Atmospheric Ozone Monitoring in Turkmenistan

In Turkmenistan the atmospheric ozone monitoring is carried out by the National Hydrometeorology Committee at the Cabinet of Ministers of Turkmenistan ("Turkmenhydomet"). At present the regular daily monitoring for the total atmospheric ozone content is carried out at 4 stations:

#	Stations	Coordinates		Area Height. m	Devices Used			
		North Lat.	East Long.		Type	#	Year	Calibration Date
1	Mary	37.36°	53.00°	221.7	M-124	386	1988	VII-VIII. 1995
2	Bekreve	37.57°	58.21°	311.6	M-124	290	1987	VIII-IX. 2000
3	Repetek	38.34°	63.11°	185,0	M-124	269	1983	III-IV. 2001
4	Turkmenbashi	40.03°	53.00°	82.5	M-124	287	1987	IX-X. 2002

The first monitoring for atmospheric ozone commenced in 1953 on the basis of the Chardzhou aerologic station (Turrkmenabat now). In 1975 the ozone station was transferred to a meteorological site of the Repetek station and the ozone monitoring has been carried out at this station so far.

In 1961 the ozone measurements commenced on a meteorological site of the Keshi station. In 1998 this meteorological station was transferred to Berzengi village and later in Bekreve village in 2001. The ozone measurements have been carried out at this station so far.

In 1994 in Turkmenbashi (Krasnovodsk) the measurements of the total atmospheric ozone content commenced. Within 2000-2002 due to delivery of M-124 ozonometer for calibration the monitoring was not carried out. After calibration of this device the monitoring has commenced since October 2002 and it continues at present.

In 2001 the monitoring of the total atmospheric ozone content was arranged in the Murgab meteorological post. This ozone station was transferred to a meteorological site of the Mary station in 2005 where the ozone monitoring has been carried out so far.

Measurements of the atmospheric ozone content are carried out by means of M-124 ozonometers produced in Russia. The ozonometers used have become physically outdated. Lack of spare and reserve ozonometers for replacement of operating devices during their calibrations (a case in Turkmenbashi) results in a monitoring failure for a long term.

Over the last years due to the absence of possibilities for calibrations and routine maintenance of the devices used a technical state of ozonometers has considerably worsened. Overheat of device's bodies, essential deviation of the measured values from former data and others are observed. After 2002 the ozonometers have not been calibrated. The situation developed in aggregate impacts negatively on quality of the data obtained. In support it is possible to demonstrate the Monitoring Result Review for OCO over the CIS countries for 2008 carried out by the Central Aerologic Observatory under the guidance of the Main Geophysical Observatory where poor quality of ozone monitoring data at some stations is highlighted including Repetek, Turkmenbashi and Bekreve.

Daily data on the total atmospheric ozone content (*Chardzhou*), Turkmenbashi (*Krasnovodsk)* and Bekreve (*Ashkhabad)* are preliminary processed and sent by telegramme at the address: AVIA Moscow 736 OZONE. Monthly Tables O-3 t are sent to the Main Geophysical Observatory named after Voyeykov not later than on the 3rd day of the following month. Then, all information is delivered to the data exchange coordinated international network of the World Meteorological Organization (WMO).

All primary data are stored in "Turkmengidromet" archive in a paper form.

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