

Lithium in Groundwater of Rajasthan – Subhajyoti Das (Email: subhajyoti_das@hotmail.com)

In a pioneering study, D.D. Ozha and H.R. Bhati of Rajasthan Groundwater Department, Jodhpur, Rajasthan report occurrence of lithium in groundwater of Nawa and Degana areas of Nagaur district of Western Rajasthan. Lithium is an important strategic alkali metal, found in minerals like biotite, amphibole, pyroxene, spodumene, petalite and lepidolite in granites, pegmatites. It has been reported from groundwater in many countries. It has also been reported earlier in India (4.00 ppm, Krishna district, Andhra Pradesh), but no detailed study had been conducted so far. This study by Ozha and Bhati reveals occurrence of lithium in significant

proportions in saline rather than non-saline waters. The lithium content in groundwater varies from 0.16 to 3.82 ppm. The highest value has been noted in Kuchaman area. The genesis is traced to weathering of rocks and its solution through percolating waters.

This report is highly significant, since it has potential of extensive uses in metal alloys, salts and consumer products. Lithium-manganese dioxide may substantially reduce the cost of rechargeable lithium batteries. Its use as process catalyst in aluminium manufacture is valuable. Further, magnesium aluminium lithium alloys are also used in ISRO satellite program. The metal lithium has excellent

possibilities as propellant in rocks and spacecrafts. Lithium carbonate is also used in psychiatric, oncology and dermatology drugs. It is high time that detailed investigations for lithium are carried out in other similar terrains as in Bihar, Kashmir, Madhya Pradesh Karnataka and Rajasthan. Central Ground Water Board and State Ground Water Organisations have more than 50,000 groundwater monitoring stations throughout the country. Lithium may now be included in the list of chemical constituents in groundwater quality monitoring, at least in areas where such occurrences are expected (Source: Jour. IWWA, Jan-March 2013, pp 50-54).