



**MASTER SUMMARY OF WORKS COMPLETED**

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
<b>1959</b>				
1	MANGLA DAM. Multipurpose dam on river Jhelum. 380 feet high, 11,000 ft long embankment. Gross storage 5.3 million acre ft. 1400MW hydropower. Work in association with Geostrazivanja (Yugoslavia).	Diamond core drilling. Water loss tests and stage grouting. 470 ft. of core-drilling and associated tests.	WAPDA Lahore.	Binnie and Partners (U.K.) & Harza Engineering Int. (U.S.A.)
<b>1960</b>				
2	TARBELA DAM. Multipurpose dam on the Indus River. 9,000 ft. long 480 ft. high embankment. 2100MW hydropower.	Percussion drilling & soil sampling with large dia (20 -12 in) casing, through heterogeneous alluvial overburden & boulders. 800 ft. of drilling and associated tests.	WAPDA Lahore.	Harza Engineering Int. (USA.) and TAMS (U.S.A.)
3	TARBELA DAM. Multipurpose earth and rock fill dam on the Indus River. 9,000 ft long 480 ft. high embankment. 2100 MW hydropower.	Diamond core-drilling. Many horizontal and angle holes to 700 ft. depth through heavy overburden and hard rocks. Elaborate water pressure and water absorption tests. 16,490 ft. of core drilling and 657 tests.	WAPDA Lahore.	Harza Engineering Int. (USA.) and TAMS (U.S.A.)
4 to 6	KUNHAR VALLEY. 3 potential dam sites on River Kunhar. Sites in steep narrow gorges, in rugged terrain, with difficult access. Part of work during heavy snow cover.	Diamond core-drilling in different metamorphic rocks and heavy overburden. Water pressure tests. 3,000 ft. of core-drilling 371 water pressure tests.	WAPDA Lahore.	Chas.T. Main Inc., (U.S.A.)
7	THATTA-SAJAWAL BRIDGE. A major bridge across the Indus River near the historical town of Thatta.	Shell and auger borings, soils sampling and standard penetration tests. 1156 ft. of borings, 108 tests.	Public Works Department (PWD) Govt. of Pakistan.	T.O.Lazarides & J.D. Harris.
<b>1961</b>				
8	MIAN NOOR. Part of Gomal Zam Project, for irrigation and protection against flash floods.	Rotary and percussive drilling in difficult limestone formations. Permeability and water pressure tests. 511 ft of drilling, 235 tests.	Director General P&I WAPDA Lahore.	Energoprojekt (Yugoslavia).
9	TARBELA DAM. Multipurpose earth and rock fill dam on the River Indus. 9000 ft. long 480 ft. high embankment. 2100 MW hydropower.	Diamond core-drilling. Many horizontal and angle holes. Elaborate water pressure and water absorption tests. 6000 ft. of core drilling and associated tests.	WAPDA Lahore.	Harza Engineering Int. (USA.) and TAMS (U.S.A.)
10	MAILSI SYPHON. To deliver water of the Ravi River across the Suttlej River through Mailsi-Bahawal Canal for irrigation use in Bahawalpur.	Site investigations for Syphon foundations with shell and auger, including sampling, SPTs and other tests. 300 ft. of borings and tests.	Chief Engineer, Indus Basin Projects, WAPDA.	Coode and Partners (U.K.)



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<b>1962</b>				
11	JHELUM BRIDGE. New road bridge for National Highway over Jhelum River.	Site investigations for bridge foundations, including sampling SPTs and other tests. 300 ft. of borings with associated tests.	Public Works Department (PWD) Govt. of West Pakistan.	
12	KAJURI KATCH: Potential Dam site on the River Gomal.	Diamond core-drilling and water pressure tests involving manhandling and winching of rigs hundreds of feet up the banks of a narrow gorge. 2164 ft. of core-drilling 151 tests.	Director General P&I, WAPDA Lahore.	Energoprojekt (Yugoslavia).
13	RASUL BARRAGE. A major Indus Basin Project, on the Jhelum River to divert 10,000 cusecs to the Rasul-Qadirabad Link Canal, and 6000 cusecs to the Lower Jhelum Irrigation Canal.	Comprehensive Geotechnical investigations for Barrage foundations and canal "Head Regulators" including complete soil mechanics laboratory test and appraisal report comprising data, conclusions & recommendations.	Chief Engineer, Indus Basin Projects, WAPDA.	Coode & Partners (U.K.)
14	WAPDA HOUSE. Prestigious Multi-storey, luxury office-cum-shopping building in Lahore designed by Edward D. Stone. Work in association with the Cementation Co.Ltd. (U.K.)	Complete Site Investigations for building foundations, including the full range of field and soil tests.	WAPDA Lahore.	Harza Engineering Int. (U.S.A.)
<b>1963</b>				
15	SIBI-JHATPAT PROJECT. Feasibility studies at six Dam sites in Sibi-Jhatpat area, for flood control, irrigation and power in the province of Baluchistan.	Percussion and diamond core-drilling in conglomerates, alluvium and many different rock formations. Water pressure tests, permeability tests etc. 3509 ft. of drilling 289 tests.	Director General, P&I, WAPDA Lahore.	Sir M. MacDonald and Partners (U.K.)
21	TARBELA DAM. Multipurpose dam on the Indus River. 9000 ft. long 480 ft. high embankment. 2100 MW hydropower. Work in association with Swissboring Overseas Corporation Ltd. (Switzerland).	Diamond Core-drilling. Many horizontal & angle holes. Elaborate water pressure and water absorption tests. 10,000 ft. core-drilling 556 tests.	Project Director & Chief Engineer Tarbela Dam WAPDA.	TAMS (U.S.A.)
22	SWAT RIVER. Feasibility studies for potential dam site at Kalam on River Swat in the North West Frontier Province.	Percussion and core-drilling in overburden and massive Diorite rocks. Permeability and pressure tests. 2503ft. of drilling with usual tests.	Director General, P&I WAPDA Lahore.	
23	MARALA BARRAGE. Remodelling studies at an earlier Barrage on the River Chenab. Work in association with Swissboring Overseas Corporation Ltd. (Switzerland).	Foundation Investigations with sampling and usual tests. 1370 ft. of borings, 199 tests.	Remodelling Organization WAPDA.	



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24	SANJWAL. Feasibility for potential Dam storage sites near town of Campbellpur, as possible off-channel storage below Tarbela.	Percussion and diamond core-drilling in alluvium and rock, mostly lime-stone and sand-stone shale. 829 ft. of drilling 76 tests.	Director General, P&I WAPDA Lahore.	Associated Consulting Engineers Ltd., (Pakistan).
25	CHICHAWATNI BRIDGE. A major road bridge on the River Ravi.	Site Investigations for Bridge Foundation, with usual tests. 208 ft. boring and associated tests.	Public Works Department (B&R) Govt. of Pakistan.	
26	KHANPUR DAM. 164 ft. high dam 1580 ft. long; 106,000 acre ft. storage, on River Haro in the North-West Frontier Province.	Dam Site Investigations involving drilling in river alluvium and bed rock. Permeability and water absorption tests. 7,238 ft. of drilling with associated tests.	Chief Engineer Development & Coordination WAPDA.	Associated Consulting Engineers Ltd., (Pakistan).
27	TERI-TOI BRIDGE. Bridge on National Highway.	Foundation Investigations for Highway bridge 200 ft. of boring and usual tests.	Public Works Department (PWD) Govt. of West Pakistan.	

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28	KARACHI SHIPYARD. Feasibility and design studies for construction of an additional ship berth and dry dock.	On and off-shore rotary & percussion drilling. Special sampling. 'Dutch Cone' Penetrometer tests. Heavy pump out tests. Full range of field and laboratory tests. 5855 ft. of borings.	Karachi Shipyard and Engineering Works Ltd.	Prof. Dr. Ing. Erich Lackner. (Germany) Zafar & Associates (Pakistan).
29	DARGAI POWER HOUSE. Repair to deteriorated and spalled concrete lining of long water conduits/ channels, and spillway surfaces of the Dargai hydroelectric power house.	Removal & cleaning by air chipping and sand blasting of all defective concrete, fixing dowels & reinforcement mesh, application of pneumatic concrete i.e. Guniting to give a new hard-wearing surface. 123,248 sqft. of guniting.	Operational Manager Electricity WAPDA.	Harza Engineering Intl. (U.S.A.)
30	HATTAR CEMENT WORKS. Provision of water supply to cement works.	Installation of 3 tubewells and pumping tests. 1526 ft. of tubewell borings.	The Pak Cement Industries Ltd.	
31	CHINA CREEK, KARACHI Highway Bridge in Karachi City.	Foundation Investigations for road bridge. Borings, sampling, field and laboratory tests. 436 ft. of borings, 94 tests.	Republic Engg. Corporation (Pakistan).	Republic Engg. Corporation (Pakistan).
32	MARALA BARRAGE. Investigations for design of dewatering programme during Barrage construction.	Constructing temporary tubewells and piezometers, pumping tests with measurements of drawdowns and of the cone of depression. 174 ft. Of borings with piezometers and pumping tests.	E.D. Zublin AG (West Germany).	



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33	SIDHNAI. Pakistan Western Railway Bridge at Sidhnai.	Plugging of railway bridge deep piers at Sidhnai by concrete method. 2 piers and 2 abutments.	WAPDA & Societa Domez.(Italy)	Coode and Partners (U.K.)
34	KARACHI ELECTRICITY SUPPLY CO. Design studies for foundation of Transmission line towers.	Foundation investigations along the tranmission line, borings and usual field and laboratory tests.	Karachi Electric Supply Corporation Limited.	
<b>1965</b>				
35	HYDERABAD-KASHMORE HIGHWAY. Feasibility studies of a highway project.	California Bearing Ratio (CBRs) and comprehensive borings & laboratory tests for the proposed highway.	Noon Qayum & Co. (Pakistan)	Noon Qayum & Co. (Pakistan)
36	MARALA BARRAGE. 4472 ft. long barrage on River Chenab with 1,100,000 cusecs designed discharge.	Detailed Site Investigations of barrage foundations. Full range of field tests, complete soil-mechanics laboratory tests and comprehensive appraisal report.14221 ft.of borings. 495 tests.	Ed. Zublin AG & WAPDA	Coode and Partners (U.K.).
37	HARIPUR. Feasibility studies for construction of weir in a river bed.	Exploratory site investigations in boulders, gravels in river bed with usual field and laboratory tests.464 ft. of borings, 168 tests.	Public Works Department (PWD) Govt. of Pakistan.	
38	SIMLY DAM. Feasibility and design studies for a Dam on Simly River near Islamabad to provide water supply to the capital city of Pakistan.	Dam site investigations. Diamond core and percussion drilling with water pressure tests, sampling etc., alongwith accurate determination of borehole inclinations. Many angle-holes. 1770 ft. of drilling. 67 tests.	Capital Development Authority, Islamabad.	Techsult, International Ltd., (Canada.)
39	RASUL BARRAGE. A component of the Indus Basin Projects, to divert 10,000 cusecs to the Rasul Qadirabad Link Canal, and 6,000 cusecs to the Lower Jhelum Irrigation Canal.	Comprehensive Site Investigations for Barrage foundations and canal "Head Regulators". Including complete soil mechanics laboratory tests. and appraisal report including data, conclusions and recommendations. 16,349 ft. of borings and associated tests.	WAPDA & Cogefar Astaldi (Italy).	Coode and Partners (U.K.)
40	BURJ ZAM, DAMANDA, WUCHA to	Exploratory diamond core-drilling with usual water pressure and other tests. 2,200 ft. of drilling.205 tests.	Director General P&I, WAPDA Lahore.	
43	SISTA RIVER MOUTH. Feasibility studies of potential dam sites in North West Frontier Province.			
44	HUB DAM & KHANPUR DAM. Dams near Karachi and Haripur respectively.	Special check tests of soil samples in our Pakistan laboratory and the laboratories of Cementation of U.K. (17 Nos. laboratory tests).	WAPDA Lahore.	Associated Consulting Engineering Ltd., (Pakistan)



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45	MARGALLA. Feasibility studies for location of a cement factory and availability of groundwater.	Complete Site and foundation investigations with usual field and laboratory tests. Temporary tube-wells, and pumping tests. 1668 ft of borings. 20 tests.	Gandhara Industries Ltd.	
<b>1966</b>				
46	CHASHMA BARRAGE. A major unit of the Indus Basin Projects, to divert water of the Indus to the Jhelum River and onwards into the Trimu-Sidhnai-Mailsi- Bahawal Link Canals System.	Site investigations for foundations. Extensive deep sounding with Dutch Cone Penetrometer. Full range of field, and soil mechanics laboratory tests. 9516 ft. of borings, and associated tests.	Chief Engineer, Indus Basin Projects, WAPDA.	Harza Engineering Int. Co. (USA)
47	HYDERABAD KOTRI. Tower crossing for transmission line over the Indus River.	Straight and raked bored-in-situ piles and beams to provide foundations for transmission line towers for river crossing. (5901 ft. of piling).	WAPDA & British Insulated Callendars Cables Ltd., (B.I.C.C.)	Sandwell & Co. (Canada).
48	KHANPUR DAM. 164 ft. high 1580 ft. long 1,06,000 acre ft. storage earth dam, on the river Haro in the North-West Frontier Province and Punjab.	Dam Site investigations with percussion and diamond core drilling in river alluvium and bed rock. 3000ft. of drilling and associated tests.	Director General P&I, WAPDA Lahore.	
49 to 50	CHINIOT AND MALAKWAL. River crossing of Sui Northern Gas Pipelines.	Bored-in-situ piles and connected superstructure to support gas pipe-line across river. 2008 ft. bored piles and associated superstructures.	Motherwell Bridge Contracting Co.Ltd.	Freeman Fox & Partners (U.K.)
51	CHASHMA BARRAGE. A major unit of the Indus Basin Projects, to direct water of the Indus to the Jhelum River and onwards into the Trimu-Sidhnai-Mailsi-Bahawal Link Canal System.	Additional investigations for foundations. Deep sounding with Dutch Cone Penetrometer. Full range of field and soil mechanics laboratory tests. 9500 ft. of boring and associated tests.	Chief Engineer, Indus Basin Projects, WAPDA.	Harza Engineering Int. (U.S.A.)
52	KARACHI SHIPYARD. Pre-Construction investigations for second phase of berth and Dry Dock No.2. Work in association with Swissboring Overseas Corporation Limited, (Switzerland).	Site investigations. On shore and off-shore percussion and rotary drilling. 'Dutch Cone' Penetrometer tests. Large scale pump out tests to assess dewatering requirements. Full range of field & soil mechanics laboratory tests. 2882 ft of borings.	Karachi Shipyard & Engineering Works Limited, Karachi.	Prof. Dr. Ing Erich Lackner, Consulting Engineers, (Germany) Zafar&Associates, (Pakistan).
53	HARIPUR. Water supply for factory of Telephone Industries of Pakistan Ltd.	Turnkey installation of tubewell. Hard boulders and rocky formations. 450 feet deep tubewell.	Telephone Industries of Pakistan.	



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54	MIRPUR(AZAD KASHMIR). Drinking water supply for Mirpur Town suburbs.	Turnkey installation of 6 tubewells in hard boulders and clay formations. 2818 ft. of tubewell work.	S.E. Reservoir Circle WAPDA & PWD, Mirpur (AK).	
55	FAISALABAD. 160 MW Thermal Power Station at Faisalabad, Punjab Province.	Fireproof gunite lining to 140 feet high Power House Chimney. 6044 sq ft of guniting.	WAPDA & Volkervam (Pakistan) Ltd.	
<b>1967</b>				
56	SHEIKHUPURA, SARGODHA, KHUSHAB HIGHWAY. Feasibility and Design studies of a modern Super Highway under the aegis of the World Bank.	Complete Soil Investigations and laboratory tests for design of highway & foundations of cross drainage and associated structures along 100 miles of highway. 1604 feet of borings and associated work.	Govt of West Pakistan (PWD) Highway Deptt.	Pacific Consultants, K.K. (Japan)& Zafar & Associates, (Pakistan)
57	MANGLA-LAHORE TRANSMISSION LINE 220 KV. Site Investigations for transmission line between Mangla Dam and Lahore.	Soil Investigations, with shell & auger equipment & usual field tests. Full range of laboratory tests with appraisal report. 1024 ft borings and associated tests.	WAPDA.	Commonwealth Associates & Harza Engineering Co. Int. (U.S.A.)
58	BULAND HILL. Mechanised stone and aggregate quarry, near Sargodha town in Punjab.	Diamond core-drilling to investigate geological and engineering properties in quarry area 1141 ft. of core drilling.	The Chief Engineer I.B.P. WAPDA & Impergilo (Italy)	Harza Engineering Co. Int. (U.S.A.)
59	RAJOYA. Feasibility of a small scale irrigation scheme.	Survey, soil investigations sampling and usual tests. 411 ft. of boring and sampling.	Irrigation Department.	
60	PESHAWAR. Old brickworks water aquaduct under historic Peshawar City.	Removal of defective parts, repair re-lining with rein-forcement mesh, and covering the entire tunnel with Gunite 38,561 sqft. of Guniting.	The Executive Engineer, Canal Division Peshawar.	
61	GUDDU. Proposed modern gas turbine Thermal Power Station of 600 MW Capacity.	Site investigations and tests, including micro-geological, for design of power house foundations. 5415 ft. of boring and tests.	The Chief Engineer (Contract) WAPDA.	ELC-Electrconsult (Italy).
<b>1968</b>				
62	KASHMORE - D.G.KHAN. Bridges on new Railway Link.	Soil investigation for Desert Canal and Shori Nullah Railway Bridges. 420 ft. of boring.	The Chief Engineer (Const) PWR, Lahore.	
63	RASUL BARRAGE. A major component of the Indus Basin Project on the Jhelum River to divert 10,000 cusecs to the Rasul-Qadirabad Link Canal.	Additional site investigations as at serial 13 with pump out tests for permeability determination. 6336 ft. borings and associated tests.	WAPDA & Cogefar Astaldi (Italy).	Harza Engineering Co. Int. (U.S.A.)



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64	GUDDU. Thermal Power Station with 600 MW installed capacity at Guddu.	Extensive Geohydrological Investigations & aquifer tests. Two volume appraisal report. 4,764 ft. of borings and associated works.	The Chief Engineer (Contract) WAPDA.	ELC-Electroconsult (Italy).
65	CHICHOKI-MALLIAN FERTILIZER FACTORY. Construction of Dawood Hercules Fertilizer Factory on Lahore-Sheikhupura Road.	In field testing of soil moisture density etc., samples, compaction control of the earth fill. 36 borrow area samples and approx. 2000 of insitu density samples.	Dawood Hercules Chemicals Ltd.	Trans Pakistan Engineering Limited.
<b>1969</b>				
66	GUDDU. Thermal Power Station with 600 MW installed capacity at Guddu.	Constructing bored-in situ test piles and carrying out pile loading tests to 120 tons both in compression and in tension. 12 test piles.	The Chief Engineer (Contract) WAPDA.	ELC-Electroconsult (Italy).
67	MANGLA DAM. Multipurpose earth Dam, on River Jhelum.	Pressure grouting and encasement of sealing ring in 30 feet dia. Tunnel No. 1.	Mangla Dam Contractors Consortium.	Binnie & Partners (U.K.).
68	MANGLA-LAHORE TRANSMISSION LINE 220 KV. Double Circuit transmission line between Mangla Dam and Lahore.	Soil Investigations, with shell and auger equipment, usual field and laboratory test with appraisal report. 870 ft. of borings and associated tests.	WAPDA.	Commonwealth Associates Inc. (Canada).
69	TARBELA DAM. Multipurpose earth and rock fill Dam on the Indus River. 9,000 ft. long 480 ft. high embankment. 2100 KW of hydropower.	Construction of 19 in. dia relief wells through heavy boulders to 250 ft. depth, using telescoping easings from 36 in. downwards. 2,900 ft. of drilling for Relief wells.	WAPDA and Cementation Intrafor Ltd.	T A M S. (U.S.A.)
70	SIMLY DAM. Feasibility and design studies for a dam on Simly River near Islamabad, to provide water supply to capital city of Pakistan.	Additional Damsite investigations and grouting tests. 3969 ft. of core drilling & associated tests including stage grouting.	Capital Development Authority, Islamabad.	
71 72 73	WAH, CAMPBELLPUR AND HAVELLIAN. Extension of Pakistan Ordnance Factories.	Exploratory borings, and site investigations for factories. 720 ft. of drilling and associated tests.	The Superintending Engineer, P.O.F. Wah Cantt.	



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<b>1970</b>				
74	MARALA BARRAGE. Remodelling studies at an earlier Barrage on the River Chenab, to investigate uplift pressures on downstream of the barrage.	Subsurface investigations through floor of the barrage, due to unexpectedly high hydrostatic pressure in some of the check piezometers. Puncturing and drilling through the concrete floor slab whilst maintaining hydrostatic pressure to counter the uplift pressure of the upstream pond. Special caissons, pontoons, expanding seals and safety devices were designed by IVCC and pretested before start of work. Extensive piezometric and permeability tests, followed by installation of relief wells. 7939 ft. borings, 106 piezo tests.	WAPDA & The World Bank.	Coode & Partners (UK)
75	WAH CANTONMENT. Provision of additional drinking water for extension of Pakistan Ordnance Factories.	Installation of 4 Tubewells for water supply. 1,293 ft. of tubewell borings.	The Superintendent Engineer, P.O.F. Wah Cantt.	
76	HAVELLIAN. Provision of drinking water for extension of Ordnance Factories.	Installation of 6 tubewells in difficult heavy boulders, developing, and test pumping. 1387 ft. of boring.	The Superintendent Engineer, P.O.F. Wah Cantt.	
77	MIRPUR (AZAD KASHMIR). Construction of Ropeway of a Logging and Saw Mill Complex, near the River Jhelum.	Pile foundations of Ropeway towers and erection of tower steel work. 911 ft. of 19in. dia. bored-in-situ piling.	Resident Engineer A.K. Logging & Saw Mills Ltd., Mirpur (AK).	Carrier Associates Ltd.
78	KABUL RIVER. River crossing of gas transmission pipeline for Sui Northern.	Site Investigations for feasibility for pipeline foundations. 374 feet of drilling and associated work.	Sui Northern Gas Pipelines Ltd.	
79	FAROOQIA. Additional Water Supply for existing cement factory.	Turnkey installation of tubewell. 300 ft. tubewell borings.	The Pakistan Cement Industries Limited.	
80	RIVER RAVI LAHORE. River Crossing of 220 K.V. Transmission Line.	48 in. dia bored, cast-in-situ heavily reinforced piles within purpose-fabricated steel lining, in clay, and running sand formations. 1344 ft. of piles.	WAPDA & Imperial Electric Co. Ltd.	
81	ATTOCK- RIVER INDUS. Crossing of natural gas pipeline at a historic fort site.	Core drilling and site investigation for feasibility and design of pipeline foundation. 209 ft. of drilling and tests.	Sui Northern Gas Pipelines Ltd., Lahore.	



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<b>1971</b>				
82	KABUL RIVER. Feasibility and design studies for a high level river bridge.	Soil investigations and usual field and laboratory tests. 1,100 feet of borings and tests including 500 ft. of boring on water.	The Executive Engineer, Highway Division, Mardan.	
83	KARACHI. Feasibility studies for expansion of Karachi Harbour. Work in association with Foundation Engineering Ltd.	Site investigations with percussion and Rotary drilling on land and in 30-40 feet of sea depth. Usual field and laboratory tests. Dutch Cone Soundings. 4112 feet of boring on sea plus 2,777 ft. on land with tests.	Karachi Port Trust, Karachi.	Van Houten Associates Karachi.
84	RASUL BARRAGE. Remodelling studies at an earlier Barrage on the River Jhelum, to investigate uplift pressures on downstream of the barrage.	Additional investigations and installation of relief wells at site under similar conditions as at ser 74 above. 1696 feet of boring and associated tests.	WAPDA & The World Bank.	Coode & Partners (U.K.).
85	MANGLA-KHARIAN TRANSMISSION LINE. 132 KV Transmission Line to distribute Mangla Dam Power.	Soil investigations with field and laboratory tests for foundations of towers. 272 ft. of borings and tests.	AEI-English Electric (Pak) Ltd., Lahore.	
86	HFF-TAXILA. Heavy Forge and Foundry Complex, being constructed with Chinese assistance.	Site Investigations for factory and foundations for heavy plant and equipment. 1696 ft. of borings and associated tests.	The Chief Engineer W.P.I.D.C. Karachi.	
<b>1972</b>				
87	LAHORE. Provision of additional drinking water supplies to the provincial metropolitan town of Lahore.	Installation of 9 large capacity tubewells. Stringent specifications with development & testing to 6 cusecs. 4,814 feet of drilling.	Lahore Improvement Trust (LIT) Lahore.	
88	GUJRANWALA. Natural Gas transmission pipeline crossing of the Upper Chenab Canal.	Driving of prefabricated steel shell piles to 'refusal.' Cementing piles & constructing necessary pipeline appurtenances for pipeline canal crossing. 6 in. x 16 in. dia. Shell piles. 211 ft. piling.	Sui Northern Gas Pipelines Ltd., Lahore.	
89	KHEWRA. Chemical Factory of Imperial Chemical Industries (Pakistan).	Turnkey tubewell installation with pumping tests. 220 ft. of tubewell borings.	Imperial Chemical Industries (Pak) Ltd.	
90	SIL RIVER. River crossing of natural gas transmission pipelines.	Exploratory boring and related tests for the Meyal-Dhullian section of the pipeline. 120 ft. of borings and related tests.	The Sui Northern Gas Pipelines Ltd., Lahore.	



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91	TAUNSA. Transmission line tower foundations over Indus River, at Taunsa.	Cast-in-situ 48 in. dia piles, concreting of caps, pedestals and beams involving 20 feet dewatering.	WAPDA.	
92	MANDIALI. Industrial water supply scheme.	Installation of one tubewell for provision of water supply to Mill. 200 feet of tubewell boring.	Pakistan Paper Products Ltd.	
		<b>1973</b>		
93	JHELUM. Additional water supply for existing tobacco factory.	Installation of one tubewell. 240 ft. of tubewell boring.	Pakistan Tobacco Company Ltd.	
94	HASSANABDAL. Water supply for a textile mill.	Installation of one tubewell for provision of water supply to Mill. 267 feet of tubewell boring.	Monnoo Textile Industries Ltd.	
95	NEW KHANPUR. Town for Rehabilitation of persons displaced by construction of Khanpur Dam Project.	Provision of drinking water for New Khanpur Township. 200 feet of tubewell boring.	The Executive Engineer, Khanpur.	
96	DAUDKHEL. Foundation investigations of fertilizer factory.	Subsoil investigations for evaluation of the present conditions of the foundation structure. 677 feet of borings.	The Pak American Fertilizer Company.	Associated Consulting Engineers, (ACE) Ltd., (Pakistan).
97	ISMAILABAD (MULTAN). Additional water supply for the Colony Textile Mills.	Installation of one Tubewell. 300 ft. of tubewell boring.	Multan Cotton Industries.	
98	MUZAFFAR GARH. Additional water supply for a cotton mill.	Installation of one Tubewell. 300 ft. of tubewell boring.	Multan Cotton Industries.	
99	SIALKOT CANTT. Proposed Sewerage Disposal Scheme for Cantonment.	Subsoil investigation for the Cantt. Area. 538 ft. of borings and tests.	CMES (Army) Kharian Cantt.	
100	SIALKOT CANTT. Additional drinking water for Army Units.	Turnkey installation of 4 tubewells 1400 ft. of tubewell borings.	CMES (Army) Kharian Cantt.	
101	TAXILA. Additional water supply for Heavy Foundry and Forge Complex at Taxila.	Turnkey installation of 8 tubewells in difficult formations. 1,520 feet of tubewell borings.	W.P.I.D.C. Karachi.	
102	MANGLA CANTT. Additional water supply.	Installation of 2 tubewells. 400 feet of tubewell borings.	CMES (Army) Kharian Cantt.	



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103	KOTRI. Multispan major railway bridge over the River Indus.	Complete off shore subsoil investigations for pier foundations. 1774 ft. of boring and sampling.	Railway Board. Pakistan Railways.	
		<b>1974</b>		
104	LAHORE. Proposed PIDC House at Egerton Road. Multistorey commercial Building.	Subsoil Investigation for foundations. 106 feet of boring, sampling and allied tests.	W.P.I.D.C. Karachi.	
105	AZAD KASHMIR. Peoples Works programme-Kasguma, Maira Jattan.	Turnkey installation of 2 Tubewells. 418 ft of tubewell borings.	Local Govt. PWD Mirpur (AK).	
106	RASUL BARRAGE. A major component of the Indus Basin Project on the Jhelum River to divert 100,000 cusecs to the Rasul-Qadirabad-Link canal and 6,000 cusecs to the Lower Jhelum irrigation canal.	Installation of 2 piezometers at Rasul Barrage at difficult locations. Work included dewatering through well points and drilling in concrete through barrage floor.	WAPDA.	
107	AZAD KASHMIR. Proposed road bridge on Bhimber nullah near Bhimber town.	Complete Subsoil investigations for bridge pier foundations. 376 feet of boring, sampling and tests.	Executive Engineer Development PWD, Mirpur (AK).	Akbar & Aleem (Pakistan).
108	BHIMBER NULLAH. 220 K.V. Transmission Line, near Lalamusa Town.	Construction of pile foundations for 6 towers in Bhimber Nullah. 1,296 ft. of piling.	WAPDA & Societa Anonima Elettraficazione (SAE) (Italy).	
109	PALKHU NULLAH. 220 KV Transmission line near Wazirabad Town.	Construction of pile foundations for 3 towers Mangla - Kala Shah Kaku Transmission Line. 300 ft. of Piling.	WAPDA.	
110	KALABAGH DAM PROJECT. 260 feet high proposed dam on River Indus at Kalabagh downstream of the confluence of Indus and Soan Rivers.	Subsurface explorations for Kalabagh Dam Project, covering investigatory boreholes on land as well as in the River Indus. 1,800 ft. of core drilling and tests.	Director General P&I, WAPDA.	Associated Consulting Engineers(ACE) Ltd. (Pakistan).
		<b>1975</b>		
111	WARSAK - PESHAWAR SCARPS AREA. Reclamation Project to reclaim nearly 30,000 acres affected by the twin menace of water logging and salinity.	Turnkey installation & commissioning of 64 tubewells in Kafur Dheri Unit of Peshawar SCARP. 11,439 feet of tubewell borings using heavy percussion rigs and large diameter casings.	WAPDA (SCARP) Peshawar.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
112	RAIWIND AREA. Public Health Engineering Department water supply schemes.	Installation of tubewells at Raiwind and Jia Bagga towns for the provision of drinking water. 1,160 feet of tubewell borings.	P.H.E.D. & Al-Munir Concern Lahore.	
		<b>1976</b>		
113	CHINIOT. 500 KV Transmission Line Tarbela-Faisalabad.	Subsoil Investigations for 4 towers near Chiniot. 300 feet of borings.	WAPDA & Imperial Electric Co.Ltd.	
114	KALABAGH DAM PROJECT. 260 ft. high proposed dam on river Indus downstream of the confluence of the Indus and Soan rivers.	Additional geological & engineering investigations for the dam involving drilling in water. 2000 feet of percussion and core drilling with related tests.	Director General P&I, WAPDA.	Associated Consulting Engineers (ACE) Ltd. (Pakistan).
115	SHEIKHUPURA - SARGODHA SCARP AREA. Replacement of damaged and deteriorated tubewells.	Turnkey installation & commissioning of 63 tubewells in SCARP I, II & IV, covering an area of approximate 6000 sq.miles. 10,000 feet of tubewell borings.	WAPDA. (SCARP) Lahore.	
116	KAHUTA COMPLEX. Proposed Special production Unit in Kahuta Area.	Geohydrological investigations aimed at location of potable water & to examine water resources potential in Kahuta Area. 457 feet of borings and tests.	Special Works Organization Rawalpindi.	
117	N.W.F.P. AREA. Govt. of N.W.F.P. Workers Welfare Board, uplift scheme.	Installation of 4 Tubewells for workers colonies at Industrial Estates, Peshawar, Mingora (Swat), Kohat, and Amangarh (near Nowshera). 830 feet of tubewell boring.	N.W.F.P. Workers Welfare Board Peshawar.	
118	KAMRA . For Defence Production Board.	Installation of 4 tubewells for drinking water at Kamra. 850 feet of tubewell boring.	CMES (DPB) Kamra.	
119	JHANGI SAIDAN. Rawalpindi Cantt. water supply scheme.	Installation of tubewell for Rawalpindi Cantonment water supply scheme, 350 ft. of tubewell borings.	CMES (Army) Rawalpindi.	
120	KAMRA. For Defence Production Board. Dewatering system.	Installation of 7 shallow tubewells at Kamra for dewatering. 1,200 feet of tubewell borings.	CMES (DPB) Kamra.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
121	KAMRA AIRFIELD. For Defence Production Board. Anti-water Logging Investigations.	Drilling of test holes and field laboratory tests to investigate the Geohydrological formations & to establish values for safe soil pressure to be used in the design of foundation structures. 1774 ft. of borings.	CMES (DPB) Kamra.	Al-Saadi Technical & Management Consultants Lahore.
122	LAHORE. Steel Fabrication.	Fabrication of 1200 ft of 48 in. dia. and 450 ft. of 12 in. dia. M.S. pipe.	Oriental Engineers Lahore.	
123	LAHORE AREA. SCARP Tubewells R&D and rehabilitation programme.	Physical extraction of tubewell installed fifteen years ago to check condition of fixture materials, using specially designed equipment and jetting techniques.	O & M Division WAPDA O.D.A. (U.K.)	
<b>1977</b>				
124	LAHORE CANTT. Water supply scheme for Cantt area.	Installation of tubewell for drinking water for CMH Lahore Cantonment. 353 feet of borings.	CMES (A) Lahore Cantt.	
125	HAVELIAN. Water supply for Pakistan Ordnance Factories.	Turnkey installation of 6 tubewells for Factories at Havelian. 1530 feet of tubewell borings in large gravels and boulders.	Chief Engineer (Works) POF Wah Cantt.	
126	LAHORE. Steel Fabrication.	Fabrication of 2300 ft. of M.S. Pipe 48 in. dia.	National Water Supply Services.	
127	INDUS SUPER HIGHWAY D.G.KHAN GANDI UMAR KHAN SECTION. Proposed 850 miles Super Highway on right bank of river Indus linking Karachi with Peshawar.	Soil investigations at road structure locations, logging and taking of disturbed and undisturbed samples. Full range of laboratory tests and production of comprehensive report.	National Highway Board Islamabad.	NESPAK (Pakistan) Republic Engg Corporation Ltd., (Pakistan).
128	LAHORE CANTT. Water Supply scheme in Cantt area.	Installation of tubewell in Ghazni Lines, Lahore Cantt. 377 feet of borings.	CMES (Army) Lahore Cantt.	
129	TAXILA - HRF. (PROJECT P-711) Water Supply for Factory.	Installation of 3 tubewells at Usman Khatar, Taxila. 622 ft of borings.	CMES (DP) Taxila.	
130	LAHORE. Steel Fabrication.	Fabrication of 12 in dia. M.S. Pipes with thread protectors and shoes.	Lahore Steel Corporation.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
131	LAHORE. Steel Fabrication.	Fabrication of 2 Floating Platforms with allied super-structure for river drilling at Kalabagh Dam site.	For Company use.	
132	GUJRANWALA CANTT. Water Supply Scheme.	Installation of new Tubewell in A-4 area. 360 feet of borings.	CMES (A) Gujranwala.	
133	WAH CANTT. Pakistan Ordnance Factories water supply scheme.	Installation of 3 Tubewells in estate area. 876 ft. of borings.	Chief Engineer (Works) POF, Wah Cantt.	
134	LAHORE. Manufacture of Drilling Equipment.	Fabrication and manufacture of straight Rotary Drilling Rig.	Ground Engineering Services Limited.	
135	LAHORE. Steel Fabrication and Erection.	Fabrication and erection of steel truss roof in workshop building.	Ground Engineering Services Limited.	
136	LAHORE. Multi-storey building complex soil investigations.	Subsoil Investigation for building on Plot No. 83 Circular Road, Lahore. 110 feet of boring, ampling, tests and report.	Adam Ltd., Lahore.	Bashir Associates Karachi.
137	LAHORE. Industrial Building soil investigations.	Subsoil Investigation for proposed extension of existing factory.	Paintex Ltd. (ICI) Lahore.	
138	LAHORE. Manufacture of Equipment.	Fabrication of 5 Heavy Duty Tractor Trollies.	For Company use.	
<b>1978</b>				
139	LAHORE. Industrial water supply.	Installation of tubewell at Badami Bagh Works. 360 feet of borings.	PECO Ltd., Lahore.	
140	RISALPUR CANTT. Water supply scheme in Cantt area.	Installation of 2 tubewells including construction of Pump houses and provision of Chlorinators. 700 feet of borings.	DW & CE (Army) GHQ, Rawalpindi.	
141	MULTAN. Special foundations grouting.	Pressure Grouting of Turbine Foundations of Natural Gas Power Station.	Resident Engineer N.G.P.S. WAPDA, Multan.	
142	WAH CANTT. Special foundations at Pakistan Ordnance Factories for heavy machines.	Design and construction of Foundations of 4,000 tons press. Working in difficult restricted space including underpinning foundations by piling, guniting and grouting.	Chief Engineer (Works) POF, Wah Cantt.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
143	CHAKLALA. Water supply scheme.	Installation of tubewell at ERL Workshop. 340 feet of borings.	Special Works Org. Rawalpindi.	
144	LAHORE. Agricultural equipment and implements.	Manufacture and assembly of automatic poultry feed equipment.	Arbor Acres Limited.	
145	SHEIKHUPURA. Industrial Water Supply.	Installation of 2 Tubewells for Fertilizer Factory at Sheikhpura. 561 feet of borings.	Dawood Hercules Limited.	
146	LAHORE. Steel Fabrication.	Fabrication of 12 in dia M.S. Casing with thread protectors and driving shoes.	Lahore Steel Corporation.	
147	TAXILA - HRF (Project P-711). For Defence Production Board. Rebuilding and repairs with Gunite.	Rebuilding of reinforced concrete tank test track by reinforced gunite and pressure grouting.	CMES (DPB) Taxila.	
		<b>1979</b>		
148	KAMRA AIRFIELD. Water Supply.	Installation of 3 tubewells for drinking water at Kamra. 955 ft. of borings.	DW & CE (DP) GHQ, Rawalpindi.	
149	NOWSHERA-PESHAWAR HIGHWAY. Rehabilitation of existing highway.	Subsurface exploration at road structure locations, including full range of laboratory tests and comprehensive report. 640 metres of boring and laboratory testing.	Ministry of Communication Govt. of Pakistan, Islamabad.	Progressive Consultants Lahore.
150	MARDAN. Municipal Water Supply.	Installation of 2 Tubewells for drinking water. 718 feet of borings.	Administrator Municipal Corpn, Mardan.	
151	DANDOT CEMENT. New Cement factory investigations	Complete Subsoil Investigation for a Cement Factory.	State Cement Corporation of Pakistan.	NESPAK Ltd., Lahore.
152	KOHAT CEMENT. New Cement factory investigations.	Complete Subsoil Investigation for a Cement Factory.	State Cement Corporation of Pakistan.	Industrial Cement Engineers Ltd., Lahore.
153	MANGLA CANTT. Water Supply.	Installation of 2 tubewells for drinking purposes. 388 feet of boring.	CMES (Army) Kharian Cantt.	
154	KAMRA. Research and development.	Subsoil Investigations at Kamra, involving bearing tests to investigate settlement in structures.	CMES (DP) Kamra.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
155	WAH CANTT. Ordnance factory site.	Subsoil Investigation of Factory on Budho Road. 600 metres of percussion drilling with allied tests and full scale report.	S.E. (Works) POF Wah Cantt.	
156	MARDAN SCARP AREA. Water logging Reclamation Project.	Installation of 16 Tubewells on Turnkey Basis in difficult water logged areas. 5,400 feet of borings.	Chief Engineer (Water) WAPDA Peshawar.	
157	MULTAN CANTT. Water Supply.	Installation of 5 Tubewells for drinking purposes. 1,283 feet of borings.	CMES (Army) Multan Cantt.	
158	BANNU SCARP AREA. Multi-million rupees Antiwater Logging & Salinity Control Project.	Installation of 40 Tubewells and appurtenant works in Bannu SCARP Area in N.W.F.P. on turnkey basis. Drilling in difficult and hard stratas, requiring the use of heavy rigs. 10,166 feet of borings.	Chief Engineer (Water) WAPDA Peshawar.	
159	DAUD KHEL. Mineral exploration (USAID).	Exploratory diamond core drilling for Gypsum. Over 1,000 feet of tricone and core drilling in limestone and Gypsum.	Government of Pakistan.	MWS Consultants Inc. (USA) and United Consultants Ltd. (Pakistan).
160	DERA NAWAB. Water Supply.	Installation of Tubewell for drinking water. 252 feet of boring.	CMES (Army) Multan Cantt.	
161	ARMY AVIATION BASE MULTAN. Water Supply.	Installation of Tubewell for drinking water. 230 feet of boring.	CMES (Army) Multan Cantt.	
162	CHENAB RIVER. Near MUZAFFARGARH. 500 KV Transmission Line Towers.	48 in. dia bored cast-in-situ piles for 4 towers including pile caps and beams. 1,400 feet of piling.	WAPDA & Greaves Cotton & Co. (Pak) Limited.	NESPAK Ltd., Lahore.
163	MANGLA POWER HOUSE. 8x100MW Hydrel Power Station at Mangla Dam.	Drilling Holes through concrete for grouting Dowel Bars. 2,766 feet of drilling in R.C.C. and grouting.	WAPDA & N.C.(Pak) Limited.	NESPAK Ltd., Lahore.
164	HUB DAM PROJECT. Multi-Million Rupees Irrigation and Power Supply Project for Karachi Area.	Drilling for 14 in. diameter Relief Wells by percussive & tricone rotary rigs in hard lime stone, down stream of the dam. 1,258 feet of borings.	Chief Engineer Karachi Irrigation Project (WAPDA).	ACE Ltd., (Pakistan).
165	GOTH MACHHI. Fertilizer Factory, dewatering for foundations construction.	Dewatering to a depth of 3 metres for construction of prilling and cooling towers.	Fauji Fertilizer & National Construction Limited.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
166	MALIR RIVER KARACHI. Pak-Arab Refinery and Pipe line Project.	Subsoil Investigation and Design of 18 in. dia pile piers for 20 in. Pipe-line Crossing on Maslir River.	Pak-Arab Refinery Co. Ltd., (PARCO) Karachi.	USSR experts.
167	PIPRI - KARACHI. Pakistans first multi-billion rupees integrated Steel Mills. Dewatering operations.	Planning, design and execution of dewatering for scale pit of the hot strip mill by the installation of deep turbine wells and constant pumping for over 12 months. The depth of the water table was lowered by 32 feet.	Pak Steel & National Construction Ltd.	USSR experts.
<b>1980</b>				
168	N.W.F.P. TRIBAL AREAS. Water Supply Schemes.	Installation of 25 Tubewells in Boya Laund Mohammad Khel Agency, Orakzai Agency and F.R. Bannu in remote and difficult terrain and hostile territories. 9,357 ft. of borings.	FATA Development Corporation Peshawar.	
169	AZAD KASHMIR MIRPUR. Industrial Water Supply .	Installation of 2 Tubewells for Vespa Scooter Assembly Plant. 521 feet of borings.	Novelty Enterprises Limited.	
170	LAHORE. U.S. Consulate Housing Project.	Subsoil Investigation of Plot at Main Boulevard Gulberg, including comprehensive report.	Consulate General of U.S.A. Lahore.	
171	KARACHI. Binnie Shell Grain Storage Project for RECP. Structural reinforcement.	1/2 in. thick Guniting of 55 Bini Shells. Surface area each shell being 12,500 sq.ft. (1.4 million sq.ft. of Guniting.)	Rice Export Corporation and Shaheen Builders.	NESPAK Ltd., Lahore.
172	VEHARI - ARIFWALA AND BAHAWALPUR. Grain storage Project for NLC. Structural reinforcement.	1/2 in. thick Guniting of 55 Bini Shells. Surface area each shell being 12,500 sq.ft. (1.4 million sq.ft. of Guniting.)	National Logistic Cell (NLC) and Shaheen Builders.	
173	ISKANDERABAD. Water Supply.	Installation of two tubewells in Fertilizer Factory. 400 ft.of boring.	Pak American Fertilizer Ltd.	
174	MULTAN CANTT. Water Supply.	Replacement of one tubewell for drinking water in Haider Lines. 210 ft. of borings.	CMES (Army) Multan Cantt.	
175	KSB WORKS HASANABDAL. Turbine Pump Factory.	Installation of Tubewell in KSB Works. 215 feet of borings.	KSB Pumps Co. Ltd., Lahore.	



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176	SARAI ALAMGIR (JHELUM). Water Supply.	Installation of Tubewell in Bridging Camp Area. 200 feet of borings.	Corps of Engineers Pakistan Army.	
177	KOHAT-BANNU. Transmission Line.	Preliminary Subsoil investigation and laboratory testing for the design of piles for transmission line towers. 264 feet of borings with allied tests.	Executive Engineer Constructions Div, WAPDA Rawalpindi.	
178	GOTH MACHHI. Dewatering for foundations and process pipelines at fertilizer factory.	Dewatering by well-points for an excavated area for laying process pipelines to a depth of 4 metres.	Fauji Fertilizer Co. & Aquateer S.p.A.(Italy)	
179	CHOLISTAN. Exploratory Oil drilling operations.	Installation of 2 Tubewells in Cholistan Area for water supply to oil well drill rigs. 511 ft of boring.	Shell Oil & Nasim & Co. Ltd., Karachi.	
<b>1981</b>				
180	PESHAWAR. Multi Storey Building.	Subsoil Investigation for multi-storeyed building including Dutch Cone soundings and laboratory tests. 390 feet of borings.	State Life Insurance Corporation of Pakistan. Karachi.	Republic Engg. Corporation Ltd., Lahore.
181	HATTAR. Structural repairs to cement plant.	Repairs to Crusher structure and Clinker tower by chipping, refabrication, Guniting and Grouting during a brief shut down of the factory.	Mustehkam Cement Ltd., Rawalpindi.	INCEM Lahore.
182	JHELUM. Additional Water Supply for factory.	Installation of one Tubewell. 250 ft. of tubewell boring.	Pakistan Tobacco Co. Ltd., Jhelum	
183	RIVER JHELUM. 132 K.V. Transmission Line.	Construction of 48 in.dia.bored cast-in-situ pile foundations for transmission line towers of Head Faqirian Dandot. 132 KV (DC) T/line.	Project Director GSC, WAPDA, Lahore.	
184	CLIFTON KARACHI. Housing Complex. Structural repairs.	Structural strengthening of multi-storey buildings by reinforced gunite. Reinforcement of approximate 380 RCC columns by Gunite.	Maymar Housing Services Ltd. Karachi.	
185	D.G.KHAN. Water Supply Scheme.	Civil Works for permanent water supply for cement factory, including intake structures, storage tanks and regulators.	D.G. Khan Cement Co. Ltd., Lahore.	INCEM Lahore.



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
186	JHELUM CANTT. Water Supply Scheme.	Installation of a Tubewell at Sher Dil Lines. 204 feet of boring.	CMES (Army) Kharian Cantt.	
187	NWFP TRIBAL AREAS. Water supply schemes in tribal areas of North Pakistan.	Installation of 23 Tubewells in Khyber, Orakzai and other tribal Agencies. Heavy percussion drilling in remote areas. 6775 feet of borings.	FATA Development Corporation, Peshawar.	
188	JHELUM. Rani Ghee Mills & Motor Scooters Factory Tariqabad (AK).	Installation of 3 Tubewells in Mills premises. 827 feet of borings.	Novelty Enterprises Ltd., Mirpur (AK).	
189	SHEIKHUPURA. NASIC Glass Works water supply.	Installation of 2 Tubewells in the premises of Glass Factory. 830 feet of borings.	M/S Nasir Siddiq Corporation Lahore.	Allied Engineering Corporation Ltd., (Pakistan).
190	KHANKA DOGRAN. Grain Godown Project of NLC.	Soil Investigation, field and laboratory tests and comprehensive report. 100 feet of borings.	NLC, GHQ, Rawalpindi.	Republic Engg. Corporation Ltd., Lahore.
191	CHICHAWATNI. Multi Million Rupees Grain Silos Project.	Soil Investigation for Grain Silos with usual field and laboratory tests and comprehensive report. 300 feet of borings.	NLC, GHQ, Rawalpindi.	Republic Engg. Corporation Ltd., Lahore.
192	MANGLA CANTT. Additional Water Supply Scheme.	Installation of a Tubewell and allied works in Cantt Area. 205 ft of boring.	CMES (Army) Kharian Cantt.	
193	CHARSADDA. Industrial Water Supply.	Installation of Tubewell at paper mills colony. 350 feet of borings.	Corporation Ltd., Peshawar.	
194	DUHOK DAM - DUHOK, IRAQ. Multi-million dollars Dam and Irrigation Project in Northern Iraq for Ministry of Irrigation and State Organisation for Dams. Govt. of Iraq.	Complete drilling and grouting for main dam grout curtain, 7m dia x 1500 mtrs long diversion tunnel and 2 Km long irrigation tunnel. Approx 50,000 mtrs of core/non core drilling and other tests. Over 7,000 hours of pressure grouting and 5,000 tonnes of grout injection. Work under difficult war conditions over a 7 years period.	Ministry of Irrigation Govt. of Iraq & Engineering Services International (E.S.I.), Dubai (UAE).	Agro Complet, (Bulgaria).
<b>1982</b>				
195	KAKUL - (ABBOTTABAD). Water Supply Project. Tobe Camp.	Installation of Tubewell, pump set, rising main, external electrification and Pump House. 222 feet of borings.	DW & CE (Army) GHQ, Rawalpindi.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
196	KHAIRPUR. Multimillion rupees Grain Silos, Project for National Logistic Cell (NLC).	Turnkey project for battery of 14 slipformed RCC grain silos 50,000 tons capacity. Work included design and construction of grain silos, procurement, fabrication and installation of automatic grain cleaning and handling equipment capacity 100 tons/hour. Automatic Aeration and temperature control equipment. Ancillary storage building, roads, and other services. Operation, maintenance and training of clients staff.	National Logistic Cell (NLC) GHQ, Rawalpindi.	Pioneer Consultants. NESPAK. Ltd. Industrial & Civil Engineers. Karachi.
197	JAMMU TAWI RIVER. 132 KV Transmission Line.	Soil Investigation for R.C.C. Pile foundation in the bed of river near Bajwat with field and laboratory tests & report. 300 feet of borings.	XEN (Civil) Construction Division, WAPDA Lahore.	
198	LAHORE. Multistorey building for Grindlays Bank Ltd.	Soil Investigation of Plot for Construction of Bank's building with allied tests and reports at Bank Square. 180 feet of borings.	Grindlays Bank Ltd., Lahore.	Republic Engg. Corporation Ltd., Nayyar Ali Dada & Associates.
199	RAWALPINDI. Water Supply.	Installation of Tubewell at GD Lines JSHQ Chaklala. 380 feet of borings.	CMES (Army) Rawalpindi.	
200	PIR PIHAI & SARGODHA. Storage godowns water proofing.	Approx 1,00,000 sq.ft. of 1/2 in. Water Proof Gunit to godown roofs being constructed for wheat storage.	National Logistic Cell (NLC), GHQ & Hakeem Khan & Sons.	Republic Engg. Corporation Ltd., (Pakistan).
201	LAHORE. Railway overhead bridge.	Subsoil Investigation for Ghari Shahu Overhead bridge on Shalimar Road, Lahore. 467 ft of borings with allied tests.	Director Roads, LDA Lahore.	NESPAK Ltd., Lahore.
202	MULTAN - Water Supply.	Installation of tubewell & provision of pumping equipment, chlorinator, etc., at Mailsi. 343 feet of borings.	CMES (Army) Multan Cantt.	
203	BAHAWALPUR. Water Supply.	Installation of tubewell, pumping man Lines, Bahawalpur. 253 ft of borings. equipment, chlorinator, etc., at Yazman Lines, Bahawalpur. 253 ft. of borings.	CMES (Army) Multan Cantt.	
204	KILA SAIFULLAH-ZHOB ROAD - BALUCHISTAN. Bridge sites investigations.	Subsoil Investigation for construction of 14 bridges between Kila Saifullah-Zhob Road. 655 feet. of borings with allied tests.	Director General National Highway Board, Islamabad.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
205	JHELUM CANTT. Improvement of Water Supply.	Installation of 2 Tubewells with turbine pump, construction of pump house etc. 498 ft. of borings.	DW & CE (Army) GHQ, Rawalpindi.	
206	TARBELA DAM. Multipurpose earth and rock fill dam on the Indus River. 9000 feet long 480 ft. high 2,100 MW of hydropower	Drilling of 9 Relief Wells by heavy percussion rigs involving overburden and installation of pumping sets for dewatering the area down stream of tunnels Number 4 and 5 Contract No. 651 E. 456 feet of drilling for relief wells.	COLROCK Joint Venture & Indus River Contractors.	
207	PABBI HILLS. Exploratory Oil Drilling Operations.	Installation of Tubewell for water supply to oil well drilling rigs. 1085 feet of borings.	Nasim & Co. Ltd., Karachi. & Shell Oil.	
<b>1983</b>				
208	TARBELA DAM. Multipurpose earth and rock fill dam on the Indus River. 9,000 ft. long 480 ft. high embankment. 2,100 MW of hydropower.	Drilling & grouting of left abutment in adits of 7 ft. dia. below main dam. Approx. 39,000 feet of drilling, pressure grouting, including pressure tests. Contract No. 651 H.	WAPDA & Indus River Contractors. With Colcrete, Rodio & Keller. Joint Venture	T. A. M. S.(USA)
209	KALABAGH DAM PROJECT. Multipurpose 260 feet high proposed Dam on River Indus at Kalabagh.	Additional subsurface exploration on right bank of the Indus, covering investigatory boreholes, in-situ testing and collection of disturbed/ undisturbed samples and cores 2,900 ft. of core and 1,150 feet percussion boring. Contract No. 102.	Chief Engineer Hydro Electric Projects (H.E.P) WAPDA.	Kalabagh Consultants.
210	BASHA DAM PROJECT. Proposed Multi purpose, 1,000 feet high dam on River Indus at Basha near Chilas along the famous Karakoram highway.	Dam site subsurface explorations, on-shore and off-shore. Sampling and tests. Drilling to locate bedrock and materials in surrounding borrow areas. 3,000 ft. rotary and percussion drilling in remote and difficult formations.	Chief Engineer Hydro Electric Projects (HEP) WAPDA.	Montreal Engg. Co. Ltd., (Canada).
211	LAHORE. Provision of Water Supply.	Installation of tubewell at proposed World Cup standard Hockey Stadium. 203 feet of boring.	Hasan Associates Limited, Lahore.	
212	ISLAMABAD. Industrial Water Supply.	Installation of tubewell for Punjab Oil Mills Ltd., 300 feet of boring.	Punjab Oil Mills Ltd., Islamabad.	
213	CHARSADDA. Industrial Water Supply.	Installation of 2 Tubewells at Pakistan Paper Mills Colony. 699 feet of boring.	Pakistan Paper Corporation Ltd., Peshawar.	



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214	PAKISTAN STEEL-PIPRI KARACHI. A multi-billion rupees project for manufacture of steel products in Pakistan set up with Soviet assistance.	2 in. thick Guniting lining of chimney for Unit No.1 of Pipri power house. Total 800 square metres of Guniting.	KESCO & Messrs Suleman & Sons Limited.	
215	JHELMUM. Water Supply.	Installation of tubewell at tobacco factory. 210 feet tubewell boring.	Pakistan Tobacco Co., Ltd., Jhelum.	
216	LAHORE CANTT. Water Supply Scheme.	Installation of Tubewell at Walton Road. 370 feet of boring.	CMES (Army) Lahore Cantt.	
217	WAN RADHA RAM. THIRD IBRD National Highway including structures.	Subsoil Investigations for Overhead Bridge. 485 feet of boring with allied tests.	Director General National Highways Board, Islamabad.	NESPAK Ltd., Lahore.
218	HYDERABAD. Zeal Pak Cement Factory. Structural repairs with shotcrete/Guniting.	Repairs to RCC Structures by removing damaged concrete re-building of Silos, Clinker hopper and slurry elevators with Guniting.	General Manager, Zeal Pak Cement Factory, Hyderabad.	
219	DHAUNKAL (WAZIRABAD) PNP Rice Mills. Water supply.	Installation of Tubewell. 300 feet of boring.	Rice Export Corpn.of Pakistan. Lahore.	

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220	ABBOTTABAD CANTT. New Officers Mess.	Soil Investigation for Baluch Officers Mess with usual field and laboratory tests and report.	CMES (Army) Abbottabad.	
221	LAHORE CANTT. Water Supply.	Installation of Tubewell at Sarfaraz Rafiqi Road. 310 feet of borings.	Housing Directorate GHQ, Rawalpindi.	
222	MANGLA CANTT. Water Supply Scheme.	Installation of tubewell. 150 feet of boring.	CMES (Army) Kharian Cantt.	
223	PESHAWAR CANTT. Provision of Drinking Water.	Installation of Tubewell for State Life Building. 395 feet of boring.	General Manager, Real Estate Div., State Life Insurance Corp. Karachi.	Republic Engg. Corporation Ltd., Lahore.
224	BELA PLAIN. Ground Water Development Project. (Baluchistan).	Development and Testing of approx. 30 Tubewells of Bela Plain Ground Water Development Project.	General Manager Ground Water Division, B.D.A. Quetta.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
225	PAKISTAN STEEL - PIPRI. A multi-billion rupees project for manufacture of steel products in Pakistan, set up with Soviet Assistance.	Installation of 20 shallow wells, 20 deep piezometers and 6 deep pumping wells for study of Geohydrological activities in Pakistan Steel Area. 5,300 feet of borings, tests and observations.	General Manager (Contracts) Pakistan Steel Mill, Bin Qasim Karachi.	
226	JHELUM CANTT. Water Supply Scheme.	Installation of a tubewell. 230 feet of borings.	CMES (Army) Kharian Cantt.	
227	SANG JANI. Proposed Cement Project near Islamabad.	Soil Investigations for structural foundations and geological studies for shale and limestone deposits for of core/non core drilling, plate load tests and laboratory tests.	PECTO Cement Ltd., Lahore.	
228	MIRANSHAH. Federally Administered Tribal Area Development Programme Mineral Exploration.	Exploratory Drilling for Copper deposits at Miranshah, North Waziristan Agency of Federally Adminis-of core drilling and sampling.	FATA Development Corporation Peshawar.	
229	GANDIALLY DAM SITE. Proposed dam in Kohat Distt.	Damsite geotechnical investigations at Gandially Dam Site. Approx.105 metres of core drilling.	Govt. of NWFP Irrigation Dept. Peshawar.	NESPAK Ltd., Lahore.
230	KARACHI AIRPORT. Water Supply Scheme.	Installation of 3 Tubewells at Karachi Airport. 756 feet of borings.	General Manager (Works) P.I.A. Karachi.	
<b>1985</b>				

231	PAKISTAN STEEL- PIPRI. A multi-billion rupees Project set up with Soviet assistance.	Bored Cast-in situ piles for foundations of Control Building of Sea Water Pumping Plant.	Pakistan Steel, MacDonald Layton & Co.Ltd.,Karachi.	
232	NISAI - BALUCHISTAN. Ground water development Project.	Drilling, installation, development and testing of 20 Tubewells in Nisai Ground Water Development Project Area. 3,784 feet of borings.	Baluchistan Development Authority (BDA) Quetta.	
233	LAHORE . Multi - storey Town terminal building.	Soil investigations, installation of tubewell, and test piling for Town Terminal Building at Egerton Road, Lahore. Construction of 9,700 feet of 24 in. dia. piles and load testing to 300 tons ultimate load.	GM (Works) PIA Karachi & N.C. Ltd.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
234	2ND TARBELA - FAISALABAD 500 KV T/L PROJECT. Investigations and piling.	Soil Investigation and Piling fortowers at Jhelum and Chenab River Crossings. 3,608 feet of investigatory borings and construction of 7,383 feet of 36 in. and 48 in. dia piles and associated superstructures.	WAPDA & Imperial Const. Co. Ltd.	NESPAK Ltd., Lahore.
235	LARKANA. Provision of drinking water for Urban Water Supply Scheme Phase-III.	Turnkey installation of 8 Tubewells of 3 cusec capacity. 2,040 feet of boring.	Executive Engineer, Public Health Engineering Division, Karachi.	
236	LAHORE. PIA Town Terminal Building.	Additional Subsoil investigation and laboratory testing for re-design of foundations of town terminal building at Egerton Road.	GM (Works) PIA Karachi.	Republic Engg. Corporation Ltd., (Pakistan).
237	MANGLA DAM. Instrumentation Division Project.	Installation of 14 Piezometers downstream of main dam in Pond Area.	Chief Engineer WAPDA, Mangla Dam.	
238	MANGLA CANTT. Water Supply Scheme.	Boring of tubewell at Bong Area. Mangla. 170 feet of boring.	CMES (Army) Kharian Cantt.	
239	SIMLY DAM. Near ISLAMABAD. Provision of water supply to Capital City of Pakistan.	Drilling for instrumentation in dam body, using down the Hole / ODEX drilling techniques and core drilling. 3,050 feet of drilling covering 24 holes.	Capital Development Authority, (CDA) Islamabad.	
240	LAHORE - BYPASS. National Highway N-5 (Project). Soil Investigation.	Soil investigations for new carriageway of National Highway including tests & report. 360 metres of borings and allied tests.	NESPAK Ltd., Lahore.	NESPAK Ltd., Lahore.
241	AZAD KASHMIR - KOTLI. Water Supply Scheme.	Installation of 3 Tubewells. 463 feet of boring.	Chief Engineer PWD, Muzaffarabad (AK).	
<b>1986</b>				
242	LEIAH AND PUNJAB SALT RANGES. Coal exploration.	Core/non-core drilling for exploration of coal. 1,061 feet of core and 6,025 feet of non-core drilling.	Punjab Mineral Development Corporation (PUNJMIN) Lahore.	
243	KALABAGH DAM PROJECT. Multipurpose 260 feet high proposed Dam on River Indus at Kalabagh.	Off shore - Damsite investigations in the river channel involving 729 ft. drilling, in-situ testing & collection of samples (Contract No. 114).	Chief Engineer Kalabagh Dam Project, WAPDA.	Kalabagh Consultants.



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
244	LAHORE. Additional drinking water supply.	Installation of 2 Tubewells (4 cusec capacity), with developing and testing to 7 cusec in Allama Iqbal Town. 1,318 feet of boring.	WASA (LDA), Lahore.	
245	AZAD KASHMIR - KOTLI. Provision of drinking water for hospital.	Installation of a tubewell at DHQ Hospital. 156 feet of boring.	Executive Engineer PWD, Building Division, Kotli(AK).	
246	KALABAGH DAM PROJECT. WAPDA Engineers Main Colony.	Geotechnical Investigation for the design of Engineers Main Colony near Kalabagh Dam Site.	WAPDA & NESPAK Ltd.	NESPAK Ltd., Lahore.
247	MULTAN. WAPDA Thermal Power Station Extension Project.	28 Dutch Cone Penetration tests and compilation of test report.	WAPDA & NESPAK Ltd.	NESPAK Ltd., Lahore.
248	KANDKOT. Guddu Gas Pipeline Project.	Dewatering by well points of 2.5KM Section of trench during laying of pipeline.	WAPDA & Petrocon (Pvt) Ltd., Lahore.	
249	KANDKOT. Guddu Gas Pipeline Crossing of BS Feeder Canal.	Site investigations, & construction of 6 cast-in-situ bored piles and piers for pipeline crossing.	WAPDA & Petrocon (Pvt) Ltd., Lahore.	
250	LAHORE. Industrial Water Supply.	Installation of Tubewell at factory premises.	Pak Elektron Ltd., Lahore.	
251	QUETTA. Bolan Medical Complex Structural Concrete investigations.	Extraction of core samples from RCC in buildings and checking crushing strength.	Baluchistan PWD	NESPAK Ltd., Lahore.
252	JHIMPIR - KARACHI. Agricultural wells.	Installation of 4 Tubewells for the provision of water for Cattle Farms.	Agricultural Development Bank (ADBP), Karachi.	
253	ZIARGAI BALUCHISTAN. Ground Water Recharge Pilot Scheme, hydrological investigations.	Installation of 14 Piezometers with heavy percussion rigs in remote areas Collection of samples and testing.	B.M.I.A.D. Quetta.	
254	KARACHI. Defence Officers Housing Authority. Hydrological investigations.	Investigatory drilling to explore potential of drinking water in the area.	Defence Officers Housing Authority, Karachi.	
		<b>1987</b>		
255	LAHORE. Water Supply.	Installation of Tubewell at State Life Building, Lytton Road.	State Life Insurance Corporation, Lahore.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
256	DERA GHAZI KHAN. PAEC Development Project Area. Mineral Exploration.	Drilling through overburden in Nangar Nai Area, using ODEX equipment.	Pakistan Atomic Energy Commission, D.G. Khan.	
257	KOT ADDU. WAPDA's proposed Thermal Power Station.	12 'Dutch Cone' penetration tests to determine soil bearing properties.	Alsthorm ( France).	
258	CHASHMA BARRAGE. Proposed WAPDA Hydel Project on existing barrage.	Installation of Tubewell & piezometers and execution of long duration pump out test to determine aquifer characteristics at project site for implementing dewatering during construction phase.	H.E.P. WAPDA Lahore.	
259	LAHORE. Under pinning floors at Pearl Continental Hotel.	Backfilling and uplift grouting of approx. 8000 square feet of floor of hotel lobby and lounge areas.	Pearl Continental Hotel, Lahore.	
260	HATTAR. (District Abbottabad). Structural repairs of factory structures by Gunite.	Chipping, cleaning and repair of internal and external surfaces of Clinker tower by reinforced Gunite.	Mustehkum Cement Limited. Rawalpindi.	
261	GUJRANWALA. Water Supply.	Drilling and Installation of Tubewell in the premises of PSO depot.	Pakistan State Oil Co. Ltd., Karachi.	
262	LAHORE. Water Supply.	Installation of Tubewell at Punjab Club.	Managing Committee, Punjab Club, Lahore.	
263	MUZAFFARGARH. WAPDA Thermal Power Station Project.	Geotechnical investigations to determine the engineering characteristics of specified locations, including 31 Dutch Cone Penetration Tests for determining penetration resistance of soil.	WAPDA & NESPAK Ltd., Lahore.	NESPAK Ltd., Lahore.
264	TRIBAL AGENCIES OF N.W.F.P. Water Supply Schemes in remote tribal areas.	Installation of 37 Tubewells in South Waziristan Agency. Over 14,000 ft. of Heavy percussion borings.	FATA Development Corporation, Peshawar.	
265	MUZAFFARGARH. WAPDA Thermal Power Station Project.	Performance of 5 Plate Load Tests within the Project Area of Power Station.	WAPDA & NESPAK Ltd., Lahore.	NESPAK Ltd., Lahore.
266	LAHORE 132 KV T/LINE. Kalashah Kaku - Shalimar Grid Station.	Construction of 48 in. dia Cast-in-situ RCC Pile Foundations for towers in River Ravi.	Project Director GSC,WAPDA Lahore.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
<b>1988</b>				
267	LAHORE: Conversion of Lahore Hotel into Plaza.	Complete Subsoil Investigations for proposed Farooq Centre.	Farooq Centre, (Pvt) Ltd., Lahore.	Habib Fida Ali Karachi.
268	LAKHRA - USAID Drilling Programme for Mineral exploration - Coal.	Core and non-core drilling for Coal in desert areas of Lakhra (Sind). 12,000 Metres of drilling.	USAID, Islamabad.	US Geological Survey.
269	SANGJANI. FECTO Cement Factory, Water Supply.	Installation of 3 Tubewells for provision of Additional water for the Cement Factory.	FECTO Cement, Limited.	
270	BALUCHISTAN. Burj Aziz Khan Dam Site.	Geotechnical Investigation at Burj Aziz Khan Dam Site. Complete range of tests.	SE, (Irrigation Division) Quetta.	NESPAK Ltd., Lahore.
271	KOT ADDU. WAPDA Thermal Power.	Execution of 6 Cone Penetration tance value and friction at intervals of 10 in (25 cm).	J.G.C. (Japan).	
272	PUNJAB SALT RANGES. Mineral exploration.	Core drilling for exploration of Sodium chloride (Salt) in Sargodha, Khushab and Chakwal districts. Approx. 7,364 feet of core drilling.	Punjab Mineral Development Corporation (PUNJMIN) Lahore.	
273	LAHORE. Residential Water Supply.	Installation of Tubewell for water supply at 12 Main Gulberg.	Koh-i-Noor Textile Mills, Lahore.	
274	ISLAMABAD. Air Headquarters Complex water supply.	Installation of 2 Tubewells for Provision of water for Golf Course.	MES (Air), Islamabad.	
275	LAHORE AIRPORT. New runway for Jumbo jets.	Core Drilling in RCC for installation of runway lighting.	CAA & Siemens(Pak) Limited, Karachi.	
276	ISLAMABAD. New Naval Headquarters Complex.	Installation of a Tubewell for Swimming Pool.	DW & CE (Navy) Islamabad.	
277	BALUCHISTAN - QUETTA AREA Water Supply Scheme.	Installation of 15 Tubewells for water supply & agriculture. 6,700 ft. of Drilling ranging from 300-700 ft.	PHED&Irrigation & Power Deptts. (Govt of Baluchistan).	
278	BALUCHISTAN. Rural water supply for private farmers in remote areas.	Installation of 20 Tubewells for Irrigation purposes in Quetta, Kalat and Pishin districts. 8,500 feet of percussion/ rotary drilling ranging from 300-700 ft.	Private Farmers of Baluchistan.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
279	DUHOK DAM, IRAQ. Multi Million Dollars Dam and Irrigations Project in Northern IRAQ.	Anchorbolts and reinforced shotcreting in Tunnels (Approx. 36,000 sq. metres) and drilling and fixing 8,000 anchor bolts.	Ministry of Irrigation, Govt. of Iraq & Engineering Services Intl. Dubai (UAE).	Agrocomplet Bulgaria.
		<b>1989</b>		
280	ISLAMABAD. Development work on Lehtar Road.	Soil Investigations and collection of soil samples.	Konoike Construction Co. (Japan).	
281	CHASHMA. Proposed Hydroelectric Power Project on existing barrage.	Drilling of Investigatory Boreholes and collection of Soil samples for pre-tender evaluation.	Broek Hoven Co. (Holland.)	
282	PUNJNAD HEAD WORKS. Extension of Head regulator.	Sheet Piling at Abbasia Link Canal Head Regulator for foundations.	WAPDA and MCP Islamabad.	
283	KHEWRA. ICI Sodha Ash Factory water supply.	Installation of a Tubewell for additional water to the factory.	ICI & DESCON Engineering, Lahore.	
284	JINNAH BARRAGE. Proposed Hydro Power Station on existing barrage.	Comprehensive pumping out test & geohydrological investigations to establish dewatering criteria.	Binnie & Partners Lahore.	Binnie & Partners Lahore.
285	GOMAL ZAM. Proposed Multipurpose Dam on river Gomal in N.W.F.P.	Comprehensive Geotechnical Investigations for damsite. Work involved making adits in cliffs of steep gorge, excavation of chamber, drilling and check grouting and excavation of 32 x 2 meter dia. shaft.	WAPDA.	Coyneet Bellier (France)
286	TARBELA DAM. Hydropower Station 3rd Extension Project. Drilling and Grouting.	Drilling & grouting for Solidification of Coffor Dam Cells 1, 2 & 3 and drilling for Rock Anchors. Extensive DTH and odex drilling. 22,450 ft of drilling and grouting.	WAPDA & Hyundai-Hidco (H.H) Joint Venture. South Korea.	NESPAK Ltd., Lahore.
287	TARBELA DAM. Hydropower Station 3rd Extension Project. Tunnel re-alignment / modification of tunnel No.4.	Demolition of re-inforced concrete by controlled blasting and special breakers. Vibration monitoring. Total 4,200 cu.meters of RCC demolition. Extraction of sheet piles.	WAPDA & Hyundai-Hidco (H.H) Joint Venture. South Korea.	NESPAK Ltd., Lahore.
288	PROBYNABAD ( Distt. OKARA). Agriculture water supply.	Installation of a tubewell for Army Stud Farm. 300 feet of boring.	Manager, Army Stud Farm, Probynabad.	
289	LAHORE. Yuhannabad, Ferozepur Road.	Tubewell for proposed colony & soil investigations for public building.	Dr. P. Born, 12 FCC, Gulberg, Lahore.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
290	GILGIT AND SKARDU AREA. Investigations for bridges over Indus river.	Geotechnical investigations for 7 bridges in difficult terrains. 355 m of percussive drilling, tests and report. Some work in snow cover.	NORTHERN AREA PWD.	Associate Consulting Engineers (ACE) & NESPAK Lahore.
291	MANDI BAHAUDDIN. Water Supply.	Installation of a Tubewell in factory area. 300 feet of boring.	Shahtaj Sugar Mills Lahore.	
292	AZAD KASHMIR - KOTLI. Water Supply.	Installation of 2 Tubewells at University of Business Administration and Industrial Area. 286 ft of boring.	SE, PWD, Building Circle Mirpur (AK).	
293	BALUCHISTAN AREA. Water supply at MT schools in Quetta and Khuzdar.	Turnkey Installation of 2 Tubewells. 300 mtrs of tubewell boring.	USAID, Islamabad.	Engg. Consultants Karachi
294	AKORA KHATTAK. Water supply	Installation of a Tubewell in Factory Area. 300 ft. of tubewell boring.	Pak Tobacco Co Ltd, Akora Khattak.	
295	BALUCHISTAN AREA. Agricultural wells in remote areas for private farmers.	Installation of 55 Tubewells for Irrigation in Quetta, Kalat and Pishin districts. Over 25,000 feet drilling ranging from 300 - 700 feet.	Private Farmers of Baluchistan.	
<b>1990</b>				
296	LAHORE. Convent of Jesus and Mary School.	Turnkey installation of Tubewell. 300 ft of tubewell boring.	Principal, Convent of Jesus & Mary, Lahore.	
297	QUETTA - Lakpass Tunnel Project.	Investigations for tunnel. Drilling and testing. 75 m drilling and tests.	Korea Consultants Intl. (S. Korea)	Korea Consultants Intl. (S. Korea)
298	SKARDU - Northern Areas. Soil Investigations.	Investigations for proposed stadium & gymnasium. 210 ft of boring & tests.	Northern Area PWD.	Republic Engg. Corporation Ltd.
299	TAUNSA BARRAGE. Hydro Electric Project.	Large Pump Out Tests with 10 piezometers. 300 m of drilling and tests. Installation of wells & logging of test.	Sogex Intl. Ltd., (Canada)	Sogex Intl. Ltd., (Canada)
300	LAHORE. Domestic water supply.	Turnkey installation of tubewell with submersible pump at 18-G Gulberg 3. 293 ft of borings.	Chairman IVCC Engg. (Pvt) Ltd. Lahore.	
301	MANGLA DAM. Hydro Power Extension Project Units 9 & 10. RCC Demolition.	Breaking of Concrete Plug at Mangla Power House tunnel No. 5. Total 282.5 cubic yards of RCC demolition.	WAPDA & Frontier Works Organization (FWO).	NESPAK Ltd., Lahore.



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
302	MANGLA DAM. Hydro Power Extension Project Units 9 & 10.	Double Sheet pile wall of coffer dam and mass tremmie concreting for power house extension using floating platforms. Work included underwater cutting of concrete and socketting of double sheet pile walls. Extensive heavy structural steel fabrication.	WAPDA & Frontier Works Organization(FWO).	NESPAK Ltd., Lahore.
303	PROBYNABAD (OKARA). Agriculture water supply.	Installation of tubewell for Army Stud Farm. 300 feet of boring.	Manager, Army Stud Farm, Probynabad.	
304	MANGLA DAM. Hydro Power Extension Project Units 9 & 10.	Drilling and installation of rock bolts and guniting to stabilise slope in power house area. 750 rock bolts.	WAPDA & Frontier Works Organization (FWO).	NESPAK Ltd., Lahore.
305	QUETTA. Water supply for Cantt. Area.	Turnkey installation of 4 Tubewells in Cantt area. 1779 ft of drilling and allied pumping works.	CMES (Army) Quetta Cantt.	
306	QUETTA. Water supply for city.	Turnkey installation of 2 Tubewells in suburbs of city. 800 ft. of drilling.	Municipal Corporation, QUETTA	
307	GHAZI GHAT. 500 KV Transmission line towers. Offshore pile foundations on the Indus River.	12 nos. Cast in Situ, 48 in dia RCC piles in the river, working on large floating platforms in mid stream. Difficult logistics. 480 m. of piling and construction of RCC Superstructure.	Gen. Manager T&G, WAPDA	NESPAK Ltd., Lahore.
308	MANGLA. Transmission line towers damaged by storm. Emergency piling for new towers.	Bored cast-in-situ 24 in dia RCC piles and super structures. Drilling in gravels and boulders. 288 m. of piling and RCC Superstructure.	Gen. Manager T&G, WAPDA	
309	PAKISTAN STEEL - PIPRI KARACHI. A multi-billion rupees project for manufacture of steel.	2 in. thick Guniting lining of chimney for Unit No. 5, of Pipri power house. 800 square metres of Guniting in difficult conditions & at great heights.	Marubeni Corp. (Japan) KESCO. (Japan)	
310	TARBELA DAM. Hydropower Extension Project (Units 11-14) (Contract C-23)	Drilling of Grout holes at Dall Darra Weir PH-2 and Batch mix & injection of Bentonite for cutt off.	WAPDA/Hyundai Hidco (H.H.) J.V. South Korea.	NESPAK Ltd., Lahore



**MASTER SUMMARY OF WORKS COMPLETED**

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
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		<b>1991</b>		
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311	MANGLA DAM. Hydroelectric Power Station Extension Project Units 9&10.	Grouting of Sealing Ring, conception, development of technique and execution of grouting to establish a permanent Sealing Ring between concrete joints in one of the main power tunnels and Backfill grouting.	WAPDA/SKODA Export (CZECH).	
312	LAHORE. American Society School.	Cutting of Core Samples from 6 columns of Multipurpose Hall of School.	Lahore American Society.	
313	MANGLA DAM. Hydroelectric Power Station Extension Project Units 9&10.	Installation of Double Sheet Pile Wall alongwith under water tremmie concreting, fabrication & installation of internal & external bracings and provision of anchorage arrangements of Sheet Pile Walls to Baffle Walls.	WAPDA/FWO.	
314	LAHORE-AIRPORT. New Runway for Jumbo Jets.	Extraction of Cores from concrete Runway.	CAA Karachi	NESPAK Ltd., Lahore.
315	BHAI PHERU (Lahore).	Drilling and Installation of tubewell for provision of additional water supply for maize production factory.	Rafhan Maize Products Co. Ltd.	

		<b>1992</b>		
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316	GADOON AMAZAI. Industrial Estate.	Drilling and installation of tubewell for PEL Appliances at the Factory.	Pak Elektron Ltd., Lahore.	
317	SHEIKHUPURA. ICI Polyester Fibres Plant.	Guniting of Tanks of Cooling Tower.	Polyester Fibre Works. ICI Pak Ltd., Lahore.	
318	JAUHARABAD-KHUSHAB. Grouting under Vesell plates in PAEC Building.	Drilling & Grouting of approx 250 holes in 40MM Steel Vessel Plates.	PAEC/NCL.	NESPAK Ltd., Lahore.
319	KALLAR KAHAR (Chakwal). Core drilling along Pakistan Motorway (Lahore-Islamabad) Project.	Core drilling in Salt Range Area to establish Rock Profile. Drilling of 15 boreholes through overburden and rock. (Total drilling 313 Meters).	Daewoo Corporation South Korea.	

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**MASTER SUMMARY OF WORKS COMPLETED**

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
<b>1993</b>				
320	GHAAZI GHAT - 500 KV T/LINE TOWER GUDDU-MULTAN. Offshore Pile Foundations in River Indus.	12 Nos. Cast-in-situ, 48 in dia RCC Piles in the river under flowing water conditions working on large floating platforms in the mid stream. 480 m of Piling and Construction of RCC Superstructures (2 mtrs & 2.2 mtrs).	WAPDA/ICC(Pvt) Ltd., Lahore.	NESPAK Ltd., Lahore.
321	PAKISTAN (LAHORE-ISLAMABAD) Motorway Project, Section III Bhera - Chakwal Sector.	116 Nos. Cast-in-Situ, 1.0 M dia RCC Piles. 2,733 M of Piling in this sector.	Daewoo Corporation South Korea/National Highway Authority (NHA).	SMEC.
322	PAKISTAN (LAHORE-ISLAMABAD) Motorway Project, Section IV Chakwal-Chakri-Rawalpindi Sector.	84 Nos. Cast-in-situ, 2.0 M dia. RCC Piles in River Soan and Paneand using vibrator for driving of casing and Auger drilling. 2386 M of Piling. 482 Nos. Cast-in-Situ, 1.0 M dia. RCC Pile in rocky terrain. 7988M of Piling in this sector.	Daewoo Corporation South Korea/National Highway Authority (NHA).	SMEC.
323	RABWAH (Chiniot) . Drilling in Quarry Site Area of Pakistan Motorway Project.	Drilling of approx 50,000 Meters in the Quarry Area and preparations of drilled holes for blasting.	Daewoo Corporation South Korea.	SMEC.
<b>1994</b>				
324	KHEWRA - ICI Soda Ash Factory Water Supply.	Drilling and Installation of 2 Tubewells for additional water supply to the factory.	ICI & Descon Engineering(Pvt) Ltd. Lahore.	
325	PAKISTAN (LAHORE-ISLAMABAD) Motorway Project - Section II, River Jhelum Bridge at Bhera.	76 Nos. Cast-in-situ, 2.0/2.2 M dia Pile. 4533 M of Piling in the river by diverting the river flow.	Daewoo Corporation South Korea/National Highway	SMEC.
326	MIANWALI: Chashma Hydropower Project. A Joint Venture with Bachy/Soletanche of France.	Pump out Test. Installation of 4 Tubewells and 35 Piezometers for Pump Out Test.	Hyundai-Hidco-Hakas Joint Venture/ WAPDA.	Chashma Group of Consultants Lahore.
<b>1995</b>				
327	QADIRPUR GAS Development Pipeline (Phase I) Project for Indus River Crossing.	Piling and allied works for Road and Gas Pipeline bridge. 24 piles 1.4 M dia. Total meterage 904.	Filippo Fochi Energia, S.r.l. Fochi Group, Italy/OGDC Islamabad.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
328	MIANWALI: Chashma Hydropower Project. A Joint Venture with Bachy/Soletanche of France.	Design and Installation of 130 Tubewells for Dewatering System with Pumping capacity of 14 cubic meter/ sec for lowering of water table upto 25/30 meters depth in an alluvium soil of Indus River. This involved installation of Global Discharge System, Flowmeters and Non-return valves etc.	Hyundai-Hidco-Hakas Joint Venture/ WAPDA.	Chashma Group of Consultants Lahore.
329	MIANWALI: Chashma Hydropower Project. A Joint Venture with Bachy/Soletanche of France.	Plastic Concrete Diaphragm wall 0.8 meter thick. Total quantity 26,000 sq. meters and construction of Guide wall approximately 400 cubic meters of RCC.	Hyundai-Hidco-Hakas Joint Venture/ WAPDA.	Chashma Group of Consultants Lahore.
330	MIANWALI: Chashma Hydropower Project. A Joint Venture with Bachy/Soletanche of France.	Vibro-Compaction involving 120,000 Liner Meter length alongwith tests involving Cone Penetration Test (CPT) and (SPT).	Hyundai-Hidco-Hakas Joint Venture/ WAPDA.	Chashma Group of Consultants Lahore.

### 1996

331	QADIRPUR: Qadirpur Gas Field Project. Recovery of Well No. O4.	Construction of Earth Embankment. Installation of 10 Tubewells for lowering of water table upto 10 M in Indus River bed. Driving of 1,600sq.meters. of sheet piles (225 tons). Excavation upto 12.0 meters within the sheet piled cofferdam for recovery of well head.	ALERT Disaster Control (Asia) Pte Ltd. Singapore/ OGDC.	
332	FAROOQABAD: PARCO-MFM Pipeline Extension Project.	Driving of prefabricated tubular steel piles. 16 Nos. 8 inch diameter piles and 8 Nos. 6 inch diameter piles (total depth 275 meters) driven under flowing water conditions at the Qadirabad-Balloki Link Canal and Upper Gogera Canal respectively. 40 meters of 8 inch diameter piles driven at dry crossings.	Willbros-Techno J.V. Lahore/PARCO.	

### 1997

333	GAHAZI-BAROTHA: Ghazi Barotha Hydropower Project. Exploratory Drilling.	Drilling of 14 holes between RD 4+475 to RD 42+700 to delineate the bed rock profile and determine the water table along the Power Channel. Approx. 324 Meters by percussion/ rotary drilling.	Ghazi Barotha Contractors/WAPDA	Pakistan Hydro Consultants.
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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
334	PEZU (D.I.Khan): Lucky Cement Plant Kiln Foundation.	Remedial measures work on Kiln Line-A and CCR building involving 38 piles 1 meter dia. upto 30 meters depth, grouting of 1250 holes with steel rebar&concrete work in Beams, Walls, Columns, Walkways/Stairs etc.	Lucky Cement Ltd. Islamabad.	NESPAK Ltd., Lahore.
335	DERA MURAD JAMALI (Baluchitan): UCH Power Plant Project. Gas Turbine Foundations (3 Nos.) and Steam Turbine Foundation (1 No)	Construction of 194 Piles of 560mm dia and 25 meters depth each and 93 piles of 460 mm dia and 14 meters depth each. Carrying out 2 Nos. Load Test with reaction piles.	Harbin Power Engg. Co. Ltd. of China/ UCH Power Ltd.	Raytheon Engineers & Constructors.
336	DERA MURAD JAMALI (Baluchitan): UCH Power Plant Project. Transformer and Duct Support (PASE-II).	Construction of 196 Piles of 560mm and 25 meters depth each and 157 piles of 460 mm dia and 14 meters depth each.	Harbin Power Engg. Co. Ltd. of China/ UCH Power Ltd.	Raytheon Engineers & Constructors.
337	PEZU (D.I.Khan):Lucky Cement Plant Cooler Building.	Remedial measures work inside Cooler Building involving 19 Piles of 700 mm dia and 20 piles of 650 mm dia, grouting of 900 holes with steel rebar and over 1,500 cubic meters of concrete in beams etc.	Lucky Cement Ltd. Islamabad.	NESPAK Ltd., Lahore.
338	LAHORE: 63A-Main Boulevard Gulberg. Soil Investigation.	Site Survey and Soil Investigations for design of building. Carrying out SPT's and collection of disturbed soil samples. Production of reports on Site Survey & Soil Investigation.	GAM Corpn.(Pvt) Ltd. A McDonald's J.V. Co. Karachi.	
339	MUZAFFARGARH: Thermal Power Station Extension . Water Supply.	Drilling and Installation of 10 Tube-wells for water supply to Unit No.4. Construction of Pump Houses, internal electrification and allied works. 900 meters of drilling.	China National Machinery & Eqpt. Imp. & Exp. Corp. of China/WAPDA.	Muzaffargarh Thermal Power Consultants Lahore.
340	DERA MURAD JAMALI (Baluchitan): UCH Power Plant Project. Boundary Wall.	Construction of brick Boundary Wall 3152 meters in length and 2.4 meters high. This involved drilling of 849 small diameter piles along-with approx.1500 cubic meters of concreting.	Harbin Power Engg. Co. Ltd. of China/ UCH Power Ltd.	Raytheon Engineers & Constructors.
341	DERA MURAD JAMALI (Baluchitan): UCH Power Plant Project.Construction of Raw Water Intake Pump House.	Construction of 150 square meters RCC structure which was approximately 15 meters high. Involved excavation works and 2500 cubic meters of concreting of complicated pump chambers and other internal structures.	Harbin Power Engg. Co. Ltd. of China/ UCH Power Ltd.	Raytheon Engineers & Constructors.



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
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342	MIAN MIR DRAIN BRIDGE LAHORE: Remedial Works at Lahore Bypass Project.	Remedial measuring / repairing of existing Mian Mir Drain Bridge. Supply and installation of steel beams, angle irons, bolts and nuts for the supporting of girders. Drilling & breaking the existing concrete making cofferdams and any incidental work.	Sezai Turkes-Fezi Akkaya Construction Company of Turkey/ National Highway Authority (NHA).	Republic Engg. Corporation Ltd. (REC) Lahore.
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343	THIRD JAMSHORO-GUDDU 500 KV T/LINE (Kot Mithan-Chachran) : Bed of the Indus River near Rajanpur.	Installation of approximately 1600 meters of large diameter off shore piling in the Indus River, in addition to over 7,000 meters of piles on dry land. Civil works for pile caps, chimneys and beams for the foundation structures.	Potential Engineers (Pvt) Ltd., Lahore/ WAPDA.	NESPAK Ltd., Lahore.
344	BELA TOWN (BALUCHISTAN) (N-25) BRIDGE ON PORALI RIVER: Main Karachi-Quetta Road. Piling and Grouting Works.	Construction of 31 piles of 710mm dia. upto the max depth of 30 meters each. Drilling of 22 External Grout holes and Piezometers of 15 meters each. (Total 307 M depth). Drilling of 8 Internal Grout holes of 28 to 30 meters each holes. Batch, Mix and Inject grout 125,000 Kilograms. Carrying out core drilling work in the piles. Carrying out of Pile Integrity Testing for 35 Nos. Piles.	Sadullah Khan & Brothers (SKB) Karachi / National Highway Authority (NHA).	Sampak International (Pvt) Ltd., (Muhammad Iqbal Haq Associates).
345	GHAZI BAROTHA: Ghazi Barotha Hydropower Project. Dewatering/ Drainage Relief Wells at Undersluices Area.	Drilling and Installation of 54 Nos. Dewatering Drainage Wells. The max diameters of the holes 725mm dia. Carrying out the holes 8.20 meters to 9 meters depth. Total drilling, 485 meters in boulders and gravels. Carrying out permeability tests.	Societa Generale Fondazioni (SGF) of Italy/GBC/Messrs Cobstoe Ltd., of U.K./ WAPDA.	Pakistan Hydro Consultants.

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346	GHAZI BAROTHA: Ghazi Barotha Hydropower Project. Temporary Dewatering Wells at Standard Bay. Barrage Area.	Drilling and Installation of 89 Nos. temporary Dewatering Wells. The diameters of the holes 725 mm dia. Carrying out the holes 8.20 meters to 28 meters drilling depth. Total drilling 1657 meters in boulders and gravels. Carrying out permeability tests.	Ghazi Barotha Contractors/ Messrs Cobstone Ltd. of U.K. / WAPDA.	Pakistan Hydro Consultants.
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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
347	GHAZI BAROTHA: Ghazi Barotha Hydropower Project. Water wells at RD 52 along the Power Channel.	Drilling and Installation of 2 Nos. Tubewells of 725/680 mm dia. At 52 KM of left bank of Power channel. The drilling depth of Tw No. 1 & 2 was 53/86 meters respectively. Drilling and Installation of one tubewell at 7 KM and one at 12 KM Power channel with 50 meters depth of each hole.	Ghazi Barotha Contractors/ Messrs Cobstone Ltd.of U.K./ WAPDA.	Pakistan Hydro Consultants.
348	KULACHI (D.I.Khan): Drinking Water Supply and Sanitation Measures in N.W.F.P., Phase III.	Drilling of a pilot hole and one no. tubewell of 296 meters each. Drilling carried out in hard silty clay & sand. Carried out development & testing of well with airlift compressor and submersible pump. Water capacity over 80, 000 litres per hour.	Celler Brunnenbau GmbH of Germany/ P.H.E.D.	Dorsch Consult Munic and K.f.W.
<b>2000</b>				
349	PAKISTAN (ISLAMABAD-PESHAWAR) Motorway Project - Section M-1, for Bridge Over Indus River. Geotechnical Investigations. (Exploratory Drilling)	Geotechnical Investigations (exploratory / confirmatory boring) for bridge over Indus River. Drilling of 8 holes of 725 mm dia. upto the depth of 50 meters each. Drilling carried out with percussion rigs in difficult strata was encountered. Total Drilling: 400 meters.	Bayindir Construction Tourism Trade and Industry Inc. of Turkey/ National Highway Authority (NHA).	Pakistan Motorway Consultants.
350	PAKISTAN (ISLAMABAD-PESHAWAR) Motorway Project - Section M-1, for Badri Khwar Nullah. Geotechnical Investigations. (Exploratory Drilling).	Geotechnical Investigations (exploratory/confirmatory boring) for left and right banks of Badri Khwar Nullah. Drilling of 2 holes of 681 mm dia. Depth of holes No. 10 & 11 was 25/30 meters respectively. Drilling carried out with percussion rigs in difficult strata was encountered.	Bayindir Construction Tourism Trade and Industry Inc. of Turkey/ National Highway Authority (NHA).	Pakistan Motorway Consultants.
351	ISKANDERABAD (DAUDKHEL) District: Mianwali. Pak-American Fertilizer Limited Cooling Tower Remedial Works.	Repairs and remedial measures of cooling tower at PAFL involved water proofing of water tank of 7.43 million litres capacity by special treatment of Asphalt coating and Asphalt membrane with top layer of reinforced concrete 11,000 cu.ft without construction joint. New concrete achored with old one by anchor bolts.	Pak-American Fertilizers Ltd., Iskanderabad (Daud Khel), District: Mianwali	Pakistan Engg. Services (Pvt) Ltd., Lahore.



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
<b>2001</b>				
352	ZAMZAMA GAS FIELD EWT PROJECT Near Dadu (Sindh). Remedial Works for Water Well.	Carry out the remedial works of well including re-Development of well & remove the gravel pack upto 260 ft. installation of 4 Nos. 1" dia pipes upto 260 ft with bottom 50 ft. perforated and refill annulus with gravel pack from 260 ft to 200 ft. Dewatering of well seepage for 288 hours.	BHP Petroleum Pty Ltd., of Australia.	Hatch Associates Proprietary Ltd., of Australia.
353	BHIT GAS FIELD DEVELOPMENT PROJECT (Phase-I): Kithar Region (Sindh). Geotechnical Site Investigations.	Geotechnical Site Investigations for the Pipelines and Plant Areas. Carry out 7 holes through overburden and 6 holes of core drilling. Total drilling 60.4M & 43.6 M respectively. Carrying out 4 Nos. Plate Load Tests, SPT's, Collection of Water Samples, Undisturbed Samples and Excavation of Test Pits.	LASMO Oil Pakistan Ltd. Karachi / NESPAK Ltd., Lahore.	NESPAK Ltd., Lahore.
354	CHASHMA RIGHT BANK CANAL Indus Highway Project Phase-II (N-55) (Contract -10A) Construction of 4 Bridges Over C.R.B.C. in District: D.I.Khan.	Construction of 4 Bridges i.e. Khad Warkai Bridge, Sherana Bridge, (CRBC) with approach on either side of bridges approximately 500 meters each side. Drilling of 4 Nos. of Test piles, 12 Nos. of Reaction piles and 115 Nos. of working piles with 1100/750mm diameters. Total Drilling 3473 meters. Superstructure consisting of RCC columns, PC girders (60 Nos), wing walls and deck slabs. Asphalt 10,000 tons & Drainage & Erosion works. Total concrete 8,000 cubic meters and 700 tons of steel.	Hyundai Engineering and Construction Co. Ltd., of South Korea/National Highway Authority (NHA) Islamabad.	Pacific Consultants International (PCI) Islamabad. In Joint Venture with NIPPON KOEI.
355	KOT LAKHPAT INDUSTRIAL AREA (LAHORE): Water Supply for Treet Corporation Factory. Well No.2.	Drilling & installation of one cusec capacity tubewell of 450 mm dia. Drilling depth 400 feet. Carry out drilling with reverse rotary rig. Development and testing of well with turbine pump, air compressor and D&T unit.	Treet Corporation (Pvt) Ltd., Lahore.	



## MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
<b>2002</b>				
356	DEFENCE HOUSING AUTHORITY (LAHORE CANTT): Repairing of Water Tanks in Sector X & Z Blocks.	Repair of columns and beams by chipping off spalled concrete, preparation of areas, cleaning of steel rust, replacement of steel. Carry out 1085 square feet guniting to repairs the water tanks.	Defence Housing Authority Lahore Cantt.	
357	DEFENCE HOUSING AUTHORITY (LAHORE CANTT): Water Proofing of Overhead Water Tank in X Block.	Cleaning of seepage areas outside of the water tank. Apply cementitious capillary water proofing material suitable for use in drinking water. Empty water tank & dry completely by using heaters. Total water proofing area 761 square feet.	Defence Housing Authority Lahore Cantt.	
358	RABWAH (District Jhang): Domestic Water Supply for Bait-ul-Qamar.	Drilling & installation of 1.35 cusec capacity tubewell of 450 mm dia. Drilling depth 218 feet. Carry out drilling with reverse rotary rig. Development and testing of well with turbine pump, air compressor and D&T Unit.	Bait-ul-Qamar Rabwah District: Jhang.	
359	PAKARAB FERTILIZER PROJECT KHANEWAL RAOD, MULTAN. Drilling of Holes (Cores).	Drilling of 6 Nos. holes (coring) of 6 inch diameter in concrete upto the depth 18" each.	Pakarab Fertilizers (Pvt) Ltd., Multan.	
360	KOT LAKHPAT INDUSTRIAL AREA (LAHORE): Water Supply for Treet Corporation Factory. Well No. 1.	Drilling & installation of one cusec capacity tubewell of 450 mm dia. Drilling depth 400 feet. Carry out drilling with reverse rotary rig. Development and testing of well with turbine pump, air compressor and D&T unit.	Treet Corporation (Pvt) Ltd., Lahore.	
361	SAWAN GAS FIELD DEVELOPMENT	Drilling & Installation of 4 Nos. Water Wells of 4 cusec capacity Borehole dia. (450 mm diameter). Total drilling 573 ft. Development and testing of wells with turbine pump, air compressor and D & T units. Water sample testing and flow rate testing using flow meters. Civil works for installation of security fencing for all 4 wells.	Clough Engineering Ltd. of Australia/OMV (Pakistan) Exploration GmbH, Australia.	
362	KAMALIA (District: Toba Tek Singh) Drilling of Holes in Concrete Foundation of Sugar Mills House.	Drilling of 258 Nos. of bore holes of 100 mm dia. In RCC/PCC upto a depth of 1 ft. Drilling of 23 Nos. boreholes for foundation of high speed gear boxes of 100 mm dia. In RCC/PCC upto a depth of 3 ft.	Kamalia Sugar Mills Ltd. Kamalia.	



**MASTER SUMMARY OF WORKS COMPLETED**

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
<b>2003</b>				
363	GOMAL ZAM: Proposed Multipurpose Dam on River Gomal in N.W.F.P. Geotechnical/Site Investigation.	Site Investigations for dam site. Work involved coring in rock, excavation of adits & shaft, carrying out packer tests (water pressure tests), various core/rock tests. Core/Rotary drilling 555 meters upto a depths of 150 meters. Percussion drilling 35 meters, adits excavation 194 m, drilling for Pits in dam area 23 m. Drilling/coring was also carried out in river channel.	Investigation Department, Tianjin Investigation, Design and Research Institute of Water Resources and Hydropower, Ministry of Water Resources, P.R. China (IDTIDI)/ WAPDA.	
364	FAQIR PLAZA: 6-Chatterjee Road, New Urdu Bazar, Lahore. Piling Work.	Construction of 105 piles of 600mm dia. upto the max depth of 59 ft. Total drilling carried out 5887 ft. Carrying out fabrication and installation of steel reinforcement.	Messrs Kingcrete Builders (Pvt) Limited, Lahore.	Axons Associates Architects & Engineers Lahore.
365	PARK LANE TOWERS: 172 Tufail Road, Lahore Cantt: Piling Work.	Construction of 37 piles of 600mm dia. upto the max depth of 57 ft. Total drilling carried out 2034 ft. Carrying out fabrication and installation of steel reinforcement. Sonic Integrity testing of 5 piles carried out.	Messrs Kingcrete Builders (Pvt) Limited, Lahore.	Axons Associates Architects & Engineers Lahore.
366	KAMALIA (District: Toba Tek Singh) Drilling of Holes in Concrete Foundation of Sugar Mills House.	Drilling of 341 Nos. of bore holes of 100 mm dia. In RCC/PCC upto a depth of 1 ft. Drilling of 10 Nos. of boreholes of 100 mm dia. upto a max depth of 2 ft. Drilling of 24 Nos. boreholes for foundation of high speed gear boxes of 100 mm dia. In RCC/PCC upto a depth of 3 ft.	Kamalia Sugar Mills Ltd. Kamalia.	
367	MANGLA DAM RAISING PROJECT: Offshore Drilling and Sediment Sampling at Mangla Reservoir (Contract No. MDR-5).	Drilling of 12 Nos. Offshore holes in Mangla Reservoir upto a max depth of 135 ft. Total Drilling: 1145 ft. Drilling carried out from floating barges using direct circulation drilling of 10 inch/PW diameter. Longyear machines alongwith mud circulation system mounted on the barge. Work executed in stormy weather and rough condition. 212 Nos. SPTs, 169 Nos. undisturbed samples & 12 Nos. Vane shear tests were executed. Carry out 8 Nos. CPT tests for the confirmation of bed rock. Max water depth from surface to zero level was 140 ft.	General Manager (Projects) North, WAPDA Lahore.	Mangla Joint Venture, Lahore.



## MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
368	SAWAN GAS FIELD DEVELOPMENT PROJECT: Drilling of Deepwell Groundbeds Boreholes for Cathodic Protection at The Central Processing Plant (CPP) (Subcontract No.SC-040).	Construction of 2 Nos. boreholes for Cathodic Protection System. Max. Borehole dia. (182 mm diameter). Total drilling 130 meters (427 feet) upto a max depth of borehole 70 meters. Development and testing of wells with Air Compressor.	Clough Engineering Ltd. of Australia/ OMV (Pakistan) Exploration GmbH, Australia.	
369	SAWAN GAS FIELD DEVELOPMENT PROJECT: Drilling of Wells No. 8 & 9 for Cathodic Protection at Gas Well Casing (Subcontract No.SC-040).	Construction of 2 Nos. boreholes for Cathodic Protection System. Max. Borehole dia. (182 mm diameter). Drilling depth of each hole 90 meters. Total drilling 180 meters (591 feet). Installation of PVC casing dia. 4" upto 50 meters each and sanitary sealing around PVC casing. Back filling of holes with Calcined Coke upto 90 meters each. Construction of concrete collar 1 No. for each hole with size 50x50x30 cm.	Clough Engineering Ltd. of Australia/ OMV (Pakistan) Exploration GmbH, Australia.	
370	KAMALIA (District: Toba Tek Singh)	Drilling of 2 Nos. bore holes of 100 mm dia. Upto a depth of 2.7 meters each hole in vertical reinforced wall of 600mm width.	Kamalia Sugar Mills Ltd., Kamalia.	
<b>2004</b>				
371	GOMAL ZAM: Proposed Multipurpose Dam on River Gomal in N.W.F.P. Geotechnical/Site Investigation.	Additional Site Investigations for dam site. Work involved rotary drilling to recover cores from soil. Drilling of two nos. boreholes BHS6 & BHS7 of upto a depths of 60/50 meters respectively. Total Core/ Rotary Drilling 110 meters. Carrying out packer tests (water pressure tests) and various laboratory tests on soil/ rock tests.	Investigation Department, Tianjin Investigation, Design and Research Institute of Water Resources and Hydropower, Ministry of Water Resources, P.R. China (IDTIDI)/ WAPDA.	
372	MIRANI DAM PROJECT: Proposed Turnkey Project located at 40 KM, West of Turbat Town to Supply Irrigation water for the lands on both sides of the non-perennial River Dasht. Consolidation Grouting, Grout Curtain and Fixing of Grouted Dowels.	Drilling of Angular Holes for Curtain Grouting from 15 feet to 90 feet depths. Total drilling carried out 6146 feet with roto-percussion rigs. Bach Mix & Injection of Grout 66,550 kilograms. Carried out 326 Nos. water pressure tests & permeability tests. Drilling of Angular holes for Consolidation Grouting. Total drilling carried out 8524 feet. Carrying out 5 Nos. trial grouting & water pressure testing in trial grout holes down to 60 feet. Fixing of the steel dowels and injection of grout (each hole upto 15 feet deep) Total 290 Nos. Steel Dowel carried out.	Mirani Dam Project Joint Venture Lahore/ WAPDA.	NEAC, Nespak House Lahore.



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# MASTER SUMMARY OF WORKS COMPLETED

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373	JINNAH BARRAGE LAKE: Secondary T/Lines and Grid Stations Project under JBIC Loan PK/P43 (Package-I) 220 KV T/Line Daukhel - Bannu. Tower No. 8.	Construction of 8 Nos. Piles of 1200mm dia. Upto a maximum depth of 36 meters each. Total drilling carried out 290 meters. Construction of pile foundation at Tower No. 8 including piles and pile caps & tie beams. Preparing barges/pontoons, platform, access, drilling/boring. Supply & installation of MS liner 10mm thick of 1200mm dia. Fabrication of steel bars, and making steel bars cages and casing, fixing reinforcement steel. Collection and testing of 33 Concrete Cylinder Samples of Tower No. 8.	Sichuan Electric Power Import & Export Corporation (SEPC) of China / WAPDA.	NESPAK Ltd., Lahore.
374	KARACHI: CREEK VISTAS AT CREEK CITY PHASE-VIII, DHA: Piling Works in Various Blocks.	Construction of 845 Nos. Piles with 1000/750/400 mm diameters. Maximum depth of pile 164.25 feet. Total drilling 106,012 feet. Pile Load Testing using reaction piles and Load Testing upto 1,000 Ton.	Associated Constructors Ltd., (ACL) / DHA, Karachi	Meinhardt (Pakistan) Private Ltd., Karachi.
375	LAHORE: AWAMI COMPLEX BLOCK NO. 1, GROUND FLOOR AT NEW GARDEN TOWN: Treatment of Columns.	Repair of 5 columns through guniting. Preparation of scaffolding platforms for guniting operations. Drilling of anchor holes and filling with epoxy. Carryout 500 sq.ft guniting for the repairing/treatment of columns.	Bank Alfalah Ltd., Lahore.	Republic Engineering Corporation (Pvt) Ltd., Lahore.
<b>2005</b>				
376	CHILAS: BASHA DIAMER DAM PROJECT: Proposed Multi purpose, 1,000 feet high dam on River Indus at Basha along the famous Karakoram highway. Excavation of 2 Nos. Adits.	Excavation of Exploratory Adit No.1 and 2 on Left and Right Bank of Indus River respectively. Dia. of Adits 2.4 m and 292 meters length of adit No. 1 and 217 meters length of adit No. 2. Excavation of chamber through rock by blasting and without blasting operations 106 cubic meters. Haulage of excavated material from within an Adit or Chamber to the specified dumping areas of 4,444 Cubic meters. Preparation of 1.2m x 1.2m x 75mm slots for flat jack testing. Work executed in very critical /rough weather conditions.	General Manager Technicl Services WAPDA Lahore.	NEAC Consultant Basha Diامر Dam Project, NESPAK House Lahore.



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
377	ISKANDERABAD (DAUDKHEL) District: Minawali: Maple Leaf Cement Factory Ltd. Site f 6700 TPD (Phase-II) Line-II. Geotechnical Investigation.	Geotechnical Investigation at the site of 6700 TPD cement plant. Drilling of 33 boreholes upto a maximum depth of 60 meters through straight rotary method in overburden soil including backfilling of boreholes. Total drilling 1,449 meters. Carrying out 1077 Nos. SPT in boreholes alongwith collection of SPT samples at 1 m interval etc. Collection of 147 Nos. UDS, 190 DS and 27 Nos. water samples from boreholes including their labelling, packing, storage & transportation to laboratory for testing.	Maple Leaf Cement Factory Ltd., Lahore.	National Engineering Service Pakistan (Pvt) Ltd. (NESPAK) Lahore.
378	ISKANDERABAD (DAUDKHEL) District: Minawali: Maple Leaf Cement Factory Ltd. Site of 6700 TPD(Phase-II) Line-II. Test Piling and Pile Load Tests.	Construction of 12 Nos. Test Piles upto max 800 mm diameter with max depth of 35 meters. Total drilling 381 meter. Fabrication of steel cages, cutting, bending and lowering of steel reinforcement in test piles including holding rings and stiffeners etc. Carrying out 14 Nos. Pile Load Test upto a maximum of 700 tons.	Maple Leaf Cement Factory Ltd., Lahore.	National Engineering Service Pakistan (Pvt) Ltd. (NESPAK) Lahore.
379	SUKKUR BARRAGE REHABILITATION PROJECT: Emergency Works for Restoration of the Barrage. Installation of Sheet Piling	Installation and Extraction of 366 Nos. sheet piles upstream and downstream of cofferdam. Length of each sheet pile 38'-8". Installation of 200 Nos. of Permanent sheet piles at upstream and downstream of Dadu Canal and main gates. Total weight of sheet piles 439,607 Kgs.	HQ FWO Rawalpindi/Irrigation & Power Deptt. Govt. of Sindh.	National Development Consultant Lahore.
380	SUKKUR BARRAGE REHABILITATION PROJECT: Emergency Works for Restoration of the Barrage. Installation, Operation and Maintenance of Dewatering System.	Drilling and Installation of 1/2 cusec capacity, 20 Nos. Tubewells at upstream of cofferdam for dewatering system upto max depth of 110 feet. Total Drilling 2000 feet. Installation of blind pipe strainer, shrouding material pump, electric motor and other accessories including disposal arrangement.	HQ FWO Rawalpindi/Irrigation & Power Deptt. Govt. of Sindh.	National Development Consultant Lahore.
381	SUKKUR BARRAGE REHABILITATION PROJECT: Emergency Works for Restoration of the Barrage. Drilling & Grouting Works	Drilling of 41 dowel holes inclined at 45 degree angle upto a depth of 5 feet. Drilling of 13 vertical grouting holes upto a max depth of 37 ft. Total drilling carried out 452 ft. Executing of 11 SPT before grouting and 8 SPT after grouting.	HQ FWO Rawalpindi/Irrigation & Power Deptt. Govt. of Sindh.	National Development Consultant Lahore.



**MASTER SUMMARY OF WORKS COMPLETED**

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
382	SUKKUR BARRAGE REHABILITATION PROJECT: Emergency Works for Restoration of the Barrage. Installation of Piezometers.	Drilling of 30 holes for electrical piezometers and drilling of 9 holes for stand pipe piezometers upto a max depth 30 ft. Total Drilling carried out 629 ft. Carrying out 61 Nos. SPT.	HQ FWO Rawalpindi/Irrigation & Power Deptt. Govt. of Sindh.	National Development Consultant Lahore.
383	SUKKUR BARRAGE REHABILITATION PROJECT: Emergency Works for Restoration of the Barrage. Investigation Work.	Drilling of 30 investigatory holes in 5 main gates for cavity checking. Drilling of 10 gravity mapped holes, drilling of 17 SPT holes, drilling of 4 concrete depth testing holes, 6 permeability test holes, drilling of 16 check holes in PCC/Soil for checking of floor of main gates/main bay. Drilling carried out for 5 additional holes at Dadu Canal. Total Drilling carried out 1,154ft. Executing of 143 Nos. SPT.	HQ FWO Rawalpindi/Irrigation & Power Deptt. Govt. of Sindh.	National Development Consultant Lahore.
<b>2006</b>				
384	KASUR: BULLEH SHAH PAPER MILL PROJECT PACKAGES LIMITED: Construction of Bored Cast-in-Place R.C.C. Piles for Foundations of Paper Machines and Turbine etc.	Construction of 813 Piles of 600 mm dia. Total Drilling 14,918 meters. Carrying out Pile load test on 1 test pile upto a max of 210 tons. Pile load test on 3 working piles upto a max of 60 tons. Breaking / removal of concrete from piles upto required elevation. Cut bend and lower Grade 60 deformed steel reinforcement cage of 523,780/- Kg in working piles and test piles including vertical bars, spirals, holding rings and stiffeners etc. Collection and Testing of 174 Concrete Cylinder Samples.	PACKAGES Limited Lahore.	Progressive Consultants (Pvt) Ltd., Lahore.
385	ISKANDERABAD (DAUDKHEL) District: Minawali: Maple Leaf Cement Factory Ltd. Site of 6700 TPD (Phase-II) Line-II. Construction of Main Working Piles including earth works.	Construction of 1,286 Piles of 660 mm diameter and 317 Piles of 800mm diameter with max depth of 56 Lin. meters. Total drilling 72,519 Lin.meter. Total volume of concrete 32,500 cubic meters. Total steel installed 3,739 tons. Excavation in all types of subsoil for pile caps including all labour, material, tools and plant upto 1.5m depth. Total excavation 40,477 cubic meters.	Maple Leaf Cement Factory Ltd., Lahore.	National Engineering Service Pakistan (Pvt) Ltd. (NESPAK) Lahore.



## IVCC ENGINEERING (PVT) LTD.

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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
386	ISLAMABAD: GOLDCREST DHA, PHASE-II. High Rise Building Project: Test Piles Casting and Testing Package (Pile Load and Plate Load Tests).	Carry out 4 complete pile load tests to failure (maximum load 750 tons) on vertical index piles at Oak, Gulmohar, Jakarranda and Cedar locations. Carry out 3 Plate Load Tests at Birch, Gulmohar and Cedar locations. Boring through all types of soil, rock and any remaining old foundations for bored cast-in-place reinforced concrete test piles. Total Drilling 46 meters.	Al Ghurair Giga Pakistan (Pvt) Ltd., Islamabad.	Pakistan Engineering Services (Pvt) Ltd., Lahore Cantt.
387	KARACHI: POWER & DESALINATION PLANT AT DHA PROJECT: Piling and Earth Works.	Construction of 70 Piles upto a 750mm diameters and with max depth 47 meters of each pile. Total drilling 3,178 meters. Cast-in-situ reinforced type-1 concrete having minimum work cylinder strength of 281 kg per cm sq (4000 psi) at 28 days using approved quality 20mm down graded crush stone. Providing and laying deformed steel grade 60 reinforcement bars. Breaking of extended length of piles. Carry out earth works (Excavation & backfilling) i.e. excavation in foundation and trenches in all kind of soils including all operation of dewatering , levelling, dressing and ramming the excavation surface and throwing earth clear of edges of excavation, making and fixing steel reinforcement bars grade 60 including cleaning, straightening, cutting, bending and placing in position with 18 gauge G.I. binding wire, steel chairs and concrete spacer blocks and bitumen coating all around	Siemens Pakistan Engineering Co. Ltd., DHA Cogen Ltd., Karachi.	Engineering Consultants International (Pvt) Ltd., Karachi.
388	CENTURY PAPER & BOARD MILLS LTD., 67 KM, LAHORE-MULTAN ROAD NEAR VILLAGE JUMER KHURD, DISTRICT KASUR: Piling Works.	Construction of 435 Nos. Piles of 600 mm dia. Total Drilling 8483 meters. Carrying out Pile load test on 1 No. test pile upto a max of 200 tons. Breaking / removal of concrete from piles upto required elevation. Cut bend and lower Grade 60 deformed steel reinforcement cage of 140,700/- Kg in working piles and test piles including vertical bars, spirals, holding rings and stiffeners etc. Collection and Testing of Concrete Cylinder Samples.	Century Paper & Board Mills Ltd. Lahore.	



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# MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
389	SUKKUR BARRAGE REHABILITATION PROJECT: Emergency Works for Restoration of the Barrage. Installation of Piezometers.	Installation of 19 piezometers beneath large abutments. Set up at each location, drilling of holes in piers, installation of piezometers complete with connectors, box etc. Wire run for piezometers including cutting in old concrete with hydraulic cutter and filling with concrete . Total drilling carried out 277 meters. Carry out 12 SPT.	HQ FWO Rawalpindi / Irrigation & Power Deptt. Govt. of Sindh.	National Development Consultant Lahore.
390	KAMALIA SUGAR MILLS: Drilling of Holes in Concrete Foundation of Sugar Mills House.	Drilling of 3 bore holes 100 mm dia. upto a depth of 1900mm and 15 boreholes upto a depth of 600mm each hole in RCC/PCC foundations.	Kamalia Sugar Mills Ltd., Kamalia.	
391	KARACHI: KORANGI THERMAL POWER STATION. Pile Load Test and Pile Integrity Tests on Test Piles.	Carry out 4 Nos. pile load tests on 750mm dia. bored cast in-situ piles. Each test approx. 500 tons. Carry out 1 No. Lateral Load Test 50 tons. Pile depth varies between 12m and 20m. Total drilling 62 meters. Performing of pile integrity test on all test piles using the sonic echo method.	Siemens Pakistan Engineering Co. Ltd. / Karachi Electric Supply Corporation(KESC).	Siemens Germany.
392	CHILAS: DIAMER BASHA DAM PROJECT: Proposed Multi purpose, 1,000 feet high dam on River Indus at Basha along the famous Karakoram highway. Excavation of Adit No. 3	Excavation of Exploratory Adit No.3 (3.2x2.4m) and 256m long on Right Bank of Indus River. Excavation of Adit portal through overburden, 124 cubic meters. Excavation of Adit through Rock 1795 cubic meters. Haulage of excavated material from within the Adit to the specified dumping areas of 1919 Cubic meters. Providing Timber and Steel supports in Adit about 5 cubic meter and 5.24 tons respectively. Work executed in very critical / rough weather conditions.	General Manager Technical Services WAPDA Lahore.	Diamer Basha Consultants Lahore.



**MASTER SUMMARY OF WORKS COMPLETED**

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
<b>2007</b>				
393	LAHORE: MABARAK CENTRE PROJECT: Proposed a Multiuse Complex on Perozepur Road, near Kalma Chowk. Test Piles and Load Test.	Construction of 2 Nos. Test Piles of 1500mm diameter. and 4 Nos. Test Piles of 1200mm diameter. bored cast in-situ piles. Total drilling 126.10 meters. Carry out 1 No. Static Vertical Load Test 2400 tons and 2 Nos. Static Vertical Load Test 1500 tons. Carry out 1 No. Lateral Load Test 240 tons and 1 No. Laternal Load Test 150 tons. Carry out 1 No. PDA test 1000 tons. Performing of pile integrity test on all test piles using sonic echo method supplied by Pile Dynamics Inc. U.S.A.	Taavun (Pvt) Limited Lahore/ Project Manager Turner Construction International - LLC Lahore.	Noor Durrani & Associates Construction Engineers Lahore.
394	KASUR: BULLEH SHAH PAPER MILL PROJECT PACKAGES LIMITED: Construction of Bored Cast-in-Place R.C.C. Piles for Bridge Over Pandoki Drain and 41 MW Turbine Foundations of Paper Mill.	Construction of 24 Piles of 600 mm diameter and 12 Piles of 900mm diameter with maximum depth of a pile 32.60 meter. Total Drilling 878.80 meters. Cut bend and lower Grade 60 deformed steel reinforcement cage of 63,883.08 Kg in piles including vertical bars, spirals, holding rings and stiffeners etc	PACKAGES Limited Lahore.	Progressive Consultants (Pvt) Ltd., Lahore.
395	KARACHI: CREEEK MARINA RESIDENTIAL DEVELOPMENT PROJECT IN DEFENCE HOUSING AUTHORITY: Carrying out fully instrumented Pile Load Tests, PDA Tests, Pile Integrity Tests and Construction of Cast-in-Situ Concrete Bored Piles.	Construction of 1758 Piles (871 piles of 560mm diameter, 520 of 1200 mm diameter, 267 of 1300mm diameter 100 of 1500 mm diameter). Maximum depth of a pile 33.50 meter. Total Drilling 48,043 meters. Cut bend and lower Grade 60 deformed steel reinforcement cage 3,728 metric tons in piles including vertical bars, spirals, holding rings and stiffeners. Carry out 8 load tests on 1200mm dia. test piles, fully instrumented with Strain Gauges and extensometers loading upto 3000 tons with load cells and data loggers. All tests done using 1200 mm dia. 40 meter deep anchor piles, 4 Nos. anchor pile for each test. Total drilling of test piles 242 meters. Carry out load tests on 15 Nos. working piles upto 2400 tons. Carryout 38 Nos. Pile Dynamic Analysis (PDA) using a drop weight of 35 tons on pile heads. Carrying out Pile Integrity Tests using Sonic Echo Method on all piles.	Creek Marina (Pvt) Limited Karachi.	Meinhardt Singapore Pte Limited.



## MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
396	LAHORE: Proposed Pearl Continental Hotel at Fort Road Lahore. Pile Integrity Tests.	Drilling of 3 Nos. Core 6" dia 12" long from top of piles. Carry out Pile Integrity Test on 6 Nos. Piles of 600mm diameter. Location left and right side of PC Hotel.	KingCrete Project Management (Pvt) Ltd., Lahore Cantt.	
397	CHILAS: DIAMER BASHA DAM PROJECT: Proposed Multi purpose, 1,000 feet high dam on River Indus at Basha along the famous Karakoram highway. Excavation of Adit No. 5	Excavation of Exploratory Adit No.5 (2.4x3.2 m) and 651 m long on Right Bank of Indus River. Excavation of Adit portal through overburden (Open cut) , 2.51 cubic meters. Excavation of Adit through Rock by Blasting Operation 4,579 cubic meters. Haulage of excavated material from within the Adit or Chamber to the specified dumping areas 4,581.63 Cubic meters. Providing Timber and Steel supports in Adit about 30 cubic feet and one ton respectively.	General Manager Technical Services WAPDA Lahore.	Diamer Basha Consultants Lahore.
398	CHILAS: DIAMER BASHA DAM PROJECT: Proposed Multi purpose, 1,000 feet high dam on River Indus at Basha along the famous Karakoram highway. Drilling of Boreholes.	Drilling of 12 Nos. Boreholes, 5 holes on the Left and 7 holes on the Right Bank of Indus River. Maximum depth upto 250 meters. Total drilling executed 1,648.4 meters. Carrying out 292 Nos. Water Pressure Tests (Lugeon Tests), carried out inclined drilling 750 meters. Carrying out 23 Nos. SPT and 10 Nos. CPT . Work executed in very critical / rough weather conditions.	General Manager Technical Services WAPDA Lahore.	Diamer Basha Consultants Lahore.
399	KHEWRA: ICI 65 KPTA Soda Ash Factory - Geotechnical Investigations.	Geotechnical Investigations at ICI 65 KPTA Soda Ash Factory. Drilling of 6 Boreholes, 2 boreholes upto a maximum depth of 15 meters at the Calciner foundation area and 4 boreholes upto a maximum of 25 meters below the top of ground at the Kiln foundation area. Total drilling executed 130 meters. Carrying out 6 plate load tests at the Calciner foundation area and 4 plate load tests at the Kiln foundation area. Laboratory testing and preparation of report including recommendations for pile and pad foundations.	ICI Pakistan Limited Lahore.	Progressive Consultants (Pvt) Ltd., Lahore.



## MASTER SUMMARY OF WORKS COMPLETED

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
<b>2008</b>				
400	KHEWRA: ICI 65 KPTA Soda Ash Factory - Carrying out fully instrumented Pile Load Test, PDA Tests, Pile Integrity Test and Piling Work.	Drilling and concreting of 45 piles of 760mm diameter with maximum depth of 20 meters. Total drilling 909 meters. Fabrication and installation of Grade 60 deformed steel reinforcement of 59,218 Kgs. Carry out breaking of pile heads and performing of a pile load test upto 360 tons in accordance with ASTM D-1143. Carrying out Pile Integrity Tests using Sonic Echo Method on all piles. Carryout 3 Nos. Pile Dynamic Analysis (PDA) using PAK analyzer of Pile Dynamic Inc.	ICI Pakistan Limited Lahore.	Progressive Consultants (Pvt) Ltd., Lahore.
<b>2009</b>				
401	ISLAMABAD: AVARI HOTEL PROJECT - Piling and Pile Load Testing Works.	Construction of 169 piles of 750mm diameter. Drilling done in 9,000 psi sand stone. Maximum depth of a Pile 40 meters. Total drilling 5,478 meters. Carrying out 7 Nos. pile load tests on working piles upto 720 tons. Installation of Grade 60 deformed steel reinforcement 367,173 Kgs. Carrying out dewatering and excavation upto elevation (-10.15) for pile load testing. Pile Hacking / Breaking, Integrity testing for all piles.	Avari Hotels Limited Karachi.	Meinhardt (Pakistan) Pvt Ltd. Karachi.
402	LAHORE SUNDAR INDUSTRIAL ESTATE: Tetra Pak Pakistan Ltd., Lahore2 Project - Construction of Bored Cast-in-Place R.C.C. Piles for Foundations of Production Machine and Laminator Buildings.	Construction of 714 piles of 450mm diameter. Maximum depth of Pile 22 meters. Total drilling 15,527 meters. Installation of a test pile of 450mm diameter upto a depth of 22 meters. Installation of Grade 60 deformed steel reinforcement 525,820 Kgs. Carry out 2 Nos. pile load tests on working piles upto 90 tons as per ASTM D1143. Supply of equipment and performance of Sonic Integrity Test and Pile Dynamic Analysis (PDA) as per ASTM D 4945 and provision of complete report using CAPWAP Analysis. Cut, Weld and Install 37,953 Kgs Sheet Piles.	Tetra Pak Pakistan Ltd. Lahore.	Progressive Consultants (Pvt) Ltd., Lahore.



**MASTER SUMMARY OF WORKS COMPLETED**

Ser No.	Project Particulars	Description & Quantum of Works	Clients	Consultants
403	LAHORE SUNDAR INDUSTRIAL ESTATE: Tetra Pak Pakistan Ltd., Lahore2 Project - Civil Works for Production Building (No. 20) and Basement.	Earthworks for structures. Compacted backfill in foundation including dressing watering, consolidation by ramming. (Total 11,554 cubic meters) Reinforcing steel bars of Grade 60. (Total 201,803 Kgs). Provide and lay structural cement concrete of 5,800 psi cylinder crushing strength. (Total quantities 5,058 cubic meters).	Tetra Pak Pakistan Ltd. Lahore.	Progressive Consultants (Pvt) Ltd., Lahore.

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404	CHILAS: DIAMER BASHA DAM PROJECT: Proposed Multi purpose, 1,000 feet high dam on River Indus at Basha along the famous Karakoram highway. Excavation of 4 No. Chambers, Drilling for Overcoring / Plate Load Tests and Performance of Overcoring Tests in Adit No. 5	Excavation of test chambers in Adit No. 5 through rock by blasting operations including mucking / haulage of excavated material from within the adit or chamber to the specified dumping areas. Drilling for overcoring/STT test hole of 40-146 mm dia. upto 90 m depth for further drilling / extraction of pilot hole core for performance of STT tests. Core drilling of overcoring/STT test hole of 35-39mm nominal dia core length 1-2 m at all test depths. Core drilling NQ size (76mm dia). 6 m deep hole for rigid plate load tests. (Total drilling 585 meters). Performance of 16 Nos. Overcoring/STT tests. Submission of Test Results/Report with photographs.	General Manager/CEO Diamer Basha Dam Organization WAPDA Lahore.	Diamer Basha Consultants Lahore.
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405	DERA GHAZI KHAN-LORALAI: 220 KV Double Circuit Twin Bundle T/Line from D.G.Khan Grid Station to 220 KV Loralai Grid Station (85 KM: from Location No.261 to location No. 520) (Lot-II). Geotechnical Investigation. Contract No. ADB-21-2009.	Survey for Tower staking, erection, stringing, testing and commission and Sub-Soil Investigation in soil/ rock including laboratory tests. Drilling of 38 Nos. boreholes. Maximum dia. of hole 101mm. Maximum depth of a hole 20 meters. Total drilling 548 meters. Carrying out SPTs, CPT, chemical analysis of soil samples, grain size analysis report ASTM D-422 and unconfined compression strength (ASTM D 2938).	National Transmission & Despatch Company Ltd. (NTDC) / Pakistan Water and Power Development Authority (WAPDA) Lahore.	Barqaab Consulting Services (Pvt) Limited.
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