



List of Current Air Quality Projects (Update)

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TCEQ 2010-11 Planned Air Quality Projects Relevant to Southeast Texas

- Air Quality Monitoring Projects
- Air Quality Emission Projects
- Air Quality Modeling Projects



Air Quality Monitoring Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2010-08 TCEQ-2010-10	Launching ozonesondes in eastern Texas during the 2010 ozone season for the primary purpose of obtaining vertical profiles of ozone	Valparaiso University
TCEQ-2010-23 AQRP- 2011-32	Enhanced data analysis using SHARP Including radical budgets and ozone formation	Univ. of Houston
TCEQ-2010-27	Ozone, NO _x , meteorology monitoring on the Moody, Texas, broadcast tower	NOAA
TCEQ-2010-32	Development of a cloud cover analysis procedure using satellite imagery data	NOAA
TCEQ-2010-36	Aerometric data collection and analysis at the UH moody tower	Univ. of Houston
TCEQ-2010-44 TCEQ-2011-15	Ozone monitoring in HGB perimeter counties	Univ. of Houston



Air Quality Monitoring Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2010-66	Identification of transport events into Texas using satellite data (TES, OMI, AIRS, MISR, MODIS)	NOAA
TCEQ-2010-73	Enhanced data analysis for nighttime VOC and nitrate chemistry using TexAQS II data sets	NOAA
TCEQ-2010-74	Enhanced data analysis for peroxy radical cycles using TexAQS II data sets	NOAA
TCEQ-2010-76	Enhanced data analysis for shear-induced vertical mixing between the boundary layer and the free troposphere by gravity waves using TexAQS II data sets	NOAA
AQRP-2011-15	Nitryl chloride chemistry in Texas non-attainment areas	NOAA ENVIRON
AQRP-2011-20	Nighttime precursor transport and impact on next day ozone	NOAA ENVIRON
AQRP-2011-21	Ozone dry-deposition to built-up surfaces	UT-Austin



Air Quality Emission Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2009-41	Update biogenic emissions using ground surveys and airborne LIDAR of vegetative species to develop bio-mass densities for input to GloBEIS	TAMU
TCEQ-2009-42	Develop a cross reference of new Texas-specific land-use/land-cover (LU/LC) categories to the National Land Cover data set	TAMU
TCEQ-2010-03 TCEQ-2011-08	Update on-road emissions development processing to use EPA's new MOVES emissions factor model. Conduct sensitivity studies	TTI
TCEQ-2010-04 AQRP-2011-09	Identify, observe, and measure HRVOC emissions from flares in a laboratory and a field setting, using remote sensing technology to improve flare VOC emissions estimates	UT-Austin
TCEQ-2010-09	Update biogenic emissions using hyperspectral imaging of vegetative species to develop bio-mass densities for input to GloBEIS	TAMU
TCEQ-2010-11	Update HGB marine vessel emissions using Port of Houston's current emissions inventory and harmonize the remaining eight-county marine vessel emissions inventory	ENVIRON



Air Quality Emission Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2010-12	Evaluate the effect of fuel prices on VMT using the most recent quality-assured VMT data (2008)	TTI
TCEQ-2010-13	HRVOC and NO _x emissions reconciliation for HGB and BPA nonattainment area (revised PSCF application)	Lamar Univ.
TCEQ-2010-14	Develop 2005, 2006, and 2018 Summer Weekday HGB on-road emissions using updated on-road emissions development processing with MOVES and compare to current on-road emissions developed with MOBILE6.2	TTI
TCEQ-2010-16	Estimated emissions from barges while in transit for the HGB, BPA and Corpus Christi industrial waterways using the Louisiana study protocol	ERG
TCEQ-2010-17	Evaluate existing methods and models for estimating oil and gas production emissions for multiple area source categories (e.g., heater-treater, dehydrator)	ERG
TCEQ-2010-18	Update emissions from oil and gas platforms in Texas state waters	ERG



Air Quality Emission Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2010-21	Develop county-level growth factors from 2005 to 2035 at the SIC/NAICS and SCC level for stationary source emissions	ERG
TCEQ-2010-29	Collect samples for VOC analysis from produced water/saltwater storage tanks to develop an activity-based emissions factor	ENVIRON
TCEQ-2010-30 TCEQ-2011-24	Evaluate emissions, activity and equipment population data collected on drayage trucks operating at the Port of Houston to refine NO _x and PM emissions. Use data analysis to extend emission estimates to other ports	H-GAC
TCEQ-2010-33	Locate and quantify HRVOC emissions loss from pipelines	ERG
TCEQ-2010-39	Collect samples from 10 to 20 upstream oil and gas tanks to refine emission factors	ENVIRON
TCEQ-2010-42 TCEQ-2011-04	Conduct aerial surveys in the HGB area using IR-camera technology to identify potentially under-reported VOC emissions	Leak Survey



Air Quality Emission Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2010-43	Conduct a survey in the HGB area of tank flash emissions to quantify the VOC emission reductions achieved by the 2007 rule (30 TAC, Chapter 115)	ENVIRON
TCEQ-2010-48	Update GloBEIS model to estimate other VOCs (e.g., sesquiterpene)	ENVIRON
TCEQ-2010-61	Updated emissions from locomotive and commercial marine sources, including growth factors	Pechan
TCEQ-2010-64 TCEQ-2011-06	Update TexN for 2008 CERR, including new EPA rules and compatibility with Access 2007	ERG
TCEQ-2010-69	Evaluate the difference between isoprene estimates using the GloBEIS and MEGAN biogenic emission models	ENVIRON



Air Quality Emission Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2010-71	Collect samples for VOC analysis from brine ponds in facilities that have degassing drums to develop an activity-based emissions factor	UT-Austin
TCEQ-2011-03	State-wide, county-level on-road emission estimates using MOVES	TTI
TCEQ-2011-09	Summer diesel and gasoline field study	ERG
TCEQ-2011-10	HGB 8-county link-based on-road emission estimates using MOVES	TTI
TCEQ-2011-12	Reprocess modeling emissions outside Texas to national (Regional Planning Organization) grid	Lamar Univ.
TCEQ-2011-23	Urban biogenic emissions estimates	TAMU



Air Quality Emission Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2011-30	Statewide drilling rig emission estimates	ERG
AQRP-2011-06	Industrial emissions estimates using mobile SOF and DOAS	Chalmers Univ.
AQRP-2011-22	Speciated flare emission estimates	Lamar Univ.
AQRP-2011-45	Petrochemical emissions estimates using the 2009 FLAIR dataset	UCLA, UNC, WSU, Aerodyne



Air Quality Modeling Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2009-21 TCEQ-2010-05	Update the carbon-bond chemical mechanism with new aromatic, isoprene, and inorganic reactions (CB6)	ENVIRON
TCEQ-2009-40 TCEQ-2010-46	Compare MM5 and WRF meteorological modeling results using integrated satellite-derived soil moisture data	NOAA
TCEQ-2010-06	Develop and test an alternative isoprene reaction mechanism for CB6 using recent TAMU laboratory experimental results	TAMU
TCEQ-2010-22	Investigate the 2006 TexAQS II modeling episodes for accuracy and precision in quantifying ozone and precursor transport into and inside Texas	ENVIRON
TCEQ-2010-24	Update EPS3 software to provide parallel processing	ENVIRON
TCEQ-2010-25	Update the HDDM assessment in CAMx to add data and input/output options for calculating the sensitivities of radical species, e.g., OH	ENVIRON



Air Quality Modeling Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2010-26	Develop an alternate plume-rise algorithm in CAMx that distributes emissions to multiple layers and perform sensitivity tests	ENVIRON
TCEQ-2010-37	Cloud assimilation into WRF, adding functionality to allow WRF to integrate satellite cloud data	LAMAR (UAH)
TCEQ-2010-40	Model impacts of clouds on photolysis within CAMx using an embedded efficient radiative transfer model and perform a photolysis attenuation calculation for each cloudy column	ENVIRON
TCEQ-2010-67	Development of enhanced future boundary conditions using the 2006 GEOS-Chem global model with the 2018 projected regional modeling (CENRAP)	ENVIRON
TCEQ-2010-75	Box modeling with the MCM chemistry mechanism using TexAQS II data sets to evaluate nighttime VOC and nitrate measurements	NOAA
TCEQ-2011-19	Analysis of ozone contributions from different source regions	ENVIRON



Air Quality Modeling Projects

TCEQ Project Numbers	Project Description	Principal Investigator
TCEQ-2011-21	Implement and test the full set of diagnostic tools for CB6 in CAMx	ENVIRON
TCEQ-2011-26	Modify meteorology user interface for WRF output to generate performance evaluation products	IPS Meteostar
TCEQ-2011-33	The effect of surface roughness on wind speed modeling errors in urban cities	TAMU
TCEQ-2011-34	Nighttime vertical mixing parameterization in the WRF and MM5 models	TAMU
TCEQ-2011-35	Vertical mixing parameterization improvement	TAMU
TCEQ-2011-36	Improve CAMx performance for ozone transported from the gulf	ENVIRON



Air Quality Modeling Projects

TCEQ Project Numbers	Project Description	Principal Investigator
AQRP-2011-08	Factors influencing ozone precursor response in SIP modeling	ENVIRON Rice Univ.
AQRP-2011-29	Wind modeling with ensemble Kalman filter	TAMU
AQRP-2011-42	Chamber experiments evaluating NO _x sinks and recycling for mechanisms	ENVIRON



HGB 2013 Eight-Hour Ozone Mid-Course Review and Attainment Demonstration SIP Timeline

PHOTOCHEMICAL MODELING and CORROBORATIVE ANALYSIS	
Modeling Domains	January – December 2010
Identify/Select Modeling Episodes	January – December 2010
AQD Projects to Enhance Modeling (EI, Met, Chem)	August 2009 – August 2011 ¹
Revise Modeling as per AQD Projects	September 2010 – August 2011 ²
Conduct base case modeling, including operational and diagnostic MPE	May 2011 - March 2012
Conduct current (2008) and future (2018) baseline modeling	April – September 2012 ³
Conduct control strategy modeling with existing and potential controls	October – December 2012
Conduct data analyses and sensitivity modeling for Corroborative Analysis	September 2010 – December 2012
Prepare SIP Modeling & Corroborative Analysis Documentation	April 2012 – March 2013

CONTROL STRATEGY DEVELOPMENT	
Internal research and analysis of potential control strategies	January 2010 – June 2012
Control strategy development - hold informational and stakeholder meetings, develop control files, and perform sensitivity runs	June – December 2012



HGB 2013 Eight-Hour Ozone Mid-Course Review and Attainment Demonstration SIP Timeline

SIP/RULE PROPOSAL DEVELOPMENT	
SIP narrative and any associated rules proposal development and review	March – May 2013
Executive Director’s recommended proposal of SIP narrative and any associated rules	June 2013
SIP proposal agenda	June 2013
Comment period	July – August 2013
Public hearing(s)	July 2013
Respond to comments/adoption package development and review	August – October 2013
Executive Director’s recommended adoption of SIP narrative	November 2013
SIP adoption agenda	November 2013
Submittal to EPA	December 2013

- Notes:
1. The Flare AQD Project, which is expected to revise emissions, is scheduled to be completed 2/23/11.
 2. The On-Road AQD Project (TTI) for base case and baseline emissions is scheduled to be completed 8/31/11.
 3. Assumes the On-Road AQD Project (TTI) for attainment year(s) emissions will be completed 4/30/12.