

## PROCESS WATER TREATMENT

CLIENT / CONTRACTOR	COUNTRY	APPLICATION	SCOPE OF SUPPLY
Abu Dhabi National Oil Co. <i>Fluor (GB) Ltd.</i>	Thamamma Abu Dhabi	Oil Refinery	2 x 330,000 kg/hr tray type deaerators for boiler feed
Alumina Contractors Ltd <i>Preece Cardew and Ryder Ltd</i>	Aughinish Island Ireland	Aluminium Smelter	3 x 171 m <sup>3</sup> /hr dealkalisation, degasser, organic scavenger, cation, anion and effluent neutralisation
Azot-Sanayii T.A.S. <i>M W Kellogg Ltd</i>	Gemlik Turkey	Ammonia Complex	Two pressure deaerators with output of 290 tonnes /hour and 94 tonnes/hour respectively
Azot-Sanayii T.A.S. <i>M W Kellogg Ltd</i>	Gemlik Turkey	Ammonia Complex	Complete process water treatment comprising: Clarification and filtration for 830 m <sup>3</sup> /hr demineralisation for 280 m <sup>3</sup> /hr condensate polishing for 195 m <sup>3</sup> /hr
Botswana Power Corp <i>Kennedy &amp; Donkin</i>	Morupule Botswana	Power Station	144 m <sup>3</sup> /hr filtration ; 2 x 45 m <sup>3</sup> /hr demineralisation, comprising cation/degasser/anion/mixed bed
Botswana Power Corp <i>Esmil</i>	Morupule Botswana	Power Station	Refurbishment of boiler feed water treatment plant
B.P. Chemicals Ltd <i>B.P. Chemicals Ltd</i>	Hull UK	Chemical Factory	Upgrading, conversion and automation of 3 x dealkalisation units, using the UPCORE packed bed process. Capacity 136 m <sup>3</sup> /hr per stream. The contract also included full erection within limited shutdown periods and remote data transmission facilities via modems and a landline
British Rail Engineering Ltd <i>British Rail Engineering Ltd</i>	London UK		1 x 8.6 m <sup>3</sup> /hr automatic base exchange softener
Central Equadorian Petroleum Corp <i>Chiyoda Chemical Engineering Corp</i>	Equador	Oil Refinery	455 m <sup>3</sup> /hr clarification/filtration 120 m <sup>3</sup> /hr demineralisation 270 m <sup>3</sup> /hr cooling water filters 138 m <sup>3</sup> /hr dissolved air flotation
Dow Corning Corp <i>Babcock Woodall Duckham Ltd</i>	Indonesia		14 m <sup>3</sup> /hr base exchange softener
Electricity Supply Commission <i>Merz &amp; McLellan</i>	Wankie Zimbabwe	Power Station	1 x 402 m <sup>3</sup> /hr clarification/filtration 2 x 180 m <sup>3</sup> /hr cation/degass/anion/mixed bed 1 x 180 m <sup>3</sup> /hr condensate polisher HP & LP boiler chemical dosing equipment

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Gas Authority of India Ltd <i>Paramount Pollution Control Ltd</i>	Auriya India	Condensate Treatment Plants	2 x Contaminated Condensate Treatment Plants for 190 m <sup>3</sup> /hr comprising of activated carbon filters/cation exchangers and mixed bed polishers. Control PLC control system
ICI Pharmaceuticals Ltd <i>ICI Pharmaceuticals Ltd</i>	Macclesfield UK	Pharmaceutical Factory	A consultancy contract to provide advice on improvements to a purified water distribution facility
ICI Pharmaceuticals Ltd <i>Costain Petrocarbon Ltd</i>	Macclesfield UK	Pharmaceutical Factory	15 m <sup>3</sup> /hr purified water. B.P. system comprising 2 x streams demineralisation and membrane filtration with storage and distribution
INA-Naftaplin <i>Pritchard-Rhodes Inc</i>	Zagreb Yugoslavia	Ethylene Complex	2 x 100% duty streams producing 100 m <sup>3</sup> /hr of demineralised water. Regeneration equipment, bulk chemical storage and an effluent treatment facility are also included
INA-Naftaplin output <i>Pritchard-Rhodes Inc</i>	Zagreb Yugoslavia	Ethylene Yugoslavia	1 x pressure deaerator with an of 82 tonnes /hour
India Petrochemicals <i>Paramount Pollution Control Ltd</i>	India	IPCL Gandhar	3 x 150 m <sup>3</sup> /hr demineralisation streams comprising of dual media filters/weak acid cation/strong acid cation/degassers/weak anion/strong anion and mixed bed polishers. System is controlled by latest SCADA control including DCS
Korea Engineering Ltd <i>Korea Engineering Ltd</i>	Korea	Process Water	Internals and design package for conversion of demineralisation unit to UPCORE operation
Kuwait National Petroleum Co <i>Japan Gas Corp</i>	Kuwait	Oil Refinery	Chemical injection package consisting of 4 x dosing sets for boiler feed water
Libyan National Oil Corp <i>Stone &amp; Webster Ltd</i>	Ras Lanuf Libya	Oil Refinery	2 x 1,110,000 kg/hr deaerators for boiler feed
Loders Croklaan <i>Esmil</i>	UK	Chemicals Production Process Water	Refurbishment and resin supply for demineralisation plant
Loders & Nucoline Ltd <i>Loders &amp; Nucoline Ltd</i>	London UK	Food industry	2 x 95 m <sup>3</sup> /hr dealkalisation, degasser and base exchange softener for boiler feed
Loders & Nucoline Ltd <i>Loders &amp; Nucoline Ltd</i>	London UK	Food Industry	1 x 78,912 kg/hr deaerator

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May & Baker Ltd <i>May &amp; Baker Ltd</i>	Dagenham UK	Pharmaceutical Factory	1 x stream 40 m <sup>3</sup> /hr cation/degass/ anion demineralisation for boiler feed
Ministry of Defence <i>Property Services Agency</i>	Aldermaston UK	Atomic Weapons Establishment	2 x complete plants - 2 x 20 m <sup>3</sup> /hr and 3 x 20 m <sup>3</sup> /hr streams demineralisation for boiler feed
Ministry of Minerals and Mines <i>Rhine Schelde Verolme Machinefabriek A.G. (Black &amp; Veach)</i>	Indonesia	Maura Karang Power Station	1 x 50 m <sup>3</sup> /hr demineralisation plant and associated regeneration equipment. Low and high pressure dosing equipment. The whole plant is controlled via a sophisticated automatic water quality analyser
Mobile Oil (UK) Ltd <i>M.W. Kellogg Ltd</i>	Coryton UK	Oil Refinery	2 x 154,000 kg/hr deaerators for boiler feed
NEC (Semiconductors) Ltd <i>Amec Projects Ltd</i>	Livingston Scotland	Semiconductor Facility	2 x streams each 40 m <sup>3</sup> /hr filtration/ reverse osmosis/demineralisation/ mixed bed polishing/ultra filtration, producing 18 megohm water for silicon chip manufacturing
Nobel Explosives <i>Davy McKee (London) Ltd</i>	Phillippines	Explosives Factory	5 m <sup>3</sup> /hr filters/demineralisation/ deaerator and dosing
Nobel Explosives <i>Tate &amp; Lyle Agri-Business Ltd</i>	Thailand	Explosives Factory	1 x clarifier and 3 x rapid gravity filters designed to produce 215 m <sup>3</sup> /hr of potable quality water, complete with chemical dosing and sludge handling equipment. 1 x fully automatic base exchange unit designed to produce 25 m <sup>3</sup> /hr of boiler feed water
Norsk Hydro Fertilisers Ltd <i>Davy McKee (London) Ltd</i>	Immingham UK	Fertiliser Factory	A single stream demineralisation plant incorporating split flow cation and anion units with an output of 74 m <sup>3</sup> /hr
Pertamina <i>Bechtel (GB) Ltd</i>	Bontang Indonesia	Oil Refinery	91 m <sup>3</sup> /hr boiler feed water demineralisation plant preceded by 3 x iron removal pressure filters
Petrola International SA <i>Sete International SA</i>	Rabigh Refinery	Oil Refinery Complex	A demineralisation and condensate de-oiling plant designed to treat 300 m <sup>3</sup> /hr of make-up water and 240 m <sup>3</sup> /hr of condensate. A full range of automatic control and regeneration equipment is also included. The plant is fully skid mounted

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Petrola International SA <i>Sete International SA</i>	Rabigh Saudi Arabia	Oil Refinery Complex	A plant to provide chemical dosing and chlorination facilities to a desalinated potable water supply. The equipment provides for demineralisation, sterilisation and activated carbon filtration to treat a flow rate of some 300 m <sup>3</sup> /hr
P.T. Pupik Kalimantan, Timur <i>Chiyoda Chemical Engineering Corp</i>	Bontang Indonesia	Oil Refinery	A 2-stream demineralisation plant with an output of 65 m <sup>3</sup> /hr per stream. Each stream comprises co-flow cation and mixed bed units with a common degasser tower. The plant is complete with fully automatic regeneration equipment and effluent neutralisation
Samsung Cunstruction Co Ltd <i>Korea Engineering Co Ltd</i>	Seoul Korea		A raw water clarifier designed to treat 190 m <sup>3</sup> /hr of river water
State Company for Oil & Petroleum <i>A.G. Rosetti Engineering SpA</i>	Iraq	Oil Refinery	4 X 83 m <sup>3</sup> /hr deep bed filters for oil well waterflood injection
Statiol <i>Elind</i>	Gulfaks B Offshore Norway	Offshore Oil Platform	Ultraviolet and chemical dosing equipment for disinfection of potable water
Tate & Lyle Ltd <i>Tate &amp; Lyle Ltd</i>	Silvertown UK	Sugar Refinery	3 x 100 m <sup>3</sup> /hr counterflow demineralisation using stratified cation/degasser, stratified anion for boiler feed
Thai Oil Refinery <i>Chiyoda Chemical Engineering Corp</i>	Sriracha Thailand	Oil Refinery	A process condensate treatment plant comprising degasser unit and 2 x 100 m <sup>3</sup> /hr duty mixed beds, each designed to handle 20 m <sup>3</sup> /hr of condensate. Fully automatic regeneration equipment, bulk chemical storage and effluent neutralisation are also included
Tugsas Gubrye Sanayii A/S <i>M W Kellogg Ltd</i>	Gemlik Turkey	Ammonia Complex	Additional equipment and specialist services to enable final completion of the water treatment facilities following six years storage
Vickers Shipbuilding & Engineering Ltd <i>Matthew Hall Ltd</i>	Barrow-in- Furness UK	Submarine Servicing	2 x 15 m <sup>3</sup> /hr mixed bed demineralisers and associated pre-treatment plant
Zemco Ltd <i>Costas V Philippou</i>	Cyprus		4 x automatic base exchange softeners

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Zimbabwe Electricity Supply Authority <i>Esmil</i>	Zimbabwe	Hwange Power Station	Complete refurbishment of the pre- treatment and demineralisation boiler feed plant, including installation of new PLC systems