

MEMORANDUM OF UNDERSTANDING

THROUGH WHICH

[Name of non-federal sponsor]

IS PURCHASING

Trace Gas Air Standards

FROM

**Earth System Research Laboratory (ESRL)
Global Monitoring Division (GMD)
Office of Oceanic and Atmospheric Research (OAR)
National Oceanic and Atmospheric Administration (NOAA)
U.S. Department of Commerce (DOC)**

Agreement No. _____

Contact Name and Address that NOAA should send invoices to:

[Sponsor's invoice contact person]
[Title of sponsor's invoice contact person]
[Address where invoice should be sent to sponsor]
Phone: [phone number of sponsor's invoice contact person]
Fax: [fax number of sponsor's invoice contact person]
E-mail: [E-mail address of sponsor's invoice contact person]

For US Sponsors only:

Dun&Bradstreet No. _____
Tax Payer ID No. _____

1. PARTIES AND PURPOSE

This Memorandum of Understanding (MOU) establishes an agreement between [name of sponsor] and ESRL/GMD, through which sponsor will pay ESRL/GMD for calibrated trace gas air standards, including shipping and handling.

2. BACKGROUND

The ESRL/GMD/[Carbon Cycle Greenhouse Gases Group \(CCGG\)](http://www.esrl.noaa.gov/gmd/ccl/index.html)¹ makes and calibrates reference gas cylinders for CO₂, CH₄ and CO for scientists worldwide. CCGG has demonstrated the long-term ability to maintain a calibration laboratory for its own historical measurement program. The ever-growing need for these standards has never been filled by a private company or corporation demonstrating this level of accuracy over time. Because of this, CCGG Group has become responsible for maintaining the World Meteorological Organization [WMO] mole fraction scales for CO₂, and well-characterized in house scales for CH₄, N₂O, SF₆ and CO, with the mission of propagating these scales for data intercomparison. High precision measurements of the trace gases CO₂, CH₄, N₂O, SF₆, and CO are being undertaken by many laboratories of various nations in order to better understand the biogeochemical cycles of these gases. There can be no integration of all

¹ GMD/CCGG - <http://www.esrl.noaa.gov/gmd/ccl/index.html>

these various measurement projects unless the data is all referenced to common well-defined calibration scales. The consistency required for optimally usable atmospheric CO₂ measurements and intercomparison must be no worse than 0.1 umol/mol for the northern hemisphere and 0.05 umol/mol in the southern hemisphere [World Meteorological Organization (WMO), 1993]. Because of stringent quality controls necessary for the measurement of long-lived trace gases, stable reference gas standards are an integral part of any long-term measurement program. The CCGG Group of ESRL/GMD has been involved with making CO₂ standards since the early 1970s [Miller, 1974] and over the years has expanded to include methane, carbon monoxide, and the stable isotopes of CO₂. CCGG can fill and calibrate compressed gas cylinders for use as standard reference gases by other laboratories for measurements of CO₂, CH₄, CO, and the stable isotopes of CO₂ (C13 and O18).

3. AUTHORITY

The authorities for ESRL/GMD to enter into this agreement are:

- (1) The "Special Studies" authority, 15 U.S.C. § 1525 (first paragraph), which permits DOC to provide, upon the request of any person, firm, or public or private organization (a) special studies on matters within the authority of the Department of Commerce, including preparing from its records special compilations, lists, bulletins, or reports, and (b) furnishing transcripts or copies of its studies, compilations, and other records.
- (2) 33 U.S.C. § 883d, which authorizes NOAA to increase engineering and scientific knowledge by conducting developmental work for the improvement of surveying and cartographic methods, instruments, and equipments; and to conduct investigations and research in geophysical sciences (including geodesy, oceanography, seismology, and geomagnetism).

4. TERMS AND CONDITIONS

ESRL/GMD will achieve full cost recovery for the goods and services it is providing under this agreement.

Sponsor assumes responsibility for the safe handling of compressed gas cylinders upon the receipt of cylinders from ESRL/GMD.

Compressed Gas Cylinders are regulated by U.S. Law under CFR Title 49, parts 106-179.

This Agreement is subject to the availability of funds.

Standards:

Unless otherwise stated, cylinder is size N150, 29.5 liter internal volume, Ceodeux brass packless, GCA590 valved.

Logistics for services are:

4-6 weeks to fill, longer depending on schedule.

4-6 weeks to calibrate per trace gas species.

Isotopes may take an additional 3 months.

Standard turn around time varies due to seasonal logistics and calibration queue.

Standards will be delivered to:

[Sponsor must state the name, address, phone, fax, and e-mail of who and where the standards are to be shipped]

ESRL/GMD will provide calibration of gases to sponsor who will pay ESRL/GMD in advance for its services, based on the following price table:

Filling of Compressed gas cylinders:

Cylinder Type	SIZE	COST	UNIT	QUANTITY	TOTAL
Aluminum untreated cylinder (For CO ₂ /CH ₄ /CO/N ₂ O/SF ₆)	N265	\$2175	Each		
Aluminum untreated cylinder	N150	\$927	Each		
Aluminum untreated cylinder	N80	\$805	Each		
Aluminum untreated cylinder	N50	\$713	Each		
Aluminum untreated cylinder	N30	\$628	Each		
Aculife-treated Aluminum (For most halocarbon compounds.)	6-L	\$900	Each		
Aculife-treated Aluminum	29-L	\$1600	Each		
Stainless Steel (For certain compounds.)	34-L	\$5000	Each		

Calibrations of Compressed Gas Cylinders

SERVICE	COST	UNIT	QUANTITY	TOTAL
CO2 WMO scale NDIR Range 250-500 PPM	\$1030.00	Each		
CO2 WMO scale NDIR Range 501-3000 PPM	\$1205.00	Each		
CH4 RANGE 1500-2000 PPB	\$721.00	Each		
CO RANGE 40-300 PPB	\$721.00	Each		
Stable Isotopes of CO2 [C13 & O18]	\$721.00	Each		
N20 RANGE 100-360 PPB, SF6 RANGE 1-12 PPT	\$700.00	Each		
Calibration for CFCs by ECD	\$700.00	Each		
Calibration for halomethanes by GCMS	\$850.00	Each		

One recalibration after use is included in the calibration cost. RECALIBRATION IS HIGHLY RECOMMENDED EVERY 2 to 3 YEARS FOR PRECISION WORK AND MUST AT LEAST BE PERFORMED AT THE END OF THE CYLINDER'S USE [25 atm pressure].

The cost for the additional recalibrations for all gases originally calibrated, after the first prepaid recalibration:

SERVICE	COST	UNIT	QUANTITY	TOTAL
Recalibrations (after first recalibration, for all gases originally calibrated).	\$260.00	Each		

Return Shipping and handling:

DDU - DELIVERED DUTY UNPAID - Under these terms, the seller fulfills his obligation to deliver when the goods have been available to the buyer un-cleared for import at the point or place of the named destination. The buyer bears all costs and risks involved in bringing the goods to the point or place of named destination from customs clearance. There is no obligation for import clearance.

SERVICE	COST	UNIT	QUANTITY	TOTAL
Shipping and handling – U.S. Mainland	\$150.00	Each		
Shipping and handling – Outside the U.S. Mainland	\$288.00	Each		

TOTALS	AMOUNT DUE
TOTAL AMOUNT OF PAYMENT DUE ESRL/GMD	\$

5. TRANSFER OF FUNDS

Payment is required in advance for goods and services provided by ESRL/GMD.

Sponsor is responsible for all payment transfer fees and costs.

To purchase from ESRL/GMD, two original signed copies of this “Memorandum of Understanding”, along with payment or appropriate funding document should be mailed to the ESRL/GMD Technical Contact listed in the contact section below.

Payment should reference project number 36R1MXXPPT (Kitzis) or 36R1MXBPEL (Hall), as appropriate, and be made in US dollars payable to NOAA/DOC.

If you are unable to make payment upon submission of signed MOU, you will receive a NOAA invoice. NOAA will invoice sponsor upon receipt of the fully signed MOU. Sponsor is expected to make payment upon receipt of the NOAA invoice by check according to the Invoice instructions, or electronic payment can be made according to Attachment A instructions. Sponsor must provide payment to ESRL/GMD prior to ESRL/GMD commencing work.

All funding documents, if submitted, **must** contain the following information:

- All costs shown in U.S. Dollars,
- All text in English,
- A clear description of goods and services being paid for,
- Clear invoicing and ship to (standards delivered to) instructions along with names, addresses, phones, faxes and email addresses.
- Funding document should reference project number 36R1MXXPPT (Kitzis) or 36R1MXBPEL (Hall), as appropriate, and be made payable in US dollars to NOAA/DOC.

For US Sponsors only:

- Employer Identification Number(s),
- Dun & Bradstreet Number(s),

6. CONTACTS

The technical points of contact for this agreement are:

[State either Duane Kitzis/CCGG or Brad Hall/HATS, as appropriate]
 Earth System Research Laboratory (ESRL)
 Global Monitoring Division (GMD)
 National Oceanic and Atmospheric Administration (NOAA)
 325 Broadway – R/GMD1
 Boulder, CO 80305, USA
 Phone: 303-497-6675 (Kitzis)
 303-497-7401 (Hall)

Fax: 303-497-6290

E-mail: duane.r.kitzis@noaa.gov or
bradley.hall@noaa.gov

Web Site: <http://www.esrl.noaa.gov/gmd/ccl/>

[Sponsor's technical contact person]

[Title of sponsor's technical contact person]

[Address of sponsor's technical contact person]

Phone: [phone number of sponsor's technical contact person]

Fax: [fax number of sponsor's technical contact person]

E-mail: [E-mail address of sponsor's technical contact person]

Fiscal and budgetary communications can be directed to:

Bill Cushman

Administrative Officer

ESRL/GMD

325 Broadway – R/GMD

Boulder, CO 80305, USA

Phone: 303-497-6074

Fax: 303-497-5590

E-mail: bill.cushman@noaa.gov

[Sponsor's fiscal and budget contact person]

[Title of sponsor's fiscal and budget contact person]

[Address of sponsor's fiscal and budget contact person]

Phone: [phone number of sponsor's fiscal and budget contact person]

Fax: [fax number of sponsor's fiscal and budget contact person]

E-mail: [E-mail address of sponsor's fiscal and budget contact person]

The parties agree that if there is a change regarding the information in this section, the party making the change will notify the other party in writing of such change.

7. DURATION OF AGREEMENT, AMENDMENTS AND MODIFICATIONS

This agreement will become effective when signed by both parties. The agreement will terminate when the sponsor receives all materials and analysis results, but no later than three years from the effective date. This agreement may be amended at any time by mutual written consent of the parties

Any party may terminate this agreement by providing thirty days written notice to the other party. In the event of termination, all amounts unexpended by ESRL/GMD as of the date of ESRL/GMD's receipt of a notice of termination from the sponsor, or as of the date of ESRL/GMD's sending a notice of intent to terminate to the sponsor, shall be promptly refunded to sponsor, less any amounts required to close the account.

8. RESOLUTION OF DISAGREEMENTS

Should disagreement arise on the interpretation of the provisions of this agreement, or amendments and/or revisions thereto, than cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each party and presented to the other party for consideration. If agreement on interpretation is not reached within thirty days, the parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution.

9. SIGNATURES

[Signature of person who has authority
to bind sponsor to the agreement]
[Typed name]
[Typed title]
[Typed name]
[Typed address]

Date

Mark E. Brown
Chief, Financial Officer/CAO
Mail Code: R
Office of Oceanic and Atmospheric Research
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
1315 East West Highway
Silver Spring, MD 20910, USA

Date

(ATTACHMENT A)

Please be sure to include within the funds transfer identifying information linking the payment to the invoice, i.e., ESRL/NOAA invoice#, Agreement #, Funding document #, and Project # as referenced in Part 4 of this agreement. **If there are problems completing the bank transfer, contact Ruth Ann Bond at Ruth.Bond@noaa.gov for funds transfer assistance.**

Please note that these are 2 distinct methods of electronic funds transfers—account numbers, etc., are different and unique for both methods.

(1) INSTRUCTIONS FOR FED WIRE FUNDS TRANSFER – TYPE 1000

**THIRD PARTY FUNDS TRANSFER MESSAGE
TO TREASURY NYC**

<u>TAG NAME</u>	<u>TAG #</u>	<u>REQUIRED INFORMATION</u>
TYPE/SUBTYPE CODE	(1510)	1000
AMOUNT	(2000)	\$9,999,999.99
SENDER FI	(3100)	123456789 BANK XYZ (SENDER ABA# AND NAME)
SENDER REFERENCE	(3320)	(FILLED IN BY SENDER)
RECEIVER FI	(3400)	021030004 TREAS NYC
BENEFICIARY	(4200)	D 13140001 (Account #) NOAA (Account name)
ORIGINATOR TO BENEFICIARY INFO	(6000)	ESRL/GMD Project 36R1M

SWIFT CODE FRNYUS33 can be used if required.

Federal Reserve Bank of New York
33 Liberty Street
New York, NY 10045

(2) INSTRUCTIONS FOR ACH (AUTOMATED CLEARANCE HOUSE) FUNDS TRANSFER

ABA/ROUTING TRANSIT NUMBER: 051036706

ACCOUNT NUMBER: 540023

U.S. DEPARTMENT OF THE TREASURY
5700 Rivertech Court
Riverdale, MD 20737

PLEASE INCLUDE ANY ADDITIONAL IDENTIFYING INFORMATION THAT IS AVAILABLE (NAME, OFFICE, PROJECT NUMBER, RECEIPT OR INVOICE NUMBER, ETC.) TO ENSURE THAT THE FUNDS ARRIVE AT THE APPROPRIATE NOAA OFFICE.