

H. List of publications of Dr. D.C. Singhal:

Books:	1.	B.S.Mathur & D.C.Singhal (Eds.)	Proc. "Water Conservation & Management in Drought" : Delhi, published by Indian Association of Hydrologists (1988).
	2.	D.C.Singhal (Ed.)	"Environmental Aspects of Ground Water Development" , published by Indian Association of Hydrologists (1994).
	3.	D.C.Singhal , N.K. Goel, D.K. Srivastava, Ranvir Singh, H. Joshi, B.S. Mathur (Eds.)	Emerging Trends in Hydrology . Proc. International Symposium. University of Roorkee, Roorkee. Published by Deptt. of Hydrology (UOR), Roorkee, 720 P. Vol. I (1997).
	4.	D.C.Singhal , N.K. Goel, D.K. Srivastava, Ranvir Singh, H. Joshi, B.S. Mathur (Eds.)	Emerging Trends in Hydrology . Proc. International Symposium. University of Roorkee, Roorkee. Published by Deptt. of Hydrology (UOR), Roorkee, 225 P. Vol. II (2001).
	5.	H.K. Verma & D.C. Singhal	Annual Report, University of Roorkee (1999-2000).
	6.	H.K. Verma & D.C. Singhal	Annual Report, University of Roorkee (2000-2001).

I. Research Papers in Journals:

Sl. No.	Year	Author(s)	Title of paper and name of Journal (Vol. and page no.)
1.	1981	D.C. Singhal & Sri Niwas	Estimation of Aquifer transmissivity from Dar Zarrouk parameters in Porous Media, Journal of Hydrology, Vol. 50. pp. 393-399.
2.	1981	D.C. Singhal & A.K. Dubey	A note on the Evolution of structures Around Chitorgarh area, Rajasthan. Geoscience Journal, Vol. II. No.1 pp. 7-12.
3.	1984	D.C. Singhal , A.K. Jain & A. Nagar	Crustal evolution of the Narmada-Son Lineament and associated Shear Zones of the Indian Lithosphere, Journal of Earth Sciences, pp. 125-128.
4.	1985	D.C. Singhal & Sri Niwas	Aquifer Transmissivity of Porous Media from resistivity Data, Journal of Hydrology, Vol. 82, pp. 143-153.
5.	1985	D.C. Singhal & A.G. Chachadi	Hydrogeological Investigations in the Sohna Block, District Gurgaon, Haryana – A Case Study, Hydrology Journal of IAH, Vol. VIII, No. 3, pp. 37-43.
6.	1987	D.C. Singhal , B.B.S.Singhal, R.P.Mathur, B.S.Mathur, V.K.Minocha, A.K.Seth & S.K.Sinha	"Effects of Industrial Effluents on the water Quality of Hindon River, Distt. Saharanpur, U.P. 1987. Journal Geological Society of India. Vol. 30, No. 5, pp. 356 - 368.
7.	1988	D.C. Singhal , R.K.Bhangaonkar, O.P.Dube & K.P.Sharma	Groundwater Availability Studies in Bhabhar Terai Region Remote Sensing Data. Hydrology Journal of IAH, 1988, Vol. XI No. 4, pp. 57 - 64.
8.	1988	D.C. Singhal , Sri Niwas & B.B.S. Singhal	Integrated Approach Towards Aquifer Delineation in Hard Rock Terrains – A Case Study from Banda District, India, Journal of Hydrology, Vol. 98, pp. 165-183.

9.	1989	D.C.Singhal , Y.A.Mensah, B.B.S.Singhal & S.Suresh	Evaluation of Minimum spacing of Wells in Fractured Aquifers of Karnataka - A Case study, Hydrology Journal of Indian Association Hydrologists, Vol. XII, No. 1 & 2, 1989. 10 p.
10.	1990	A.K.Seth, D.C.Singhal & B.B.S.Singhal	"Water Quality Modelling of River Hindon, Distt. Saharanpur (U.P.)". Hydrology Journal of Indian Association of Hydrologists, Vol. XIII No. 4, pp. 213 - 226.
11.	1993	D.C.Singhal	Earth Science in Hydrology Education - An Appraisal (Invited Paper), Jalvigyan Sameeksha - A Publication of Indian National Committee on Hydrology, Vol. VIII, No. 2, 1993, pp. 48 - 54.
12.	1998	D.C.Singhal , Sri Niwas, M.Shakeel & E.M.Adam	Estimation of hydraulic characteristics of Alluvial aquifers from electrical resistivity data. Journal, Geological Society of India Vol. 51, pp. 461 - 470.
13.	2001	D.C. Singhal , T.N. Roy, H. Joshi & A.K. Seth	Impact of Sewage Irrigation on Groundwater Quality of Roorkee Town, Uttaranchal. Hydrology Journal, Indian Association of Hydrologists, Vol. 24(4), 1-15.
14.	2001	D.C. Singhal	Environmental Impact of Groundwater Development, Journal Assoc. of Resource Persons Aid in Need (ARPAN) Vol. 1, No. 2, pp. 12-24.
15.	2002	Jaideep Banerjee, Renu Bhargava, P.K. Garg & D.C. Singhal	Waste Disposal Site Selection in GIS Environment. GIS India, Vol. II (No. 1), pp. 12-15.
16.	2003	D.C. Singhal , T.N. Roy, H. Joshi & A.K. Seth	Evaluation of Groundwater Pollution Potential in Roorkee Town, Uttaranchal. Journal Geological Society of India, Vol. 62, pp. 465-477.
17.	2003	C.K. Jain, D.C. Singhal & M.K. Sharma	Hydrochemical Studies of the Hindon River, India: Seasonal Variations and Quality-Quantity Relationships. Journal of Environmental Hydrology, Vol. 11, pp. 1-11.
18.	2003	C.K. Jain, D.C. Singhal & M.K. Sharma	Survey and Characterization of Waste Effluents Polluting River Hindon. Indian Journal of Environmental Protection, Vol. 22, No. 7 (July, 2002), pp. 792-799.
19.	2003	D.C. Singhal	Application of Integrated Approach to Ground Water Exploration. S&T Inputs for Water Resources Management (Indian Geological Congress, Roorkee) Published by Natural Resources Database Management Systems (NRDMS) Division, DST, New Delhi, pp. 123-132.

J. Research Papers of Dr. D.C. Singhal published in Proceedings

1.	1979	Aquifer Mapping in Mau Block of Banda District with the help of Geoelectrical Measurements, Proc. International Seminar on Development and Management of Groundwater Resources, Roorkee, 1979, pp. I-37 to I-40 (Co-authors: Sri Niwas and B.B.S. Singhal).
2.	1981	Geohydrological Studies for Assessing Groundwater Quality in Faridabad Area, Haryana, Proceedings, International Symposium Water Resources Conservation, Pollution and Abatement, University of Roorkee, Roorkee.Vol. I, pp. 3-14 (other authors: V.K.S. Dave and A. Jeyram).
3.	1982	Study of Groundwater Quality Around Sohna Area in Gurgaon District, Haryana, Seminar Proc. Hydrological Investigations During the Last 25 years in India. Association of Hydrologists of India. Waltair, India. pp. 233-238, May 1982 (other author: A.G. Chachadi).
4.	1983	Estimation of Aquifer Transmissivity from Surface Geoelectrical Measurements, Proceedings, International UNESCO Symposium: Methods and Instrumentation for Investigating Groundwater Systems, Noordwijkerhout, The Netherlands, May 2-6, 1983, pp. 405-414 (other author: Sri Niwas).
5.	1983	An Automatic Technique for Interpreting the Field Resistivity Data, Proc. CGWB Seminar on Assessment, Development and Management of Groundwater Resources, New Delhi, April, 1983, Vol.111, pp.3-164 to 3-176 (other author: Sri Niwas).
6.	1983	Automatic Interpretation of Resistivity Data for Groundwater Investigations in Parts of Alluvial Areas of Banda District, U.P., Proc. WRDTC Seminar Groundwater Development. A perspective for the year 2000 A.D., University of Roorkee, Roorkee, India, Dec. 1983, pp.85-96. (Co-authors: Sri Niwas and B.B.S. Singhal).
7.	1984	An Integrated Approach for Groundwater investigation in Hard Rock Areas – A Case Study, Proc. Intl. Workshop on Rural Hydrogeology and Hydraulics in Fissured Basement Zones, Univ. of Roorkee, Roorkee, pp.87-93, 1984.
8.	1985	Soil Erosion Study in Garhwal Himalayas Using Remotely Sensed Data, Proc. Cerma Conf. On Integration of Remote Sensed Data in Geographic Information Systems for Processing of Global resources information, Washington D.C. (1985), Co-authors: K.P. Sharma, P.K. Garg and D.N. Kalita.
9.	1985	Development of Dissolved Oxygen Sag model for Hindon, River Down-stream of a Paper Mill Near Saharanpur Town, U.P. India. Proc. Intl. Seminar Environmental impact Assessment of Water Resources Projects, WRDTC, University of Roorkee, Roorkee, 1985, Vol. II, pp.811-819 (with N. Patel and B.B.S. Singhal).
10.	1986	Land Capability Classification in Ramganga Catchment Using Remotely Sensed Data, Proc. Intl. Seminar on Photogrammetry and Remote sensing for the Developing Countries, Survey of India, New Delhi, March 198 (with O.P. Dubey, S.N. Pandita and Ranvir Singh). T. 11-p 2.1 to 2.7.
11.	1987	Response of Drought on Groundwater Regime of Hard Rock Terrains – A Case Study, Proc. All India Seminar on Strategies for Drought Proofing and Management, Water Management Forum, and Institution of Engineers, Ahmedabad, (invited paper) pp. 237 - 242, 1987 (other authors: S. Suresh, B.B.S. Singhal and A.K. Awasthi).
12.	1988	Monitoring of Groundwater System for drought – A Case History from Karnataka. Proc. National Seminar on Water Conservation and Management in Drought, Indian Association of Hydrologists, New Delhi, 1988, pp. I/DM/25-36. (With B.B.S. Singhal and A.K. Awasthi).

13.	1989	Analysis of Pumping Test Data from Borewells in Fractured Rocks of Karnataka, Proc. Intl. Workshop on Appropriate Methodologies for Development and Management of Groundwater Resources in Developing Countries, National Geophysical Research Institute, Hyderabad, Vol. I, pp. 15-26, (other authors: S.K. Mishra and B.B.S. Singhal).
14.	1989	Groundwater Availability Studies in a part of Delhi Region Using Remote Sensing Techniques, Proc., National Seminar on "Advances in Groundwater Hydrology and Management of Irrigated Lands" Feb., 1989. Surat, pp. 263-291 (with K.R. Sharma).
15.	1990	"Evaluation of Aquifer Parameters and Well characteristics in Fractured Rock formations of Karnataka India". Proc. 28 th International Geological Congress, Washington, D.C. USA (July, 1989) Vol., 1, 1990. Hydrogeology, Selected papers , pp. 351-362 (with B.B.S. Singhal).
16.	1990	Delineation of Dolomite Aquifers beneath Vindhyan Sandstones in Manikpur Area, Banda District. Proc. All India Seminar on GWIMGT, Lucknow, Dec 11/12, 1990. pp. T-III/10 - III/16.
17.	1990	Quality Characteristics of Surface Waters of Hindon River Basin, Distt. Saharanpur (U.P.) Proc. International Conf. On Environmental Planning and Management, University of Roorkee, Roorkee (1990) pp. 351-358.
18.	1993	Geoelectrical Studies in Narnaul Area (Haryana) for Estimating Transmissivity of Alluvial Aquifers. Proc. National Seminar on Hydrological Hazards-Prevention and Mitigation, Roorkee (India), March 1993. pp. 8.1-8.10. (Other author: A. Taheri Tizro).
19.	1993	Study of Groundwater contamination in Coastal Aquifers of Kutch (Gujarat), Proc. National Seminar on Hydrological Hazards-Prevention and Mitigation, Roorkee (India), March 1993, pp. 3.1-3.6 (other authors: K. Bhatt and V.K.S. Dave).
20.	1993	Impact of Urban Waste Effluents on Water Quality in the Hindon River Basin – A Case Study from North India. Proc. Second USA/CIS Joint Conference on Environmental Hydrology & Hydrogeology, Washington D.C. (USA) (May 1993) (other authors: A.K. Seth and B.B.S. Singhal).
21.	1994	Status of Groundwater Quality in Upper Hindon Basin, Saharanpur Area (Uttar Pradesh), Proc. Regional Workshop, Environmental Aspects of Groundwater Development, Oct, 1994, Kurukshetra University, Kurukshetra, pp. I-114 to I-122 (with A.K. Seth).
22.	1998	Evaluation of Groundwater Potential of Lime Stone Aquifers from Dar Zarrouk Parameters. Proc. 2 nd International Symposium on Karst Water Resources, Tehran (Iran) pp. 449-465 (July, 1998) (other author: B.R. Bajpai).
23.	2001	Impact of Raipur-Luni reservoir on groundwater regime and Groundwater Quality, District Pali (Rajasthan). Proc. Intl. Symp. on Emerging Trends in Hydrology, Deptt. of Hydrology, University of Roorkee, Roorkee, 205 P. (other authors: R.P. Singh and A.K. Bannerjee).
24.	2001	Evaluation of Groundwater Pollution Potential in Alluvial Terrains – A Case Study of Roorkee Town. Proc. International Workshop on Ecohydrology (Eds. V. Subramanyam & A.L. Ramanathan) JNU, New Delhi, Nov. 26-29, 2001, pp. 129-142.
25.	2002	Study of Seawater Intrusion in Coastal Aquifer of Minjur Area, Chennai (India). Proc. Intl. Conf. On Bridging the Gap between Measurement & Modeling in Heterogeneous Media. Univ. of California, Berkeley (USA), March 25-28, 2002.
26.	2003	Hydrogeological Evaluation of Waste Dumping Sites and Related Microlevel Studies in Future Planning. Proc. National Symp. on Conservation and Regulation of Ground Water Resource in Urban Areas, Lucknow, U.P., India, October 17-18, 2003.

K. Dissertations supervised by Dr. D.C. Singhal

No. of Ph.D. Thesis guided: 6

M.Tech. Dissertations / Special problems: Over 65

Sl. No.	Title of Thesis	Year of Award	Scholar	Co-supervisors
1.	Hydrochemical Studies in Upper Hindon Basin, Distt. Saharanpur, U.P., India.	1994	A.K. Seth	B.B.S. Singhal and S.K. Srivastava
2.	Hydrogeological Studies in the Southeastern Coastal Tracts of Kutch with special reference to Quality of Groundwater.	1995	Kiran Bhatt	V.K.S. Dave
3.	An Integrated Hydrogeological study of Mahendragarh Distt. Haryana, India.	1996	A.T. Tizro	A.K. Jain
4.	An Integrated Approach for Evaluation of Hydraulic Properties of Alluvial Aquifer.	1997	Mohd. Shakeel	Sri Niwas
5.	Geoenvironmental Studies in Parts of a Mountainous Watershed, Kumaun Himalaya, India.	1998	S.K. Tyagi	R. Anabalagan
6.	Studies of Hindon River System with special reference to heavy metals.	2001	M.K. Sharma	C.K. Jain

L. FOREIGN VISITS/SCHOLARSHIPS

Sept., 1973 – Dec., 1977 (Approx. 4 years)	Tanzania: Expatriate Geologist. Ministry of Water Energy & Minerals. Govt. of Tanzania. Tanzania (East Africa).
May, 1983	The Netherlands: for attending a UNESCO sponsored Conference on 'Methods and Instrumentation for the Investigation of Ground Water Systems' Noordwijkerhout (The Hague).
Jan. – May, 1984	Canada: on UNESCO Fellowship for receiving training in Water Quality Modeling in University of Waterloo, Waterloo (Ontario).
May, 1984	USA: (i) for attending Spring meeting of American Geophysical Union at Cincinnati (Ohio). (ii) Study visits to several U. S. Institutions/Universities.
July, 1998	Iran: for participating in 2 nd International Symposium on Water Resources in Karstic Formations.
March, 2002 (5 days)	USA: for participating in International Groundwater Symposium on Bridging the Gap between Measurement & Modeling in Heterogeneous Media. Univ. of California, Berkeley (USA).
March, 2003 (2 weeks)	Namibia: As an Expert of International Atomic Energy Agency (Vienna) to visit University of Namibia (Windhoek) & Ministry of Agriculture & Water for Developing Curricula in Hydrology & Water Resources.
July, 2003	The Netherlands: To attend UNESCO meetings on Water Education from July 16-19, 2003 at UNESCO-IHE Delft.
October, 2003	USA: To attend Open Science Conference on Global Water Systems Project organized by Institute for Study of Earth, Oceans & Space, University of New Hampshire (Durham) USA. The Conference was organized from Oct. 7 to 9, 2003 in Hotel Sheraton Portsmouth, New Hampshire, USA.

M. TOTAL EXPERIENCE: Over 36 years.

N. MEMBERSHIP OF COMMITTEES ETC.:

- 1990-1993: Member, Advisory Committee, Centre of Remote Sensing, Univ. of Roorkee, Roorkee.
 2001-2003: Member, Expert Committee, Natural Resource Data Management Systems (NRDMS) Committee, Deptt. of Science & Technology, New Delhi.
 2002-2003: Member, Executive Committee, Indian Association of Hydrologists.
 2003-2004: Member, CII National Committee on Disaster Management, New Delhi.

O. PRODUCTION OF TEACHING MATERIALS AND ORGANISATION OF WORKSHOP / SEMINARS / COURSES

- December, 1985 Organisation of IAH Workshop on Computer Applications in Water Hydrology' and preparation of its course material, Deptt. of Hydrology, University of Roorkee.
 May – June, 1987 Organisation of a 3 weeks Special Orientation course on investigation & Assessment of Ground Water Resources', for officers of U.P. Ground Water Investigation Organisation and preparation of its course Material, University of Roorkee.
 Sept. 1988 Technical Secretary, Organisation of IAH National Seminar on "Water Conservation and Management in Drought", in New Delhi by Indian Association of Hydrologists (IAH).
 Jan. – May, 1988 Organisation of Lecture material for a new Course on "Water Quality and Environment" for 16th International Postgraduate Hydrology Course at Department of Hydrology.
 March – April, 1989 Organisation of a Special Course on "Investigation, Planning and Management of Groundwater" and preparation of its course material, University of Roorkee.
 May 2–May 8, 1991 Organisation of Special Course on "Geophysical Methods in Groundwater Exploration" and preparation of its course material, University of Roorkee.
 Oct 17–Oct 20, 1994 Organising Secretary, IAH/AGID Regional workshop on "Environmental Aspects of Ground Water Development" Oct. 1994, Department of Geology Kurukshetra University, Kurukshetra.
 Sept. 25-27, 1997 Organising Secretary, International Symposium on "Emerging Trends in Hydrology", Department of Hydrology, University of Roorkee, Roorkee.
 July 10-29, 2000 Coordinator, Short Term Course on Groundwater Quality, Recharge & Assessment, Department of Hydrology, University of Roorkee, Roorkee.
 June 30-July 07, 2003 Coordinator, Short Term Course on Drought Analysis & Management (**Tifac-Core**), Centre for Continuing Education,

IIT, Roorkee.

P. RESEARCH AND CONSULTANCY PROJECTS HANDLED :

(1) RESEARCH PROJECTS:

Principal Investigator / Co-investigator of several research projects as under:

- (i) Co-investigator of a major research project on Hydrological Aspects of Waste Disposal in Upper Hindon Basin, U.P.” for 4 years funded by Ministry of Environment, Govt. of India (484-487).
- (ii) P.I., Research Project on Environmental Impact of Waste Disposal Practices in Roorkee Town (AICTE funded), April, 1999-2002.
- (iii) Coordinator, Special Assistance Programme (University Grants Commission), April, 1999 onwards.
- (iv) P.I., MODROBS Project, AICTE, June 2002 to March 2003.
- (v) P.I., ‘Funds for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions (FIST) Project, DST, April 2003 onwards.

(2) CONSULTANCY PROJECTS:

Advising various agencies on field problems related to **Hydrogeology, Ground water Geophysics and Environmental Impact Studies**. During Jan. 2001, the World Bank Sponsored Hydrology Project, New Delhi, appointed the undersigned as a Consultant to prepare a Manual of Lithospecific Piezometers.

The **major consultancy projects** handled by the undersigned include the following:

- (i) Working of Borewells & Dugwells in the State of Karanataka, India – Sponsored by National Bank of Agriculture & Rural Development, 1985–1987, (PI : Prof. B.B.S. Singhal) – **(completed)**.
- (ii) EIA / EMP (Geohydrological) Studies of Bokajan Cement (Expansion) Project and its associated Limestone Mines (Dillai Parbat), Assam. Sponsored by Cement Corporation of India, 1988 onwards (PI : Prof. I.M. Mishra) – **(completed)**.
- (iii) EIA (Geohydrological) study of Manal Limestone quarry, Rajban Area (HP).Sponsored by Cement corporation of India, 1988 onwards (PI : Dr. S.S. Srivastava) – **(completed)**.
- (iv) EIA (Geology and Geohydrology) Study of the proposed Kayamkulam Super Thermal Power Project, Kerala. Sponsored by M/S Consulting Engg. Services (India) Pvt. Ltd., New Delhi, 1989.
- (v) EIA (Geology and Geophydrology) Study of the Godavari Gas based Power Project, Kakinada, (A.P.) . Sponsored by M/S Consulting Engg. Services (India) Pvt. Ltd. New Delhi, 1991 **(completed)**.
- (vi) Hydrogeological Investigations in Command Areas of Narmada Sagar & Omkareshwar Projects (M.P.), 1982-1984. Sponsored by M/S Consulting Engg. Services (India) Pvt.Ltd. New Delhi **(completed)**.
- (vii) Hydrogeological Studies in Sardar Sarovar Project Command Area (beyond river Mahi), Gujarat. Sponsored by M/S CESWRDM (India) Pvt. Ltd. New Delhi. 1989-91 **(completed)**.
- (viii) Hydrogeological and Geophysical Studies for Indentification of Tubewells Sites in Vaishali, Kaushambi-Indirapuram Residential Schemes, Ghaziabad – Sponsored by U.P. Jal Nigam, Ghaziabad, 1991-92 **(completed)**.
- (ix) Biodiversity (Geohydrological) Studies of Rowghat Iron Ore Mines Project, M.P. Sponsored by M/S CES (India) Pvt. Ltd. New Delhi. 1993-94 **(completed)**.
- (x) Hydrogeological & Geophysical Survey for Tubewell Sites in Bhupatwala & Kankhal areas, Haridwar. Sponsored by M/S U.P. Jal Nigam, Meerut – 1997 **(completed)**.
- (xi) Hydrogeological and Electrical Resistivity Survey for Tubewell location at POL Installation, BPCL, New Delhi. Sponsored by M/S Bharat Petroleum Corporation Ltd., Noida (U.P.), 1999 **(completed)**.
- (xii) Preparation of Manual on Lithospecific Piezometers, sponsored by M/S DHV Consultants & DELFT Hydraulics, New Delhi **(completed)**.
- (xiii) Feasibility Study of Shikdi SHP Project, Rohru (Distt. Shimla), H.P. (Sponsored by M/S Forgees Urja Strot Ltd., New Delhi) **ongoing**.
- (xiv) Rapid EIA of Ganga Action Plan Support Projects, Kanpur (Sponsor: M/S ENC Engineers, New Delhi) **completed**.
- (xv) Groundwater Investigation for Installation of Tubewells & Assessment of Water Availability in Parts of Dehradun & Kotdwar (UA) **completed**.
- (xvi) Geophysical – Hydrological Investigations for Selection of Tubewells Sites in Kotdwar – Dehradun Areas (Sponsor: Garhwal Jal Sansthan, Dehradun), 2002; **completed**.
- (xvii) Groundwater Investigations for Location of Tubewells in Dehradun/Kotdwar. (Sponsor: Tubewell Irrigation Division, Dehradun) **ongoing**.

Q. Brief Summary of Major/Typical Sponsored Research and Consultancy Projects handled by Dr. D.C.Singhal (Prof. of Hydrology):

1) Consultancy Project on Preparation of Manual on Lithospecific Piezometers Started: Jan 2001(Completed). (Cost: US\$3000/- approx.):

The project envisages preparation of a manual on different aspects of piezometers, their location and construction in the nine designated States of India under World Bank aided 'Hydrology Project' (Handled by M/S DHV Consultants, New Delhi).

2) Special Assistance Programme (SAP: Sponsored by University Grants Commission, New Delhi). Started in April 1999 onwards up to March 2004. (Cost: US\$100,000/- approx.)

The newly started SAP programme at the level of Departmental Research Support stipulates development of infrastructure and carrying out research in the Thrust areas of Groundwater Hydrology, Water Quality Studies and Hydroinformatics.

The main objectives of the Programme envisage pursuing research on development of geophysical and remote sensing techniques related to groundwater exploration in rocky regions and piedmont zones, development of instrumentation in Water Quality Studies and starting a new academic course in Hydroinformatics.

3) Research project on "Environmental Impact of Waste Disposal Practices on Groundwater Regime of Roorkee Town (U.P.)" sanctioned under TAPTEC scheme of All India Council of Technical Education, New Delhi (Started: April, 1999 onwards). (Total Cost: US\$ 15000/- approx.)

The project has been taken up with the objectives of environmental evaluation of groundwater regime of Roorkee town of India from current waste disposal practices, especially sewage farming, and assessment of the health hazards due to groundwater contamination, if any.

4) Consultancy Project on Hydrogeological and Geophysical (Resistivity) Studies for siting of Tubewells under Vaishali, Kaushambi-Indirapuram Water Supply Schemes: Sponsored by U.P. Jal Nigam, Ghaziabad. (Period:1991-92) (Total Cost: US\$ 6000/- approx.)

The project involved identification of sites for tubewells for meeting the requirements of potable drinking water for the residents of newly developed schemes of Vaishali, Kaushambi and Indirapuram in Ghaziabad (U.P.) India. The sites were selected with the help of hydrogeological and geoelectric resistivity soundings and the data were interpreted keeping in view the poor quality of groundwater reported in the area. A number of sites were recommended for drilling after carrying out systematic resistivity soundings in Indirapuram-Vaishali areas and sources of potable ground water were found during drilling at the suggested sites.

- 5) **Hydrogeological studies in Sardar Project Command Area (Beyond River Mahi), Gujarat, (Sponsored by: M/S Consulting Emerging Services, New Delhi (Total Cost US\$ 2000/- approx.) (Duration: 1989-91).**

The project involved preparation of hydrogeological sections (along 3 selected regional traverse lines) and depth to water table maps with the objective of evaluating likely places of water logging, and high salinity in the Command areas(area around 25000 sq. km) of Sardar Sarovar Dam Project, Gujarat. The study comprised of about 100 man days of field investigations, followed by data interpretation, documentation and reporting.

- 6) **Consultancy Project on Working of Borewells and Dugwells in the state of Karnataka, India (sponsored by National Bank of Agriculture and Rural Development (NABARD), Bombay. (Duration: 1985-87).
Cost: Approximately US\$ 18000/- (Co-Principal Investigator: Dr. D. C. Singhal).**

The project was taken up with the objective of a field evaluation of working of existing deep borewells and shallow open wells in the diverse hard rock areas of Karnataka for the purpose of evaluating their sustainability, studying their cut off discharges in reference to the ongoing failed well compensation scheme of the NABARD, and evaluating their Comparative production efficiencies during droughts. For meeting these objectives, 6 well fields were constructed and pumping tests were conducted in areas having different lithological conditions.

R. SCIENTIFIC ACTIVITIES / ASSOCIATIONS

1. Secretary, Indian Association of Hydrologists, **Roorkee Regional Centre**, 1985-86.
2. Honorary Secretary, Indian Association of Hydrologists (**National Body**), 1986-1992.
3. Member, American Geophysical Union (1984 & 1985).
4. Life Fellow, Indian Association of Hydrologists, (1984 onwards).
5. Life Member, Association of Geoscientists for International Development (AGID) 1989 onwards.
6. Member, National Water Well Association of America (1978).
7. Life Member, Indian Geological Congress, Roorkee.
8. Member, International Association of Hydrologists (U.K.).

Dated: December 14, 2003

(Dr. D. C. Singhal)
Prof. & Head, Deptt. of Hydrology,
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INDIA