ANNEX II

ACTION PLAN
OF THE MEMORANDUM OF COOPERATION ON AIR QUALITY MONITORING BETWEEN THE SECRETARIAT OF THE ENVIRONMENT AND NATURAL RESOURCES OF THE UNITED MEXICAN STATES, THE GOVERNMENT OF THE STATE OF BAJA CALIFORNIA OF THE MEXICAN UNITED STATES, THE ENVIRONMENTAL PROTECTION AGENCY OF THE UNITED STATES OF AMERICA, AND THE CALIFORNIA AIR RESOURCES BOARD OF THE STATE OF CALIFORNIA OF THE UNITED STATES OF AMERICA

Background

On June 24, 2004, the Memorandum of Cooperation on Ambient Air Quality Monitoring was signed, through which the Secretariat of the Environment and Natural Resources (SEMARNAT) of the United Mexican States, through the Office of Air Quality Management, Emissions Monitoring and Pollutant Transfer, and the National Institute of Ecology (INE), through the Office of the National Headquarters of Environmental Research and Training (DGCENICA); the Government for the State of Baja California of the United Mexican States; the Environmental Protection Agency, Region 9 (EPA Region 9) of the United States of America; the Environmental Protection Agency of the State of California (Cal/EPA) of the United States of America, through the Air Resources Board (ARB) (hereafter collectively referred to as the "Participants"), have carried out the following activities with respect to the of air monitoring stations' transfer in the State of Baja California: :

1) **Annual Report and Equipment Inventory for the California-Baja California Border Air Monitoring Program.** Between 2003 and 2007, ARB provided an Annual Report to the Baja California State Environmental Protection Agency (SPA), EPA Region 9, INE, and SEMARNAT, which included a summary of data and site operations as well as an updated equipment inventory. The reports summarized the annual exceedances of California State air quality standards, U.S. Federal air quality standards, and Mexican air quality standards. In addition, beginning in 2006, SPA has prepared Air Monitoring Station Annual Reports which include peak pollutant concentrations for the year.

2) **Performance Audits.** In 2006, 2007, and 2008, EPA Region 9 performed performance audits for most of the Air Monitoring Network stations in the following locations in Mexico: Tijuana, Tecate, Mexicali, and Playas de Rosarito, Baja California. The audits provided an opportunity to review the quality of the ambient data being collected at the stations and identified opportunities for improvements to the operation of the monitors. In February and March of 2007, ARB inspected the meteorology equipment installed at the monitoring stations. This inspection allowed them to evaluate the quality of the meteorological data collected by the station, as well as to identify equipment operation improvement opportunities. In 2009-2010, EPA Region 9 and INE performed audits at all of the above-mentioned monitoring stations (manual, automatic, and meteorological stations).

3) **Monitoring Network Investments.** SPA acquired monitors and instruments in 2010 to equip three new monitoring stations, two new housings for station relocations, and seven new monitors to replace existing ones. These acquisitions were funded by the Mexican state and Mexican federal governments, pursuant to the SPA's obligations under the Memorandum of Cooperation (MOC II) executed on March 15, 2007.

4) **Training.** Beginning in 2006, ARB, using funding provided by EPA Region 9, has trained SPA personnel on numerous topics including: Theory of Operating and Air Quality Monitoring Stations; Manual Station Operation Supervision; Data Review, Validation, and Dissemination; Air Quality Monitoring Equipment and Meteorology Equipment Calibration. These trainings have taken place both in Baja California and in Imperial Valley, California. Also beginning in 2006, INE has trained SPA staff both through direct one on one trainings and through courses and workshops it offers every year on Equipment Operation, Maintenance, and Calibration; Air Quality Monitoring System Quality Control and Assurance; Sistema Nacional de Información de la Calidad del Aire (SINAICA); and Data Management.

5) **Availability of Real Time Air Quality Data on SPA and SINAICA websites.** In 2005, SPA with general assistance from EPA Region 9 and with technical assistance provided by ARB and SEMARNAT through INE launched a website (http://aire.bajacalifornia.gob.mx) which shows real-time air quality for the cities of Tijuana, Tecate, Playas de Rosarito, and Mexicali, as well as recommendations to protect the health of their residents. The website provides air quality information to border residents, allowing them to take the necessary precautions on "bad" air quality days. SEMARNAT, through INE, incorporated this data to INE's website, under the page for SINAICA. EPA Region 9 has since provided resources and technical support to SPA for managing the website.

6) **Air Monitoring Network Design Evaluation.** During the performance audits conducted in April 2006, EPA Region 9 identified the need to review, assess, and update the Monitoring Network's design in order to improve the representativeness of air quality data based on population exposure. In August 2006, EPA Region 9 recommended evaluating the re-design of the Monitoring Network to the workgroup. SPA agreed to lead the evaluation starting in 2007. On October 15th, 2010, LT Consulting – at SPA's request and with contracting support from the Border Environment Cooperation Commission (BECC), technical support from EPA Region 9, INE, and ARB, and financial support from EPA Region 9– published the *Monitoring Network Assessment*, aimed at evaluating the performance and representativeness of the Baja California Air Quality Monitoring Network.

7) **Comprehensive Funding Plan for Operation and Maintenance of the Monitoring Stations.** In 2006, the Participants agreed on a 3-year plan for funding operations and maintenance for the monitoring stations, which went into effect in April 2007. This plan set forth that EPA Region 9, ARB, and SEMARNAT (through INE) would continue providing technical support from 2007 to 2010 and that SPA would gradually assume the responsibility of funding the operation and maintenance of the monitoring stations. In 2009, SPA allocated funding to cover the network's operations and maintenance, but still depended on ARB and EPA Region 9 for the analyses of the quartz filters used in high-volume air sampling of PM10 and Total Suspended Particulates (TSP), as well as for the certification of secondary calibration standards.

8) **Monitoring Equipment Transfer.** Under MOC II, SPA and Cal/EPA transferred the ownership of all equipment comprising the Baja California Air Monitoring Network to SPA.

9) **Creation of the Department of Air Quality (DCA).** SPA's DCA officially started operating in September 2010, and was charged with addressing the Air Quality Agenda and commitments, including, but not limited to: monitoring network operation, maintenance, and expansion; data management, review, and reporting; and network and lab data quality assurance. This was accomplished under a SPA project with funding by SEMARNAT which totaled MX$1,980,000.00.

10) **SPA Air Quality Laboratory.** Under SPA projects funded by a total of MX$7,062,223.06 from SEMARNAT, the Air Quality Laboratory was created and equipped during 2009-2010, for the core purpose of performing gravimetric analysis of PM10 and PM2.5 filters, and metal analysis through atomic absorption spectroscopy.

11) **Air Quality Monitoring Network Maintenance Shop.** The Air Quality Laboratory grounds are also home to the first monitoring network maintenance and storage facility as well as a test booth for repaired equipment, thus ensuring the availability of equipment to replace those that break down at the stations and avoiding data losses.

12) **Mobile Monitoring Unit.** The necessary modifications are underway to convert one of the former air monitoring network stations into a mobile monitoring unit; the unit will be used for special air quality studies that were planned for the end of 2012 to improve SPA's capacity to respond to emergencies and residents' complaints.

By the above, the Participants hereby establish this Action Plan:

Section I
Overall Objective

This Action Plan is aimed at consolidating and building the capacity of the Baja California Air Quality Monitoring Network (hereinafter 'the network") under SPA's purview with the goal of obtaining reliable, high quality data with support from SEMARNAT and INE, and international support from EPA Region 9 and ARB, as specified below.

Section II
Specific Objectives

1. Advise SPA on the analysis of Particulate Matter to be performed at the new Air Quality Laboratory, including the gravimetric analysis of PM10 and PM 2.5 filters and metal analysis through atomic absorption spectroscopy, thus increasing DCA's current analysis capabilities;
2. Develop Standard Operating Procedures and job descriptions for SPA's DCA, including a Network Quality Assurance Program for the monitoring network and operations of the Baja California Air Quality Laboratory.
3. Optimize air quality data delivery to SINAICA and EPA Air Quality System (AQS).

Section III
Roles and Responsibilities

The Participants to the Memorandum of Cooperation from which this Action Plan was derived, intend to perform the following actions during the five-year period:

1) SPA intends to:

a) Develop a network design plan by November 2012;
b) Develop a Monitoring and Quality Assurance and Control (QA/QC) Plan and operate the network in compliance therewith during the first year of this Action Plan;
c) Develop a QA/QC Plan for the laboratory and operate it in compliance therewith during the first year of this Action Plan;
d) Continue being financially and operationally responsible for providing maintenance to the Baja California Air Monitoring Network stations, as well as for the maintenance and proper working of all monitors and instruments at each station;
e) Continue being responsible for purchasing of calibration gases in a timely manner such as to avoid having to work with gases past their expiration date;
f) Continue being financially responsible for the rent of the places where the monitoring stations are located, and for the costs related to making the necessary modifications for

new stations and relocations, as well as the contract for having an internet connection at every station;

g) Continue being financially and administratively responsible for importing equipment and/or parts for the monitoring stations into Mexico;
h) Assume responsibility for purchasing the PM10, PM2.5, and TSP manual sampler filters once SPA's lab is capable of performing the analyses;
i) Continue being technically, financially, and administratively responsible for data control and quality assurance (QA/QC), data management and dissemination and uploading the data from the gas monitors without delay to the EPA AQS and SINAICA; and will endeavor to provide data to AQS within 90 days of the end of each calendar quarter;
j) Continue being financially and administratively responsible for purchasing consumables, parts, and repairs;
k) Set up a mobile monitoring unit for specific samplings;
l) Assume the costs related to making the necessary adaptations for the operation of the mobile unit, as well as transportation and lodging costs at the locations where said monitoring is to take place;
m) Commit to sending the data online to SINAICA and EPA Region 9's through contractor (Sonoma Tech) for the working and operation of the Baja California Real-Time Air Quality webpage;
n) Continue sharing all validated air quality data collected at the laboratory and the monitoring stations with EPA Region 9, ARB, INE, and SEMARNAT through AQS and SINAICA;
o) Assume technical, financial, and administrative responsibility for the gravimetric analysis of PM10 and PM 2.5 filters, including QA/QC and the dissemination of the data and loading them without delay into AQS beginning on January 1st, 2013;
p) Assume technical, financial, and administrative responsibility for metal analysis of filters, including QA/QC and the dissemination of the data and loading them without delay into AQS beginning on January 1st, 2014;
q) Assume responsibility for preparing an annual report indicating the status of the network and showing how the network is meeting the monitoring goals, including a site data and operations summary and an up-to-date equipment inventory. Said report shall also include the number of exceedances of California Air Quality Standards, as well as of U.S. and Mexico Standards;
r) Develop a corrective action plan for the annual performance and technical system audits performed by EPA Region 9 and/or INE;
s) On the DCA Annual Report, account for actions taken in response to findings of Annual Audits performed by EPA Region 9 –INE;
t) Develop standard operating procedures for the job positions at SPA's DCA, including a Quality Assurance Program for the Network and the Baja California Air Quality Laboratory;
u) Fortify the Air Quality Department by one position by the end of the second semester in 2012 and another position after the second semester of 2012. These positions are permanent and technical positions to support the monitoring network. This will improve DCA operational staff retention, continuity, and expansion, such that the time and financial resources invested in training are not wasted due to personnel turnover. Plan on continued training for SPA contracted staff;
v) Build calibration capacities both for gases and meteorology;
w) Continue generating general information documents, as well as quality control documents and monthly and quarterly activity reports.

2) ARB intends to:

a) Continue providing analytical laboratory services and associated support for ambient particulate matter sampling until such a time when SPA assumes the responsibility for performing physical and chemical analyses of the collected particulate matter filters;

b) Continue providing SPA trainings on monitoring station operation, maintenance, and calibration; data management, validation, and reporting; and gravimetric and metals analysis operation and report generation (all training will be conducted in the State of California in the United States of America) which will last through 2015;
c) Certify the transfer standards for the monitoring stations until 2013.

3) EPA Region 9 intends to:

a) Continue supporting ARB in carrying out laboratory analysis, training, certification, QA/QC, and data management as legally permitted and as resources allow;
b) Perform annual performance audits of the monitoring network, including the mobile unit through 2013;
c) Perform technical system audits, including lab audits, once every three years or until INE builds capacity to conduct such audits, whichever is sooner; EPA Region 9 also intends to endeavor to provide training on these types of audits to INE staff;
d) Continue providing support, as funds allow, for the operation of the website, such that the air quality data generated in Baja California may be available in real time.

4) SEMARNAT intends to:

a) Provide technical support and training to SPA regarding monitoring station maintenance, equipment/instrument calibration, and quality assurance and control both for operating the stations and for the data;
b) Provide technical support and training to SPA staff on physicochemical analyses;
c) Continue carrying out performance audits on the meteorological systems;
d) Assume responsibility for carrying out performance audits on gas monitors and particulate samplers beginning in 2014;
e) Assume the responsibility of performing technical system audits once Mexico has built the capacity;
f) Provide technical advice and calibrate SPA transfer standards for flows and ozone measurement by 2013;
g) Continue incorporating raw and validated data generated by the Baja California Air Quality Monitoring System to the SINAICA;
h) Review design, QA/QC, and monitoring programs and actualization of monitoring system;
i) Review data quality and data recovery percentages.

5) The Participants intend to jointly:

a) Continue to participate in the Work Group comprised of staff from EPA Region 9, INE, and SPA to oversee the implementation of the actions and intentions described in this document, to the extent possible. This Task Force will conduct a review of the progress of the actions described in this Action Plan and develop a corrective plan to align actions with the intentions described in this document;

b) Maintain information on air quality in real time on the SPA and SINAICA websites and provide health information for Tijuana, Tecate, Playas de Rosarito, and Mexicali in Baja California.

Section IV
Term, Amendments, and Discontinuation

This Action Plan shall take effect on September 30, 2012 and shall remain in effect for a period of five years, which may be amended by mutual agreement in writing between the Participants.

Any Participant may withdraw from participating in the activities described in this Action Plan at any time with 45 calendar days advance written notice.

Section V
Good Faith

The Participants intend to act in good faith and maintain open communication when implementing the collaborative efforts described in this Action Plan. Any differences arising from the interpretation, administration or application of this Instrument are to be resolved through common agreement by all of the Participants.

Section VI
Special Understandings

Nothing in this Action Plan is intended to restrict the authority of the Participants to act as provided by law, statute, or regulation, or to restrict any Participant from enforcing any laws within its authority or jurisdiction.

This Action Plan is not intended to, and does not create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law, by any Participant against the United States, the state of California, the state of Baja California or the United States of Mexico, their agencies, their officers, or any person.

This Action Plan is not a fiscal or funds obligation document. Specific work projects or activities that involve the transfer of funds under this Action Plan should be carried out in separate funding agreements and are subject to the availability of appropriated funds and personnel.

All Participants to the Action Plan applying for assistance agreements from EPA must follow EPA policies governing assistance agreements.

Signed at the time and place indicated below, in four originals in Spanish and English

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9/19/12

Jared Blumenfeld
Regional Administrator,
EPA Region 9

Date

Place: San Francisco, CA

FOR THE SECRETARIAT OF THE ENVIRONMENT AND NATURAL RESOURCES

18/IX/12

Ana María Contreras
General Director of Air Quality Management, Emissions Registry and Pollutant Transfer

Date

Place: Ciudad de México

FOR THE CALIFORNIA AIR RESOURCES BOARD

9/24/2012

James Goldstene
Executive Officer
Air Resources Board
State of California

Date

Place: SACRAMENTO, CA

FOR THE SECRETARIAT OF ENVIRONMENTAL PROTECTION FOR THE STATE OF BAJA CALIFORNIA

9/28/2012

Efrain Nieblas Ortiz
Secretary of Environmental Protection
State of Baja California

Date

Place: MEXICALI, B.C.