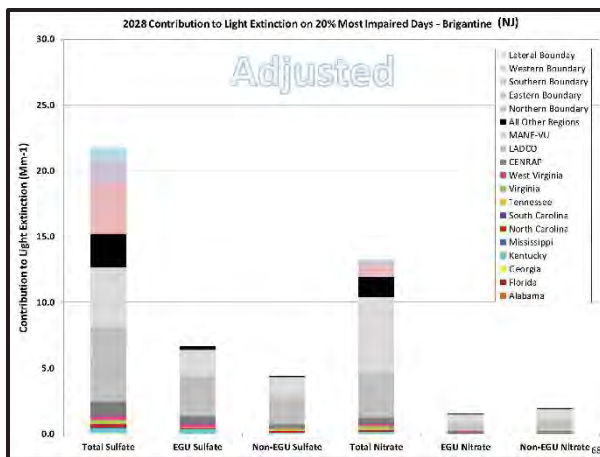






Reasonable Progress Screening Approach

1. The VISTAS reasonable progress work started with AOI screening ($Q/d * EWRT$) to rank facilities based on their sulfate and nitrate contributions at each Class I area.
2. These rankings were used to identify 87 individual facilities for PSAT tagging. PSAT tagging was used to determine the sulfate and nitrate contributions from each facility at each Class I area in the VISTAS_12 domain.
3. Each individual VISTAS state will apply a PSAT contribution threshold based on the facility sulfate and facility nitrate impacts (separately, not combined) divided by the total impact of sulfate + nitrate from all point sources to determine which sources may need to be considered for a four-factor analysis.
 - If sulfate contribution $\geq 1.00\%$ \rightarrow SO₂ Four-Factor Analysis
 - If nitrate contribution $\geq 1.00\%$ \rightarrow NO_x Four-Factor Analysis



Why 1% Threshold?

- In the Round 1 Regional Haze SIPs, many VISTAS states used the AOI approach and a 1% threshold on a Unit basis.
 - Round 2 uses the AOI/PSAT approach and a $\geq 1.00\%$ PSAT threshold based on a Facility basis.
 - This will pull in more facilities compared to a Unit basis.
 - Round 2 uses 2028 emissions (lower than 2018)
 - This will pull in facilities with smaller visibility impacts (in Mm^{-1}) compared to Round 1.
- This approach results in a reasonable number of sources that can be evaluated with limited state resources and focuses on the sources with the largest impacts.

Reasonable Progress Screening Analysis

Area of Influence (AOI) Analysis

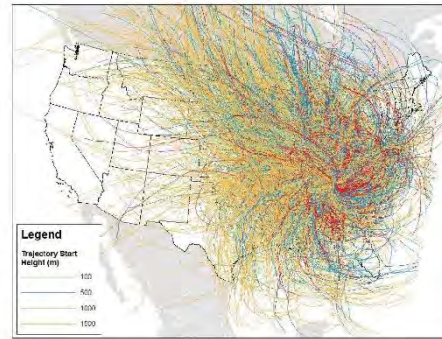
- Evaluates emissions (Q), distance to Class I area (d), and extinction weighted residence time (EWRT) in model grid cells (point) or counties (source categories)
- Formula: $(Q/d)*EWRT$
- Establishes each county's and each facility's contribution to light extinction at each Class I area on the 20% most impaired days
- Can use contributions to rank and screen facilities for the four-factor analysis

HYSPLIT Trajectories

- Trajectories were run using NAM-12 meteorology for the 20% most impaired days in 2011-2016 at 44 Class I areas.
 - Trajectories were run with starting heights of 100, 500, 1,000, and 1,500 meters.
 - Trajectories were run 72 hours backwards in time for each height at each location.
 - Trajectories were run with start times of 12AM (midnight of the start of the day), 6AM, 12PM, 6PM, and 12AM (midnight at the end of the day) local time.
- **44 Class I areas x 6 years x 24 days/year x 4 heights x 5 start times = 126,720 trajectories**

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All Trajectories at GRSM



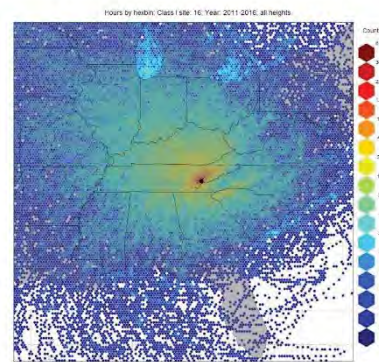
76

Class I Areas Analyzed



74

Residence Time for GRSM



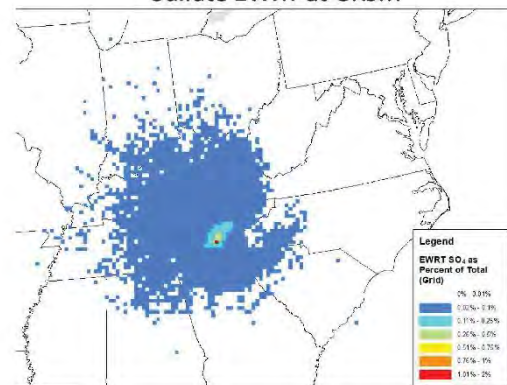
77

100 Meter Trajectories at GRSM



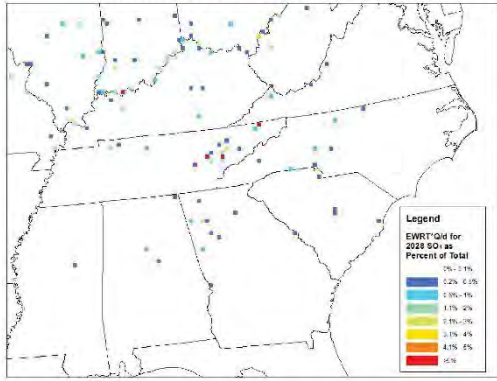
75

Sulfate EWRT at GRSM



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Sulfate Q/d*EWRT at GRSM



AOI Point Contributions for Wolf Island

State	FACILITY NAME	DISTANCE (km)	NOx_2028 (tons/year)	SO2_2028 (tons/year)	NOx Contribution	SO2 Contribution
GA	Brunswick Cellulose Inc	27.9	1,554.5	294.2	2.34%	1.54%
FL	ROCK TENN CP, LLC	74.9	2,316.8	2,636.7	0.95%	8.56%
GA	International Paper - Savannah	85.9	1,560.7	3,845.4	0.24%	7.53%
FL	JEA	105.1	651.8	2,091.5	0.06%	7.43%
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	109.9	351.5	1,860.2	0.03%	2.63%
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC.	373.8	112.4	2,743.0	0.01%	1.97%
SC	ALLUMAX OF SOUTH CAROLINA	225.0	109.1	5,751.7	0.00%	1.84%
FL	RAYONIER PERFORMANCE FIBERS LLC	77.4	2,327.1	362.0	0.38%	1.79%
FL	SYNTHETIC FIBER COOPERATIVE, INC.	381.4	917.8	3,713.4	0.02%	1.77%
DH	General James M. Gavin Power Plant (0627010099)	845.5	8,172.5	41,596.8	0.07%	1.71%
SC	SAVITTE COOPER CROSS GENERATING STATION	251.0	3,273.5	4,281.2	0.05%	1.59%
GA	Southern States Phosphate & Fertilizer	84.1	1.0	597.1	0.00%	1.55%
FL	ICI CHEMICAL HOLDINGS, INC.	118.5	37.7	898.9	0.00%	1.22%
FL	DUKE ENERGY FLORIDA, INC. (DEFL)	296.6	2,489.8	5,306.4	0.04%	1.19%
GA	Ga Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.03%	1.08%
GA	Savannah Sugar Refinery	89.9	521.6	582.0	0.08%	1.06%
SC	INTERNATIONAL PAPER EASTOVET	288.7	1,780.2	3,213.9	0.05%	0.95%
GA	Ga Power Company - Plant McVenus	77.1	72.2	90.1	0.14%	0.93%
SC	KAPSTONE CHARLESTON PAPER LLC	213.6	2,355.8	1,863.7	0.09%	0.89%
VA	GENCO NEWGEM CO/FERTILIZER/VA	1,048.6	6,578.5	56,939.2	0.01%	0.84%

AOI Point Contributions for Cohutta

State	FACILITY NAME	DISTANCE (km)	NOx_2028 (tons/year)	SO2_2028 (tons/year)	NOx Contribution	SO2 Contribution
GA	Ga Power Company - Plant Bowen	78.0	6,643.3	10,453.4	1.15%	19.53%
IN	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	430.1	8,805.8	39,536.3	0.13%	4.83%
GA	International Paper - Rome	87.4	1,773.4	1,791.0	0.18%	4.56%
IN	Illinois	487.1	12,280.3	23,117.2	0.16%	2.31%
IN	INDIANAPOLIS POWER & LIGHT - HETERSBURG	477.0	10,665.3	18,141.9	0.16%	2.18%
KY	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	7,037.3	19,304.7	0.07%	2.18%
TN	TRU & NORTON FOSSE PLANT	124.0	1,857.4	1,886.1	0.13%	2.17%
DH	General James M. Gavin Power Plant (0627010099)	512.0	8,122.5	41,595.8	0.07%	1.71%
TN	IVA CUMBERLAND - CIVIL PLANT	327.0	4,916.5	8,437.3	0.09%	1.48%
KY	Blairstown Electric Corp - Wilson Station	366.0	1,151.9	6,934.7	0.01%	1.03%
DH	Duke Energy Delta, Wm. II - Flomem Station (141300154)	454.6	7,150.0	22,133.9	0.08%	1.05%
GA	Ga Power Company - Plant Wansley	156.8	2,052.5	4,856.0	0.04%	1.05%
KY	CV Lumbert Co - Lumbert Station	441.5	7,959.9	10,169.3	0.08%	1.05%
IL	Joppa Steam	486.9	4,706.5	20,309.3	0.07%	1.04%
GA	Mohawk Industries Inc.	32.0	66.5	77.1	0.07%	1.02%
TN	EASTMAN CHEMICAL COMPANY	289.8	6,900.3	6,420.2	0.09%	0.99%
MS	AMEREN MISSOURI LARABEE P-PLANT	195.4	9,885.5	41,740.3	0.01%	0.95%
IL	Nescon	564.0	1,934.0	10,631.6	0.01%	0.91%
GA	Chemical Products Corporation	71.9	19.5	513.8	0.00%	0.89%
IN	INDIANA KENTUCKY ELECTRIC CO/GENERATION	444.4	6,188.5	5,038.1	0.04%	0.78%

Georgia Tagging for PSAT

- Sources in Georgia (≥ 2% threshold)
 - Ga Power Company – Plant Bowen
 - International Paper – Rome (aka TEMPLE INLAND)
 - International Paper – Savannah
 - Brunswick Cellulose Inc
 - Georgia-Pacific Consumer Products LP (Savannah River Mill)
- Sources outside Georgia (≥ 4% threshold)
 - INDIANA MICHIGAN POWER DBA AEP ROCKPORT (IN)
 - ROCK TENN CP, LLC (FL)
 - JEA (FL)

AOI Point Contributions for Okefenokee

State	FACILITY NAME	DISTANCE (km)	NOx_2028 (tons/year)	SO2_2028 (tons/year)	NOx Contribution	SO2 Contribution
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC.	71.5	112.4	2,743.0	0.03%	14.13%
FL	ROCK TENN CP, LLC	64.8	2,316.8	2,636.7	0.88%	11.87%
FL	JEA	61.6	651.8	2,091.5	0.18%	16.06%
FL	SYNTHETIC FIBER COOPERATIVE, INC.	121.4	917.8	3,713.4	0.07%	3.45%
FL	ICI CHEMICAL HOLDINGS, INC.	56.8	37.7	898.9	0.01%	3.25%
FL	RAYONIER PERFORMANCE FIBERS LLC	63.4	2,327.1	362.0	0.90%	2.82%
GA	International Paper - Savannah	178.5	1,560.7	3,845.4	0.08%	2.81%
FL	BUCKEYE OVERSEA LIMITED PARTNERS (IP)	153.8	1,830.7	1,520.4	0.17%	2.18%
FL	GENSSENZ, LLC	59.8	86.3	389.5	0.02%	1.86%
FL	DUKE ENERGY FLORIDA, INC. (DEFL)	205.0	2,489.8	5,306.4	0.06%	1.40%
AL	Sanders - acid Co.	384.6	121.7	7,951.1	0.00%	1.11%
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	197.2	351.5	1,860.2	0.01%	1.05%
GA	Ga Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.05%	1.07%
GA	Brunswick Cellulose Inc	78.9	1,554.5	294.2	0.34%	1.01%
SC	ALLUMAX OF SOUTH CAROLINA	322.7	108.1	3,751.7	0.00%	0.97%
GA	PCA Valdesota Mill	112.7	1,032.6	485.7	0.09%	0.83%
SC	SAVITTE COOPER CROSS GENERATING STATION	348.1	3,273.5	4,281.2	0.03%	0.85%
FL	CITY OF GAINESVILLE, FL	111.7	416.0	881.4	0.03%	0.79%
SC	KAPSTONE CHARLESTON PAPER LLC	314.7	2,355.8	1,863.7	0.06%	0.66%
GA	Ga Power Company - Plant Wansley	403.7	2,052.5	4,856.0	0.02%	0.95%

AOI Screening Summary

State	Threshold	Notes
AL	2%	Sulfate only
FL	5%	Sulfate or nitrate, plus Gulf Crist, Mosaic Bartow, Mosaic New Wales, and Mosaic Riverview
GA	2% - 4%	Sulfate or nitrate, 2% threshold for GA facilities, 4% threshold for facilities outside GA
KY	2%	Sulfate or nitrate
MS	2%	Sulfate or nitrate
NC	3%	Sulfate + nitrate
SC	2% - 5%	2% for sulfate, 5% for nitrate, plus Santee Cooper Winyah, International Paper Georgetown, and SCE&G Williams
TN	3%	Sulfate + nitrate, plus CEMEX
VA	2%	Sulfate + nitrate
WV	0.2%	Sulfate or nitrate

PSAT Source Apportionment Modeling

- Quantifies visibility impacts from individual point sources, source sectors, and geographic regions
- NOx and SO₂ tagging
- Used for further evaluation of AOI results
- Refines information on contributions to visibility impairment
- Can be used to adjust future year visibility projections to account for additional emission controls
- VISTAS contract with ERG allows for up to 250 tags

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Facility Tags (KY, MS, NC, SC, TN, VA)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 (TPY)	NOx (TPY)
KY	VISTAS	2185-191611	Box Tower Electric Corp - Whitten Station	3,594.18	1,151.23
KY	VISTAS	2189-215243	Century Aluminum of KY LLC	5,044.15	1,272.08
KY	VISTAS	2177-115271	Farrington Valley Authority - Paraker Road Plant	3,013.01	3,114.52
KY	VISTAS	21145-203211	Farrington Valley Authority - Duval - Highway Road Plant	18,024.77	7,076.14
MS	VISTAS	2807-018411	Chemura Products Company, Petrographic Refinery	781.24	1,544.12
MS	VISTAS	2805-251011	Mississippi Power Company - Plant Victor - Diesel	231.52	3,825.22
NC	VISTAS	37037-292051	Bois Ridge Paper Products - Canton Mill	1,127.07	2,982.37
NC	VISTAS	37187-304931	Central Power Company, LLC	597.85	1,785.08
NC	VISTAS	37835-837011	Duke Energy Carolinas, LLC - Marshall Steam Station	4,139.21	7,511.21
NC	VISTAS	37835-847311	PCS Phosphate Company, Inc. - Aurora	4,645.94	195.18
NC	VISTAS	37823-851301	SCS Carbon, LLC	261.94	214.69
SC	VISTAS	44618-404011	WILMINGTON STEEL CORP. USA	9,031.84	109.08
SC	VISTAS	45043-658811	INTERNATIONAL PAPERS CORPORATION - W.L.	2,491.34	2,691.24
SC	VISTAS	45019-462711	KEPPTON CHEMICALS - WAST - 1E	1,869.24	2,355.33
SC	VISTAS	45019-473011	KEPPTON CHEMICALS - WAST - 1B	4,281.17	3,771.47
SC	VISTAS	45043-656211	KEPPTON CHEMICALS - WAST - 1C	2,246.43	1,772.73
SC	VISTAS	45015-310271	SCAGS WILLIAMS	192.43	892.23
TN	VISTAS	47039-497511	Cemex - Knoxville Plant	221.47	711.93
TN	VISTAS	47153-292811	EAST VAN CHEMICAL COMPANY	8,400.45	6,900.13
TN	VISTAS	47105-412211	TAI & VLS - 2008	472.18	983.23
TN	VISTAS	47039-849011	THE BULL RUN Fossil PLANT	823.54	394.18
TN	VISTAS	47153-497511	THE CUMBERLAND Fossil PLANT	8,427.33	4,916.23
TN	VISTAS	47145-497511	THE WINGSTON Fossil PLANT	1,866.23	1,887.18
VA	VISTAS	51127-403811	Woolf Creek Company L.P.	5,090.94	2,601.1
VA	VISTAS	51140-474871	Woolf Creek Fertilizer Refinery	3,115.11	1,945.29
VA	VISTAS	51174-503611	Woolf Creek Cement Company	2,285.11	1,972.23

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PSAT SO₂ and NOx Tags (209)

Round 1 (122 tags)

- Total SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- Total NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point NOx tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ tags for individual VISTAS facilities = 50 tags
- NOx tags for individual VISTAS facilities = 20 tags

Round 2 (87 tags)

- Non-EGU point SO₂ for 10 individual VISTAS states + 3 RPOs = 13 tags
- Non-EGU point NOx for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ and NOx for N/S/W/E boundaries = 8 tags
- SO₂ tags for individual VISTAS facilities = 10 tags
- NOx tags for individual VISTAS facilities = 16 tags
- SO₂ tags for individual non-VISTAS facilities = 17 tags
- NOx tags for individual non-VISTAS facilities = 10 tags

→ 87 Total Facility Tags (both SO₂ and NOx)

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Facility Tags (WV, AR, MO, MD, PA, IL, IN, OH)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 (TPY)	NOx (TPY)
WV	VISTAS	34615-617111	ALLEGHENY ENERGY SUPPLY CO. - LITTLETON	10,082.68	11,820.68
WV	VISTAS	34640-484611	AVONLEY STEELWORKS POWER PLANT - FLOWN PL	2,110.23	2,245.18
WV	VISTAS	34640-484611	AVONLEY STEELWORKS POWER PLANT - FLOWN PLANT	10,084.72	4,870.18
WV	VISTAS	44810-247311	Donnanon Biochemicals, Inc. - MCLINTOSH POWER STATION	2,172.54	1,984.14
WV	VISTAS	44811-390011	FOURTOPS - CENTURY RUN CO. 2	0.12	511.07
WV	VISTAS	54633-278071	PILES CREEK GC 1948	0.15	643.23
WV	VISTAS	54633-278071	PILES CREEK GC 1959	0.11	513.29
WV	VISTAS	54633-278071	PILES CREEK GC 1960	16.93	140.08
WV	VISTAS	54633-278071	CONVIEW POWER	2,111.75	1,556.57
WV	VISTAS	54633-278071	WHEELING PLANT	5,272.44	2,719.58
WV	VISTAS	54633-278071	MONONGAHELA POWER CO. - FOST N. WASTIN POWER	8,881.57	15,749.22
WV	VISTAS	54633-278071	MONONGAHELA POWER CO. - FOST N. WASTIN POWER	16,811.45	5,487.27
WV	VISTAS	54633-278071	MONONGAHELA POWER CO. - FOST N. WASTIN POWER	406.28	655.38
AR	CFRPO	00530-106521	BERNARD POWER PLANT - WINDY HOLLOW PLANT	22,092.48	24,133.11
AR	CFRPO	29143-416181	NEW MADRID POWER PLANT - MADRID	16,293.71	4,941.18
MD	VAWE-VI	24001-776311	Sub - Power Company	72,054.42	3,607.08
PA	VAWE-VI	42005-306211	GENCO WILMINGTON CO. - WILMINGTON STA	61,238.27	5,724.17
PA	VAWE-VI	42005-306211	HOMER CITY GEN CO. - CENTER TWP	13,667.20	5,215.06
PA	VAWE-VI	42005-306211	IRS WHO - SALE GEN/SEWARD GEN STA	8,880.21	2,754.04
IL	Midwest RPO	17127-298011	Joplin Steam	20,562.28	4,705.23
IN	Midwest RPO	18135-348111	Nickel Wire Rod Power - 70 Age Div of Al	3,071.48	21,156.58
IN	Midwest RPO	18151-726111	Johnson	25,417.23	22,820.34
IN	Midwest RPO	18147-807711	MUSKOGEE POWER PLANT - DUBA STATION	20,336.27	3,808.77
IN	Midwest RPO	18135-348111	Nickel Wire Rod Power - 70 Age Div of Al	18,481.48	19,664.27
IN	Midwest RPO	18135-348111	Speeder - 8 Brown South - Indiana Gas & Ele	5,444.74	1,618.14
OH	Midwest RPO	19831-311571	Central Power Plant (Excella Fueling Company) (OH) (500002)	8,460.74	2,463.71
OH	Midwest RPO	19831-307811	Central Power Plant (OH) (500000)	0.26613	9,467.27
OH	Midwest RPO	19835-018411	Duke - Mt. Vernon, Wm. - 17 - Aurora Station (143300114)	72,113.64	7,142.49
OH	Midwest RPO	19835-018411	General James V. Gavin Power Plant (OH) (27000005)	14,585.81	8,122.52
OH	Midwest RPO	19835-798311	Ohio Valley Electric Corp. - Kuyler Creek Station (OH) (27000005)	3,400.14	5,143.84

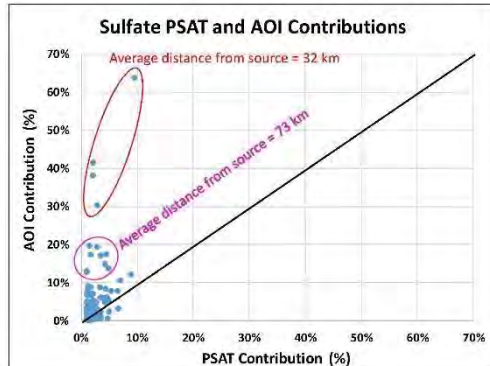
88

Facility Tags (AL, FL, GA)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 (TPY)	NOx (TPY)
AL	VISTAS	01077-240811	Alco Metall Chemicals, Inc.	8,339.72	291.21
AL	VISTAS	01077-240811	Alco Metall Chemicals, Inc.	8,339.72	2,719.29
AL	VISTAS	01138-107011	Johnson and Johnson Chemicals, LLC	3,106.16	474.43
AL	VISTAS	01077-240811	EMERALD CO. COMPANY, INC.	2,102.17	1,276.57
AL	VISTAS	01053-848011	Paragon Processing Company, LLC	18,924.78	3,695.37
AL	VISTAS	01053-848011	Paragon Operating Company, LLC	6,589.20	1,192.64
AL	VISTAS	01103-100001	Nucor Steel Decatur, LLC	470.23	331.21
AL	VISTAS	01139-805711	Smelter Lead Co.	7,951.02	121.21
AL	VISTAS	01053-848011	Union Carbide California - Chatsworth Gas Plant	2,973.18	602.21
FL	VISTAS	12123-752411	BUNDEE FLORIDA, LIMITED PARTNERSHIP	1,520.44	1,830.71
FL	VISTAS	12086-900111	CEMEX CONSTRUCTION MATERIALS FL, LLC	29.53	910.39
FL	VISTAS	13814-648011	DUKE ENERGY FLORIDA, INC. (DUKE)	3,369.41	2,469.82
FL	VISTAS	14888-960011	FLORIDA POWER & LIGHT (FPL)	33.05	170.81
FL	VISTAS	14838-752711	GOULD POWER - GOLF	2,615.25	2,928.34
FL	VISTAS	12086-900111	LOUISIANA CITY (LUM) (LUM)	0.00	87.00
FL	VISTAS	12011-648011	PA	2,294.48	661.74
FL	VISTAS	12105-717711	MOSCAIC FERTILIZER, LLC	7,860.57	310.42
FL	VISTAS	12057-716411	MOSCAIC FERTILIZER, LLC	3,034.09	159.71
FL	VISTAS	12105-818011	MOSCAIC FERTILIZER, LLC	4,425.55	111.02
FL	VISTAS	12089-845511	PATYONER PERFORMANCE - 18885, LLC	561.07	2,327.18
FL	VISTAS	14888-955711	ROCKTENN CP, LLC	1,606.72	2,316.77
FL	VISTAS	14888-955711	ROCKTENN CP, LLC	2,592.88	3,401.89
FL	VISTAS	12018-207111	THE AMERICAN CITY FUEL OIL (MARTIN) STA	2.86	191.49
FL	VISTAS	14888-955711	THE AMERICAN CITY FUEL OIL (MARTIN) STA	0.0831	2,645.03
FL	VISTAS	12086-900111	UNION CARBIDE	3.48	878.21
GA	VISTAS	12147-728711	ALLIANT ENERGY CORP. (THE TRIVALEN) (CHEMICALS), INC.	3,187.77	112.41
GA	VISTAS	13137-772101	Pharosack & Collaborative	284.50	1,354.21
GA	VISTAS	12015-781301	Sub - Power Company - Plant Jackson	10,453.41	6,643.37
GA	VISTAS	13139-278311	Savannah Electric Company / Tricorpus LP (Savannah River VIII)	1,860.18	354.54
GA	VISTAS	13013-278311	Tricorpus LP - Savannah	5,965.35	1,560.53
GA	VISTAS	13115-539311	TECHNICAL MILANO	1,791.00	1,773.83

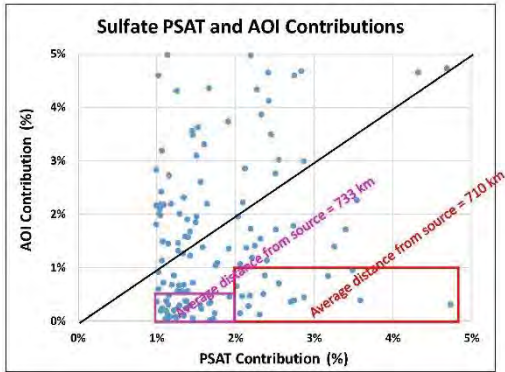
87

Sulfate AOI vs. Sulfate PSAT (≥ 1.00%)



80

Sulfate AOI vs. Sulfate PSAT ($\geq 1.00\%$)



91

PSAT Reasonable Progress Screening

- Due to the amount of resources already invested in the AOI and PSAT analysis, **VISTAS does not plan to redo the original AOI or PSAT analyses.**
- In cases where emissions decreased or increased at individual facilities being considered for a four-factor analysis, the facility contributions will be adjusted to be consistent with the lower/higher facility emissions before comparing to the PSAT contribution threshold.
- **EPA verbally stated this should be okay 2/6/2020.**

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AOI vs. PSAT Summary

- AOI tends to overestimate impacts for facilities near the Class I area.
- AOI tends to underestimate impacts for facilities far away from the Class I area.
 - AOI uses 72-hour back trajectories, sulfate can last for weeks and travel hundreds to thousands of km.
- PSAT is the most reliable modeling tool for tracking facility contributions to visibility impairment at Class I areas.

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Original Facility PSAT Contributions

- **Original Facility Sulfate PSAT Contributions (%)**

$$= \frac{\text{Facility Sulfate PSAT Contributions (Mm}^{-1}\text{)}}{\text{Total Sulfate + Nitrate Point Contribution (Mm}^{-1}\text{)}}$$
- **Original Facility Nitrate PSAT Contributions (%)**

$$= \frac{\text{Facility Nitrate PSAT Contributions (Mm}^{-1}\text{)}}{\text{Total Sulfate + Nitrate Point Contribution (Mm}^{-1}\text{)}}$$

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PSAT Reasonable Progress Screening

- The **facility sulfate and nitrate contributions (Mm⁻¹)** from the individual 87 tagged facilities should not change unless a facility has reduced or increased SO₂ and/or NO_x emissions.
- The updated 2028 CAMx modeling will impact the **total sulfate and total nitrate contribution** from point sources at each Class I area since the SO₂ and NO_x emissions have decreased.
 - The facility percent contribution will increase even if the facility emissions do not change since the denominator will decrease

Facility Sulfate Contribution (%) =

$$= \frac{\text{Facility Sulfate Impact (Mm}^{-1}\text{)} \uparrow \downarrow}{\text{Total Impact of All Point Sources of Sulfate + Nitrate (Mm}^{-1}\text{)} \downarrow}$$

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Revised Facility Sulfate PSAT Results

- **Revised Facility Sulfate PSAT Results**

$$= \text{Original Facility Sulfate PSAT Results} \times \text{SO}_2 \text{ Ratio}_{\text{Facility}} \times \text{Ratio}_{\text{Class I Area}}$$

$$\text{where, } \text{SO}_2 \text{ Ratio}_{\text{Facility}} = \frac{\text{(Revised facility SO}_2 \text{ emissions)}}{\text{(Original facility SO}_2 \text{ emissions)}}$$

$$\text{where, } \text{Ratio}_{\text{Class I Area}} = \frac{\text{(Original sulfate + nitrate point contribution)}}{\text{(Revised sulfate + nitrate point contribution)}}$$

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Sipsey Wilderness Area (AL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	337.7	0.364	16.370	2.223	0.369	16.370	0.055
OH	39053-8148511	General James M. Gavin Power Plant (0927010056)	650.9	0.327	16.370	1.993	0.021	16.370	0.133
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	398.4	0.327	16.370	1.993	0.050	16.370	0.311
IN	18051-7363111	Gibson	438.7	0.270	16.370	1.693	0.029	16.370	0.138
IN	18123-7362411	INDIANA POLIS POWER & LIGHT - PETERSBURG	467.4	0.258	16.370	1.372	0.026	16.370	0.165
TN	47161-4879311	TVA CLUMBERLAND FOSSIL PLANT	228.8	0.242	16.370	1.453	0.038	16.370	0.172
VO	29143-5363831	NLW MADRID POWER PLANT - VARS'ON	314.5	0.220	16.370	1.144	0.012	16.370	0.675
KY	21183-8561611	Big Rivers Electric Corp - Wilson Station	345.5	0.211	16.370	1.297	0.008	16.370	0.055

103

St Marks Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³
GA	13015-2813011	Ea Power Company - Plant Bowen	492.8	0.574	11.729	4.893	0.004	11.729	0.036
FL	12005-5354111	ROCKTECH CP LLC	140.8	0.540	11.729	4.603	0.015	11.729	0.136
AL	01109-9857111	Sanders Lead Co	255.8	0.131	11.729	1.123	0.000	11.729	0.000

106

Chassahowitzka Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³
FL	12017-6406111	DUKE ENERGY FLORIDA, INC. (DEF)	27.4	0.629	10.092	6.243	0.023	10.092	0.233
GA	13015-2813011	Ea Power Company - Plant Bowen	637.2	0.230	10.092	2.238	0.008	10.092	0.036
FL	12057-5386111	TAMPA ELECTRIC COMPANY (TEC)	106.8	0.129	10.092	1.263	0.007	10.092	0.075
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1,068.0	0.102	10.092	1.013	0.005	10.092	0.055
AL	01109-9857111	Sanders Lead Co	471.2	0.101	10.092	1.003	0.001	10.092	0.033

104

Cohutta Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³
DH	39053-8148511	General James M. Gavin Power Plant (0927010056)	512.0	0.322	13.229	2.143	0.009	13.229	0.075
GA	13015-2813011	Ea Power Company - Plant Bowen	78.0	0.282	13.229	2.135	0.005	13.229	0.048
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	0.190	13.229	1.443	0.002	13.229	0.028
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	410.3	0.181	13.229	1.373	0.005	13.229	0.045
DH	39025-8294311	Puke Energy Ohio, Wm. H. Zimmer Station (1413090154)	454.6	0.173	13.229	1.311	0.005	13.229	0.043
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	269.8	0.166	13.229	1.253	0.012	13.229	0.093
PA	42051-3866111	EP-NON NE V GVT CO/KEYSTONE STA	801.1	0.137	13.229	1.043	0.003	13.229	0.016
IN	18051-7363111	Gibson	467.1	0.137	13.229	1.033	0.003	13.229	0.036

107

Everglades NP (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³
FL	12057-5386111	TAMPA ELECTRIC COMPANY (TEC)	316.6	0.084	1.333	3.303	0.000	1.333	0.000
FL	12105-9158111	MDS&C FERTILIZER, LLC	384.7	0.035	1.333	2.623	0.000	1.333	0.000
FL	12105-9177111	MDS&C FERTILIZER, LLC	383.3	0.035	1.333	2.600	0.000	1.333	0.000
FL	12086-8399111	TARMAC AMERICA LLC	61.7	0.063	1.333	0.233	0.035	1.333	2.633

105

Okefenokee Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³	FINAL Revised EGU + NREGU Min ³	FINAL Revised Sulfate PSAT Min ³	FINAL Revised Nitrate PSAT Min ³
FL	12047-7697111	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	71.5	0.372	13.400	2.773	0.002	13.400	0.013
GA	13015-2813011	Ea Power Company - Plant Bowen	458.1	0.308	13.400	2.303	0.007	13.400	0.050
FL	12123-7524111	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	183.5	0.288	13.400	2.163	0.016	13.400	0.140
DH	39053-8148511	General James M. Gavin Power Plant (0927010056)	909.1	0.203	13.400	1.513	0.002	13.400	0.015
FL	12089-7537111	ROCKTECH CP, LLC	64.8	0.176	13.400	1.313	0.020	13.400	0.158
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	348.1	0.158	13.400	1.183	0.006	13.400	0.043
GA	13051-36798111	International Paper - Savannah	178.5	0.140	13.400	1.043	0.008	13.400	0.063
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	939.4	0.138	13.400	1.033	0.006	13.400	0.043
PA	42051-3866111	EP-NON NE V GVT CO/KEYSTONE STA	1,129.0	0.137	13.400	1.023	0.002	13.400	0.013

108

Wolf Island Wilderness (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + NO ₂ Mm ⁻³	FINAL Revised Sulfate PM ₁₀ Mm ⁻³	FINAL Revised Nitrate PM ₁₀ Mm ⁻³	FINAL Revised PM ₁₀ Mm ⁻³	FINAL Revised PM _{2.5} Mm ⁻³	FINAL Revised CO Mm ⁻³	FINAL Revised O ₃ Mm ⁻³	FINAL Revised NH ₃ Mm ⁻³	FINAL Revised H ₂ O Mm ⁻³
FL	12089-753731	ROCK TENN CP, LLC	74.9	0.304	12.957	2.350	0.018	12.957	0.140			
GA	13015-2813011	Ea Power Company - Plant Bowen	458.1	0.302	12.957	2.330	0.007	12.957	0.050			
GA	13127-3721011	Branswick Cellulose Inc	27.9	0.228	12.957	1.700	0.017	12.957	0.130			
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	845.3	0.224	12.957	1.730	0.003	12.957	0.020			
GA	13051-3679811	International Paper - Savannah	85.9	0.200	12.957	1.540	0.012	12.957	0.090			
SC	45015-4120411	SANTTEE COOPER CROSS GENERATING STATION	251.0	0.168	12.957	1.300	0.011	12.957	0.080			
IL	12031-640211	IRA	105.1	0.167	12.957	1.300	0.008	12.957	0.090			
SC	45015-4819411	ALUMAX OF SOUTH CAROLINA	223.0	0.162	12.957	1.350	0.001	12.957	0.010			
PA	42005-3866111	GLN/NL N/GV/T CO/ALYSTONE STA	1,048.4	0.149	12.957	1.150	0.002	12.957	0.010			

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Shining Rock Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + NO ₂ Mm ⁻³	FINAL Revised Sulfate PM ₁₀ Mm ⁻³	FINAL Revised Nitrate PM ₁₀ Mm ⁻³	FINAL Revised PM ₁₀ Mm ⁻³	FINAL Revised PM _{2.5} Mm ⁻³	FINAL Revised CO Mm ⁻³	FINAL Revised O ₃ Mm ⁻³	FINAL Revised NH ₃ Mm ⁻³	FINAL Revised H ₂ O Mm ⁻³
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	397.3	0.297	12.313	2.120	0.001	12.313	0.010			
RY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	573.4	0.201	12.313	1.630	0.009	12.313	0.020			
TN	47161-4979311	TVA CLIMBERLAND FOSSIL PLANT	454.1	0.162	12.313	1.320	0.002	12.313	0.020			
GA	13015-2813011	Ea Power Company - Plant Bowen	281.6	0.150	12.313	1.290	0.004	12.313	0.010			
VO	79143-5563811	NEW MADRID POWER PLANT-VARSTON	675.2	0.158	12.313	1.280	0.001	12.313	0.010			
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	473.3	0.156	12.313	1.270	0.012	12.313	0.090			
PA	42005-3866111	GLN/NL N/GV/T CO/ALYSTONE STA	637.6	0.151	12.313	1.230	0.000	12.313	0.020			
IN	18051-7763111	Gibson	554.2	0.151	12.313	1.220	0.008	12.313	0.070			
NC	37087-7929511	Blue Ridge Paper Products - Canton Mill	16.9	0.133	12.313	1.060	0.012	12.313	0.100			
OH	39025-8294311	Duke Energy Ohio, Wm. H. Twiss Station (1413090154)	406.7	0.120	12.313	1.050	0.002	12.313	0.010			
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	783.3	0.129	12.313	1.040	0.001	12.313	0.010			
TN	47163-3982111	EASTMAN CHEMICAL COMPANY	126.5	0.128	12.313	1.040	0.009	12.313	0.020			

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Mammoth Cave NP (KY)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + NO ₂ Mm ⁻³	FINAL Revised Sulfate PM ₁₀ Mm ⁻³	FINAL Revised Nitrate PM ₁₀ Mm ⁻³	FINAL Revised PM ₁₀ Mm ⁻³	FINAL Revised PM _{2.5} Mm ⁻³	FINAL Revised CO Mm ⁻³	FINAL Revised O ₃ Mm ⁻³	FINAL Revised NH ₃ Mm ⁻³	FINAL Revised H ₂ O Mm ⁻³
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	118.0	0.426	25.289	3.080	0.085	25.289	0.330			
IN	18051-7363111	Gibson	158.2	0.411	25.289	3.030	0.081	25.289	0.330			
RY	21145-6037011	Big Rivers Electric Corp - Wilson Station	89.8	0.361	25.289	2.930	0.070	25.289	0.080			
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	233.6	0.290	25.289	2.150	0.046	25.289	0.190			
VO	79143-5563811	NEW MADRID POWER PLANT-VARSTON	312.7	0.280	25.289	2.160	0.072	25.289	0.090			
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PLT/RSBURG	182.9	0.264	25.289	2.040	0.068	25.289	0.270			

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Swanquarter Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + NO ₂ Mm ⁻³	FINAL Revised Sulfate PM ₁₀ Mm ⁻³	FINAL Revised Nitrate PM ₁₀ Mm ⁻³	FINAL Revised PM ₁₀ Mm ⁻³	FINAL Revised PM _{2.5} Mm ⁻³	FINAL Revised CO Mm ⁻³	FINAL Revised O ₃ Mm ⁻³	FINAL Revised NH ₃ Mm ⁻³	FINAL Revised H ₂ O Mm ⁻³
PA	42005-3866111	GLN/NL N/GV/T CO/KEYSTONE STA	640.2	0.375	10.894	3.440	0.009	10.894	0.030			
NC	37013-8479311	PCS Phosphate Company, Inc. -Aurora	52.5	0.329	10.894	3.020	0.007	10.894	0.060			
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	651.5	0.219	10.894	2.010	0.005	10.894	0.050			
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	659.6	0.203	10.894	1.860	0.007	10.894	0.080			
MD	74001-7763811	Luke Paper Company	512.5	0.191	10.894	1.750	0.008	10.894	0.070			
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- MARIETTA	568.6	0.186	10.894	1.710	0.013	10.894	0.120			
PA	42005-3866111	GLN/NL N/GV/T CO/KEYSTONE STA	620.3	0.151	10.894	1.340	0.008	10.894	0.070			
WV	54073-4782811	MONONGAHELA POWER CO-PLASANTS POWER STA	625.7	0.127	10.894	1.170	0.005	10.894	0.090			
GA	13015-2813011	Ea Power Company - Plant Bowen	810.6	0.112	10.894	1.070	0.003	10.894	0.030			
NC	37117-8049311	Bonmar Paper Company, LLC	69.0	0.109	10.894	1.000	0.022	10.894	0.200			

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Linville Gorge Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + NO ₂ Mm ⁻³	FINAL Revised Sulfate PM ₁₀ Mm ⁻³	FINAL Revised Nitrate PM ₁₀ Mm ⁻³	FINAL Revised PM ₁₀ Mm ⁻³	FINAL Revised PM _{2.5} Mm ⁻³	FINAL Revised CO Mm ⁻³	FINAL Revised O ₃ Mm ⁻³	FINAL Revised NH ₃ Mm ⁻³	FINAL Revised H ₂ O Mm ⁻³
TN	47163-3982111	EASTMAN CHEMICAL COMPANY	81.9	0.522	12.884	3.050	0.013	12.884	0.100			
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	379.7	0.446	12.884	3.460	0.007	12.884	0.070			
PA	42005-3866111	GLN/NL N/GV/T CO/KEYSTONE STA	567.5	0.235	12.884	1.870	0.000	12.884	0.020			
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.172	12.884	1.340	0.002	12.884	0.020			
TN	47161-4979311	TVA CLIMBERLAND FOSSIL PLANT	516.6	0.154	12.884	1.200	0.001	12.884	0.010			
GA	13015-2813011	Ea Power Company - Plant Bowen	340.9	0.146	12.884	1.130	0.000	12.884	0.000			
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	503.5	0.142	12.884	1.100	0.012	12.884	0.090			
IN	18051-7363111	Gibson	582.3	0.138	12.884	1.070	0.008	12.884	0.070			
VO	79143-5563811	NEW MADRID POWER PLANT-VARSTON	688.6	0.134	12.884	1.060	0.000	12.884	0.000			
VA	51027-4034811	Bewell Coles Company LLP	140.4	0.132	12.884	1.020	0.000	12.884	0.000			

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Cape Romain Wilderness Area (SC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised SO ₂ + NO ₂ Mm ⁻³	FINAL Revised Sulfate PM ₁₀ Mm ⁻³	FINAL Revised Nitrate PM ₁₀ Mm ⁻³	FINAL Revised PM ₁₀ Mm ⁻³	FINAL Revised PM _{2.5} Mm ⁻³	FINAL Revised CO Mm ⁻³	FINAL Revised O ₃ Mm ⁻³	FINAL Revised NH ₃ Mm ⁻³	FINAL Revised H ₂ O Mm ⁻³
SC	45019-4977611	KEYSTONE CHARLESTON KRAFT LLC	29.3	0.523	14.028	3.730	0.046	14.028	0.330			
GA	13015-2813011	Ea Power Company - Plant Bowen	506.2	0.495	14.028	3.530	0.019	14.028	0.140			
SC	45015-4834911	ALUMAX OF SOUTH CAROLINA	39.1	0.327	14.028	2.330	0.009	14.028	0.020			
PA	42005-3866111	GLN/NL N/GV/T CO/ALYSTONE STA	857.3	0.320	14.028	2.280	0.002	14.028	0.010			
SC	45015-4120411	SANTTEE COOPER CROSS GENERATING STATION	83.8	0.316	14.028	2.250	0.038	14.028	0.270			
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	701.0	0.305	14.028	2.170	0.005	14.028	0.040			
SC	45043-5686611	INTERNATIONAL PAPER GEORGETOWN MILL	57.4	0.230	14.028	1.640	0.021	14.028	0.170			
SC	45043-6652811	SANTTEE COOPER WINVAH GENERATING STATION	51.4	0.187	14.028	1.310	0.024	14.028	0.170			
GA	13051-3679811	International Paper - Savannah	166.3	0.180	14.028	1.300	0.009	14.028	0.060			

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Great Smoky Mountains National Park (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL_Reviewed EGU + NREGU Min ³	FINAL_Reviewed Sulfate PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed SO ₂ PPM ³	FINAL_Reviewed NH ₃ PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed Nitrate PPM ³
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	400.5	0.570	13.916	2.72%	0.003	13.916	0.07%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	466.3	0.183	13.916	1.32%	0.011	13.916	0.08%	
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	160.3	0.170	13.916	1.22%	0.007	13.916	0.05%	
PA	42005-3866111	GENON NE V.G.V.T CO/KEYSTONE STA	688.2	0.166	13.916	1.19%	0.001	13.916	0.01%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP KICKPORT	375.5	0.166	13.916	1.19%	0.035	13.916	0.25%	
IN	18051-7363111	Edison	456.8	0.146	13.916	1.05%	0.017	13.916	0.12%	

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Shenandoah National Park (VA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL_Reviewed EGU + NREGU Min ³	FINAL_Reviewed Sulfate PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed SO ₂ PPM ³	FINAL_Reviewed NH ₃ PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed Nitrate PPM ³
PA	42005-3866111	GENON NE V.G.V.T CO/KEYSTONE STA	249.8	0.740	15.375	6.81%	0.003	13.375	0.06%	
DH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	266.6	0.637	15.375	4.50%	0.018	13.375	0.12%	
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	180.7	0.636	15.375	4.14%	0.070	15.375	0.46%	
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	323.4	0.576	15.375	3.75%	0.043	15.375	0.14%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	265.0	0.389	15.375	2.20%	0.043	15.375	0.28%	
MD	42063-3005211	HOMER CTY GEN LP/CENTER TWP	230.4	0.274	15.375	1.78%	0.010	13.375	0.06%	
PA	24001-7763811	Juke Paper Company	118.4	0.216	15.375	1.41%	0.021	13.375	0.14%	
PA	42005-3866111	GENON NE V.G.V.T CO/KEYSTONE STA	215.5	0.172	15.375	1.12%	0.003	13.375	0.02%	
WV	54051-6902311	MITCHELL PLANT	251.8	0.155	15.375	1.01%	0.015	15.375	0.09%	
DH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	324.2	0.155	15.375	1.01%	0.009	13.375	0.06%	

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Joyce Kilmer-Slickrock Wilderness Area (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL_Reviewed EGU + NREGU Min ³	FINAL_Reviewed Sulfate PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed SO ₂ PPM ³	FINAL_Reviewed NH ₃ PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed Nitrate PPM ³
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	475.1	0.473	13.694	3.45%	0.007	13.694	0.01%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	472.8	0.189	13.694	1.38%	0.014	13.694	0.10%	
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	179.2	0.178	13.694	1.30%	0.003	13.694	0.02%	
PA	42005-3866111	GENON NE V.G.V.T CO/KEYSTONE STA	711.0	0.154	13.694	1.12%	0.000	13.694	0.00%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP KICKPORT	391.2	0.154	13.694	1.12%	0.030	13.694	0.22%	
GA	13015-2813011	Six Power Company - Plant Bowen	166.2	0.152	13.694	1.11%	0.001	13.694	0.01%	
IN	18051-7363111	Sibson	471.7	0.139	13.694	1.02%	0.029	13.694	0.21%	
DH	39022-8229411	Duke Energy Ohio, Wm. H. Zimmer Station (141890154)	385.1	0.137	13.694	1.00%	0.002	13.694	0.01%	

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Dolly Sods Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	FINAL_Reviewed EGU + NREGU Min ³	FINAL_Reviewed Sulfate PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed SO ₂ PPM ³	FINAL_Reviewed NH ₃ PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed Nitrate PPM ³
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	83.6	1.350	19.349	7.18%	0.059	19.349	0.31%	
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	233.8	0.945	19.349	4.88%	0.009	19.349	0.05%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	163.9	0.810	19.349	4.17%	0.020	19.349	0.10%	
DH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	163.9	0.778	19.349	4.02%	0.007	19.349	0.03%	
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (141890154)	416.9	0.288	19.349	1.49%	0.010	19.349	0.05%	
WV	54051-6902311	MITCHELL PLANT	144.2	0.276	19.349	1.42%	0.009	19.349	0.05%	
PA	42005-3866111	GENON NE V.G.V.T CO/KEYSTONE STA	172.8	0.246	19.349	1.27%	0.001	19.349	0.00%	
DH	39033-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	234.9	0.220	19.349	1.18%	0.003	19.349	0.02%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	219.8	0.221	19.349	1.14%	0.006	19.349	0.03%	
WV	54061-6773611	MONONGAHELA POWER CO - FORT MARTIN POWER	79.8	0.218	19.349	1.13%	0.044	19.349	0.23%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	847.6	0.204	19.349	1.05%	0.003	19.349	0.02%	

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James River Face Wilderness Area (VA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL_Reviewed EGU + NREGU Min ³	FINAL_Reviewed Sulfate PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed SO ₂ PPM ³	FINAL_Reviewed NH ₃ PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed Nitrate PPM ³
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	270.2	0.582	14.404	4.04%	0.016	14.404	0.11%	
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	207.6	0.526	14.404	3.65%	0.020	14.404	0.14%	
DH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	306.4	0.520	14.404	3.62%	0.008	14.404	0.06%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	248.0	0.325	14.404	2.26%	0.007	14.404	0.05%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	223.5	0.278	14.404	1.93%	0.016	14.404	0.11%	
PA	42005-3866111	GENON NE V.G.V.T CO/KEYSTONE STA	337.1	0.217	14.404	1.51%	0.005	14.404	0.04%	
VA	51580-5738711	MeadWestvaco Packaging Resource Group	46.5	0.209	14.404	1.45%	0.031	14.404	0.22%	
DH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	270.0	0.170	14.404	1.18%	0.006	14.404	0.04%	
WV	54051-6902311	MITCHELL PLANT	269.6	0.156	14.404	1.05%	0.006	14.404	0.04%	

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Otter Creek Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	FINAL_Reviewed EGU + NREGU Min ³	FINAL_Reviewed Sulfate PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed SO ₂ PPM ³	FINAL_Reviewed NH ₃ PPM ³	FINAL_Reviewed Nitrate PPM ³	FINAL_Reviewed Nitrate PPM ³
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	72.8	1.242	19.077	6.51%	0.059	19.077	0.31%	
DH	39053-8148511	General James M. Gavin Power Plant (0627010056)	214.2	1.001	19.077	5.25%	0.011	19.077	0.06%	
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	148.3	0.809	19.077	4.24%	0.023	19.077	0.12%	
DH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	162.7	0.777	19.077	3.81%	0.008	19.077	0.04%	
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (141890154)	307.5	0.302	19.077	1.58%	0.012	19.077	0.06%	
WV	54051-6902311	MITCHELL PLANT	138.8	0.297	19.077	1.50%	0.010	19.077	0.05%	
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	198.0	0.249	19.077	1.31%	0.007	19.077	0.04%	
DH	39033-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	215.3	0.242	19.077	1.22%	0.004	19.077	0.02%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	825.5	0.207	19.077	1.05%	0.003	19.077	0.02%	
IN	18051-7363111	Sibson	709.7	0.193	19.077	1.01%	0.009	19.077	0.05%	
WV	54061-6773611	MONONGAHELA POWER CO - FORT MARTIN POWER	82.7	0.182	19.077	1.00%	0.046	19.077	0.24%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP KICKPORT	656.7	0.191	19.077	1.00%	0.007	19.077	0.04%	
PA	42005-3866111	GENON NE V.G.V.T CO/KEYSTONE STA	186.5	0.190	19.077	1.00%	0.001	19.077	0.00%	

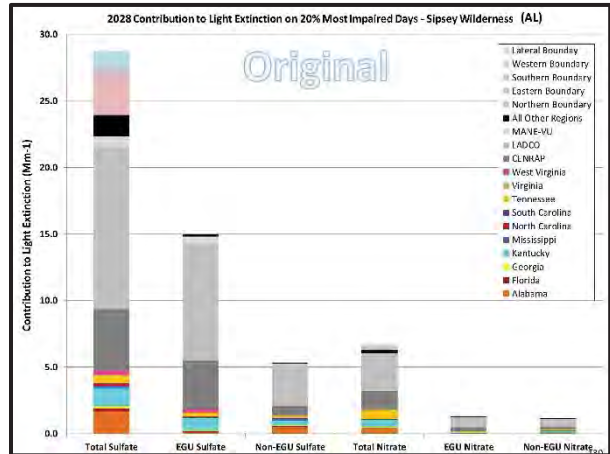
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Remaining VISTAS Work Schedule

Task	Schedule
2028 Point Emissions Updates	Completed *
2028 Emissions Processing	Completed *
2028 CAMx Modeling	Completed *
2028 Visibility Projections	Completed *
2028 Deposition Projections	Late May/Early June 2020 *
Final Reports and Documentation	Late July 2020
Website Updates and Postings	Late July 2020
End of Contract	September 30, 2020
Regional Haze SIPs Due to EPA	July 31, 2021

* References technical work completion. Draft reports to follow.

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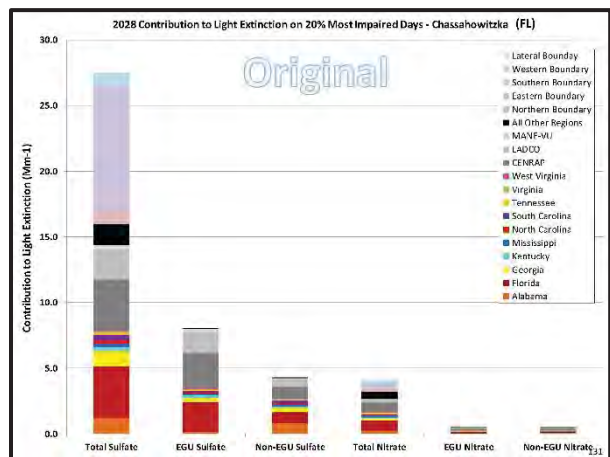


Contacts for Further Information

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 - TAWG – Randy Strait (randy.strait@ncdenr.gov)
 - CC – Jim Boylan (james.boyland@dnr.ga.gov)
- For project and contract management questions, contact the Project Manager:
 - John Hornback (hornback@metro4-sesarm.org)

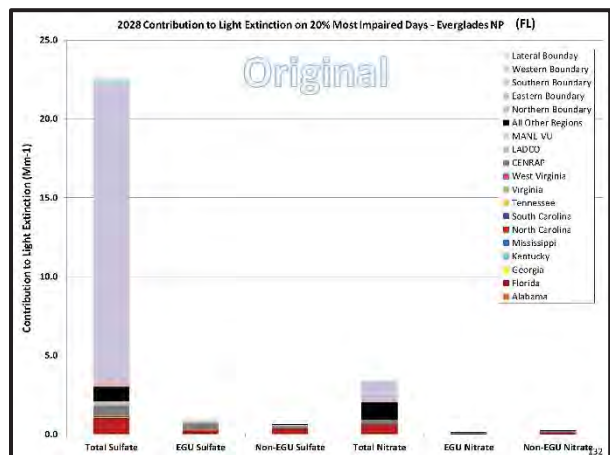


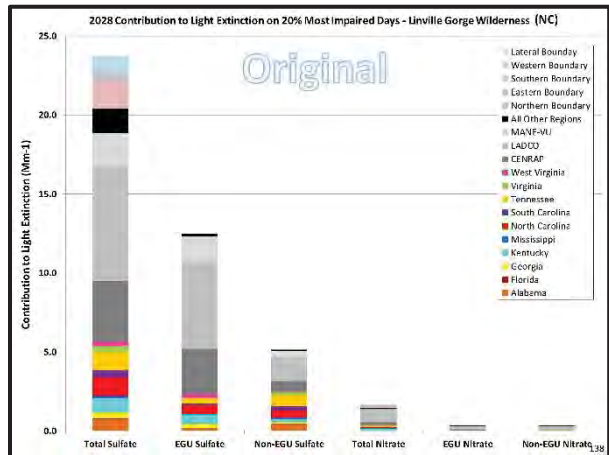
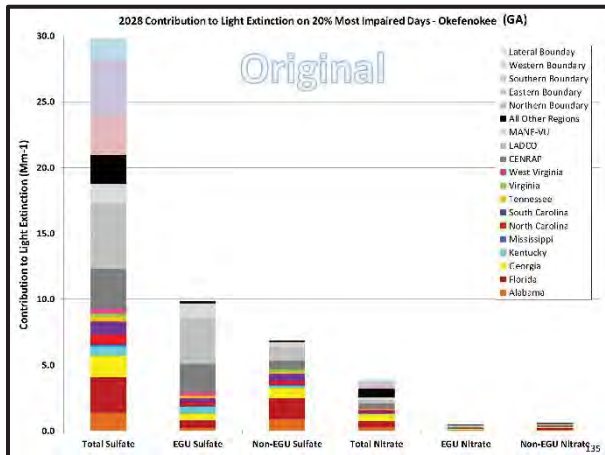
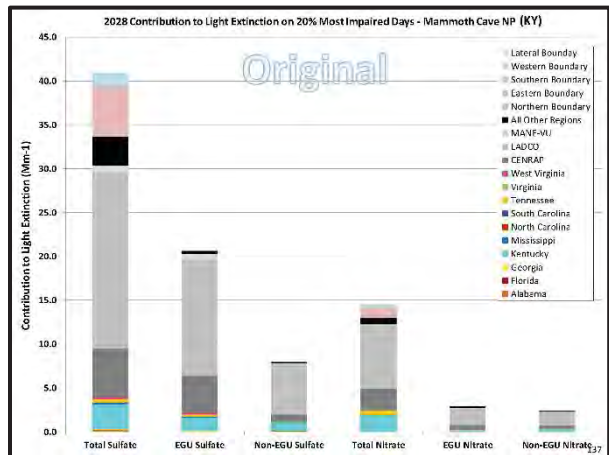
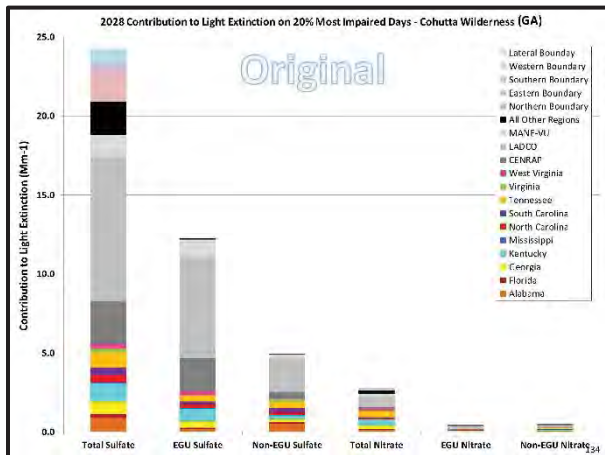
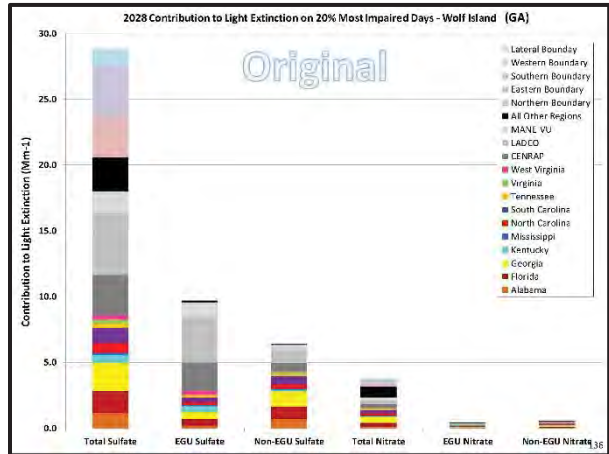
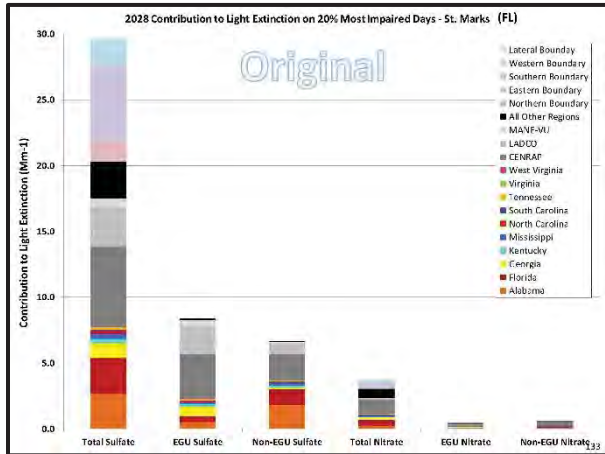
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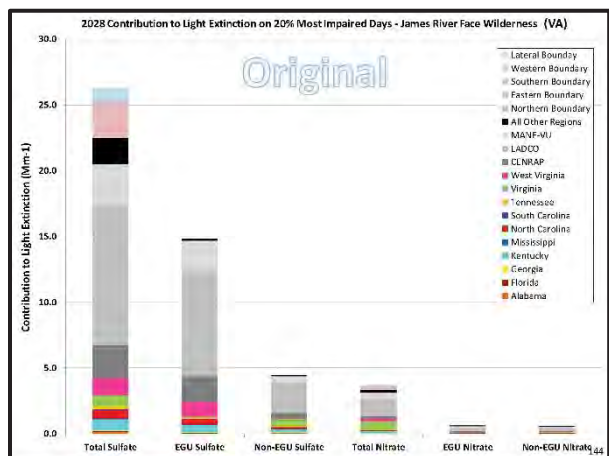
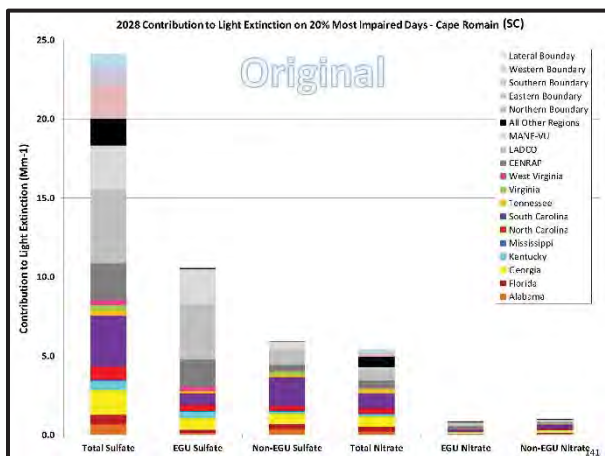
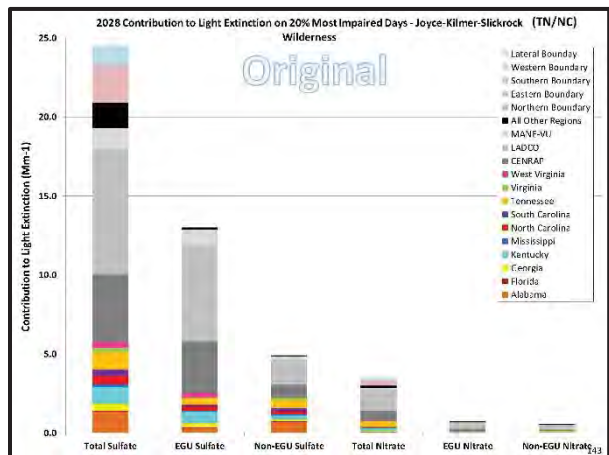
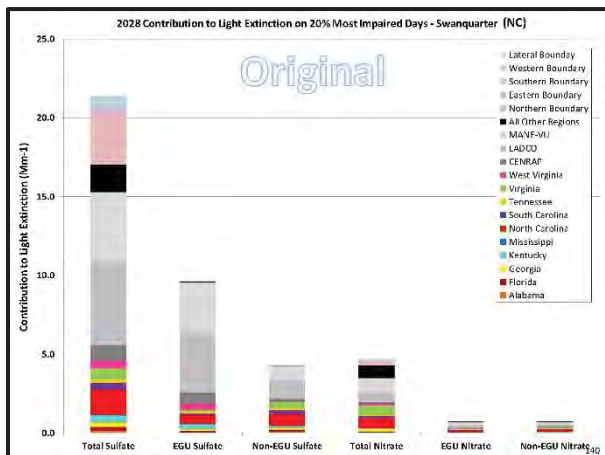
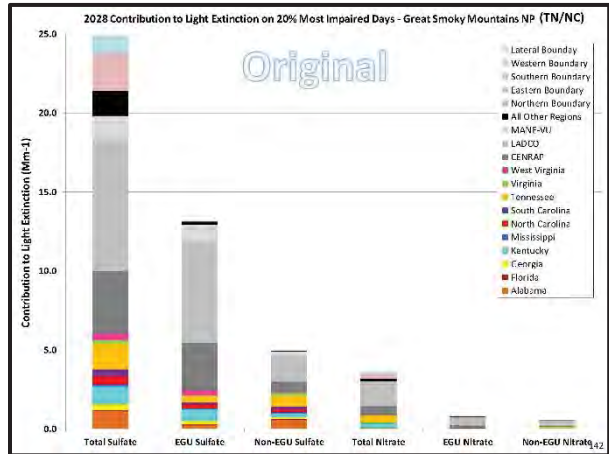
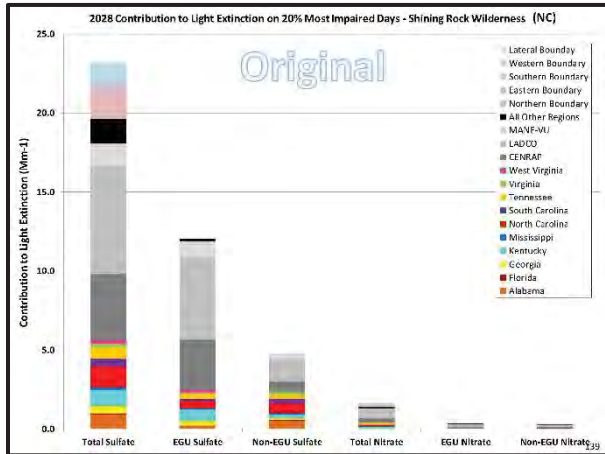


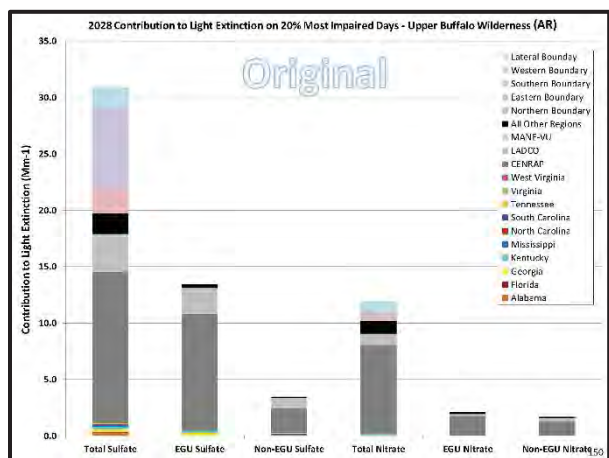
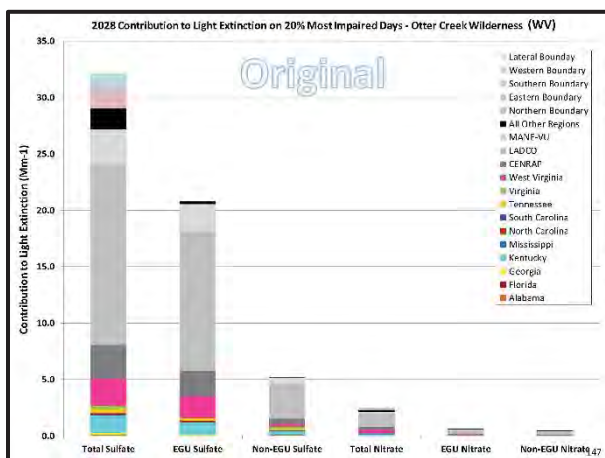
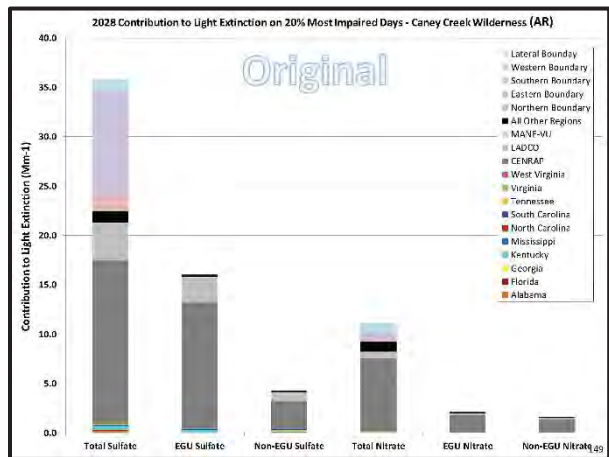
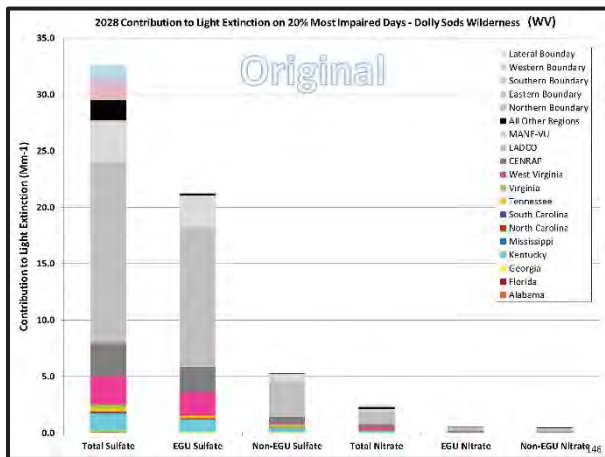
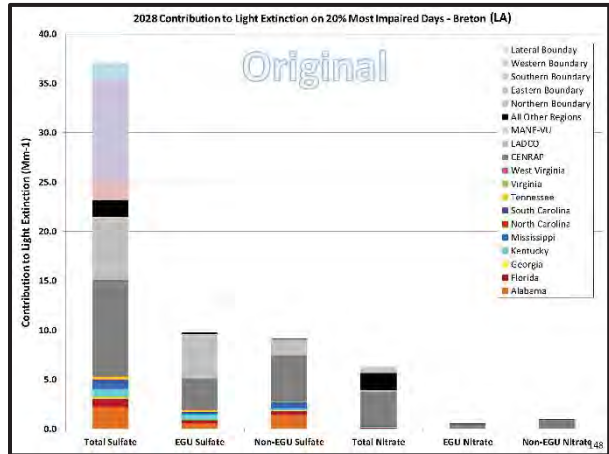
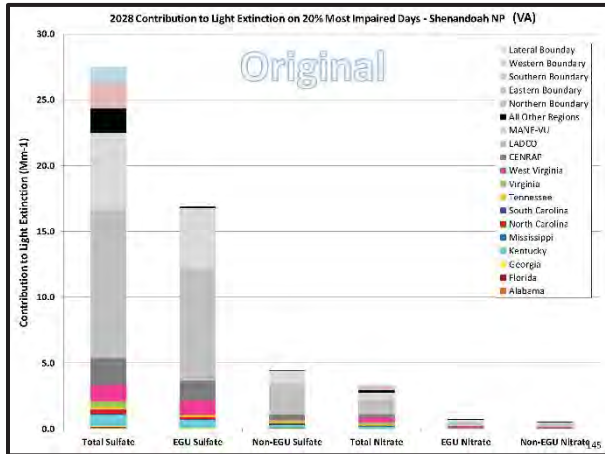
Appendix: Original Analysis (Conducted 2018-2019)

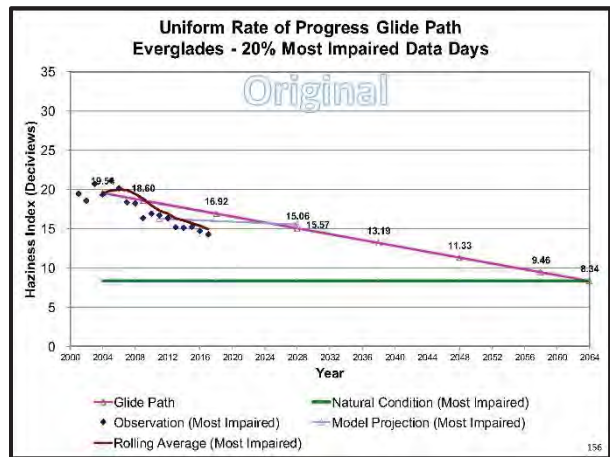
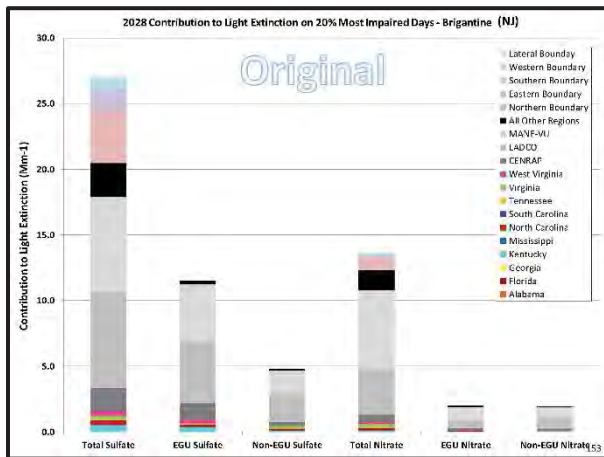
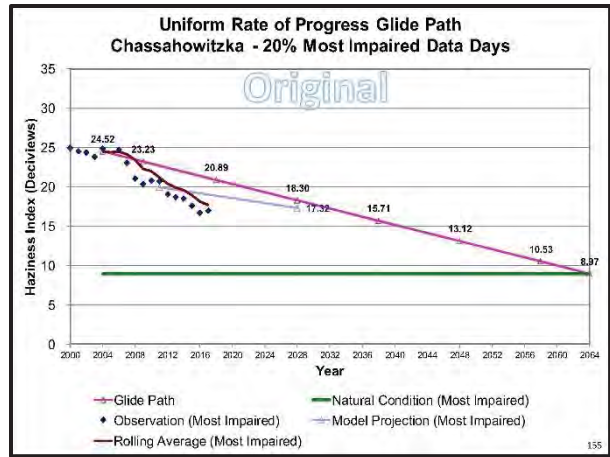
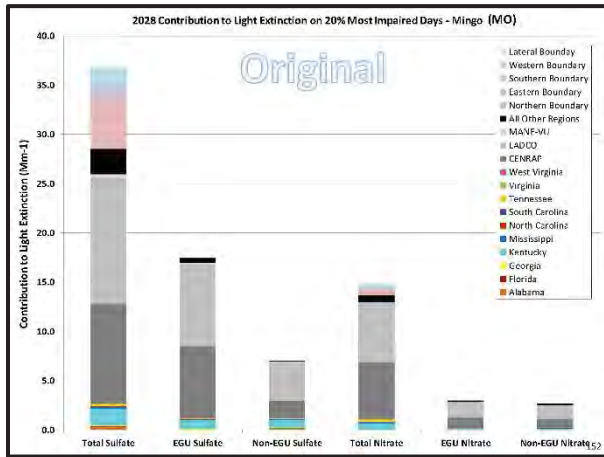
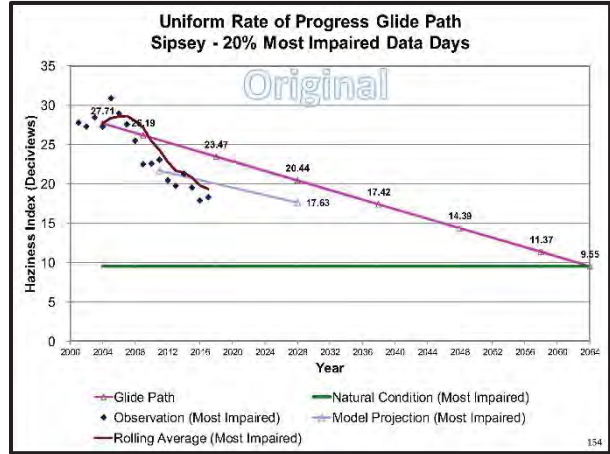
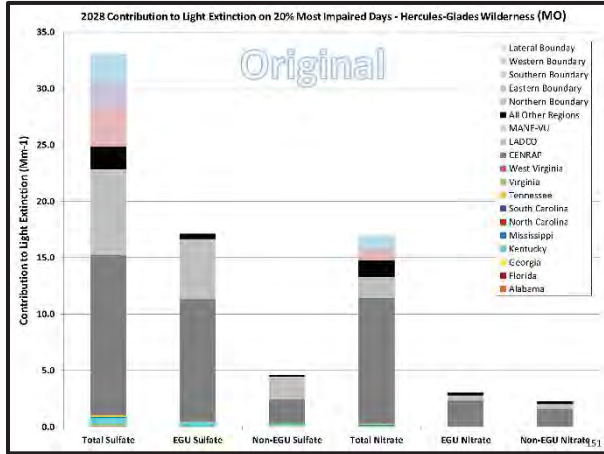
129

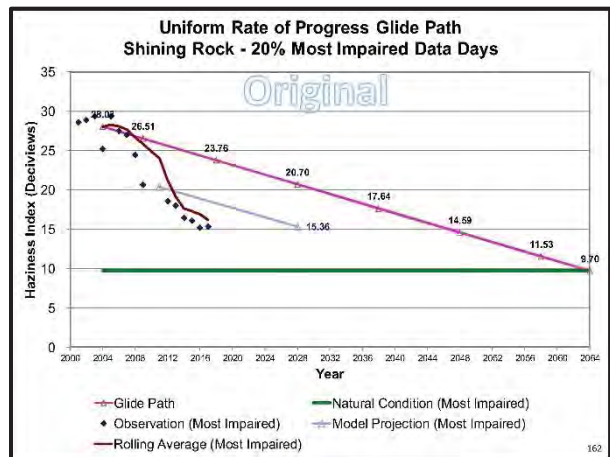
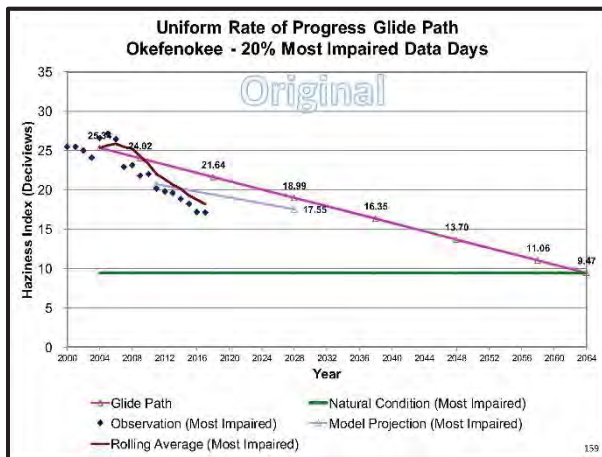
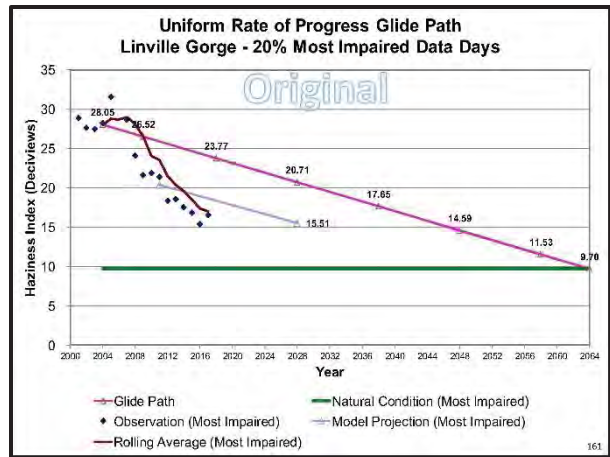
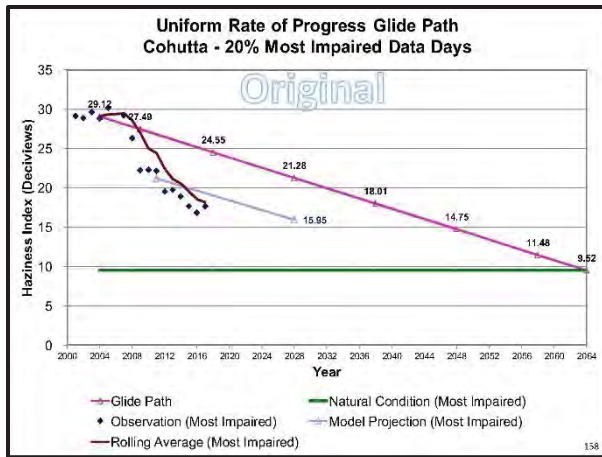
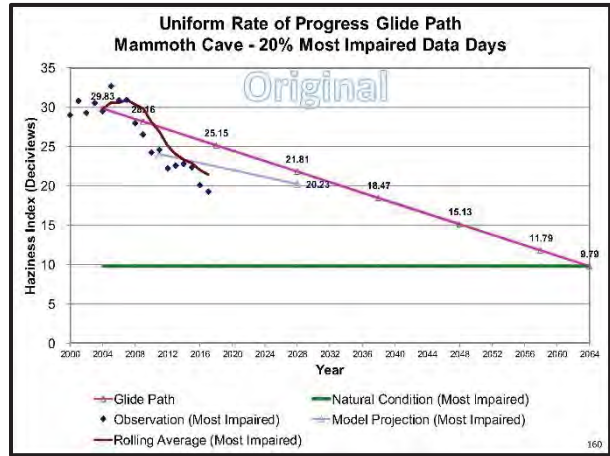
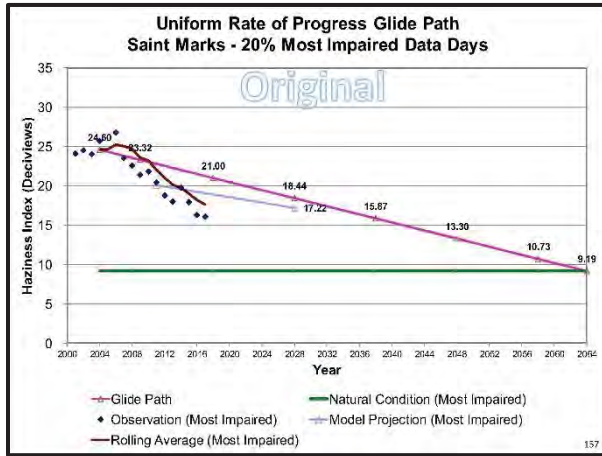


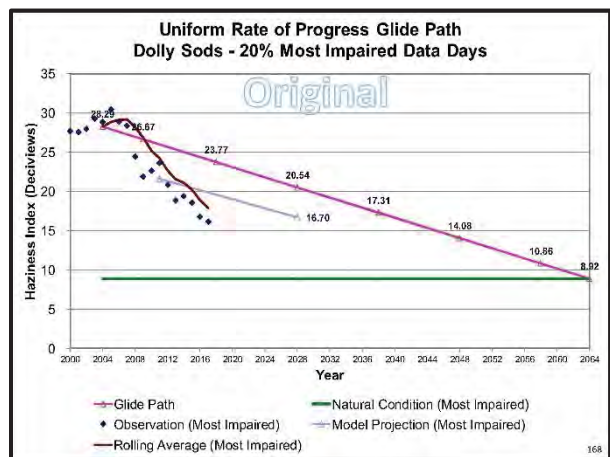
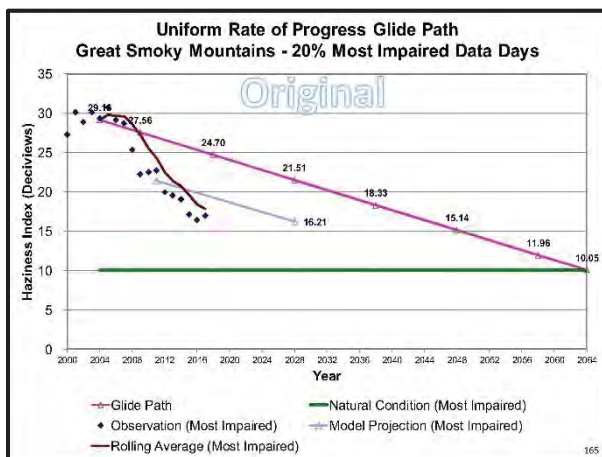
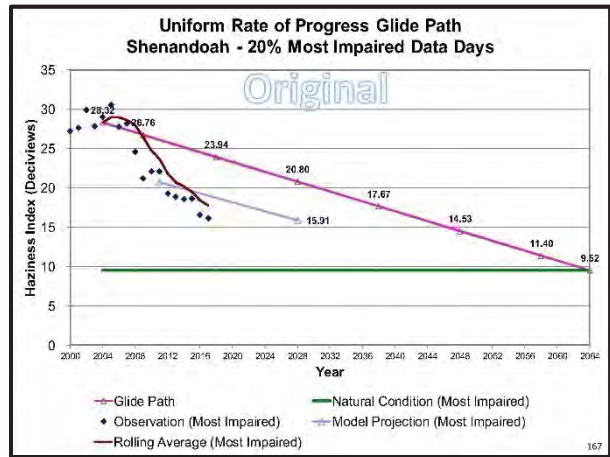
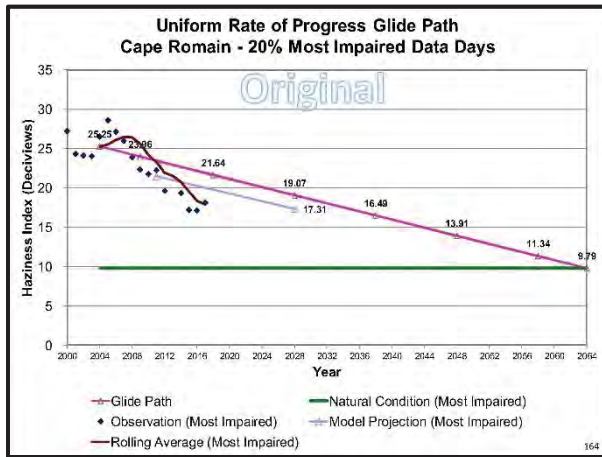
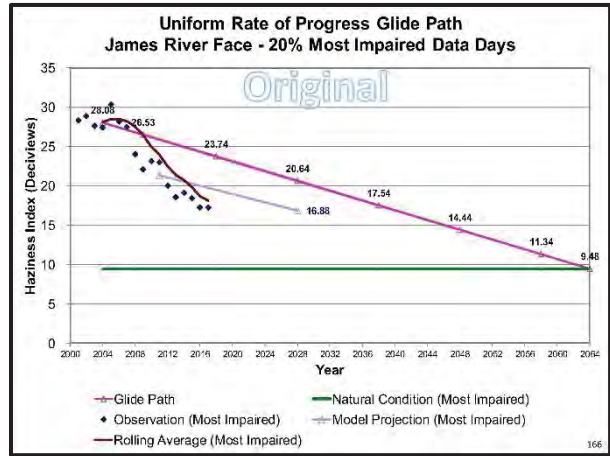
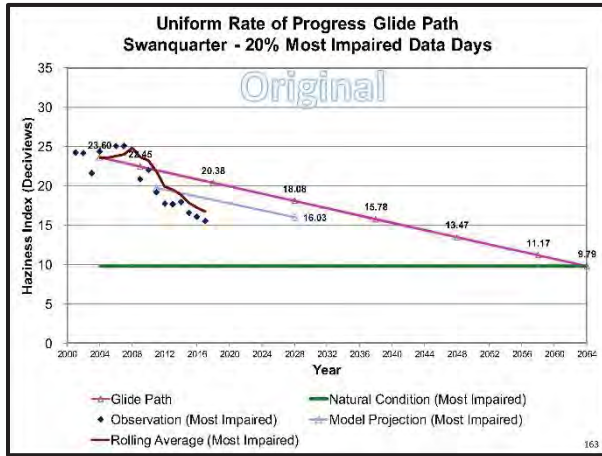


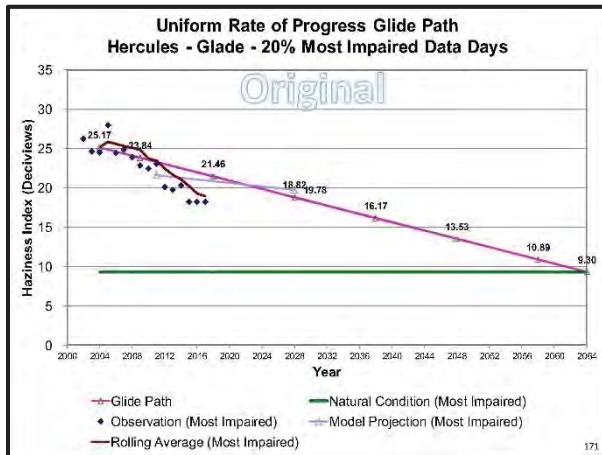
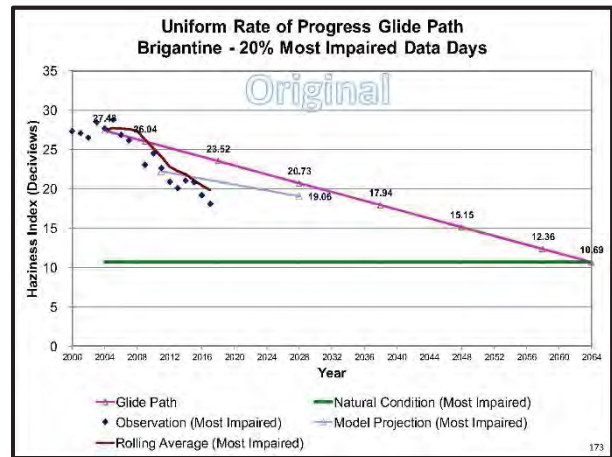
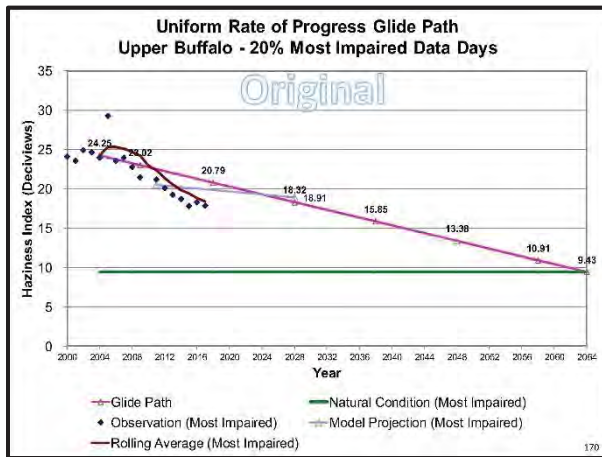
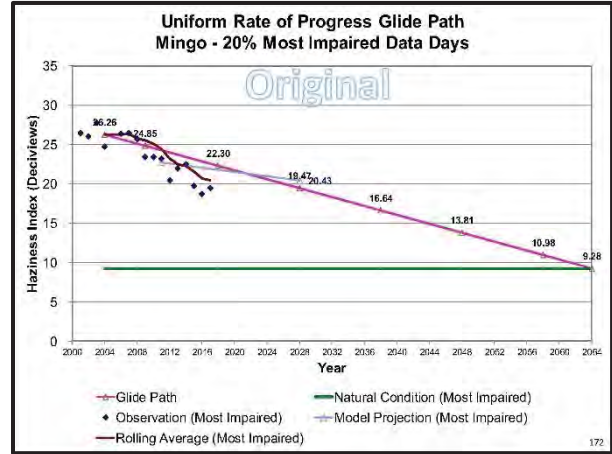
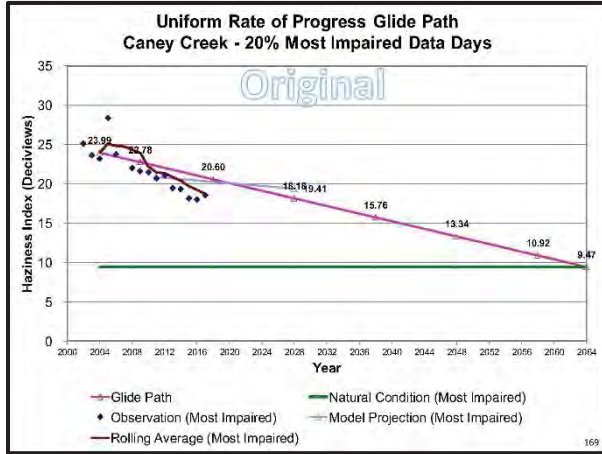












Sipsey Wilderness Area (AL)

State	Facility ID	Facility Name	DISTANCE (mi)	Sulfate AOl %	Original Sulfate PSAT %	FINAL Proposed Sulfate PSAT %	Mineral AOl %	Original Mineral PSAT %	FINAL Proposed Mineral PSAT %
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee fossil plant	337.7	3.31%	1.61%	2.22%	0.57%	0.04%	0.05%
OH	39053-8148511	General James M. Gavin Power Plant (0627910056)	690.9	0.38%	2.75%	1.55%	0.03%	0.09%	0.13%
IN	18147-8017211	INDIA VA WICHIGAN POWER DBA AEP ROCKPORT	308.4	5.72%	4.09%	1.59%	0.31%	0.23%	0.31%
IN	18051-7363111	Gibson	418.7	2.85%	2.12%	1.59%	0.27%	0.19%	0.18%
IN	18123-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	464.4	1.72%	2.49%	4.37%	0.23%	0.23%	0.18%
TN	87161-4979311	TVA CLUMBERLAND FOSSIL PLANT	328.9	3.18%	1.07%	1.80%	0.48%	0.13%	0.17%
MO	22943-5303811	NEW MADRID POWER PLANT WARS'ON	314.5	3.46%	1.40%	1.16%	0.25%	0.03%	0.07%
KY	21183-5581811	Big Rivers Electric Corp - Wilson Station	348.5	3.97%	0.98%	1.79%	0.07%	0.04%	0.05%
Facilities That Dropped Off After REVISION									
IL	17127-7808211	Joppa Steam	346.5	1.94%	1.51%	0.87%	0.75%	0.03%	0.02%
IN	18178-8181111	WCCO WARRICK POWER PLT AGL DIV OF AL	396.3	0.91%	1.07%	0.41%	0.62%	0.52%	0.19%

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Chassahowitzka Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
FL	12017-640611	DUKE ENERGY FLORIDA, INC. (DEF)	27.4	63.62%	9.55%	6.24%	1.95%	0.00%	0.23%	
GA	13015-2813011	Ea Power Company - Plant Bowen	437.2	0.03%	1.72%	2.28%	0.00%	0.02%	0.03%	
FL	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	106.8	4.73%	0.86%	1.36%	0.24%	0.05%	0.07%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1,088.0	0.03%	0.74%	1.01%	0.00%	0.04%	0.05%	
AL	01109-985711	Sanders Lead Co	471.2	0.15%	0.76%	1.00%	0.00%	0.01%	0.01%	
Facilities That Dropped Off After REVISION										
AR	05069-1081412	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	1,131.4	0.05%	1.47%	0.83%	0.00%	0.09%	0.04%	
IN	18147-8017212	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	1,099.6	0.03%	1.13%	0.53%	0.00%	0.04%	0.00%	
AL	01053-7410212	Escambia Operating Company LLC	530.7	0.24%	1.57%	0.41%	0.00%	0.02%	0.01%	

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Cohutta Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
DH	39053-8148511	General James M. Gavin Power Plant (0627210056)	512.0	1.71%	3.41%	2.14%	0.02%	0.05%	0.07%	
GA	13015-2813011	Ea Power Company - Plant Bowen	78.0	19.58%	1.56%	2.13%	1.15%	0.03%	0.04%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	2.18%	1.05%	1.44%	0.07%	0.01%	0.02%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	410.1	4.68%	2.84%	1.37%	0.13%	0.08%	0.04%	
DH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	154.6	1.05%	2.00%	1.31%	0.00%	0.03%	0.04%	
TN	47163-3982913	KASTMAN CHEMICAL COMPANY	269.8	0.95%	0.92%	1.25%	0.09%	0.07%	0.09%	
PA	42003-3866111	KFNON NE V G V T CO/KEYSTONE STA	801.1	0.14%	2.06%	1.04%	0.00%	0.01%	0.01%	
IN	18051-7363111	Kirkson	487.1	2.31%	1.35%	1.03%	0.10%	0.07%	0.07%	
Facilities That Dropped Off After REVISION										
IN	18125-7362412	INDIANA POWER & LIGHT - PETRESBURG	477.0	2.18%	1.59%	0.84%	0.16%	0.05%	0.02%	
TN	47145-4979112	TVA WINSTON FOSSIL PLANT	124.0	2.17%	1.10%	0.34%	0.13%	0.06%	0.02%	

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Everglades NP (FL)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
FL	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	316.6	3.02%	2.56%	3.10%	0.95%	0.00%	0.00%
FL	12105-915811	MIDSAC FERTILIZER, LLC	384.7	3.31%	2.09%	2.47%	0.01%	0.00%	0.00%
FL	12105-9171111	MIDSAC FERTILIZER, LLC	308.8	7.26%	3.55%	2.60%	0.08%	0.00%	0.00%
FL	12086-895911	HARMAC AMERICA LLC	61.7	0.16%	0.17%	0.23%	2.02%	0.76%	2.43%

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Okefenokee Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	71.5	14.63%	4.32%	2.77%	0.03%	0.01%	0.01%	
GA	13015-2813011	Ea Power Company - Plant Bowen	458.1	1.02%	1.74%	2.30%	0.05%	0.04%	0.05%	
FL	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	155.5	2.18%	1.64%	2.16%	1.44%	0.11%	0.14%	
DH	39053-8148511	General James M. Gavin Power Plant (0627210056)	909.1	0.46%	2.15%	1.51%	0.01%	0.01%	0.01%	
FL	12089-753711	ROCK TENN CP, LLC	54.8	12.82%	1.00%	1.31%	0.88%	0.11%	0.15%	
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	348.1	0.85%	0.89%	1.18%	0.05%	0.03%	0.04%	
FL	12051-3679811	International Paper - Savannah	178.5	2.81%	0.79%	1.04%	0.08%	0.05%	0.06%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	939.4	0.23%	0.78%	1.03%	0.00%	0.03%	0.04%	
PA	42003-3866111	KFNON NE V G V T CO/KEYSTONE STA	1,129.0	0.46%	2.05%	1.02%	0.01%	0.01%	0.01%	
Facilities That Dropped Off After REVISION										
DH	39025-8294312	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	971.9	0.09%	1.34%	0.83%	0.00%	0.01%	0.01%	
IN	18147-8017212	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	915.7	0.55%	1.40%	0.65%	0.01%	0.02%	0.03%	

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St Marks Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
GA	13015-2813011	Ea Power Company - Plant Bowen	452.9	0.38%	3.59%	4.81%	0.21%	0.03%	0.03%	
FL	12005-535411	ROCKTENN CP LLC	140.8	8.54%	3.86%	4.40%	0.24%	0.09%	0.13%	
AL	01109-985711	Sanders Lead Co	255.5	3.06%	0.82%	1.12%	0.00%	0.00%	0.00%	
Facilities That Dropped Off After REVISION										
AL	01097-1036112	Alle Power - Berry	382.1	1.67%	2.13%	0.73%	0.03%	0.02%	0.02%	
AL	01053-7440712	Escambia Operating Company LLC	375.4	3.49%	5.53%	0.91%	0.01%	0.02%	0.02%	
IN	18147-8017212	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	908.4	0.33%	1.67%	0.80%	0.00%	0.01%	0.01%	
PA	42003-3866111	KFNON NE V G V T CO/KEYSTONE STA	1,757.0	0.79%	1.79%	0.65%	0.01%	0.02%	0.02%	
AL	01053-7440712	Escambia Operating Company LLC	315.0	0.60%	1.68%	0.02%	0.00%	0.02%	0.02%	

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Wolf Island Wilderness (GA)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
FL	12089-753711	ROCK TENN CP, LLC	74.9	9.56%	1.79%	2.35%	0.39%	0.11%	0.14%	
GA	13015-2813011	Ea Power Company - Plant Bowen	458.1	1.08%	1.78%	2.33%	0.03%	0.04%	0.05%	
GA	13127-3721011	Brunswick Cellulose Inc	27.9	8.84%	1.84%	1.76%	2.94%	0.10%	0.13%	
DH	39053-8148511	General James M. Gavin Power Plant (0627210056)	845.3	1.71%	2.51%	1.73%	0.02%	0.02%	0.02%	
SC	45015-4120411	International Paper - Savannah	251.0	1.99%	0.99%	1.30%	0.08%	0.06%	0.08%	
GA	13051-3679811	International Paper - Savannah	85.9	7.53%	1.18%	1.54%	0.34%	0.07%	0.09%	
FL	12031-640211	IEA	105.1	4.43%	0.96%	1.39%	0.09%	0.03%	0.06%	
SC	45015-4834911	ALLUMAR OF SOUTH CAROLINA	323.0	1.84%	0.95%	1.35%	0.00%	0.01%	0.01%	
PA	42003-3866111	KFNON NE V G V T CO/KEYSTONE STA	1,048.6	0.84%	2.07%	1.15%	0.03%	0.01%	0.01%	
Facilities That Dropped Off After REVISION										
DH	39025-8294312	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	876.2	0.07%	1.25%	0.76%	0.00%	0.02%	0.02%	
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	173.6	1.97%	1.05%	0.67%	0.01%	0.02%	0.01%	
IN	18147-8017212	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	899.0	0.37%	1.38%	0.64%	0.00%	0.02%	0.03%	

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Mammoth Cave NP (KY)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	118.0	16.88%	3.57%	2.68%	2.60%	0.26%	0.33%	
IN	18051-7363111	Gibson	158.2	5.73%	2.16%	1.63%	1.20%	0.35%	0.33%	
KY	21145-6037011	Big Rivers Electric Corp. - Wilson Station	39.9	5.75%	1.07%	1.39%	0.37%	0.66%	0.66%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	238.8	1.60%	0.86%	1.15%	0.15%	0.14%	0.19%	
VA	29143-5363811	NEW MADRID POWER PLANT-MARSTON	312.7	0.86%	1.29%	1.16%	0.04%	0.07%	0.09%	
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PLEASANTBURG	182.9	3.09%	1.30%	1.04%	0.96%	0.40%	0.27%	
Facilities That Dropped Off After REVISION										
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	256.1	4.22%	1.43%	0.89%	0.14%	0.12%	0.12%	
OH	39053-8148511	General James M. Gavin Power Plant (062703006)	406.5	1.45%	1.15%	0.81%	0.04%	0.02%	0.02%	
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	498.6	0.30%	1.15%	0.65%	0.04%	0.08%	0.02%	
IN	18173-8183122	ALCOA - WARRICK POWER FLY AEG DIV OF AL	136.7	2.05%	1.03%	0.40%	1.74%	0.82%	0.30%	
IN	18125-8186111	Espee Air Brown-Scott Indiana Gas & Elec	162.9	2.78%	1.16%	0.60%	0.27%	0.68%	0.00%	

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Swanquarter Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
PA	42003-3866111	GEVONN NE V/GV T CO/KEYSTONE STA	640.2	3.00%	6.66%	3.44%	0.08%	0.08%	0.03%	
NC	37013-8479311	PCS Phosphate Company, Inc. - Aurara	52.5	37.89%	2.16%	3.07%	0.57%	0.05%	0.06%	
OH	39053-8148511	General James M. Gavin Power Plant	651.5	1.77%	2.74%	2.01%	0.06%	0.03%	0.05%	
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	659.6	0.35%	1.00%	1.86%	0.02%	0.03%	0.06%	
MD	74001-7763811	Luke Paper Company	512.5	0.43%	2.88%	1.75%	0.02%	0.05%	0.07%	
WV	54033-8271711	ALLEGHENY ENERGY SUPPLY CO, LLC-MARTINSBURG	568.8	0.67%	1.19%	1.71%	0.08%	0.10%	0.12%	
VA	42053-3005211	HOMLR CTY GLN LP/ CENTER WP	620.3	0.55%	1.27%	1.38%	0.05%	0.05%	0.07%	
PA	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER 3RD	625.7	0.84%	1.23%	1.17%	0.07%	0.03%	0.05%	
GA	13015-2813011	Ea Power Company - Plant Bowen	810.6	0.15%	0.74%	1.32%	0.00%	0.02%	0.03%	
NC	37117-8049311	Dorstar Paper Company, LLC	89.0	2.27%	0.72%	1.00%	1.02%	0.14%	0.20%	
Facilities That Dropped Off After REVISION										
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	1,005.3	0.34%	1.69%	0.83%	0.02%	0.03%	0.04%	

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Linville Gorge Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
TN	47163-8982311	EASTMAN CHEMICAL COMPANY	81.8	19.21%	2.87%	4.05%	0.66%	0.67%	0.16%	
OH	39053-8148511	General James M. Gavin Power Plant (062703006)	329.2	5.90%	4.67%	3.46%	0.04%	0.01%	0.02%	
PA	42003-3866111	GEVONN NE V/GV T CO/KEYSTONE STA	567.5	0.84%	3.49%	1.87%	0.00%	0.00%	0.00%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.28%	0.95%	1.44%	0.00%	0.61%	0.02%	
TN	47163-8979311	TVA CLIMBERLAND FOSSIL PLANT	516.6	0.11%	0.85%	1.20%	0.00%	0.61%	0.01%	
GA	13015-2813011	Ea Power Company - Plant Bowen	345.9	0.53%	0.30%	1.13%	0.02%	0.60%	0.00%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	503.5	1.18%	2.22%	3.10%	0.03%	0.07%	0.09%	
IN	18051-7363111	Gibson	582.3	0.67%	1.35%	1.07%	0.03%	0.07%	0.07%	
VA	29143-5363811	NEW MADRID POWER PLANT-MARSTON	686.6	0.03%	1.11%	1.09%	0.00%	0.07%	0.00%	
VA	51027-4034811	Jewell Coke Company LLP	140.4	5.34%	0.93%	1.92%	0.01%	0.60%	0.00%	
Facilities That Dropped Off After REVISION										
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	856.4	0.29%	1.43%	0.86%	0.00%	0.02%	0.00%	
MD	24901-7763811	Luke Paper Company	463.8	0.23%	1.77%	0.84%	0.00%	0.02%	0.02%	
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PLEASANTBURG	530.5	0.30%	1.32%	0.82%	0.01%	0.07%	0.05%	
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	380.3	2.82%	1.00%	0.66%	0.03%	0.02%	0.03%	

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Cape Romain Wilderness Area (SC)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
SC	45019-4973611	KAPSTONE CHARLESTON KRAFT LLC	29.3	30.18%	2.86%	3.73%	2.74%	0.25%	0.33%	
GA	13015-2813011	Ea Power Company - Plant Bowen	506.2	0.36%	2.71%	3.53%	0.01%	0.10%	0.14%	
SC	45015-4834911	ALLIANCE OF SOUTHE CAROLINA	39.1	17.07%	1.79%	2.43%	0.05%	0.07%	0.03%	
PA	42003-3866111	GEVONN NE V/GV T CO/KEYSTONE STA	857.1	0.30%	4.74%	2.89%	0.00%	0.01%	0.01%	
SC	45015-4120411	SANTHE COOPER CROSS GENERATING STATION	83.8	6.57%	1.73%	2.25%	0.45%	0.21%	0.27%	
OH	39053-8148511	General James M. Gavin Power Plant (062703006)	701.0	0.84%	3.18%	2.17%	0.00%	0.03%	0.04%	
SC	45043-5496411	INTERNATIONAL PAPER GEOBOLTOWN MILL	57.4	4.31%	1.64%	1.64%	0.35%	0.11%	0.15%	
SC	45043-6652811	SANTHE COOPER WINYAW GENERATING STATION	51.4	4.66%	1.02%	1.33%	0.38%	0.13%	0.17%	
GA	13051-3479811	International Paper - Savannah	166.1	1.76%	0.99%	1.21%	0.04%	0.05%	0.06%	
Facilities That Dropped Off After REVISION										
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	776.2	0.12%	1.14%	0.69%	0.00%	0.04%	0.04%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	868.3	0.06%	1.78%	0.54%	0.00%	0.07%	0.08%	

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Shining Rock Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
OH	39053-8148511	General James M. Gavin Power Plant (062703006)	397.3	1.39%	3.26%	2.11%	0.01%	0.01%	0.01%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	573.4	0.47%	1.66%	1.63%	0.01%	0.02%	0.02%	
TN	47163-8979311	TVA CLIMBERLAND FOSSIL PLANT	454.1	0.58%	0.95%	1.32%	0.02%	0.61%	0.02%	
GA	13015-2813011	Ea Power Company - Plant Bowen	241.6	1.70%	0.92%	1.38%	0.07%	0.61%	0.01%	
VA	29143-5363811	NEW MADRID POWER PLANT-MARSTON	625.7	0.36%	1.37%	1.96%	0.00%	0.01%	0.01%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	473.3	0.70%	2.55%	1.77%	0.01%	0.07%	0.09%	
PA	42003-3866111	GEVONN NE V/GV T CO/KEYSTONE STA	657.6	0.49%	2.36%	1.27%	0.00%	0.00%	0.00%	
IN	18051-7363111	Gibson	524.2	0.29%	1.35%	2.21%	0.01%	0.07%	0.07%	
NC	37087-7920511	Blue Ridge Paper Products - Carson Mill (1413090154)	16.9	41.29%	2.14%	1.95%	6.65%	0.67%	0.10%	
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	406.7	1.37%	1.59%	1.05%	0.03%	0.01%	0.01%	
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	783.3	0.13%	1.74%	1.04%	0.00%	0.01%	0.01%	
TN	47163-8982311	EASTMAN CHEMICAL COMPANY	126.5	4.83%	0.74%	1.04%	0.40%	0.62%	0.03%	
Facilities That Dropped Off After REVISION										
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PLEASANTBURG	529.0	0.18%	1.77%	0.82%	0.01%	0.11%	0.08%	
IL	17127-7808911	Boysco Steam	582.4	0.23%	1.07%	0.59%	0.00%	0.01%	0.00%	

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Great Smoky Mountains National Park (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %	
OH	39053-8148511	General James M. Gavin Power Plant (062703006)	400.5	2.75%	5.10%	3.73%	0.04%	0.02%	0.03%	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	465.3	1.34%	0.94%	1.32%	0.02%	0.06%	0.08%	
TN	47163-8982311	EASTMAN CHEMICAL COMPANY	160.3	6.03%	0.88%	1.27%	0.19%	0.04%	0.05%	
PA	42003-3866111	GEVONN NE V/GV T CO/KEYSTONE STA	688.7	6.11%	2.51%	1.19%	0.00%	0.01%	0.01%	
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	375.5	4.86%	2.42%	1.19%	0.21%	0.19%	0.25%	
IN	18051-7363111	Gibson	456.3	1.25%	1.84%	1.05%	0.07%	0.77%	0.27%	
Facilities That Dropped Off After REVISION										
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	360.0	1.89%	1.50%	0.98%	0.09%	0.02%	0.02%	
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PLEASANTBURG	435.6	1.48%	1.08%	0.78%	0.22%	0.29%	0.20%	
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	675.9	0.19%	1.22%	0.72%	0.02%	0.01%	0.00%	
TN	47145-8979111	TVA KINGSTON FOSSIL PLANT	80.0	2.38%	1.23%	0.38%	0.71%	0.08%	0.03%	

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Joyce Kilmer-Slickrock Wilderness Area (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	475.3	4.74%	4.89%	3.45%	0.06%	0.01%	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	472.8	0.84%	0.98%	1.38%	0.05%	0.07%	0.10%
TN	47163-3982811	EASTMAN CHEMICAL COMPANY	179.2	5.88%	0.93%	3.30%	0.36%	0.02%	0.02%
PA	42003-3866111	GENON NE V/G/T CO/KEYSTONE STA	711.0	0.27%	2.17%	0.12%	0.00%	0.00%	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	391.2	4.33%	2.27%	2.12%	0.14%	0.16%	0.22%
GA	19015-2819011	Juke Power Company - Plant Bowen	166.2	3.61%	0.79%	2.11%	0.10%	0.01%	0.01%
IN	19051-7363111	Edison	471.7	2.00%	1.29%	3.02%	0.13%	0.21%	0.21%
OH	39023-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413992154)	385.1	3.63%	1.53%	3.00%	0.06%	0.01%	0.01%
Facilities That Dropped Off After REVISION									
AR	05062-1083421	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	674.4	1.58%	1.36%	0.81%	0.05%	0.02%	0.02%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	453.0	2.16%	1.00%	0.72%	0.14%	0.23%	0.16%
IN	18145-4979111	TVA KINGSTON FOSSEL PLANT	73.7	7.68%	1.29%	0.39%	0.57%	0.10%	0.03%

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Dolly Sods Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	83.6	13.58%	4.94%	7.18%	1.36%	0.26%	0.31%
OH	39013-8148511	General James M. Gavin Power Plant (0627010056)	233.8	7.62%	6.56%	4.88%	0.10%	0.03%	0.05%
WV	54073-4782811	MICHONGAHELA POWER CO-PLEASANTS POWER STA	168.9	4.64%	4.32%	4.19%	0.16%	0.07%	0.10%
OH	39081-8111711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	163.9	1.36%	2.14%	4.02%	0.03%	0.01%	0.03%
OH	39023-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413992154)	416.9	1.40%	2.25%	1.49%	0.02%	0.04%	0.05%
WV	54051-6902311	MITCHELL PLANT	144.2	1.45%	1.28%	1.42%	0.07%	0.02%	0.05%
PA	42005-1866111	GENON NE V/G/T CO/KEYSTONE STA	172.8	4.12%	2.42%	1.27%	0.01%	0.00%	0.00%
OH	39013-7983011	The Valley Electric Corp., Sugar Creek Station (0627000003)	234.9	0.62%	0.66%	1.18%	0.11%	0.02%	0.02%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	219.8	3.56%	1.45%	1.14%	0.11%	0.03%	0.03%
WV	54061-6773611	MICHONGAHELA POWER CO - FORT MARTIN POWER	79.8	6.33%	1.27%	1.13%	1.07%	0.18%	0.23%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	847.6	0.12%	0.74%	1.05%	0.00%	0.01%	0.02%
Facilities That Dropped Off After REVISION									
IN	18051-7363111	Edison	729.5	0.04%	1.24%	0.90%	0.02%	0.04%	0.04%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	676.3	0.44%	1.93%	0.97%	0.01%	0.02%	0.03%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	682.6	0.16%	1.05%	0.79%	0.02%	0.04%	0.03%
OH	39013-8010611	Kennecott Power Plant (0615000000)	242.3	0.71%	1.04%	0.00%	0.17%	0.08%	0.00%

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James River Face Wilderness Area (VA)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	270.2	7.66%	5.44%	4.04%	0.14%	0.08%	0.11%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	297.6	2.76%	2.51%	3.69%	0.36%	0.12%	0.14%
OH	39081-8111711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	306.4	1.95%	1.92%	3.03%	0.04%	0.02%	0.06%
WV	54073-4782811	MICHONGAHELA POWER CO-PLEASANTS POWER STA	248.0	3.87%	2.33%	2.26%	0.15%	0.03%	0.05%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	223.5	3.30%	2.46%	1.93%	0.13%	0.05%	0.11%
PA	42003-3866111	GENON NE V/G/T CO/KEYSTONE STA	337.1	2.98%	2.88%	2.17%	0.06%	0.02%	0.04%
VA	51580-5738711	Meadowlands Packaging Resource Group	46.5	12.64%	1.02%	1.35%	1.14%	0.15%	0.22%
OH	39053-7983011	The Valley Electric Corp., Sugar Creek Station (0627000003)	270.0	0.63%	0.66%	1.18%	0.16%	0.04%	0.04%
WV	54051-6902311	MITCHELL PLANT	268.6	0.68%	0.97%	1.05%	0.03%	0.02%	0.04%
Facilities That Dropped Off After REVISION									
OH	39023-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413992154)	435.2	1.89%	1.39%	0.92%	0.05%	0.05%	0.06%
IN	18051-7363111	Edison	729.4	0.59%	1.02%	0.82%	0.02%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	663.5	0.56%	1.33%	0.66%	0.03%	0.01%	0.02%

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Otter Creek Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	72.8	17.37%	4.49%	6.51%	1.81%	0.26%	0.31%
OH	39013-8148511	General James M. Gavin Power Plant (0627010056)	214.2	10.46%	7.08%	5.25%	0.18%	0.04%	0.06%
WV	54073-4782811	MICHONGAHELA POWER CO-PLEASANTS POWER STA	148.3	8.19%	4.39%	4.24%	0.30%	0.08%	0.12%
OH	39081-8111711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	162.7	1.94%	2.03%	3.61%	0.05%	0.02%	0.04%
OH	39023-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413992154)	397.5	1.12%	2.40%	1.58%	0.02%	0.06%	0.06%
WV	54051-6902311	MITCHELL PLANT	136.6	1.56%	1.40%	1.50%	0.06%	0.03%	0.05%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	198.0	4.36%	1.67%	1.31%	0.12%	0.02%	0.04%
OH	39013-7983011	The Valley Electric Corp., Sugar Creek Station (0627000003)	215.3	0.85%	0.71%	1.27%	0.20%	0.02%	0.02%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	816.5	0.18%	0.77%	1.09%	0.00%	0.01%	0.02%
IN	18051-7363111	Edison	709.7	0.24%	1.22%	2.01%	0.03%	0.05%	0.05%
WV	54061-6773611	MICHONGAHELA POWER CO - FORT MARTIN POWER	82.7	4.96%	1.14%	1.00%	0.92%	0.20%	0.24%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	655.7	0.64%	2.01%	1.00%	0.01%	0.03%	0.04%
PA	42005-1866111	GENON NE V/G/T CO/KEYSTONE STA	186.5	3.73%	1.91%	3.07%	0.03%	0.00%	0.00%
Facilities That Dropped Off After REVISION									
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	663.0	0.23%	1.07%	0.79%	0.02%	0.04%	0.03%
OH	39013-8010611	Kennecott Power Plant (0615000000)	233.8	1.12%	1.07%	0.00%	0.17%	0.08%	0.00%

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Shenandoah National Park (VA)

State	Facility ID	Facility Name	DISTANCE_m	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
PA	42003-3866111	GENON NE V/G/T CO/KEYSTONE STA	249.8	11.83%	8.89%	6.81%	0.10%	0.05%	0.06%
OH	39081-8111711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	269.6	1.53%	2.32%	3.50%	0.06%	0.05%	0.13%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	189.7	4.60%	2.75%	4.14%	0.59%	0.37%	0.46%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	323.4	5.25%	4.88%	3.75%	0.14%	0.10%	0.14%
WV	54073-4782811	MICHONGAHELA POWER CO-PLEASANTS POWER STA	265.0	4.97%	2.20%	2.20%	0.24%	0.18%	0.28%
PA	42063-3005211	HOMER CITY GEN LF/CENTER TWP	230.1	2.60%	1.56%	3.78%	0.13%	0.04%	0.06%
ND	24901-7763811	Juke Paper Company	118.4	6.90%	2.20%	3.41%	0.23%	0.09%	0.14%
PA	42063-3005111	NUC WHITE SULF GEN/SWARD GEN STA	215.5	1.80%	1.00%	1.17%	0.04%	0.02%	0.02%
WV	54051-6902311	MITCHELL PLANT	251.8	1.46%	0.88%	1.01%	0.11%	0.08%	0.16%
OH	39053-7983011	The Valley Electric Corp., Sugar Creek Station (0627000003)	324.1	0.43%	0.55%	1.01%	0.16%	0.06%	0.06%
Facilities That Dropped Off After REVISION									
WV	54061-6773611	MICHONGAHELA POWER CO - FORT MARTIN POWER	184.4	2.41%	1.06%	0.97%	1.27%	0.47%	0.62%
OH	39023-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413992154)	505.4	1.31%	1.28%	0.87%	0.11%	0.05%	0.08%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	265.6	2.08%	1.04%	0.84%	0.09%	0.09%	0.19%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA ALP ROCKPORT	755.8	0.71%	1.46%	0.76%	0.03%	0.02%	0.03%

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**Appendix F-31 - VISTAS Regional Haze Project Update to
EPA Region 3, Region 4, and OAQPS -July 30, 2020**

VISTAS Regional Haze Project Update



EPA Region 4, Region 3, and OAQPS Briefing
 Jim Boylan
 July 30, 2020

Why 1% Threshold?

- In the Round 1 Regional Haze SIPs, many VISTAS states used the AOI approach and a 1% threshold on a Unit basis.
 - Round 2 uses the AOI/PSAT approach and a $\geq 1.00\%$ PSAT threshold based on a Facility basis.
 - This pulled in more facilities compared to a Unit basis.
 - Round 2 uses 2028 emissions (lower than 2018)
 - This pulled in more facilities with smaller visibility impacts (in Mm^{-1}) compared to Round 1.
- This approach results in a reasonable number of sources that can be evaluated with limited state resources and focuses on the sources and pollutants with the largest impacts.

Outline

- Reasonable Progress Screening Approach
- Area of Influence
- PSAT Results
- Initial List of Sources
- EPA Discussion



Area of Influence (AOI) Analysis

- Evaluates emissions (Q), distance to Class I area (d), and extinction weighted residence time (EWRT) in model grid cells (point) or counties (source categories)
- Formula: $(Q/d)*EWRT$
- Establishes each county's and each facility's contribution to light extinction at each Class I area on the 20% most impaired days
- Can use contributions to rank and screen facilities for the four-factor analysis

Reasonable Progress Screening Approach

1. The VISTAS reasonable progress work started with AOI screening ($Q/d * EWRT$) to rank sectors and facilities based on their sulfate and nitrate contributions at each Class I area.
2. These rankings were used to identify 87 individual facilities for PSAT tagging. PSAT tagging was used to determine the sulfate and nitrate contributions from each facility at each Class I area in the VISTAS_12 domain.
3. Each individual VISTAS state will apply a PSAT contribution threshold based on the facility sulfate and facility nitrate impacts (separately, not combined) divided by the total impact of sulfate + nitrate from all point sources to determine which sources may need to be considered for a four-factor analysis.
 - If sulfate contribution $\geq 1.00\%$ \rightarrow SO_2 Four-Factor Analysis
 - If nitrate contribution $\geq 1.00\%$ \rightarrow NO_x Four-Factor Analysis

AOI Source Categories for WOLF

SOURCE CATEGORY	NO_x	SO_2	TOTAL
NONPOINT	1.7%	2.8%	4.4%
NONROAD_MAR	2.9%	1.5%	4.4%
NONROAD_OTHER	3.3%	0.3%	3.6%
ONROAD	5.7%	0.7%	6.4%
POINT	7.3%	67.9%	75.2%
PT_FIRES_PRESCRIBED	0.9%	5.1%	6.0%
TOTAL	21.8%	78.2%	100.0%

AOI Screening Summary

State	Threshold	Notes
AL	2%	Sulfate only
FL	5%	Sulfate or nitrate, plus Gulf Crist, Mosaic Bartow, Mosaic New Wales, and Mosaic RiverView
GA	2% - 4%	Sulfate or nitrate, 2% threshold for GA facilities, 4% threshold for facilities outside GA
KY	2%	Sulfate or nitrate
MS	2%	Sulfate or nitrate
NC	3%	Sulfate + nitrate
SC	2% - 5%	2% for sulfate, 5% for nitrate, plus Santee Cooper Winyah, International Paper Georgetown, and SCE&G Williams
TN	3%	Sulfate + nitrate, plus CEMEX
VA	2%	Sulfate + nitrate
WV	0.2% - 2%	Sulfate or nitrate

Each VISTAS state selected their threshold based on their state-specific situation and will document the selection process in their SIP.

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Facility Tags (KY, MS, NC, SC, TN, VA)

Facility State	Facility BPO	FACILITY ID - STD	FACILITY NAME - STD	SO2 (TPY)	NOx (TPY)
KY	VISTAS	21183-206111	Big Rivers Electric Corp. - Wilson Station	6,534.16	1,151.25
KY	VISTAS	21091-752411	Century Aluminum of KY LLC	5,044.16	197.66
KY	VISTAS	21177-5198711	Tennessee Valley Authority - Paradise Fossil Plant	3,011.01	3,114.52
KY	VISTAS	21145-4693711	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	19,304.79	2,007.24
MS	VISTAS	28059-838911	Chemron Products Company - Parsippany Refinery	761.60	1,584.12
MS	VISTAS	28059-8251011	Mississippi Power Company - Plant Victor J Daniel	231.92	3,829.72
NC	VISTAS	37087-7920311	Blue Ridge Paper Products - Canton Mill	1,127.07	2,992.37
NC	VISTAS	37117-809811	Domtar Paper Company, LLC	857.48	1,786.45
NC	VISTAS	37035-8370411	Duke Energy Carolinas, LLC - Marshall Steam Station	4,139.21	7,511.31
NC	VISTAS	37033-8479311	PCS Phosphate Company, Inc. - Aurora	4,845.90	495.58
NC	VISTAS	37023-8513011	SGL Carbon LLC	261.64	21.09
SC	VISTAS	45015-4838111	ALUMAX OF SOUTH CAROLINA	3,751.69	108.08
SC	VISTAS	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	2,787.52	2,031.26
SC	VISTAS	45019-4973011	KAPSTONE CHARLESTON KRAFT LLC	1,863.60	2,355.82
SC	VISTAS	45015-4704611	SANTEE COOPER CROSS GENERATING STATION	4,281.17	3,273.47
SC	VISTAS	45043-4662811	SANTEE COOPER WINYAH GENERATING STATION	2,246.86	1,772.53
SC	VISTAS	45015-8306711	SCE&G WILLIAMS	392.48	992.73
TN	VISTAS	47991-4979911	Cemex - Knoxville Plant	121.47	711.50
TN	VISTAS	47163-7982111	EASTMAN CHEMICAL COMPANY	6,420.16	6,992.31
TN	VISTAS	47105-4129211	TATE & LYLE, Loudon	472.76	883.25
TN	VISTAS	47001-6196011	TVA BULL RUN FOSSIL PLANT	6,922.24	964.16
TN	VISTAS	47181-4879311	TVA CUMBERLAND FOSSIL PLANT	8,427.23	4,936.51
TN	VISTAS	47145-4979111	TVA KINGSTON FOSSIL PLANT	1,586.09	1,687.38
VA	VISTAS	51027-4034811	Jewell Coke Company LP	5,090.95	520.17
VA	VISTAS	51280-5798711	Meadowcreek Packaging Resource Group	2,115.31	1,985.69
VA	VISTAS	51023-5059611	Roanoke Cement Company	2,250.17	1,972.57

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AOI Point Contributions for Wolf Island

State	FACILITY NAME	DISTANCE (m)	NOx_2028 (tons/year)	SO2_2028 (tons/year)	NOx Contribution	SO2 Contribution
GA	Brunswick Cellulose Inc	17.9	1,554.5	284.2	2.94%	8.84%
FL	ROCK TENN CP, LLC	74.9	2,316.8	2,606.7	0.39%	3.54%
GA	International Paper - Savannah	89.9	1,560.7	3,945.4	0.24%	7.93%
FL	J&J	105.1	851.8	2,094.5	0.09%	4.43%
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	109.9	951.5	1,860.2	0.08%	2.65%
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	173.6	112.4	3,751.7	0.01%	1.97%
SC	ALUMAX OF SOUTH CAROLINA	223.0	108.1	3,751.7	0.00%	1.84%
FL	RAYONIER PERFORMANCE FIBERS LLC	77.4	2,327.1	562.0	0.38%	1.79%
FL	SEAWOOD S&C CO-OP COOPERATIVE, INC	181.4	917.8	3,713.4	0.02%	1.77%
OH	General James M. Gavin Power Plant (062700056)	845.3	3,122.5	41,955.8	0.02%	1.71%
SC	SANTEE COOPER CROSS GENERATING STATION	251.0	3,273.5	4,281.2	0.09%	1.59%
GA	Southern States Phosphate & Fertilizer	84.1	1.0	597.1	0.00%	1.55%
FL	IFF CHEMICAL HOLDINGS, INC	118.5	37.7	898.9	0.00%	1.22%
FL	DUKE ENERGY FLORIDA, INC. (DEF)	296.6	4,289.8	5,306.4	0.05%	1.19%
GA	Ga Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.03%	1.08%
GA	Savannah Sugar Refinery	89.9	521.6	582.0	0.08%	1.06%
SC	INTERNATIONAL PAPER EASTOVER	288.7	1,780.3	3,232.9	0.05%	0.95%
GA	Ga Power Company - Plant McManus	27.1	72.2	80.1	0.14%	0.93%
SC	KAPSTONE CHARLESTON KRAFT LLC	213.6	2,355.8	1,863.7	0.09%	0.89%
PA	SENONINE MGMT CO/KEYSTONE STA	1,048.6	5,578.5	56,395.2	0.01%	0.84%

By setting the AOI threshold at GA's levels, a reasonable number of tags and facilities were identified and 35.0% of the total sulfate + nitrate point contribution was captured.

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Facility Tags (WV, AR, MO, MD, PA, IL, IN, OH)

Facility State	Facility BPO	FACILITY ID - STD	FACILITY NAME - STD	SO2 (TPY)	NOx (TPY)
WV	VISTAS	54031-6277111	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	10,082.94	11,830.08
WV	VISTAS	54049-4864111	AMERICAN BITUMINOUS POWER-GRANT TOWN PLT	2,210.25	1,245.10
WV	VISTAS	54079-8799111	APPALACHIAN POWER COMPANY - JOHN AMOS PLANT	4,878.16	4,878.16
WV	VISTAS	54023-6257011	Domination Resources, Inc. - MOUNT STORM POWER STATION	2,123.64	1,984.14
WV	VISTAS	54041-6900311	EQUITRANS - COPELY RUN CS 70	0.10	511.05
WV	VISTAS	54083-6790711	FILES CREEK 6C-340	0.15	643.39
WV	VISTAS	54083-6790611	GLADY 6C-339	0.11	343.29
WV	VISTAS	54093-8327811	KINGSFORD MANUFACTURING COMPANY	16.96	140.88
WV	VISTAS	54061-1632011	LONGVIEW POWER	2,313.78	1,556.57
WV	VISTAS	54051-6029211	MITCHELL PLANT	5,372.68	2,729.62
WV	VISTAS	54061-6736111	MONONGAHELA POWER CO. - FORT MARTIN POWER STA	4,881.87	15,743.52
WV	VISTAS	54073-4782611	MONONGAHELA POWER CO. PLEASANTS POWER STA	16,817.43	5,497.37
WV	VISTAS	54063-6778811	MORGANTOWN ENERGY ASSOCIATES	628.64	655.38
AR	CENRAP	02063-1084111	ENTERGY ARKANSAS INC. INDEPENDENCE PLANT	32,609.48	14,133.10
MO	CENRAP	29143-1363811	NEW MADRID POWER PLANT-MARSTON	16,783.71	4,394.10
MD	MANE-VU	24001-7763811	Luke Paper Company	22,659.84	3,607.00
PA	MANE-VU	42005-3666111	SENONINE MGMT CO/KEYSTONE STA	56,509.25	6,578.47
PA	MANE-VU	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	11,865.70	5,215.96
PA	MANE-VU	42063-3005111	NHS WHOLESALE GEN/SEWARD GEN STA	8,880.26	2,254.04
IL	Midwest RPO	17127-7808911	Joppa Steam	20,599.28	4,706.35
IN	Midwest RPO	18173-8181111	Alcoa Warrick Power PB Agc Div of AL	5,671.26	11,158.55
IN	Midwest RPO	18051-7963111	Gibson	23,117.23	12,280.34
IN	Midwest RPO	18147-8017211	INDIANA MICHIGAN POWER DBA ASP ROCKPORT	30,536.53	8,806.77
IN	Midwest RPO	18125-7884111	INDIANAPOLIS POWER & LIGHT - PETERSBURG	18,141.88	10,665.27
IN	Midwest RPO	18129-8166111	Sigeac AB Brown South Indiana Gas & Ele	7,644.70	1,578.59
OH	Midwest RPO	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	7,460.79	2,467.31
OH	Midwest RPO	39031-8010811	Cornellville Power Plant (0616000000)	6,156.23	9,997.87
OH	Midwest RPO	39024-8294311	Duke Energy (Ohio, Wm. H. Zimmer Station (343300154)	22,813.80	2,149.57
OH	Midwest RPO	39053-8148511	General James M. Gavin Power Plant (0627010056)	41,355.81	8,122.51
OH	Midwest RPO	39053-7983011	Ohio Valley Electric Corp. - Kyger Creek Station (0627000001)	3,400.14	9,143.08

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Facility Tags (AL, FL, GA)

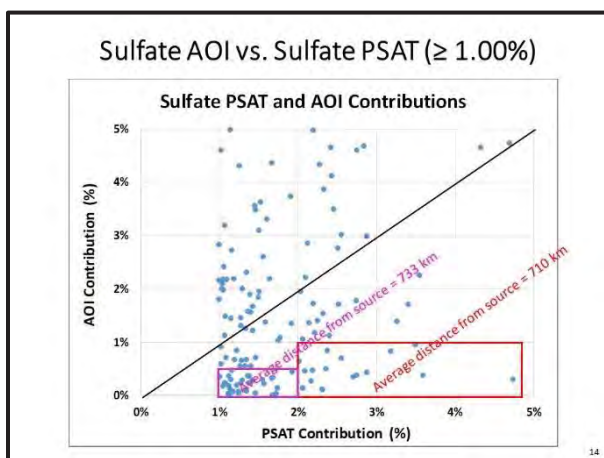
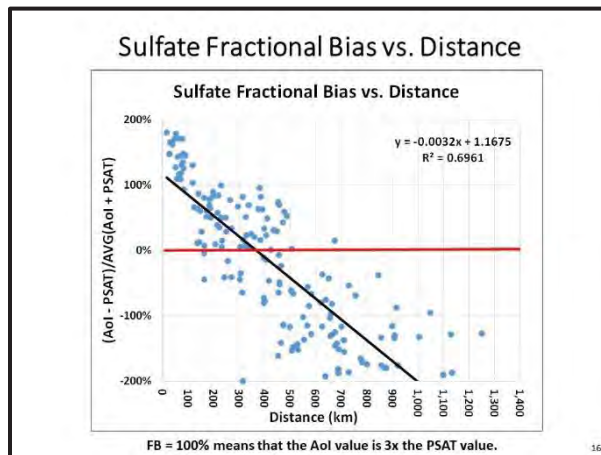
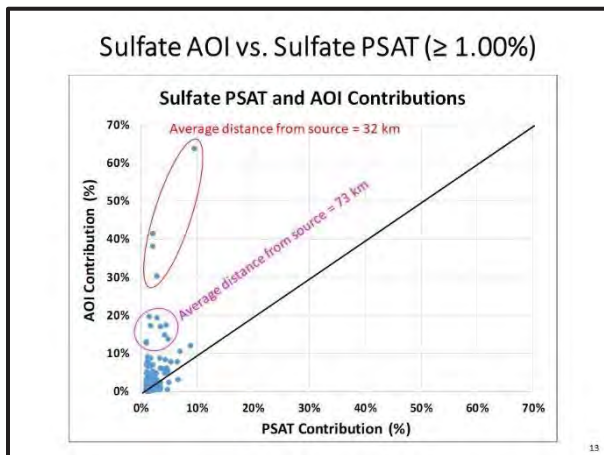
Facility State	Facility BPO	FACILITY ID - STD	FACILITY NAME - STD	SO2 (TPY)	NOx (TPY)
AL	VISTAS	01097-9498111	Alco Nobel Chemicals Inc	3,135.72	20.72
AL	VISTAS	01097-9506111	Ala Power - Barry	6,623.17	2,275.76
AL	VISTAS	01129-1028711	American Midstream Chatham, LLC	1,106.38	425.87
AL	VISTAS	01073-1018711	DRUMMOND COMPANY INC	2,362.17	1,228.55
AL	VISTAS	01053-7400211	Escambia Operating Company LLC	18,574.39	349.32
AL	VISTAS	01053-9851111	Escambia Operating Company LLC	8,585.60	149.64
AL	VISTAS	01103-1000011	Nucor Steel Decatur LLC	170.23	331.24
AL	VISTAS	01109-9857111	Sanders Lead Co	7,951.06	121.71
AL	VISTAS	01097-1006111	Union Oil of California - Churchill Gas Plant	2,575.15	349.23
FL	VISTAS	12123-7244111	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	1,520.42	1,830.71
FL	VISTAS	12086-9001111	CEMEX CONSTRUCTION MATERIALS FL, LLC	29.52	910.36
FL	VISTAS	12017-4406111	DUKE ENERGY FLORIDA, INC. (DEF)	3,930.41	2,489.85
FL	VISTAS	12086-9000111	FLORIDA POWER & LIGHT (PTF)	13.09	130.63
FL	VISTAS	12093-7527111	SULF POWER - Crist	2,615.65	2,998.28
FL	VISTAS	12086-3532711	HOMESTEAD CITY UTILITIES	0.00	97.69
FL	VISTAS	12011-6402111	J&J	2,094.48	601.79
FL	VISTAS	12105-7177111	MOOSAIC FERTILIZER LLC	7,900.67	810.42
FL	VISTAS	12057-7104111	MOOSAIC FERTILIZER, LLC	3,034.06	159.71
FL	VISTAS	12105-9108111	MOOSAIC FERTILIZER, LLC	4,425.56	141.62
FL	VISTAS	12088-8458111	RAYONIER PERFORMANCE FIBERS LLC	561.97	2,327.10
FL	VISTAS	12089-7937111	ROCK TENN CP, LLC	2,808.72	2,316.77
FL	VISTAS	12005-2354111	ROCKTENN CP, LLC	2,590.88	1,404.89
FL	VISTAS	12129-7291711	TALLAHASSEE CITY PLUMDOR GENERATING STA.	2.86	121.46
FL	VISTAS	12057-5386111	TAMPA ELECTRIC COMPANY (TEC)	6,084.90	2,665.03
FL	VISTAS	12086-8999111	TAPMAC AMERICA LLC	9.38	879.70
FL	VISTAS	12047-7997111	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	3,157.77	112.41
GA	VISTAS	13127-3721011	Brunswick Cellulose Inc	794.20	1,554.51
GA	VISTAS	13015-2813011	Ga Power Company - Plant Bowen	10,453.42	6,643.32
GA	VISTAS	13103-3363111	Georgia-Pacific Consumer Products LP (Savannah River Mill)	1,860.18	351.52
GA	VISTAS	13013-3796111	International Paper - Savannah	1,365.38	1,560.71
GA	VISTAS	13115-5393111	TEMPLE INLAND	1,781.00	1,773.30

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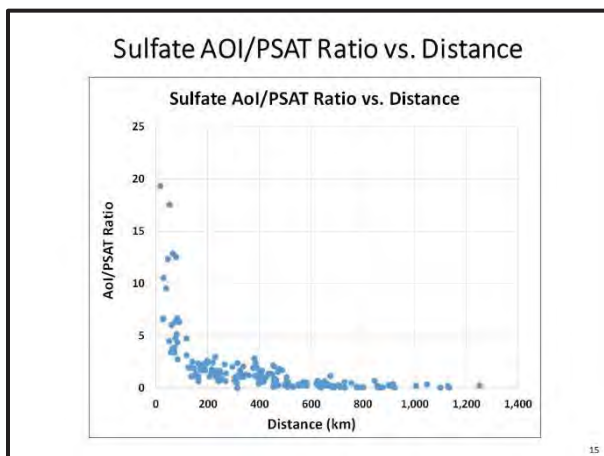
PSAT Source Apportionment Modeling

- Quantifies visibility impacts from individual point sources, source sectors, and geographic regions
- NOx and SO₂ tagging
- Used for further evaluation of AOI results
- Refines information on contributions to visibility impairment
- Can be used to adjust future year visibility projections to account for additional emission controls
- VISTAS contract with ERG allows for up to 250 tags

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- ### AOI vs. PSAT Summary
- AOI tends to overestimate impacts for facilities near the Class I area. This brought in more nearby sources.
 - AOI tends to underestimate impacts for facilities far away from the Class I area. This may miss some far away sources, but they are likely being captured by other Class I areas that are closer to those sources.
 - PSAT is the most reliable modeling tool for tracking facility contributions to visibility impairment at Class I areas.
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- ### PSAT Reasonable Progress Screening
- The **facility sulfate and nitrate contributions (Mm^{-1})** from the individual 87 tagged facilities should not change unless a facility has reduced or increased SO_2 and/or NO_x emissions.
 - The updated 2028 CAMx modeling will impact the **total sulfate and total nitrate contribution** from point sources at each Class I area since the SO_2 and NO_x emissions have decreased.
 - The facility percent contribution will increase even if the facility emissions do not change since the denominator will decrease
- Facility Sulfate Contribution (%) =**
- $$\frac{\text{Facility Sulfate Impact (Mm}^{-1}\text{)}}{\text{Total Impact of All Point Sources of Sulfate + Nitrate (Mm}^{-1}\text{)}}$$
- 18

Sipsey Wilderness Area (AL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ + Nitrate PSAT ¹ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ %	
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	337.7	0.364	16.370	2.224	0.009	16.370	0.05%
OH	39053-8148511	General James M. Gavin Power Plant	690.9	0.327	16.370	1.993	0.021	16.370	0.13%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	398.4	0.327	16.370	1.993	0.050	16.370	0.31%
IN	18051-7363111	Gilson	448.7	0.270	16.370	1.654	0.029	16.370	0.18%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	464.4	0.258	16.370	1.574	0.016	16.370	0.16%
TN	47161-4879811	TVA CUMBERLAND FOSSIL PLANT	228.9	0.242	16.370	1.445	0.038	16.370	0.17%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	314.5	0.220	16.370	1.344	0.012	16.370	0.07%
KY	21189-5561411	Big Rivers Electric Corp - Wilson Station	349.5	0.211	16.370	1.234	0.008	16.370	0.05%

8 Facilities Identified for Reasonable Progress Analysis addressing more than 13.5% of the entire sulfate plus nitrate point source visibility impact in 2028.

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St Marks Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ + Nitrate PSAT ¹ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ %	
GA	13015-2813011	Isa Power Company - Plant Bowen	492.8	0.574	11.729	4.830	0.004	11.729	0.03%
FL	12005-5354111	ROCKTENN CP LLC	140.8	0.540	11.729	4.600	0.015	11.729	0.13%
AL	01109-9857111	Sanders Lead Co	259.9	0.131	11.729	1.124	0.000	11.729	0.00%

3 Facilities Identified for Reasonable Progress Analysis addressing more than 10.6% of the entire sulfate plus nitrate point source visibility impact in 2028.

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Chassahowitzka Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ + Nitrate PSAT ¹ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ %	
FL	12017-5406111	DUKE ENERGY FLORIDA, INC. (DEF)	27.4	0.629	10.092	6.244	0.023	10.092	0.23%
GA	13015-2813011	Isa Power Company - Plant Bowen	637.2	0.230	10.092	2.284	0.003	10.092	0.03%
FL	12057-5386111	TAMPA ELECTRIC COMPANY (TEC)	106.8	0.129	10.092	1.234	0.007	10.092	0.07%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1,098.0	0.102	10.092	1.014	0.005	10.092	0.05%
AL	01109-9857111	Sanders Lead Co	471.2	0.101	10.092	1.000	0.001	10.092	0.01%

5 Facilities Identified for Reasonable Progress Analysis addressing more than 11.8% of the entire sulfate plus nitrate point source visibility impact in 2028.

20

Cohutta Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ + Nitrate PSAT ¹ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ %	
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	512.0	0.322	13.229	2.444	0.009	13.229	0.07%
GA	13015-2813011	Isa Power Company - Plant Bowen	78.0	0.282	13.229	2.134	0.009	13.229	0.04%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	0.190	13.229	1.444	0.002	13.229	0.02%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	410.1	0.181	13.229	1.374	0.005	13.229	0.04%
OH	39025-8294311	Trale Energy Ohio, Wm. H. Zimmer Station (1413090154)	454.6	0.173	13.229	1.314	0.005	13.229	0.04%
TN	47168-8982811	EASTMAN CHEMICAL COMPANY	269.8	0.166	13.229	1.234	0.012	13.229	0.09%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	801.1	0.137	13.229	1.044	0.002	13.229	0.01%
IN	18051-7363111	Gilson	487.1	0.137	13.229	1.054	0.002	13.229	0.02%

8 Facilities Identified for Reasonable Progress Analysis addressing more than 12.0% of the entire sulfate plus nitrate point source visibility impact in 2028.

23

Everglades NP (FL)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ + Nitrate PSAT ¹ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ %	
FL	12097-5386111	TAMPA ELECTRIC COMPANY (TEC)	316.6	0.044	1.333	0.304	0.000	1.333	0.00%
FL	12105-9198111	MOSAIC FERTILIZER, LLC	384.7	0.035	1.333	0.242	0.000	1.333	0.00%
FL	12105-7177111	MOSAIC FERTILIZER LLC	303.3	0.035	1.333	0.260	0.000	1.333	0.00%
FL	12086-8999111	TARMAC AMERICA LLC	61.7	0.003	1.333	0.233	0.035	1.333	2.63%

4 Facilities Identified for Reasonable Progress Analysis addressing more than 11.2% of the entire sulfate plus nitrate point source visibility impact in 2028.

21

Okefenokee Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ Mm ⁻³	FINAL Revised SO ₄ + H2SO ₄ + Nitrate PSAT ¹ Mm ⁻³	FINAL Revised Nitrate PSAT ¹ %	
FL	12047-7687111	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	71.5	0.372	13.400	2.774	0.002	13.400	0.01%
GA	13015-2813011	Isa Power Company - Plant Bowen	458.1	0.208	13.400	2.360	0.007	13.400	0.05%
FL	12123-7524111	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	193.3	0.289	13.400	2.160	0.019	13.400	0.14%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	909.1	0.203	13.400	1.514	0.002	13.400	0.01%
FL	12089-7537111	ROCK TENN CP, LLC	64.8	0.176	13.400	1.334	0.020	13.400	0.15%
SC	45015-4120411	SANTÉE COOPER CROSS GENERATING STATION	348.1	0.158	13.400	1.180	0.006	13.400	0.04%
GA	13051-8679811	International Paper - Savannah	178.9	0.140	13.400	1.040	0.008	13.400	0.06%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	999.4	0.138	13.400	1.030	0.006	13.400	0.04%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,129.0	0.137	13.400	1.020	0.002	13.400	0.01%

9 Facilities Identified for Reasonable Progress Analysis addressing more than 14.3% of the entire sulfate plus nitrate point source visibility impact in 2028.

24

Wolf Island Wilderness (GA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³
FL	12089-753711	ROCK TENN CP, LLC	74.9	0.804	12.957	2.35%	0.018	12.957	0.14%
GA	13015-2813011	Ga Power Company - Plant Bowen	458.1	0.302	12.957	2.35%	0.007	12.957	0.05%
GA	13117-9721011	Brunswick Cellulose Inc	27.9	0.228	12.957	1.76%	0.017	12.957	0.13%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	845.3	0.224	12.957	1.73%	0.003	12.957	0.02%
GA	13051-3679811	International Paper - Savannah	85.9	0.200	12.957	1.54%	0.012	12.957	0.09%
SC	45015-4120411	SANTÉE COOPER CROSS GENERATING STATION	231.0	0.189	12.957	1.40%	0.011	12.957	0.08%
FL	12091-640211	HEA	109.1	0.167	12.957	1.29%	0.008	12.957	0.06%
SC	45015-4834911	ALLUMAX OF SOUTH CAROLINA	228.9	0.162	12.957	1.23%	0.001	12.957	0.01%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,048.6	0.149	12.957	1.15%	0.002	12.957	0.01%

9 Facilities Identified for Reasonable Progress Analysis addressing more than 14.7% of the entire sulfate plus nitrate point source visibility impact in 2028.

25

Shining Rock Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	397.3	0.297	12.313	7.41%	0.001	12.313	0.01%
KY	21145-6097011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	579.4	0.201	12.313	1.63%	0.009	12.313	0.02%
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	454.1	0.182	12.313	1.32%	0.002	12.313	0.02%
GA	13015-2813011	Ga Power Company - Plant Bowen	241.6	0.159	12.313	1.29%	0.001	12.313	0.01%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	625.2	0.158	12.313	1.28%	0.001	12.313	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	473.3	0.156	12.313	1.27%	0.012	12.313	0.09%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	657.6	0.151	12.313	1.23%	0.000	12.313	0.00%
IN	18051-7363111	Gibson	554.2	0.151	12.313	1.22%	0.008	12.313	0.07%
NC	37087-7920511	Blue Ridge Paper Products - Canton Mill	16.9	0.139	12.313	1.09%	0.012	12.313	0.10%
OH	39025-8294311	Pulse Energy Ohio, Wm. H. Zimmer Station (1413090154)	406.7	0.129	12.313	1.05%	0.002	12.313	0.01%
AR	05063-1083411	ENERGY ARKANSAS INC-INDEPENDENCE PLANT	783.3	0.129	12.313	1.04%	0.001	12.313	0.01%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	126.5	0.128	12.313	1.04%	0.009	12.313	0.02%

12 Facilities Identified for Reasonable Progress Analysis addressing more than 15.9% of the entire sulfate plus nitrate point source visibility impact in 2028.

28

Mammoth Cave NP (KY)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	118.0	0.426	25.289	1.68%	0.085	25.289	0.33%
IN	18051-7363111	Gibson	198.2	0.411	25.289	1.67%	0.084	25.289	0.32%
KY	21145-6097011	Big Rivers Electric Corp - Wilson Station	89.9	0.361	25.289	1.48%	0.040	25.289	0.08%
KY	21145-6097011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	239.6	0.290	25.289	1.13%	0.049	25.289	0.19%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	312.7	0.289	25.289	1.14%	0.022	25.289	0.09%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT - PETERSBURG	182.9	0.264	25.289	1.04%	0.068	25.289	0.27%

6 Facilities Identified for Reasonable Progress Analysis addressing more than 8.1% of the entire sulfate plus nitrate point source visibility impact in 2028.

26

Swanquarter Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	640.2	0.375	10.894	3.42%	0.009	10.894	0.09%
NC	37013-8479311	PCS Phosphate Company, Inc. - Aurora	52.5	0.329	10.894	3.02%	0.007	10.894	0.06%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	651.5	0.219	10.894	2.01%	0.005	10.894	0.05%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	659.6	0.203	10.894	1.86%	0.007	10.894	0.06%
MD	24001-7763811	Luke Paper Company	512.5	0.191	10.894	1.75%	0.008	10.894	0.07%
WV	54033-6221711	ALLSOUTH ENERGY SUPPLY CO, LLC - HARRISON	568.6	0.186	10.894	1.71%	0.013	10.894	0.12%
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	620.1	0.151	10.894	1.38%	0.008	10.894	0.07%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	625.7	0.127	10.894	1.17%	0.005	10.894	0.05%
GA	13015-2813011	Ga Power Company - Plant Bowen	810.8	0.112	10.894	1.03%	0.003	10.894	0.03%
NC	37117-8049311	Domtar Paper Company, LLC	89.0	0.109	10.894	1.00%	0.022	10.894	0.20%

10 Facilities Identified for Reasonable Progress Analysis addressing more than 18.4% of the entire sulfate plus nitrate point source visibility impact in 2028.

29

Linville Gorge Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	81.9	0.522	12.884	8.05%	0.013	12.884	0.10%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	329.2	0.446	12.884	5.46%	0.002	12.884	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	567.5	0.235	12.884	1.82%	0.000	12.884	0.00%
KY	21145-6097011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.172	12.884	1.34%	0.002	12.884	0.02%
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	316.6	0.154	12.884	1.20%	0.001	12.884	0.01%
GA	13015-2813011	Ga Power Company - Plant Bowen	340.5	0.146	12.884	1.13%	0.000	12.884	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	503.5	0.142	12.884	1.10%	0.012	12.884	0.09%
IN	18051-7363111	Gibson	582.3	0.138	12.884	1.07%	0.008	12.884	0.07%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	688.6	0.134	12.884	1.04%	0.000	12.884	0.00%
VA	51027-4034811	Jewell Coke Company LLP	140.4	0.132	12.884	1.02%	0.000	12.884	0.00%

10 Facilities Identified for Reasonable Progress Analysis addressing more than 17.2% of the entire sulfate plus nitrate point source visibility impact in 2028.

27

Cape Romain Wilderness Area (SC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT %	FINAL Revised EGU + HEGU Mm ³
SC	45015-4973611	KAPSTONE CHARLESTON KRAFT LLC	29.3	0.523	14.028	3.72%	0.046	14.028	0.33%
GA	13015-2813011	Ga Power Company - Plant Bowen	806.2	0.495	14.028	3.55%	0.019	14.028	0.14%
SC	45015-4834911	ALLUMAX OF SOUTH CAROLINA	39.1	0.327	14.028	2.38%	0.005	14.028	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	857.1	0.320	14.028	2.28%	0.002	14.028	0.01%
SC	45015-4120411	SANTÉE COOPER CROSS GENERATING STATION	63.8	0.316	14.028	2.25%	0.038	14.028	0.27%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	701.0	0.305	14.028	2.17%	0.005	14.028	0.04%
SC	45043-3698611	INTERNATIONAL PAPER GEORGETOWN MILL	37.4	0.230	14.028	1.84%	0.021	14.028	0.19%
SC	45043-6652811	SANTÉE COOPER WINTYAH GENERATING STATION	51.4	0.187	14.028	1.33%	0.024	14.028	0.17%
GA	13051-3679811	International Paper - Savannah	166.1	0.180	14.028	1.25%	0.009	14.028	0.06%

9 Facilities Identified for Reasonable Progress Analysis addressing more than 20.6% of the entire sulfate plus nitrate point source visibility impact in 2028.

30

Great Smoky Mountains National Park (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Sulfate PM ₁₀ %	FINAL Revised Nitrate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Nitrate PM ₁₀ %		
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	400.5	0.520	13.916	3.72%	0.003	13.916	0.02%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	465.3	0.188	18.916	1.82%	0.011	18.916	0.08%
TN	47149-8982811	EASTMAN CHEMICAL COMPANY	160.1	0.170	18.916	1.82%	0.007	18.916	0.05%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	688.2	0.166	13.916	1.19%	0.001	13.916	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	875.5	0.166	13.916	1.19%	0.035	13.916	0.25%
IN	18051-7363111	Gibson	456.3	0.146	13.916	1.05%	0.077	13.916	0.27%

6 Facilities Identified for Reasonable Progress Analysis addressing more than 9.7% of the entire sulfate plus nitrate point source visibility impact in 2028.

31

Shenandoah National Park (VA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Sulfate PM ₁₀ %	FINAL Revised Nitrate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Nitrate PM ₁₀ %		
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	249.8	0.740	15.375	2.81%	0.009	15.375	0.06%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	269.6	0.692	15.375	4.50%	0.018	15.375	0.12%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	189.7	0.636	15.375	4.14%	0.070	15.375	0.46%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	323.4	0.576	15.375	3.75%	0.022	15.375	0.14%
WV	54073-4782811	MICHONINGAHELA POWER CO-PLEASANTS POWER STA	205.0	0.389	15.375	2.58%	0.043	15.375	0.28%
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	230.4	0.274	15.375	1.78%	0.010	15.375	0.06%
MD	24001-7763811	Luke Paper Company	118.4	0.216	15.375	1.41%	0.021	15.375	0.14%
PA	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	215.3	0.172	15.375	1.12%	0.003	15.375	0.02%
WV	54031-6902811	MITCHELL PLANT	281.8	0.155	15.375	1.01%	0.039	18.378	0.18%
OH	39053-7983011	Ohio Valley Electric Corp., Rager Creek Station (0627000003)	324.1	0.155	15.375	1.02%	0.009	15.375	0.06%

10 Facilities Identified for Reasonable Progress Analysis addressing more than 25.7% of the entire sulfate plus nitrate point source visibility impact in 2028.

34

Joyce Kilmer-Slickrock Wilderness Area (TN/NC)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Sulfate PM ₁₀ %	FINAL Revised Nitrate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Nitrate PM ₁₀ %		
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	425.1	0.473	13.694	3.45%	0.002	13.694	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	472.8	0.188	18.694	1.83%	0.014	18.694	0.10%
TN	47149-8982811	EASTMAN CHEMICAL COMPANY	179.2	0.178	18.694	1.80%	0.009	18.694	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	711.0	0.154	13.694	1.12%	0.000	13.694	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	891.2	0.154	13.694	1.12%	0.030	13.694	0.22%
GA	13015-2813011	Sea Power Company - Plant Bowen	166.2	0.152	13.694	1.11%	0.001	13.694	0.01%
IN	18051-7363111	Gibson	471.7	0.139	13.694	1.02%	0.029	13.694	0.21%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	885.1	0.137	13.694	1.00%	0.002	13.694	0.01%

8 Facilities Identified for Reasonable Progress Analysis addressing more than 11.5% of the entire sulfate plus nitrate point source visibility impact in 2028.

32

Dolly Sods Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Sulfate PM ₁₀ %	FINAL Revised Nitrate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Nitrate PM ₁₀ %		
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	83.6	1.390	19.849	7.18%	0.039	19.849	0.31%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	233.8	0.945	19.349	4.86%	0.009	19.349	0.05%
WV	54073-4782811	MICHONINGAHELA POWER CO-PLEASANTS POWER STA	169.9	0.810	19.349	4.19%	0.020	19.349	0.10%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	163.5	0.778	19.349	4.02%	0.007	19.349	0.03%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	416.9	0.288	19.349	1.49%	0.010	19.349	0.05%
WV	54051-6902311	MITCHELL PLANT	144.2	0.276	19.349	1.42%	0.009	19.349	0.05%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	112.8	0.246	19.349	1.27%	0.001	19.349	0.00%
OH	39053-7983011	Ohio Valley Electric Corp., Rager Creek Station (0627000003)	234.9	0.229	19.349	1.18%	0.003	19.349	0.02%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	215.8	0.221	19.349	1.14%	0.006	19.349	0.03%
WV	54051-6773611	MICHONINGAHELA POWER CO - FORT MARTIN POWER	79.8	0.218	19.349	1.13%	0.044	19.349	0.23%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	847.6	0.204	19.349	1.05%	0.003	19.349	0.02%

11 Facilities Identified for Reasonable Progress Analysis addressing more than 29.0% of the entire sulfate plus nitrate point source visibility impact in 2028.

35

James River Face Wilderness Area (VA)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Sulfate PM ₁₀ %	FINAL Revised Nitrate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Nitrate PM ₁₀ %		
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	270.2	0.582	14.404	4.04%	0.016	14.404	0.11%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	207.6	0.326	14.404	2.63%	0.020	14.404	0.14%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	306.4	0.520	14.404	3.61%	0.008	14.404	0.06%
WV	54073-4782811	MICHONINGAHELA POWER CO-PLEASANTS POWER STA	248.0	0.323	14.404	2.28%	0.007	14.404	0.05%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	223.3	0.278	14.404	1.93%	0.018	14.404	0.12%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	337.1	0.217	14.404	1.51%	0.005	14.404	0.04%
VA	51580-5797811	Marathon/Petroleum Packaging Resources Group	46.5	0.209	14.404	1.45%	0.051	14.404	0.25%
OH	39053-7983011	Ohio Valley Electric Corp., Rager Creek Station (0627000003)	270.0	0.170	14.404	1.18%	0.006	14.404	0.04%
WV	54051-6902311	MITCHELL PLANT	259.6	0.156	14.404	1.08%	0.006	14.404	0.04%

9 Facilities Identified for Reasonable Progress Analysis addressing more than 20.7% of the entire sulfate plus nitrate point source visibility impact in 2028.

33

Otter Creek Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_m	FINAL Revised Sulfate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Sulfate PM ₁₀ %	FINAL Revised Nitrate PM ₁₀ / EGU + NEDU Mm ⁻³	FINAL Revised Nitrate PM ₁₀ %		
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	72.8	1.242	19.077	6.51%	0.039	19.077	0.31%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	214.2	1.001	19.077	5.25%	0.011	19.077	0.06%
WV	54073-4782811	MICHONINGAHELA POWER CO-PLEASANTS POWER STA	148.8	0.899	19.077	4.24%	0.023	19.077	0.12%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	162.7	0.727	19.077	3.81%	0.008	19.077	0.04%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	397.5	0.302	19.077	1.56%	0.012	19.077	0.06%
WV	54051-6902311	MITCHELL PLANT	136.8	0.297	19.077	1.56%	0.010	19.077	0.05%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	198.0	0.248	19.077	1.31%	0.007	19.077	0.04%
OH	39053-7983011	Ohio Valley Electric Corp., Rager Creek Station (0627000003)	215.3	0.242	19.077	1.27%	0.004	19.077	0.02%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	826.5	0.207	19.077	1.09%	0.008	19.077	0.02%
IN	18051-7363111	Gibson	709.7	0.193	19.077	1.01%	0.009	19.077	0.05%
WV	54051-6773611	MICHONINGAHELA POWER CO - FORT MARTIN POWER	82.7	0.192	19.077	1.00%	0.046	19.077	0.24%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	655.7	0.191	19.077	1.00%	0.007	19.077	0.04%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	186.5	0.190	19.077	1.00%	0.001	19.077	0.00%

13 Facilities Identified for Reasonable Progress Analysis addressing more than 30.6% of the entire sulfate plus nitrate point source visibility impact in 2028.

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Non-VISTAS Class I Areas

- Only two VISTAS facilities have a contribution $\geq 1.00\%$ at any non-VISTAS Class I Area
- **ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON (WV)**
 - Moosehorn Wilderness EDM (1.06% sulfate)
- **Tennessee Valley Authority (TVA) - Shawnee Fossil Plant (KY)**
 - Caney Creek Wilderness Area (1.09% sulfate)
 - Hercules-Glades Wilderness Area (1.95% sulfate)
 - Mingo Wilderness Area (1.47% sulfate)
 - Great Gulf Wilderness Area (1.03% sulfate)
 - Presidential Range-Dry River Wilderness (1.03% sulfate)

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Non-VISTAS Facilities $\geq 1.00\%$

State	FACILITY_ID_STD	FACILITY_NAME_STD	IMPACTED CLASS I AREAS
AR	05083-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	SHRO
IN	18051-7888111	Gibson	COHU, GRSM, JOYC, LIGO, MACA, OTCR, SHRO, SIPS
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKFORD	COHU, GRSM, JOYC, LIGO, MACA, OTCR, SHRO, SIPS
IN	18125-7862411	INDIANAPOLIS POWER & LIGHT PETERSBURG	MACA, SIPS
MD	24001-7763811	Luke Paper Company	SHEN, SWAN
MO	29148-5565811	NEW MADRID POWER PLANT-MARETON	LIGO, MACA, SHRO, SIPS
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0541050002)	DOSO, JARI, OTCR, SHEN, SWAN
OH	39053-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413050134)	COHU, DOSO, JOYC, OTCR, SHRO
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	COHU, DOSO, GRSM, JARI, JOYC, LIGO, OKEF, OTCR, ROMA, SHEN, SHRO, SIPS, SWAN, WOLF
OH	39053-7883011	Ohio Valley Electric Corp., Kyger Creek Station (0627000001)	DOSO, JARI, OTCR, SHEN
PA	42005-3886111	GENON NE MGMT CO/KEYSTONE STA	COHU, DOSO, GRSM, JARI, JOYC, LIGO, OKEF, OTCR, ROMA, SHEN, SHRO, SIPS, SWAN, WOLF
PA	42063-3095211	HOMER CITY GEN LP/ CENTER TWP	DOSO, JARI, OTCR, SHEN, SWAN
PA	42063-3095111	NRG WHOLESALE GEN/SEWARD GEN STA	SHEN, SWAN

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Summary for VISTAS Class I Areas

VISTAS FEDERAL CLASS I AREAS	Number of Facilities	Percent of Point Sulfate + Nitrate
AL - Sipsey Wilderness Area (SIPS)	8	13.5%
FL - Chassahowitzka Wilderness Area (CHAS)	5	11.8%
FL - Everglades National Park (EVER)	4	11.2%
FL - Saint Marks Wilderness Area (SAMA)	3	10.6%
GA - Cohutta Wilderness Area (COHU)	8	12.0%
GA - Okefenokee Wilderness Area (OKEF)	9	14.3%
GA - Wolf Island Wilderness Area (WOLF)*	9	14.7%
KY - Mammoth Cave National Park (MACA)	6	8.1%
NC - Linville Gorge Wilderness Area (LIGO)	10	17.2%
NC - Shining Rock Wilderness Area (SHRO)	12	15.9%
NC - Swanquarter Wilderness Area (SWAN)	10	18.4%
SC - Cape Romain Wilderness Area (ROMA)	9	20.6%
TN/NC - Great Smoky Mountains National Park (GRSM)	6	9.7%
TN/NC - Joyce Kilmer-Slickrock Wilderness Area (JOYC)*	8	11.5%
VA - James River Face Wilderness Area (JARI)	9	20.7%
VA - Shenandoah National Park (SHEN)	10	25.7%
WV - Dolly Sods Wilderness Area (DOSO)	11	29.0%
WV - Otter Creek Wilderness Area (OTCR)*	13	30.6%
AVERAGE	8.3	16.4%

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Thoughts for Discussion

- VISTAS used a screening approach with Aol (various thresholds) and PSAT (1.00% threshold). This resulted in an average of 8+ facilities per Class I area and accounts for an average of 16.4% of the point source sulfate + nitrate contributions. This should be more than adequate especially accounting for all the other recent emission controls that are already built into our 2028 emission projections (next slide).
- The VISTAS focus is on significant emission impacts on Class I areas, not on the number of facilities evaluated in each state.
- Some facilities may be interested in taking permit limits resulting in adjusted PSAT impacts below the 1.00% threshold, thus avoiding the four-factor analysis.
- We are uncertain of the documentation required to apply the four factor analysis off-ramps (e.g., MATS) discussed in the August 2019 guidance.
- We are not aware of the triggers that might require incorporation of permit conditions into the Regional Haze SIPs.

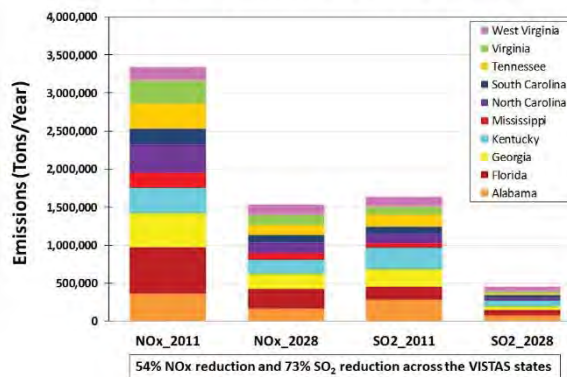
41

VISTAS Facilities $\geq 1.00\%$

State	FACILITY_ID_STD	FACILITY_NAME_STD	IMPACTED CLASS I AREAS
AL	01109-985711	Sanders Lead Co	CHAS, SAMA
FL	12123-253011	BUNGEY FLORIDA LIMITED PARTNERSHIP	OKEF
FL	12031-545011	DUKE ENERGY FLORIDA, INC. (DEF)	CHAS
FL	12031-649211	IEA	WOLF
FL	12103-571711	MOAIC FERTILIZER LLC	EVER
FL	12103-515811	MOAIC FERTILIZER LLC	EVER
FL	12085-751711	ROCK TENN CP, LLC	OKEF, WOLF
FL	12085-535411	ROCK TENN CP, LLC	SAMA
FL	12053-538611	TAMPA ELECTRIC COMPANY (TEC)	CHAS, EVER
FL	12085-899911	TARMAAC AMERICA, LLC	EVER
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS, INC	OKEF
GA	13112-2711011	Brownsea Cellulose Inc	WOLF
GA	13015-2813011	Esa Power Company - Plant Bowen	CHAS, COHU, JOYC, LIGO, OKEF, ROMA, SAMA, SHRO, SWAN, WOLF
GA	13021-387811	International Paper - Savannah	OKEF, ROMA, WOLF
KY	21185-5501611	Big Rivers Electric Corp - Wilson Station	MACA, SIPS
KY	31143-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	CACR, CHAS, COHU, DOSO, GRBU, GRSM, HEGI, JOYC, LIGO, MACA, MING, OKEF, OTCR, PRDR, SHRO, SIPS
NC	37087-720511	Blue Ridge Paper Products - Canton Mill	SHRO
NC	37117-8049311	Domtar Paper Company, LLC	SWAN
NC	37011-8479311	PCS Phosphate Company, Inc. - Aurora	SWAN
SC	45015-4814911	BULLWACK OF SOUTH CAROLINA	ROMA, WOLF
SC	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	ROMA
SC	45019-4973611	KAPSTONE CHARLESTON KRAFT LLC	ROMA
SC	45014-420411	SANTEE COOPER CROSS GENERATING STATION	OKEF, ROMA, WOLF
SC	45043-6652811	SANTEE COOPER WINNAH GENERATING STATION	ROMA
TN	47168-3982311	EASTMAN CHEMICAL COMPANY	COHU, GRSM, JOYC, LIGO, SHRO
TN	47181-4799311	TVA CUMBERLAND FOSSIL PLANT	LIGO, SHRO, SIPS
VA	51027-4034811	Jewell Coke Company LIP	LIGO
VA	51580-5788711	Meadwestvaco Packaging Resource Group	JARI
WV	54031-6217711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	DOSO, JARI, MOXD, OTCR, SHEN, SWAN
WV	54079-6759111	APPALACHIAN POWER COMPANY - SCHEN & AMOS PLANT	DOSO, JARI, OTCR
WV	54051-6902311	MITCHELL PLANT	DOSO, JARI, OTCR, SHEN
WV	54061-6778211	MONONGAHELA POWER CO - FORT MARTIN POWER	DOSO, OTCR
WV	54074-4782611	MONONGAHELA POWER CO/CLARKSANTS POWER STA	DOSO, JARI, OTCR, SHEN, SWAN

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VISTAS States Emissions: 2011 vs. 2028



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Contacts for Further Information

- For general, technical, and SIP-related questions, contact the TAWG and CC Co-chairs:
 - TAWG – Randy Strait (randy.strait@ncdenr.gov)
 - TAWG – Doris McLeod (doris.mcleod@deq.virginia.gov)
 - CC – Jim Boylan (james.boylan@dnr.ga.gov)
 - CC – Jimmy Johnston (james.johnston@tn.gov)
- For project and contract management questions, contact the Project Manager:
 - John Hornback (hornback@metro4-sesarm.org)



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**Appendix F-3m - VISTAS Regional Haze Project Update,
August 4, 2020**

VISTAS Regional Haze Project Update



EPA, FLM, RPO Briefing
 Jim Boylan
 August 4, 2020

Overview

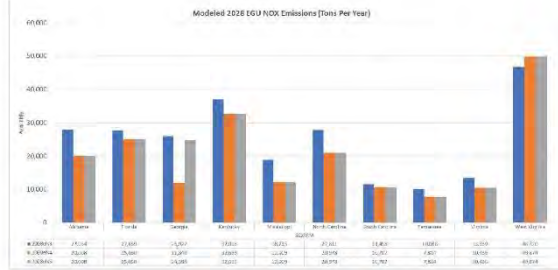
- During the QA process, an issue was identified with the emissions used in the CAMx modeling that was previously presented on May 20, 2020
- The emissions inventory was correct, but some SO₂ and NO_x emissions from EGUs were dropped during the SMOKE processing
- This issues does not impact any of the PSAT modeling or adjustments to the PSAT modeling
- This issue does impact the projected visibility in 2028 for comparison to the URP glide slope

Outline

- Recent Issue with 2028 Modeling
- Updated 2028 Model Projections
- Next Steps & Schedule

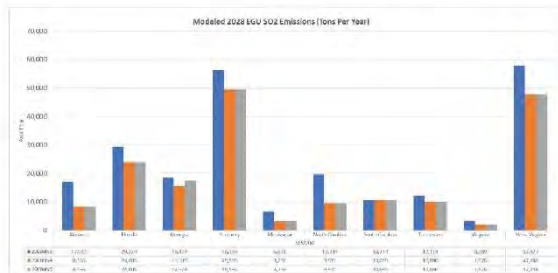


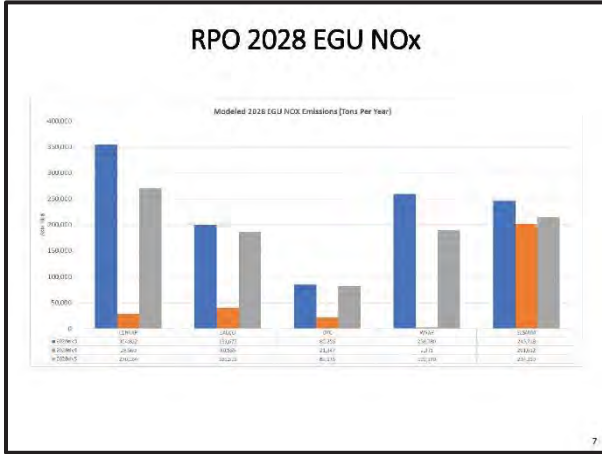
VISTAS 2028 EGU NO_x



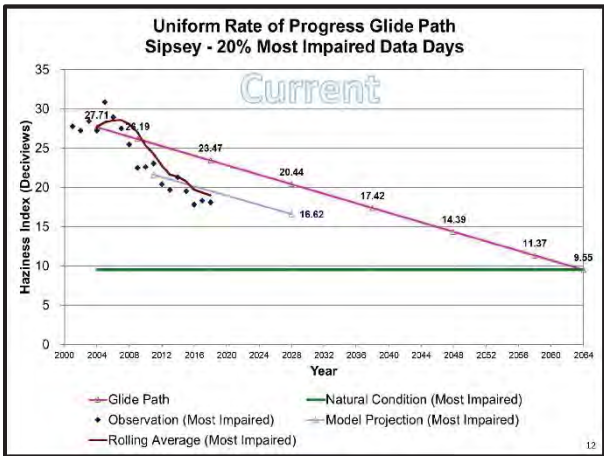
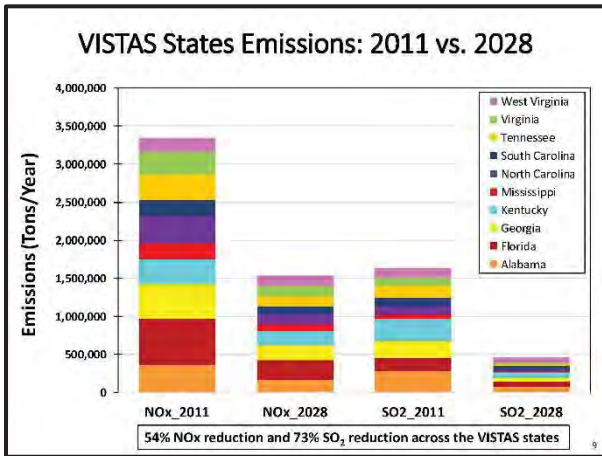
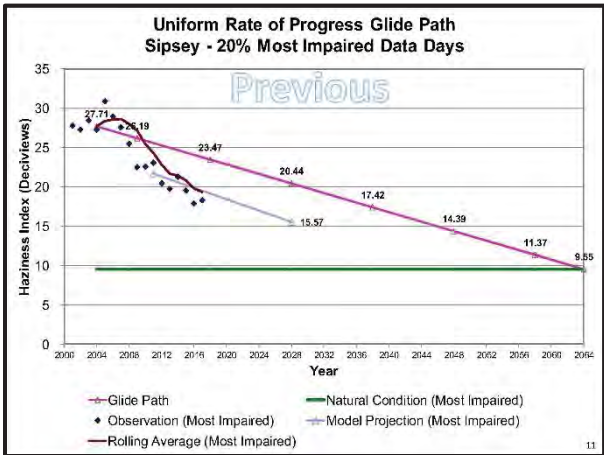
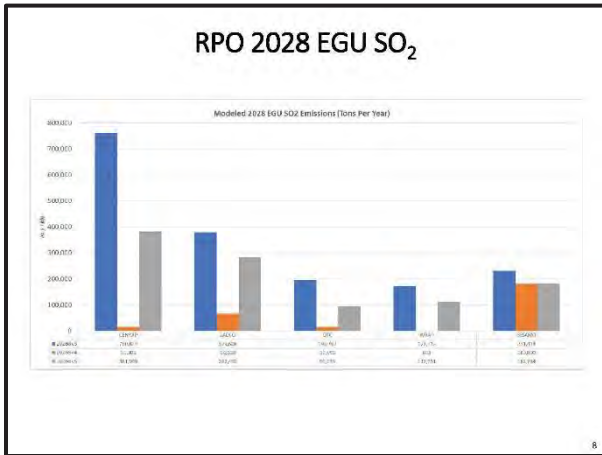
Recent Issue with 2028 Modeling

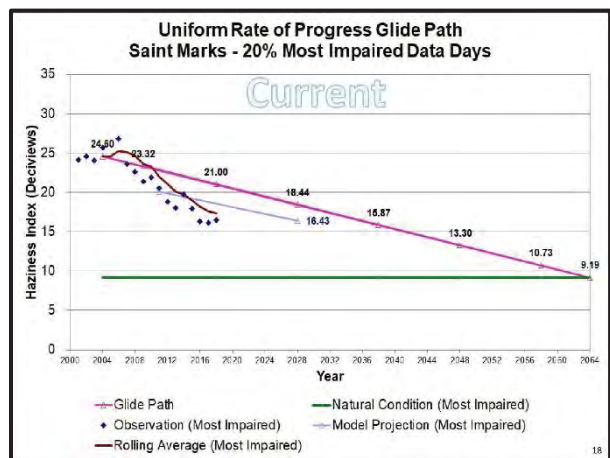
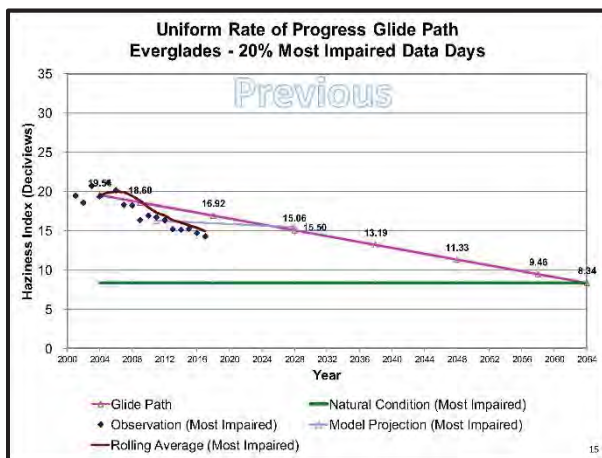
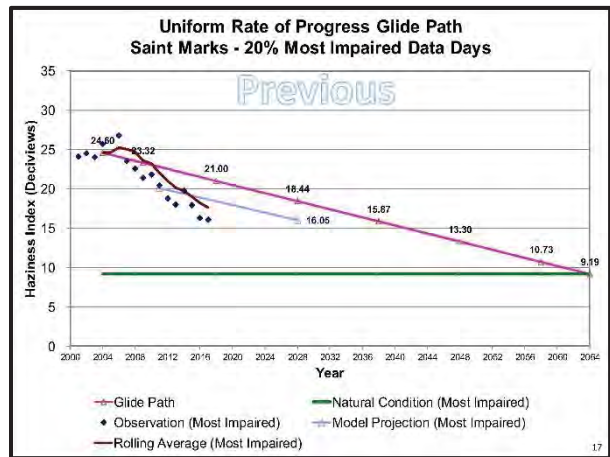
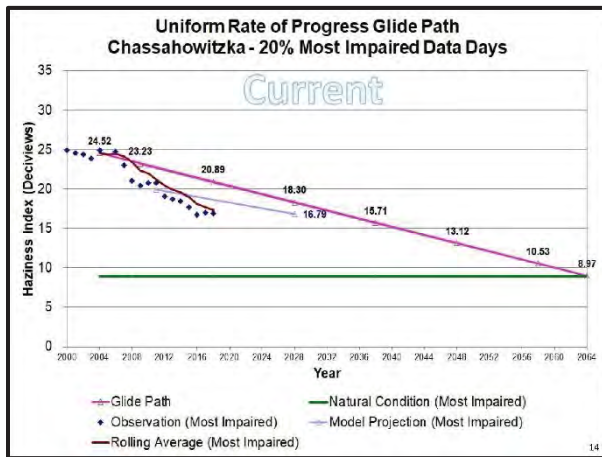
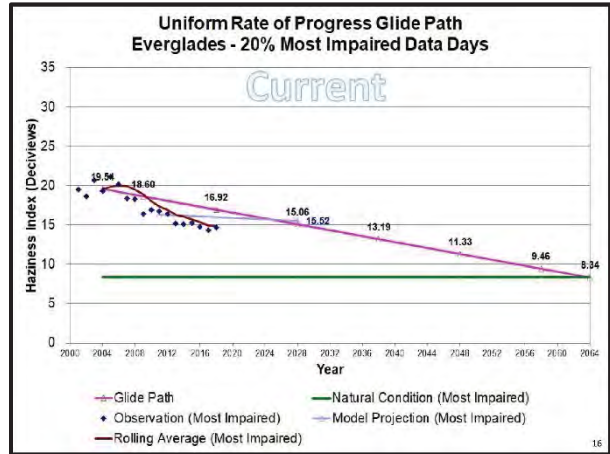
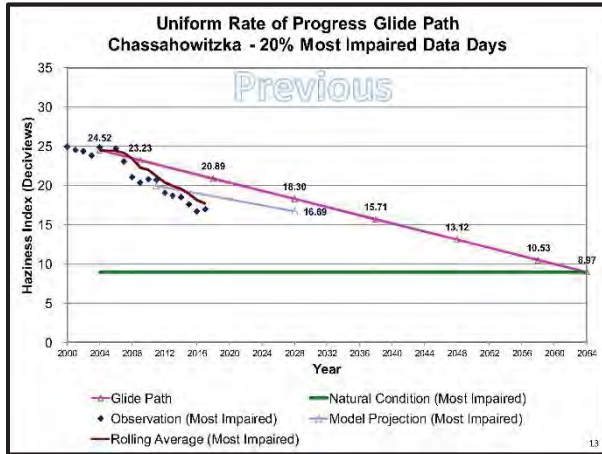
VISTAS 2028 EGU SO₂

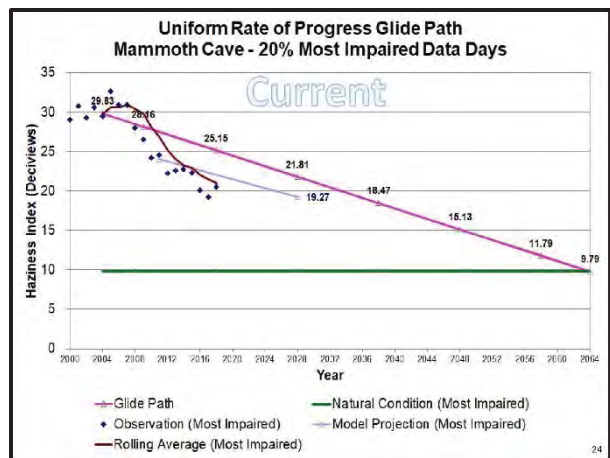
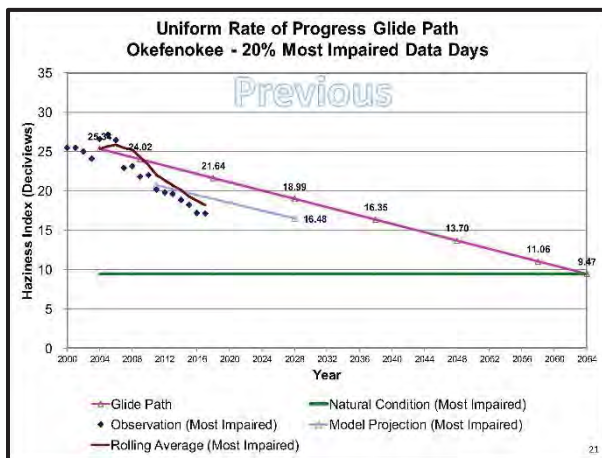
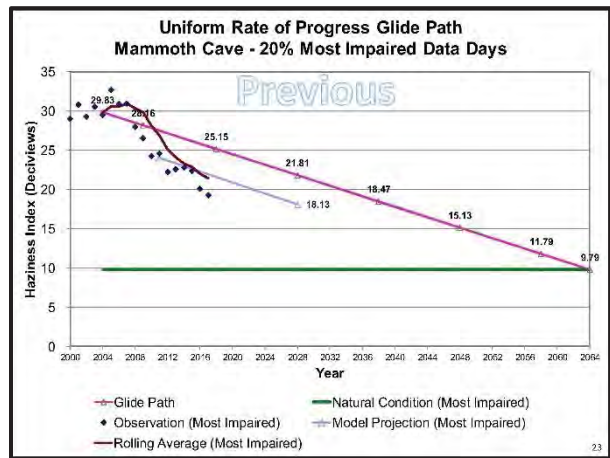
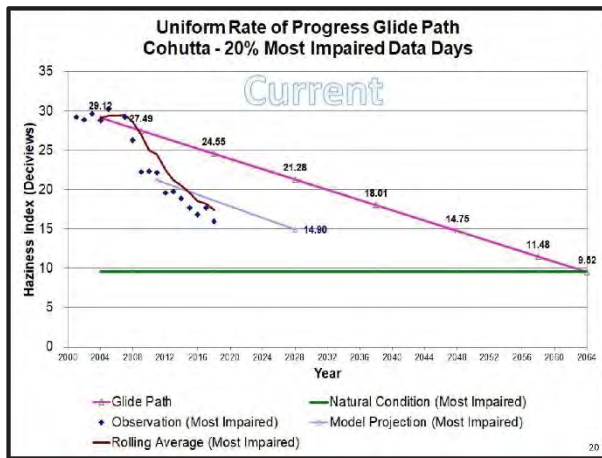
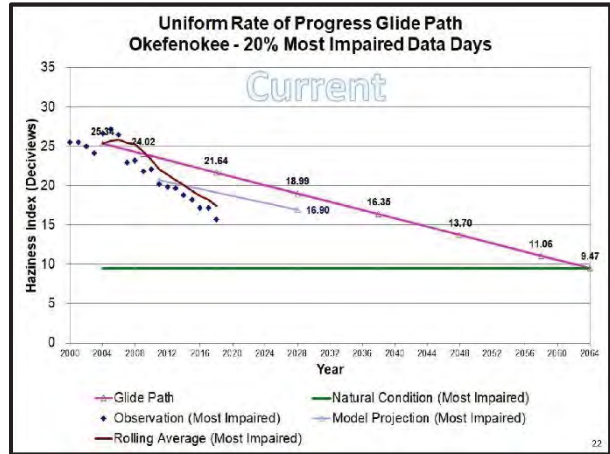
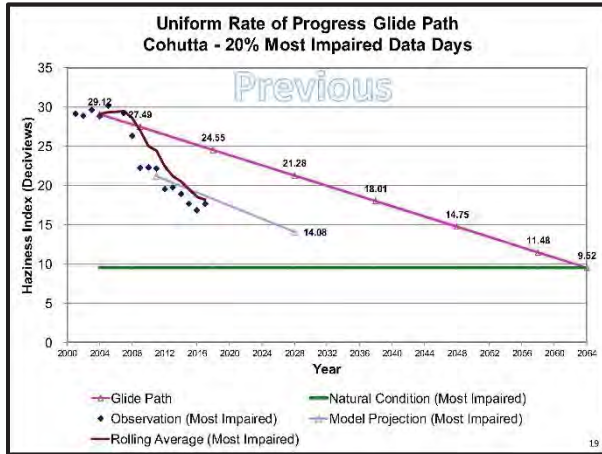


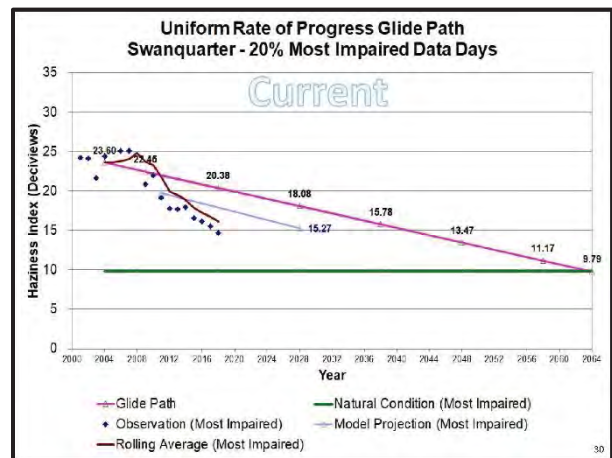
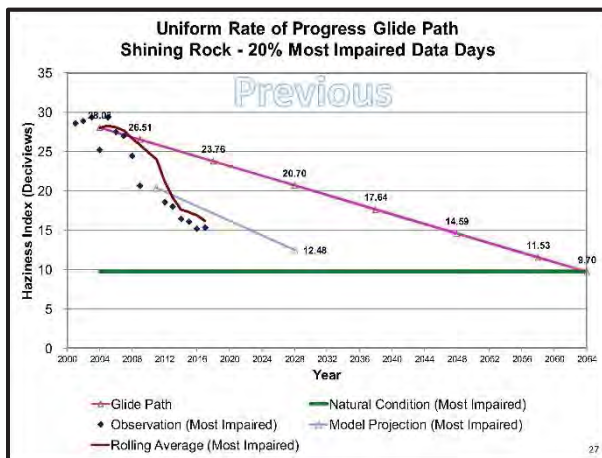
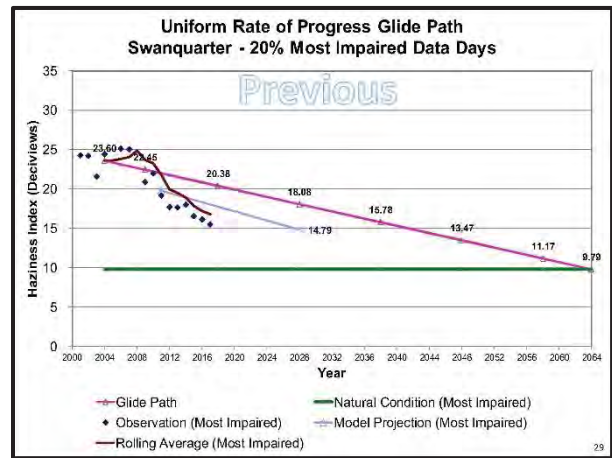
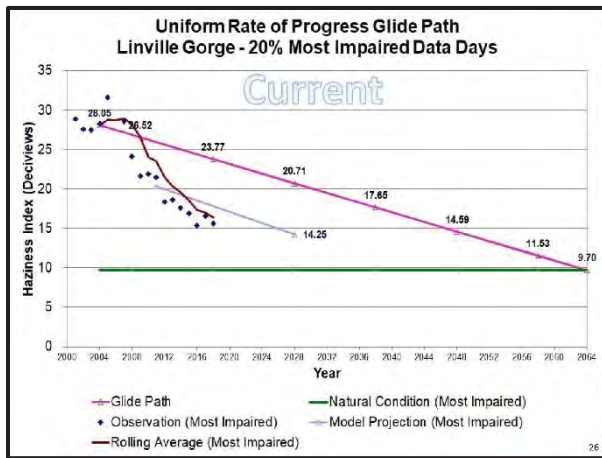
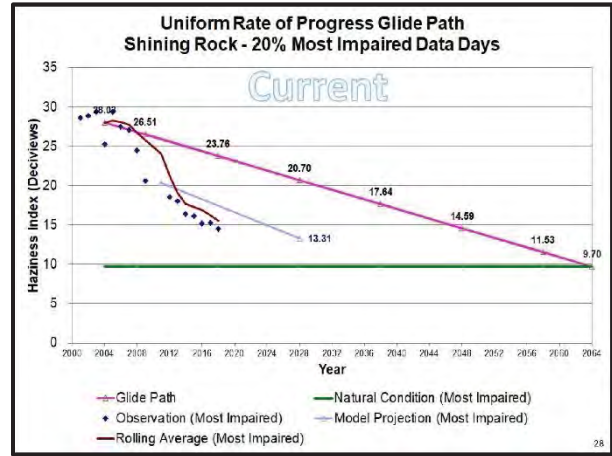
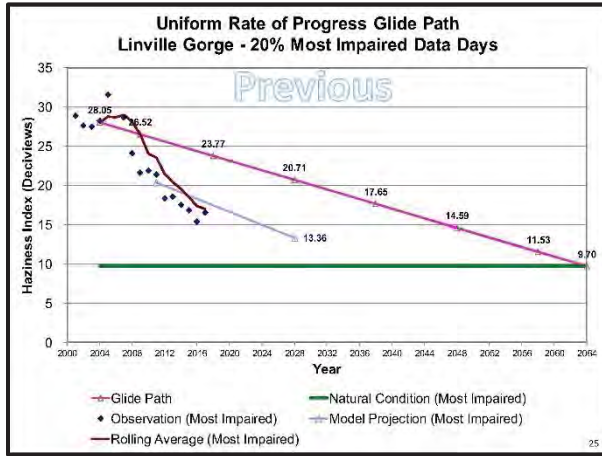


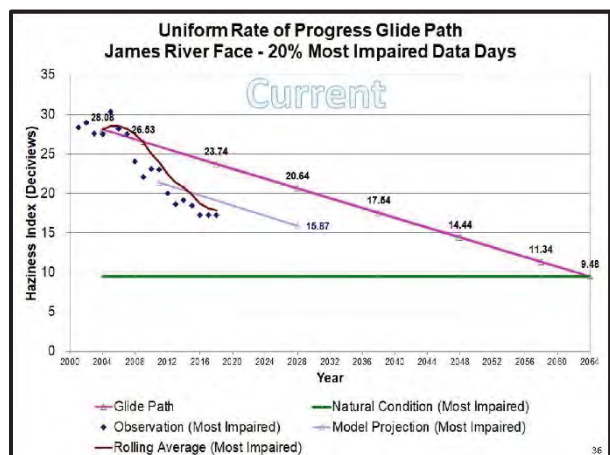
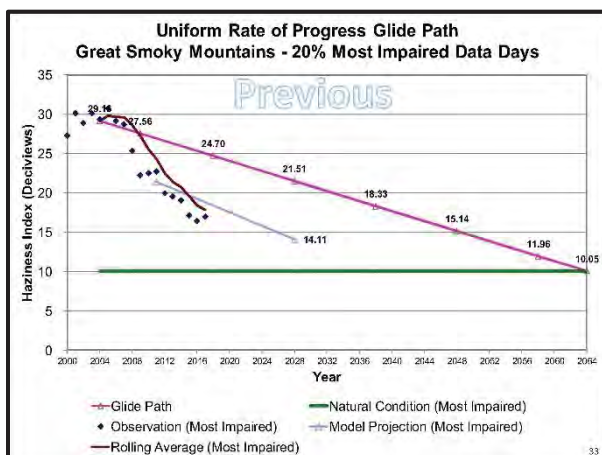
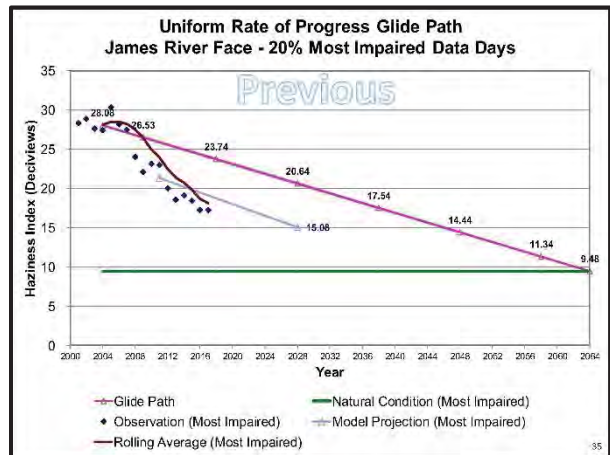
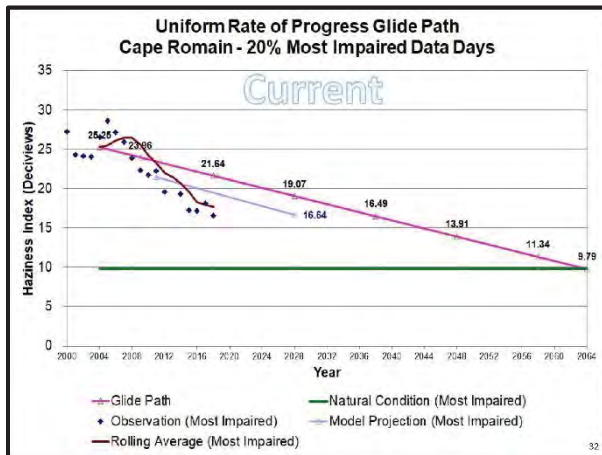
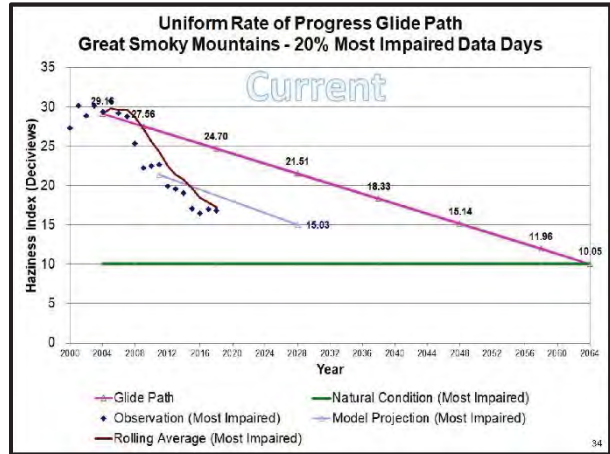
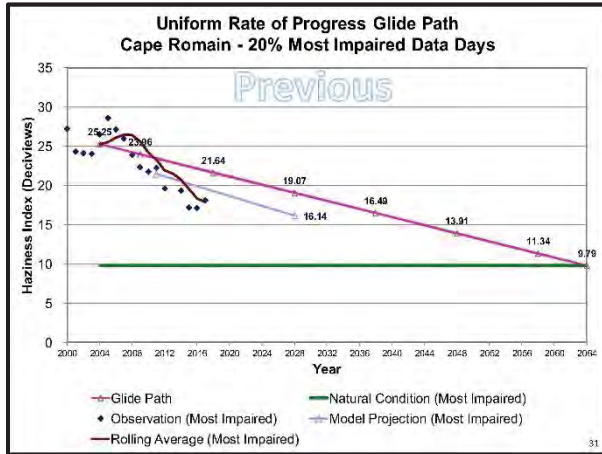
Updated 2028 Model Projections

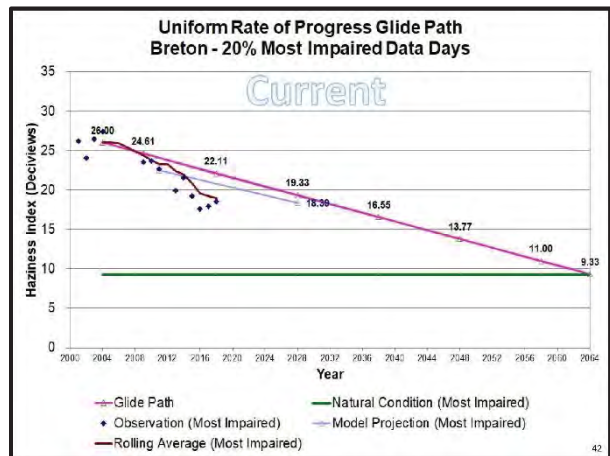
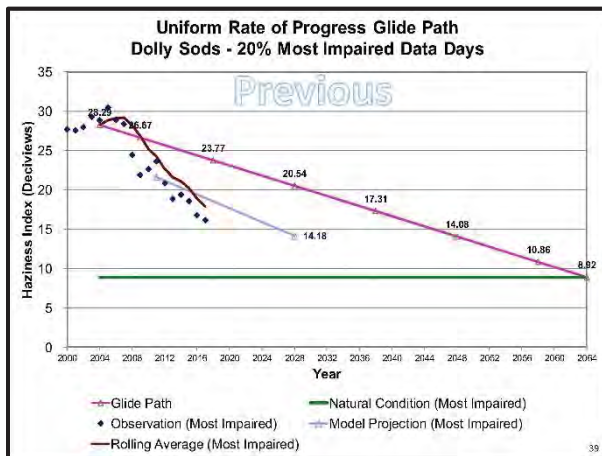
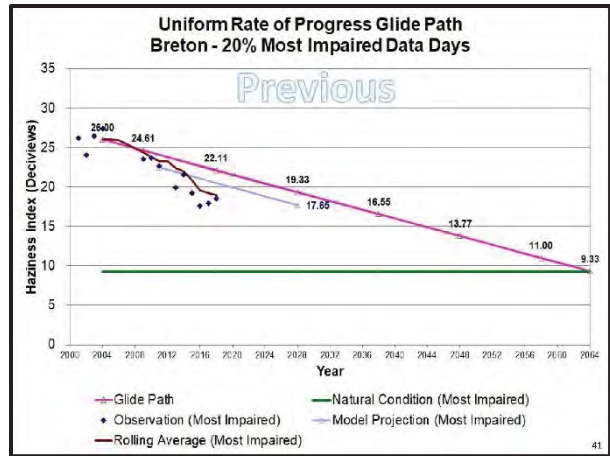
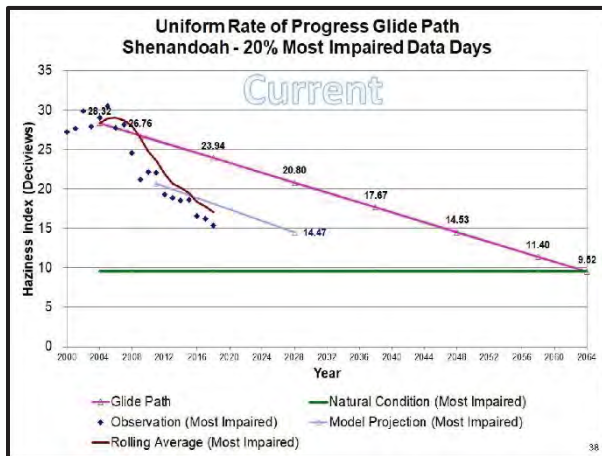
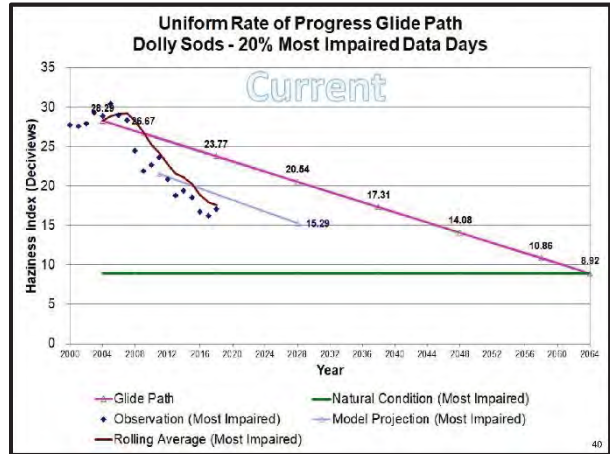
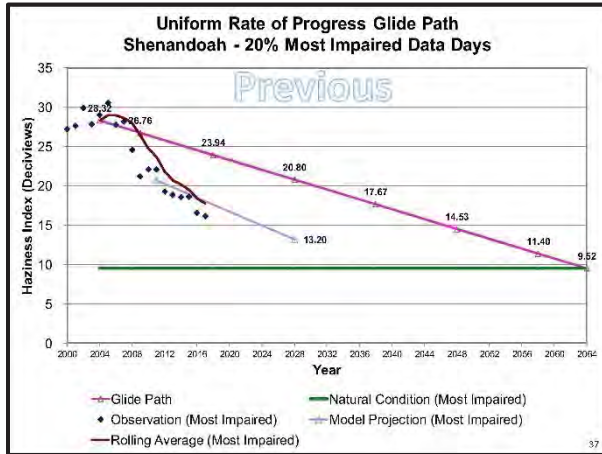


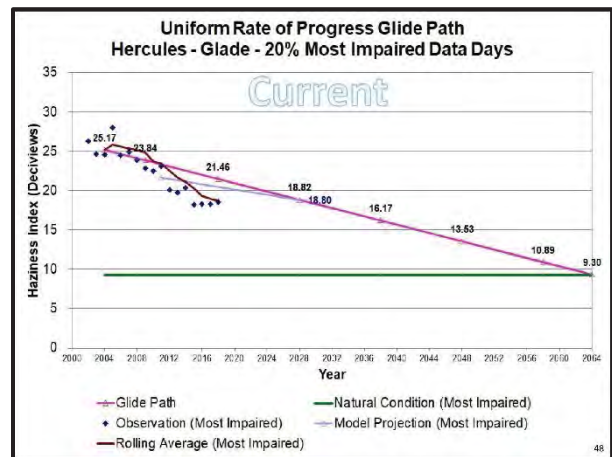
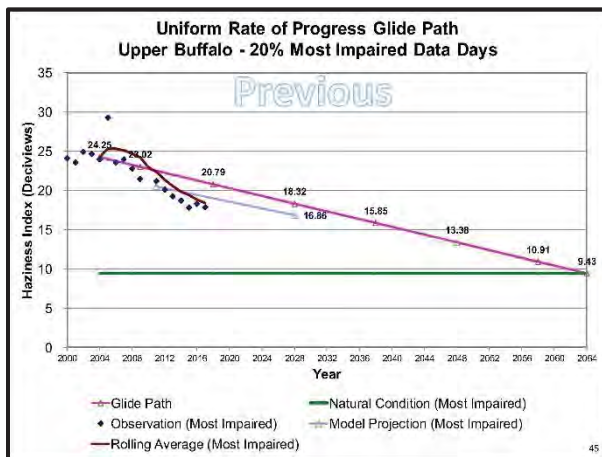
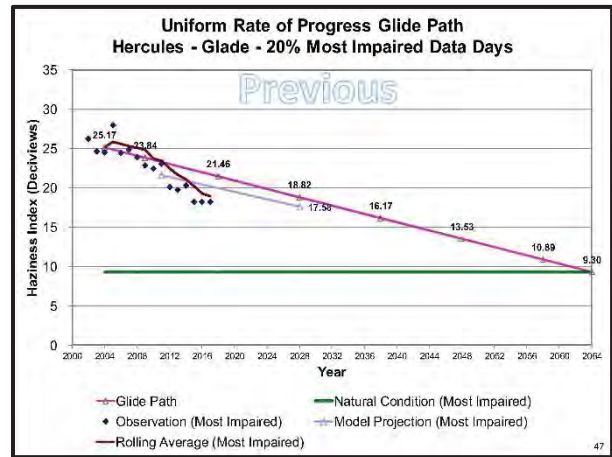
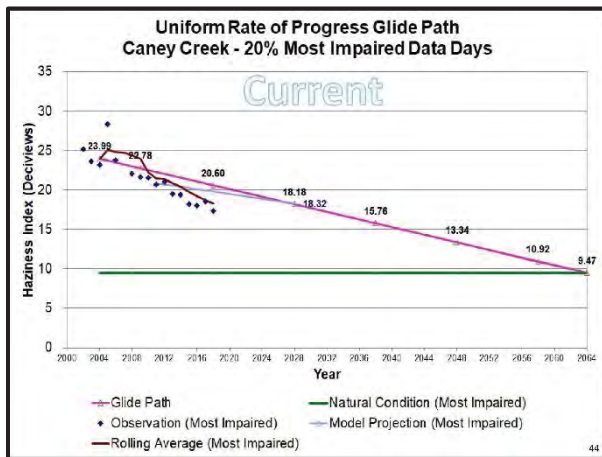
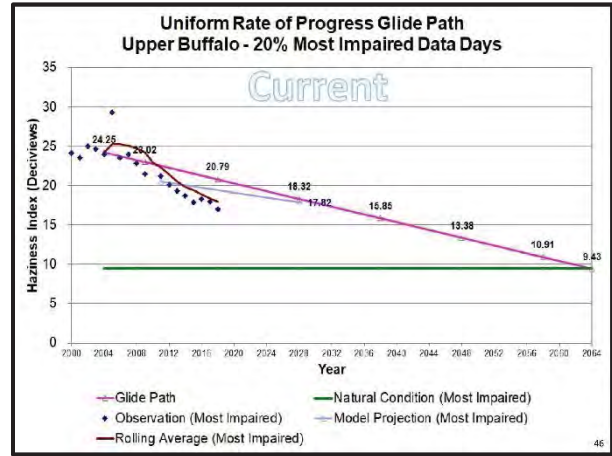
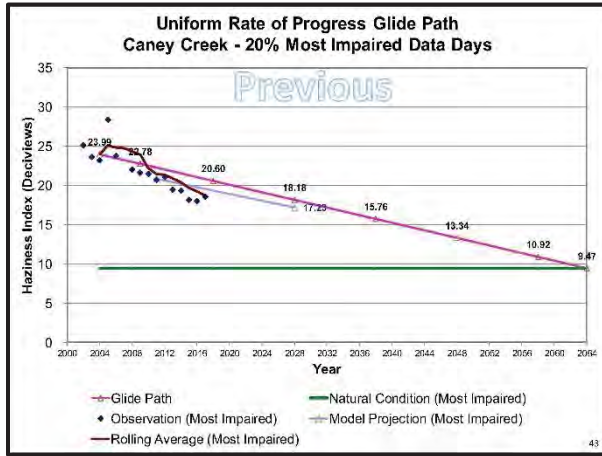


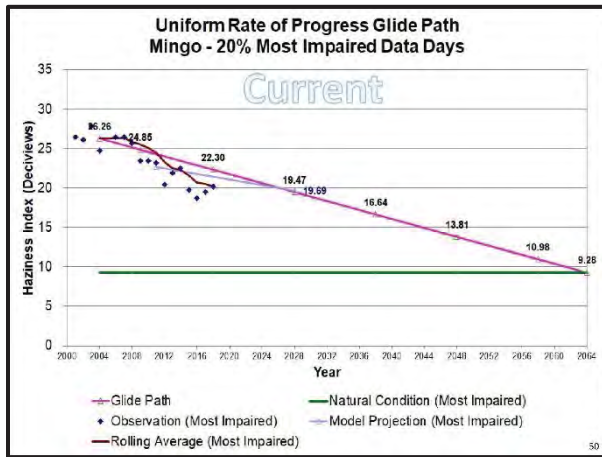
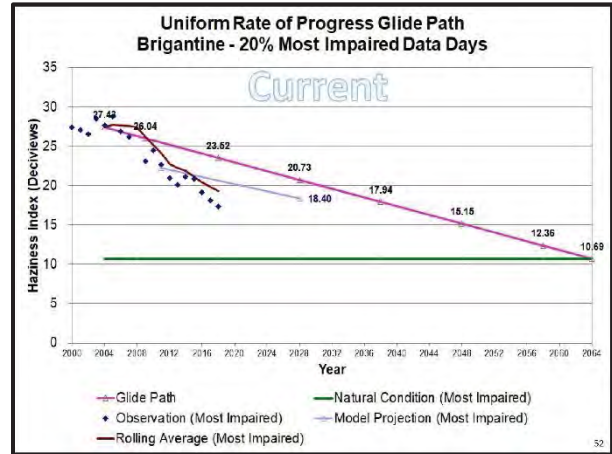
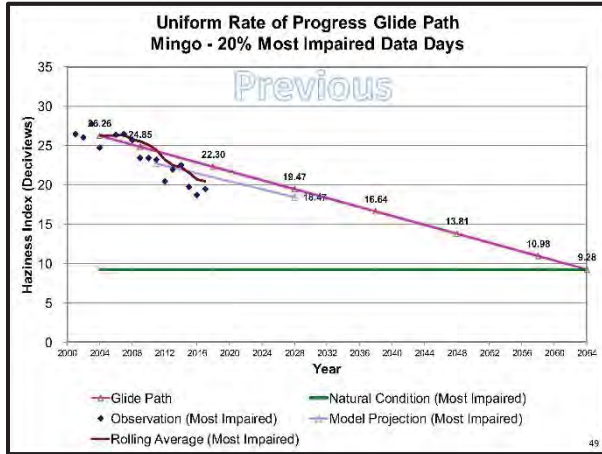






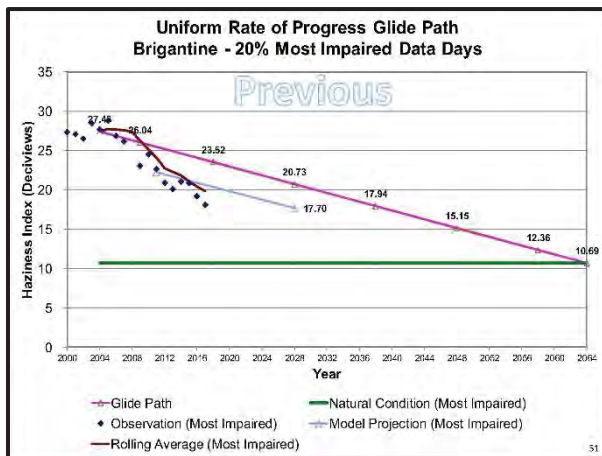






Next Steps and Schedule

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Remaining VISTAS Work Schedule

Task	Schedule
2028 Point Emissions Updates	Completed*
2028 Emissions Processing	Completed*
2028 CAMx Modeling	Completed*
2028 Visibility Projections	Completed*
2028 Deposition Projections	Early August 2020
Final Reports and Documentation	Late August 2020
Website Updates and Postings	Late August 2020
End of Contract	September 30, 2020
Regional Haze SIPs Due to EPA	July 31, 2021

* References technical work completion. Draft reports to follow.

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Contacts for Further Information

- For general, technical, and SIP-related questions, contact the TAWG and CC Co-chairs:
 - TAWG – Randy Strait (randy.strait@ncdenr.gov)
 - TAWG – Doris McLeod (doris.mcleod@deq.virginia.gov)
 - CC – Jim Boylan (james.boylan@dnr.ga.gov)
 - CC – Jimmy Johnston (james.johnston@tn.gov)
- For project and contract management questions, contact the Project Manager:
 - John Hornback (hornback@metro4-sesarm.org)



**Appendix F-3n - EPA Region 4 Fall 2020 Air Director's
Meeting-Regional Haze Update October 26, 2020**

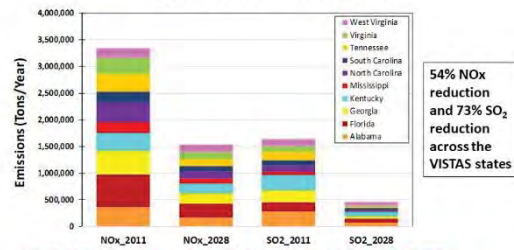
VISTAS II Regional Haze Project Update



Jim Boylan (GA DNR), Randy Strait (NC DAQ), Doris McLeod (VA DEQ), Jimmy Johnston (TN DEC), Chad LaFontaine (Metro 4/SESARM), and John Hornback (Metro 4/SESARM)

EPA Region 4 Fall 2020 Air Director's Meeting
October 26, 2020

Emission Inventories



- "Task 2A Emission Inventory Updates Report (Aol and PSAT)"
- "Task 2B Emission Inventory Updates Report (2028 Visibility Estimates)"
- "Conversion of Task 2A 2028 Point Source Modeling Files for Emissions Processing with SMOKE (Task 3A)"
- "Conversion of the Task 2B 2028 Point Source Remodeling Files for Emissions Processing with SMOKE (Task 3B)"

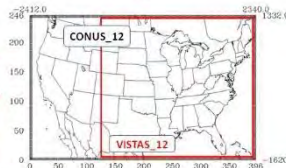
Project Background

- Goal was to provide states with technical information needed to draft their regional haze SIPs
- Project started in December 2017
- Expenses are less than 80% of budget
- Initial tasks: RFP, bids, contractor selection, contract development, work plan, QAPP, and modeling protocol
- Contractor support provided by:



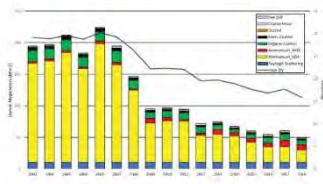
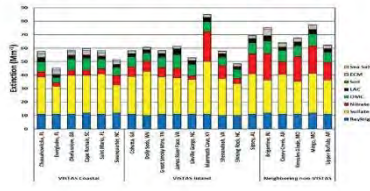
Air Quality Modeling

- "2011el and 2028el CAMx Benchmarking Report Task 6 Benchmark Report #1 Covering Benchmark Runs #1 and #2"
- "2011el CAMx Version 6.32 and 6.40 Comparison Report Task 6 Benchmark Report Number #2 Covering Benchmark Run #3"
- "2028 CAMx Version 6.32 and 6.40 Comparison Report Task 6 Benchmark Report #4 Covering Benchmark Run #4"
- "2011el CAMx Version 6.40 12km VISTAS and EPA 12km Continental Grid Comparison Report Benchmark Report Task 6 Benchmark Report #3 Covering Benchmark Run #5"
- "2028elv3 CAMx Version 6.40 12km VISTAS and EPA 12km Continental Grid Comparison Report Benchmark Report Number #6 for Task 6"
- "2028 Emissions Version V3 and V5 Comparison Report Benchmark Report Task 6 Benchmark Report #6 Covering Benchmark Run #7"



Data Acquisition and Analysis

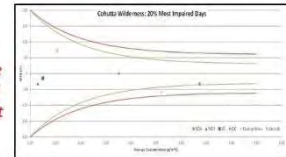
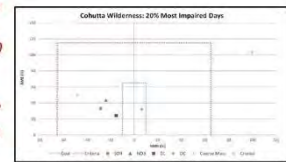
- "Task 4 Report"
- IMPROVE
- AQS
- NADP
- CASTNET
- WBAN

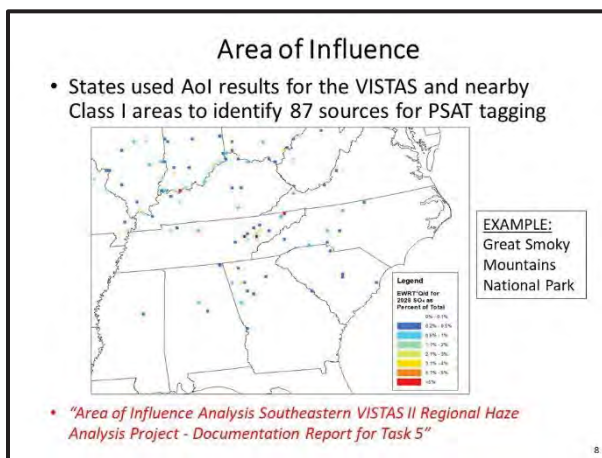
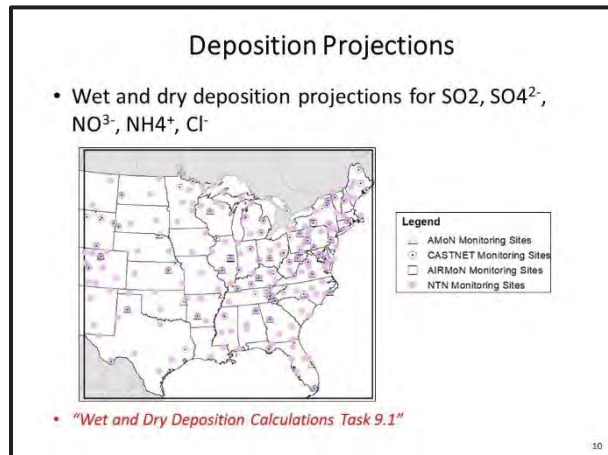
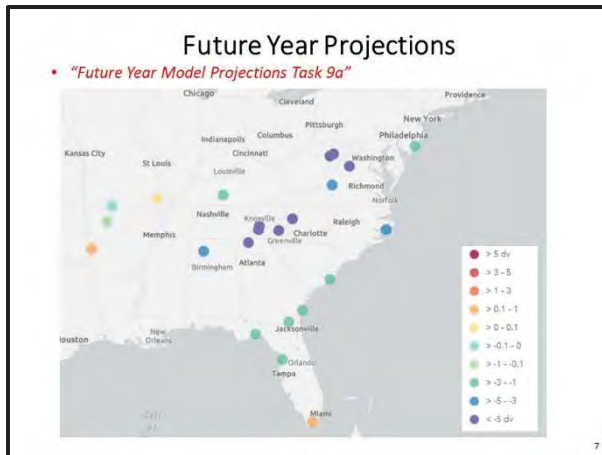


EXAMPLE:
Cohutta Wilderness Area
(2001-2018)

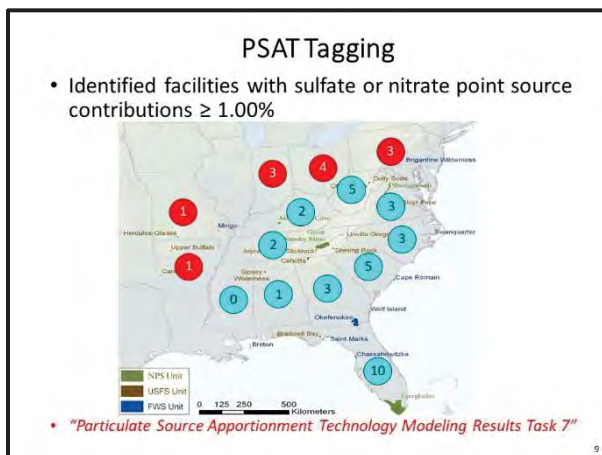
Model Performance Evaluation

- "Model Performance Evaluation for Particulate Matter and Regional Haze of the CAMx 6.40 Modeling System and the VISTAS II 2011 Updated Modeling Platform for Task 8.0"
- "Model Performance Evaluation for Ozone of the CAMx 6.40 Modeling System and the VISTAS II 2011 Updated Modeling Platform (Task 8.0)"
- "Deposition Model Performance Evaluation Southeastern VISTAS II Regional Haze Analysis Project (Task 8.1)"





- ### Final Project Report
- Covers everything in previous slides:
 - Task 2 – Emissions Inventories
 - Task 3 – Emissions Processing
 - Task 4 – Data Acquisition and Analysis
 - Task 5 – Area of Influence
 - Task 6 – 2011 and 2028 Photochemical Modeling
 - Task 7 – PSAT Tagging
 - Task 8 – Model Performance Evaluation
 - Task 9 – Visibility and Deposition Projections
 - Task 10 – Data Handling Sharing
 - Task 11 – Extraction of State-Specific modeling, IC/BC, and meteorology
- 11



- ### Consultation & Communication
- FLMs and EPA
 - Multiple VISTAS presentations on technical work
 - Non-VISTAS states
 - Multiple VISTAS presentations on technical work
 - Letters to non-VISTAS states from SESARM
 - VISTAS states
 - State to state phone calls and e-mails
 - Letters to VISTAS states from other VISTAS states
 - Stakeholders
 - One VISTAS presentation on technical work
 - Letters to specific facilities from home states
- 12

4-Factor Analysis

- States will evaluate certain sources and emissions to determine if reasonable controls are in place or available
- Considers four important factors:
 - Potential costs of compliance (\$/ton, \$/Mm⁻¹)
 - Time necessary for compliance
 - Energy and non-air quality environmental impacts of compliance
 - Remaining useful life of sources subject to this analysis

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FLM Consultation Requirements

40 CFR 51.308(i)(2) (in pertinent part):

...The State must provide the Federal Land Manager with an opportunity for consultation, in person at a point early enough in the State's policy analyses of its long-term strategy emission reduction obligation so that information and recommendations provided by the Federal Land Manager can meaningfully inform the State's decisions on the long-term strategy. The opportunity for consultation will be deemed to have been early enough if the consultation has taken place at least 120 days prior to holding any public hearing or other public comment opportunity on an implementation plan (or plan revision) for regional haze required by this subpart. The opportunity for consultation on an implementation plan (or plan revision) or on a progress report must be provided no less than 60 days prior to said public hearing or public comment opportunity...

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SIP Template Outline

- | | |
|---|--|
| 1. Introduction | 7. 2028 Model Projections |
| 2. Natural Background Conditions and Assessment of Baseline, Modeling Base Period, and Current Conditions | 8. Long-Term Strategy |
| 3. Glidepaths to Natural Conditions in 2064 | 9. Reasonable Progress Goals |
| 4. Types of Emissions Impacting Visibility Impairment | 10. Monitoring Strategy |
| 5. Regional Haze Modeling Methods and Inputs | 11. Consultation Process |
| 6. Model Performance Evaluations | 12. Comprehensive Periodic Implementation Plan Revisions |
| | 13. Determination of the Adequacy of the Existing Plan |
| | 14. Progress Report |
| | APPENDICES |

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Tentative Timeline*

Dates	Milestone
Week of 11/2/2020	Send redacted template to EPA R4 and R3. Redacted sections to include those dealing with reasonable progress facility selection and four-factor analysis results. Would like to receive feedback on missing analyses or "show stoppers."
11/5/2020 – 12/4/2020	EPA review period
12/7/2020 – 12/15/2020	SIP template workgroup to address EPA's comments
12/15/2020 – 1/15/2021	Develop state-specific draft
1/15/2021 – 1/30/2021	States to address EPA's comments
1/30/2020 – 4/30/2020	Consultation period for FLMs (may vary by state)
4/30/2021 – 5/30/2021	Address FLM comments
5/30/2021 – 6/30/2021	Public comment period
6/30/2021 – 7/31/2021	Address public comment and finalize package for submission
7/31/2021	Regional Haze SIP due to EPA

*Timeline is subject to change due to state-specific resources and issues.

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Current Work Topics

- Cost thresholds for four-factor analyses: workgroup in place to evaluate available information
- Use of off-ramps for four-factor analyses
- Inclusion of various requirements in the SIP as opposed to federally enforceable permits such as construction permits or state operating permits
- NPS and NPCA source listings: some states are in an ongoing dialogue with these groups
- EPA Region 4 source list analysis
- Communications with other states outside of VISTAS for information on facilities impacting VISTAS Class I areas
- How to address face-to-face consultation requirement with FLMs in light of the pandemic? (next slide)

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Contacts for Further Information

- For general, technical, and SIP-related questions, contact the TAWG and CC Co-chairs:
 - TAWG – Randy Strait (randy.strait@ncdenr.gov)
 - TAWG – Doris McLeod (doris.mcleod@deq.virginia.gov)
 - CC – Jim Boylan (james.boylan@dnr.ga.gov)
 - CC – Jimmy Johnston (james.johnston@tn.gov)
- For project and contract management questions, contact the Project Manager:
 - Chad LaFontaine (clafontaine@metro4-sesarm.org)



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Appendix F-30

FLM Consultation Letters December 14, 2022

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State of Mississippi

TATE REEVES
Governor

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHRIS WELLS, EXECUTIVE DIRECTOR

Via Electronic Mail

December 14, 2022

Ms. Melanie Peters
National Park Service
Melanie_Peters@nps.gov

Subject: Federal Land Manager Consultation – Draft Regional Haze SIP Revision for Second Implementation Period

Dear Ms. Peters,

Under the U.S. Environmental Protection Agency's Regional Haze Rule, each state must submit a State Implementation Plan (SIP) and subsequent revisions that provide for reasonable progress towards achieving natural visibility conditions in Class I areas, including Class I areas in other states. Mississippi has no Class I areas within its borders and, therefore, evaluated a long-term strategy and monitoring strategy to address emissions from Mississippi that may affect Class I areas outside the state.

Pursuant to 40 CFR 51.308(i)(2), Mississippi must provide the Federal Land Managers (FLMs) with an opportunity for consultation on the draft Regional Haze SIP Revision (SIP Revision) no less than 60 days prior to the start of the public comment period on the draft SIP Revision.

With this letter, the Mississippi Department of Environmental Quality (Department) is providing the National Park Service with Mississippi's draft SIP Revision for the second implementation period, including the progress report required by 40 CFR 51.308(f)(5), to begin the 60-day FLM consultation period. The Department requests that you provide any comments on the draft SIP Revision by February 13, 2023, and encourages you to set up a meeting to discuss any potential comments with the Department prior to providing final comments. The Department will include a summary of all FLM comments received in the proposed Regional Haze SIP Revision and will address all FLM comments in the final Regional Haze SIP Revision submittal.

The Department can provide any supporting documentation upon request. If you have any questions, please contact Carla Brown at 601-961-5561 (cbrown@mdeq.ms.gov) or Matt Carpenter at 601-961-5164 (mcarpenter@mdeq.ms.gov).

Sincerely,

A handwritten signature in blue ink that reads "Melissa Fortenberry".

Melissa Fortenberry, P.E.
Chief, Air Division

OFFICE OF POLLUTION CONTROL

POST OFFICE BOX 2261 • JACKSON, MISSISSIPPI 39225-2261 • TEL: (601) 961-5171 • FAX: (601) 354-6612 • www.mdeq.ms.gov

Facebook: [@mdeq.ms](https://www.facebook.com/mdeq.ms) • Twitter: [@MDEQ](https://twitter.com/MDEQ) • Instagram: [@MDEQ](https://www.instagram.com/MDEQ)

AN EQUAL OPPORTUNITY EMPLOYER



State of Mississippi

TATE REEVES
Governor

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

CHRIS WELLS, EXECUTIVE DIRECTOR

Via Electronic Mail

December 14, 2022

Mr. Tim Allen
U.S. Fish & Wildlife Service
Tim_Allen@fws.gov

Subject: Federal Land Manager Consultation – Draft Regional Haze SIP Revision for Second Implementation Period

Dear Mr. Allen,

Under the U.S. Environmental Protection Agency's Regional Haze Rule, each state must submit a State Implementation Plan (SIP) and subsequent revisions that provide for reasonable progress towards achieving natural visibility conditions in Class I areas, including Class I areas in other states. Mississippi has no Class I areas within its borders and, therefore, evaluated a long-term strategy and monitoring strategy to address emissions from Mississippi that may affect Class I areas outside the state.

Pursuant to 40 CFR 51.308(i)(2), Mississippi must provide the Federal Land Managers (FLMs) with an opportunity for consultation on the draft Regional Haze SIP Revision (SIP Revision) no less than 60 days prior to the start of the public comment period on the draft SIP Revision.

With this letter, the Mississippi Department of Environmental Quality (Department) is providing the U.S. Fish & Wildlife Service with Mississippi's draft SIP Revision for the second implementation period, including the progress report required by 40 CFR 51.308(f)(5), to begin the 60-day FLM consultation period. The Department requests that you provide any comments on the draft SIP Revision by February 13, 2023, and encourages you to set up a meeting to discuss any potential comments with the Department prior to providing final comments. The Department will include a summary of all FLM comments received in the proposed Regional Haze SIP Revision and will address all FLM comments in the final Regional Haze SIP Revision submittal.

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State of Mississippi

TATE REEVES
Governor

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

CHRIS WELLS, EXECUTIVE DIRECTOR

Via Electronic Mail

December 14, 2022

Ms. Melanie Pitrolo
U.S. Forest Service
Melanie.Pitrolo@usda.gov

Subject: Federal Land Manager Consultation – Draft Regional Haze SIP Revision for Second Implementation Period

Dear Ms. Pitrolo,

Under the U.S. Environmental Protection Agency's Regional Haze Rule, each state must submit a State Implementation Plan (SIP) and subsequent revisions that provide for reasonable progress towards achieving natural visibility conditions in Class I areas, including Class I areas in other states. Mississippi has no Class I areas within its borders and, therefore, evaluated a long-term strategy and monitoring strategy to address emissions from Mississippi that may affect Class I areas outside the state.

Pursuant to 40 CFR 51.308(i)(2), Mississippi must provide the Federal Land Managers (FLMs) with an opportunity for consultation on the draft Regional Haze SIP Revision (SIP Revision) no less than 60 days prior to the start of the public comment period on the draft SIP Revision.

With this letter, the Mississippi Department of Environmental Quality (Department) is providing the U.S. Forest Service with Mississippi's draft SIP Revision for the second implementation period, including the progress report required by 40 CFR 51.308(f)(5), to begin the 60-day FLM consultation period. The Department requests that you provide any comments on the draft SIP Revision by February 13, 2023, and encourages you to set up a meeting to discuss any potential comments with the Department prior to providing final comments. The Department will include a summary of all FLM comments received in the proposed Regional Haze SIP Revision and will address all FLM comments in the final Regional Haze SIP Revision submittal.

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Sincerely,

A handwritten signature in blue ink that reads "Melissa Fortenberry".

Melissa Fortenberry, P.E.
Chief, Air Division

cc: Jeremy Ash, U.S. Forest Service (jeremy.ash@usda.gov)

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