



# Tech Talk

Monthly Newsletter by Spectro Group

## Director's Desk

Dear all, welcome to the second edition of Spectro's Newsletter! Our belief in walking on the path of continuous growth and development has taken us one step ahead. We are very excited to publish our monthly Newsletter entitled "Tech Talk" which will showcase informative articles. We will be sharing with you the current hot topics in the world of Science, especially related to Health and Environment along with our forthcoming activities and achievements.

I hope that this Newsletter will keep you updated of the state-of-art technologies and developments taking place in the world. It will facilitate your work and will probably build a long-lasting relationship with Spectro.

*Kuldeep Dhingra*  
Managing Director

## Introduction to Spectro

Spectro Analytical Labs Ltd. is NABL Accredited Laboratory, providing world class facilities for Testing, Training, Inspection, Auditing, Certification and Verification Services. We are 19 years old self-reliant and trusted name, providing Analytical solutions to the leading companies. We have successfully made our presence at more than 10 locations all over the country and added a benchmark in the Indian market by proving our trustworthiness and dedication.

## Ground Water Depletion



India being the largest user of ground water in the world uses more than 230 cubic km of ground water per year which is more than one-fourth of the total level, round the globe. The Capital's groundwater which is the major source of water supporting more than 60% irrigated

agriculture and 80% of the rural and water supplies have started facing crisis. The studies show that the availability of fresh groundwater was at the depth of 10m in the year 1983. The complications were observed in 2011, when the groundwater level had sharply fallen to 40m which marked an abrupt depletion in available groundwater.

According to the latest report by World Bank, if the prevailing indiscriminate exploitation methods are not discontinued then around 60% of the aquifers would be in a crucial condition within next 15 years and for that, corrective measures needs to be implemented immediately in order to tackle this problem.

Contd.

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## Global PT, Spectro's associate company achieved NABL Accreditation

Global PT Provider (P) Ltd., which is an associate company of Spectro Analytical Labs Ltd. has achieved the most prominent NABL accreditation. It is an independent Proficiency Testing Provider to various Laboratories for checking the lab performance through inter-lab comparison. A complete array of Proficiency Testing Services is being offered all under one roof. Our upcoming PT Programs include Rockwell Hardness, Charpy Impact Testing, Heavy Metals in Water and Chemical Composition of Zinc Alloy.

### Contd. (Ground Water Depletion )

Covering over 264 square km, the areas which are worst affected encircle South Delhi and portions of South West Delhi where the reduction is up to 10m and the other parts have faced the depression up to 4m.

The situation is getting poor with the rising scarcity at a very fast pace. All these incidents are indicating just one thing that the condition will deteriorate with time. Now, the water level has decreased up to 70m where the water is found to be saline.



The groundwater samples were tested for quality check and the results uncovered the presence of nitrates, fluorides and heavy metals like cadmium, chromium, lead, etc.

Moreover, the concentration of their presence is found to be 33 times more than the safety level which depicts how impure and contaminated the groundwater has become.

Urbanization is being considered as the major culprit for reducing the recharge areas because of the increasing number of construction of roads and buildings. Nitya Jacob, Program Director for Water at the Center for Science and Environment, said "India is using its groundwater faster than nature can replenish it."



Apart from Delhi, Gurgaon may also face a scenario of becoming dependent upon other states for water as its water level has decreased by 7.6m and it is undergoing depletion at an average rate of 2m per year from last 3 years.

The concerned officials are keeping their fingers crossed hoping that the new water supply line named as NCR Channel could solve the water calamity issue of the entire region.

### *Acknowledgement*

- » The Times of India
- » Mail Online India
- » India Today



# An Overview of Asbestos

Asbestos are a set of six naturally occurring silicate minerals which are basically heat and corrosion resistant. They are highly cancerous, thus more than 52 countries have stopped using materials which contain even small traces of it.

Surveys are necessary to be carried out to check their presence under which Sampling and Analysis is done. The two types of surveys: The Demolition Survey diagnoses and locates all the ACM before beginning any structural work. The Management Survey focuses upon the ACM management during normal conditions of the area by locating the damaged ACM and installing new equipments if required.

Air Sampling is an important step to identify Asbestos. Filter Sampling technique is used to collect contaminants with the help of Filter Cassettes and a Calibrated Pump.

The method developed by National Institute of Occupational Safety and Health (NIOSH 7400) is the most common method for testing Asbestos. NIOSH 7402 Method in conjunction with NIOSH 7400 is used to calculate the ratio between the Asbestos and Non-Asbestos fibers. Some of the quantitative and qualitative analysis method includes.

Phase Contrast Microscopy (PCM): It measures the overall concentration of fibers in air sample.



Polarized Light Microscopy (PLM): It can classify the type of asbestos as amosite, chrysotile, actinolite, etc.

X-Ray Diffraction (XRD): It is used to analyze free silica and asbestos in bulks

Transmission Electron Microscope (TEM): It is the most sophisticated analytical instrument for analyzing airborne and waterborne asbestos fibers.

Scanning Electron Microscopy and Energy Dispersive X-Ray (SEM/EDX) Microanalysis: It is best suited for analyzing asbestos in wipes, tapes, bulk and for studying the elemental composition and structure of a material in its solid state.

*Spectro Analytical Labs Ltd. provides facility to combat the problems concerned with Asbestos. Whether it is Asbestos Sampling or its removal, we can help you in all the related fields.*

## Technical Showcase: ICP-MS

Inductively Coupled Plasma Mass Spectrometry i.e. ICP-MS is a sophisticated Analytical Technique which is employed for elemental determinations. It is a combination of a high-temperature ICP source and MS.

Commercially introduced in 1983, this technique has earned successful acceptance in various types of laboratories in Pharmaceutical, Environmental, Food and Beverage Industries.

It is capable of scanning all the elements in a sample simultaneously and can detect metals, non-metals and even the ultra trace metals in high purity reagents. A typical ICP-MS can detect in the region of nano-grams per liter to 10 or 100 milligrams per liter.



Spectro owns this high-tech instrument for fulfilling the requirements of their esteemed customers. We have ICP-MS Make: Agilent Technologies, Model: 7700 Series, G5700A

## Major Activities

### Testing

### Calibration

### Training

### Inspection

### Clean Room Validation

### R&D

- Ü Metals & Alloys
- Ü Food and Agro Products
- Ü Electrical & Electronics
- Ü Rubber & Polymers
- Ü Coal & Petroleum

- Ü Building Materials
- Ü Paper & Textiles
- Ü Hazardous Substances
- Ü Water & Environment
- Ü Minerals & Chemicals

Spectro Lab Equipments (P) Ltd. is promoted by a team of committed professionals who have years of experience and have not lost any opportunity to prove their ingeniousness. SLE is the largest manufacturer on Environment and Coal laboratory equipments.

## Activities

- Ü Chemical and Analytical Equipments
- Ü Coal Equipments
- Ü NDT Equipments
- Ü Mechanical Test Equipments
- Ü Environmental Equipments
- Ü Gold Testing Equipments
- Ü Polymer and Rubber Equipments

Spectro Weld Institutes (P) Ltd. provides exemplary short-term courses and full time courses on specialized topics. The welder gets certification by AWS (American Welding Society). We are also creating a pool bank of trained and certified welders for ready deployment for projects.

## Joint Ventures Labs:

- Ü Bhubaneshwar
- Ü Patna
- Ü Mumbai
- Ü Kolkata
- Ü Kanpur
- Ü Jaipur
- Ü Patiala
- Ü Jammu



We will be pleased to receive your suggestions and feedback on our email ID: [newsletter@spectrogroup.com](mailto:newsletter@spectrogroup.com)

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