

APPENDIX C

WASTEWATER TREATMENT EXPERIENCE

Appendix C provides summaries of many of the key projects in which CES and its strategically, ENVIROPOWER, and their personnel have played a significant role.

RIVERBEND PRAIRIE LEACHATE TREATMENT SYSTEM

Dalton, Illinois

Client: Land and Lakes Company

The project included the design of the gravity lines, fittings, manholes, and roadway restoration, preparing construction drawings and technical specifications, and obtaining the permits for construction. In addition, EnviroPower personnel were retained to evaluate the source of odors in the manholes, and to design an odor treatment system. EnviroPower personnel supervised construction of the project and provided QA/QC during construction.

KADUNA WASTEWATER TREATMENT FACILITY

Kaduna, Nigeria

Client: Municipality

EnviroPower personnel design a wastewater treatment plant for municipal and industrial wastewater for the Municipality of Kaduna. The facility included both primary and secondary treatment, with discharge to surface water. The facility was located in an industrial area and was specifically designed to handle dies and discharges from the garment industry in the area.

BERMAN ROAD LEACHATE TREATMENT FACILITY

Okachobee, Florida

Client: Waste Management Inc.

The project included the design and construction management of a wastewater treatment facility to treat landfill leachate. The design included a lined aeration ponds and secondary treatment using reverse osmosis. Treated water was discharged to surface water. EnviroPower personnel prepared the design, construction drawings, specifications, obtained the state and local permits, and evaluated the bid packages from the contractors. EnviroPower personnel also provided construction management for the facilities, and performed QA/QC during construction.

COUNTRYSIDE WASTEWATER TREATMENT FACILITY

Lake County, Illinois

Client: USA Waste

The project included the design of a wastewater treatment plant to treat leachate from an MSW Landfill. The facility included both primary and secondary treatment, and treated water was discharged to surface water. EnviroPower personnel prepared the design, construction drawings, specifications, obtained the state and local permits, and evaluated the bid packages from the contractors. EnviroPower personnel also provided construction management for the facilities, and performed QA/QC during construction.

KARACHI DHA 5.0 MGD WWTP FACILITY

Karachi, Pakistan

Client: DHA

EnviroPower Personnel designed a 5.0 MGD (19,000 m³/day) wastewater treatment plant (WWTP) for Phase VIII of the Defense Housing Authority (DHA) in Karachi, Pakistan. The feasibility study for the project included the development of designs and detailed cost estimates for construction and operation of both a conventional activated sludge WWTP, and a modified plant using the One Moving Part (NOYES-OMP-PLANT) system developed by Noyes Associates (Noyes Technology). Based on the results of the feasibility study, it was determined that for the site conditions, the Noyes Technology, which is a modified Activated Sludge Treatment System, had a lower capital cost (30 percent lower) and operating cost (70 percent lower). The treatment facility consisted of a pump station, screens, aeration basin, clarifier, aerobic sludge digester, centrifuges to dewater the sludge, and a chlorination system to treat the effluent. The design requirements for the system specified a reduction in the BOD for the influent from over 400 mg/L, to less than 15 mg/L. The treated effluent was required to be of an acceptable quality for use as irrigation water in parks and at the Golf Course.

KARACHI DHA 0.5 MGD WWTP FACILITY

Karachi, Pakistan

Client: DHA

EnviroPower Personnel designed a 0.5 MGD (2,000 m³/day) wastewater treatment plant (WWTP) for the Defense Housing Authority (DHA) in Karachi, Pakistan. The feasibility study for the project included the development of designs and detailed cost estimates for construction and operation of both a conventional activated sludge WWTP, and a modified plant using the One Moving Part (NOYES-OMP-PLANT) system developed by Noyes Associates (Noyes Technology). Based on the results of the feasibility study, it was determined that for the site conditions, the Noyes Technology, which is a modified Activated Sludge Treatment System, had a lower capital cost (30 percent lower) and operating cost (70 percent lower). The treatment facility consisted of a pump station, screens, aeration basin, clarifier, aerobic sludge digester, centrifuges to dewater the sludge, and a chlorination system to treat the effluent. The design requirements for the system specified a reduction in the BOD for the influent from over 400 mg/L, to less than 15 mg/L. In addition, the treatment system was designed to accommodate a wide range in initial flowrates, and high salt concentrations due to saline ground-water conditions in the area. The treated effluent was required to be of an acceptable quality for use as irrigation water in parks and at the Golf Course.

BARKA 2,000 M³/DAY WWTP FACILITY

Barka, Oman

Client: MRMEWR

EnviroPower personnel designed the 2,000 m³/day wastewater treatment plant (WWTP) expansion for Barka Municipality and the Ministry of Regional Municipalities, Environment, and Water Resources (MRMEWR). The design included a reception tank, screens, concentric aeration basin and clarifier, centrifuges, and sludge drying beds. The design also included an option to modify the existing WWTP to be used as an aerobic sludge digester to replace the sludge drying beds. The system was designed for an average influent BOD of 400 mg/L, with an effluent BOD of 25 mg/L. The design included treatment of the effluent with chlorination so the effluent could be used for irrigation of agricultural areas and municipality parks and green areas. The system design was also modified to allow major fluctuations in the influent flowrates, resulting from delivery of the influent by tanker trucks. The system was also designed to provide treatment of leachate from an adjacent municipal solid waste (MSW) landfill.

MIRBAT 900 M³/DAY WWTP FACILITY

Mirbat, Oman

Client: Dhofar Municipality

Dhofar Municipality requested that EnviroPower provide design and equipment supply for a 0.239 MGD (900 m³/day) wastewater treatment plant (WWTP) that would treat municipal sewage for the Municipality of Mirbat, Oman. EnviroPower formed a Joint Venture with Noyes Associates, the manufacturer of the wastewater treatment equipment, to design and provide the wastewater treatment equipment for the 0.239 MGD (900 m³/day) WWTP.

Based on the information provided by the Dhofar Municipality, an alternative design was developed using a modified type of activated sludge treatment system. The alternative design was based on a One Moving Part Plant (NOYES-OMP-PLANT) technology, with a concentric aeration basin and clarifier to minimize both the capital cost and operating cost of the plant, and sludge digester to reduce the quantity of sludge prior to disposal in the new MSW Landfill. The 0.239 MGD (900 m³/day) NOYES-OMP-PLANT WWTP design was selected as the recommended and specified conceptual plant design configuration because the proposed plant design:

- Could meet WWTP performance requirements within site area limitations,
- Could cost-effectively provide water at landscape reuse quality,
- Could be built faster than a conventional WWTP,
- Could provide sufficient flexibility for operation at the range of influent flowrates;
- Had fewer moving parts, which minimized maintenance costs and made the NOYES-OMP-PLANT WWTP easier to operate;
- The NOYES-OMP-PLANT WWTP was driven by one pump, which reduced the spare parts inventory, reduced the possibility of down time, and made the system much easier to operate and maintain; AND
- Minimized odors to the extent possible.

A preliminary engineering feasibility analysis resulted in the determination that overall site size and layout for the most reliable, easy to maintain, and most cost effective treatment plant process configuration to achieve the design requirements and specifications could easily fit on a plot of 840 m² (0.08 Hectares). The system design included an aerobic sludge digester to process the sludge and convert the sludge to compost. This process minimized odors and converted the sludge into compost, which could be used for fertilizer. The system design could also be modified to use either sludge drying beds, or additional centrifuges instead of the aerobic sludge digester. This would reduce the overall cost of the system, but would increase the odors associated with the management and handling of the sludge.

TAQAH 600 M³/DAY WWTP FACILITY

Taqah, Oman

Client: Dhofar Municipality

Dhofar Municipality requested that EnviroPower personnel provide the design and equipment supply for a 0.159 MGD (600 m³/day) wastewater treatment plant (WWTP) that would treat municipal sewage for the Municipality of Taqah, Oman. Globex formed a Joint Venture with Noyes Associates (Globex-Noyes JV), the manufacturer of the wastewater treatment equipment, to design and provide the wastewater treatment equipment for the 0.159 MGD (600 m³/day) WWTP. Based on the information provided by the Dhofar Municipality, EnviroPower personnel prepared an alternative design based on a One Moving Part Plant (NOYES-OMP-PLANT) technology, with a concentric aeration basin and clarifier to minimize both the capital cost and operating cost of the plant, and centrifuges and/or a sludge digester to reduce the quantity of sludge prior to disposal in the new MSW Landfill.

A preliminary engineering feasibility analysis resulted in the determination that overall site size and layout for the most reliable, easy to maintain, and most cost effective treatment plant process configuration to achieve the design requirements and specifications can easily fit on a plot of 560 m² (0.06 hectares). The system design included an aerobic sludge digester to process the sludge and convert the sludge to compost. This process minimized odors and converted the sludge into compost, which could be used for fertilizer. The system design could be modified to use either sludge drying beds, or additional centrifuges instead of the aerobic sludge digester. This reduced the overall cost of the system, but increased the odors associated with the management and handling of the sludge.

DHOFAR MUNICIPALITY AEROBIC SLUDGE DIGESTER

Salalah, Oman

Client: Dhofar Municipality

The Dhofar Municipality requested the EnviroPower personnel to design, supply, and construct a 372 m³/day Aerobic Sludge Digester at the existing Salalah WWTP, and a 15 tonne/day Compost Plant at the existing Salalah solid waste management facilities. Sludge waste from the primary and secondary settlement tanks was combined with a recycle stream of digested biosolids and was pumped into the Aerobic Sludge Digester through a fluid manifold pipe. Prior to re-entry to the Aerobic Sludge Digester, aeration was achieved by aspiration in the throat of a Venturi inserted in the pipe prior to the redistribution manifold. This configuration eliminated the need for conventional air diffusers or surface aerators, which were maintenance intensive and costly to operate due to high power input per ton of oxygen dissolved. The liquid pump was the only moving part of the system addition. The treated sludge from the Aerobic Sludge Digester was then sent to the existing dewatering belt press and dried to 30 percent by weight solids for transport to the proposed new 15 tonne/day Compost Plant. The supernatant from the Aerobic Sludge Digester was returned to the aeration basin of the existing plant.

The proposed design was selected because:

- Minimized odors to a much greater extent than the technologies recommended in the study by Parsons and ONEC;

- Could be built and operated at a low cost compared to conventional technologies;
- Could be built faster than an anaerobic sludge digester;
- Was more cost effective than thermal treatment systems;
- Provided a treated sludge suitable for composting;
- Minimized odors to the extent possible;
- Were the most reliable and easy to maintain of the viable alternatives; and
- Converted the sludge and green waste into a high quality compost that salable in Oman.

HERMEL WASTEWATER TREATMENT PROJECT

Hermel, Lebanon

Client: Municipality of Hermel, Cooperative Housing Foundation (CHF)

EnviroPower personnel performed a full detailed design of a hybrid system for treatment of solid waste and wastewater in the region of Hermel. The design included the segregation of the organic portion of solid waste by passing the mixed MSW through a sorting facility. The organic fraction was then grinded, mixed with treated wastewater, and added to the wastewater influent in a UASB (anaerobic) reactor. The mixture of wastewater and organics then passed through an extended aeration system in order to meet the effluent treatment requirements. The remaining solid waste was segregated, potentially recyclable materials were removed from the waste stream, and the rejects were transported to an MSW Landfill. The potentially recyclable materials were processed and sold into the local recycled materials markets.

The treatment processes were designed to eliminate contamination that is currently polluting the Assi River that flows into Syria. The Assi River is a major source of drinking water, and a main source of irrigation water on both the Lebanese and Syrian sides of the borders. The WWTP was design in a modular form, and took into consideration future growth of the area. The system was designed to accommodate the current population of 20,000 people, but was also designed to be incrementally expanded to accommodate up to 60,000 people. The WWTP included screens, inline solids grinders, anaerobic digesters, recovery of gas and production of electricity, and treatment of the effluent from the anaerobic digesters in a modified extended aeration system, including a concentric aeration basins and clarifiers, centrifuges, and sludge drying beds. An alternative design for the modified extended aeration treatment system was developed using the Noyes technology to minimize cost, reduce maintenance requirements, and improve operational performance.

CREATIVE ENVIRONMENTAL SYSTEMS, LLC (CES) - EPM WT & WWT PROJECTS

CES now serves as, and provides, the in-house water and wastewater expertise to EPM. Tabulated below are the CES-EPM water treatment (WT) & wastewater (WWT) projects at

- the numerous waste-to-energy (WTE) projects employing CES predecessor entity CLASSI CREATIVE ENVIRONMENTAL's WTE technology with Dr Barry Liss,

- PE serving as overall process engineering integrator,
- the projects Dr Ganesh V. Kumar (GVK) provided turnkey services, and
 - the numerous projects Daniel G. Noyes managed as head of Noyes & Associates, Inc.

Tabulated below are DR. BARRY LISS, PE - ENVIROPOWER MANAGEMENT WASTE TO ENERGY POWER PLANT PROJECTS WATER & WASTEWATER TREATMENT SYSTEMS broken down by Global regions including:

- Asia,
- Africa and Europe,
- Middle East,
- Central & South America, and
- USA

**DR. BARRY LISS, PE - ENVIROPOWER MANAGEMENT
WASTE TO ENERGY POWER PLANT PROJECTS
WATER & WASTEWATER TREATMENT SYSTEMS**

Project List #	Power Plant Size	Location (City or Site or Region)	Country	WTP Capacity (m ³ /hr)	WTP Installed CC (\$US)	WWTP Capacity (m3/hr)	WWTP Installed CC (\$US)	Project Type / Status
A-#		ASIA						
1	24	Mauritius (also 36MW)	Mauritius	87.48	\$517,882	37.44	\$422,061	Designed
2	24	Kabul	Afghanistan	87.48	\$517,882	37.44	\$422,061	PreProp.
3	72	Bali	Indonesia	262.44	\$1,553,645	112.32	\$1,266,183	Pending
4	72	Surabaya	Indonesia	262.44	\$1,553,645	112.32	\$1,266,183	Pending
5	480	Jakarta	Indonesia	1,749.60	\$10,357,632	748.80	\$8,441,222	Pending
6	36	Batam	Indonesia	131.22	\$776,822	56.16	\$633,092	Proposal
7	36	Sunter	Indonesia	131.22	\$776,822	56.16	\$633,092	Proposal
8	6.6	Trivandrum	India	79.99	\$473,553	10.56	\$232,637	Approved
9	24	Kochi	India	87.48	\$517,882	37.44	\$422,061	Designed
10	12	Calicut	India	94.20	\$725,623	18.96	\$315,684	Designed
11	6.6	Kannur	India	79.99	\$473,553	10.56	\$232,637	Designed
12	6.6	Thrissur	India	79.99	\$473,553	10.56	\$232,637	Designed
13	36	Bangalore	India	131.22	\$776,822	56.16	\$633,092	DesignOnly
14	72	Chennai (MV)	India	262.44	\$1,553,645	112.32	\$1,266,183	In Negoc.
15	96	Chennai (K)	India	349.92	\$2,071,526	149.76	\$1,688,244	Proposal
16	6.6	Srei Bagasse	India	79.99	\$473,553	10.56	\$232,637	Proposal
17	36	Himacha Pradesh	India	131.22	\$776,822	56.16	\$633,092	Proposal
18	12	Pondicherry	India	94.20	\$725,623	18.96	\$315,684	Proposal
19	6.6	Rice Husk	India	79.99	\$473,553	10.56	\$232,637	Pre=Prop.
20	36	Bhubaneswar	India	131.22	\$776,822	56.16	\$633,092	Designed
21	108	Karachi	Pakistan	393.66	\$2,330,467	168.48	\$1,899,275	Proposal
22	36	Lahore	Pakistan	131.22	\$776,822	56.16	\$633,092	Designed
23	120	Ho Chi Minh, City	Vietnam	437.40	\$2,589,408	187.20	\$2,110,306	PPA Pend.
24	36	Phenom Penh	Cambodia	131.22	\$776,822	56.16	\$633,092	Designed
25	36	Beijing	China	131.22	\$776,822	56.16	\$633,092	Proposal
26	120	Manilla	Philippines	437.40	\$2,589,408	187.20	\$2,110,306	Proposal;
27	144	Dhaka	Bangladesh	524.88	\$3,107,290	224.64	\$2,532,367	Proposal
	1701	Asia Total	w/Maurit. 24MW					

**DR. BARRY LISS, PE - ENVIROPOWER MANAGEMENT
WASTE TO ENERGY POWER PLANT PROJECTS**

WATER & WASTEWATER TREATMENT SYSTEMS

Project List #	Power Plant Size	Location (City or Site or Region)	Country	WTP Capacity (m ³ /hr)	WTP Installed CC (\$US)	WWTP Capacity (m3/hr)	WWTP Installed CC (\$US)	Project Type / Status
<u>E&A-#</u>		<u>Europe & Africa</u>						
1	36	Cotonou	Benin	131.22	\$776,822	56.16	\$633,092	Designed
2	240	Addis Adaba	Ethiopia	874.80	\$5,178,816	374.40	\$4,220,611	Proposal
3	36	Ga. South	Ghana	131.22	\$776,822	56.16	\$633,092	Approved
4	36	Takoradi	Ghana	131.22	\$776,822	56.16	\$633,092	Proposal
5	6.6	Jeykjavic (also 2.2, 4.4, 8.8)	Iceland	79.99	\$473,553	10.56	\$232,637	PreProp.
6	36	Gortadroma	Ireland	131.22	\$776,822	56.16	\$633,092	ShortList
7	12	Pristina (6.6 too)	Kosovo	94.20	\$725,623	18.96	\$315,684	Designed
8	2 x 4.4		Ukraine	69.08	\$550,050	13.90	\$315,684	In Negot.
9	6.6	Gabes	Tunisia	79.99	\$473,553	10.56	\$232,637	Designed
10	6.6	Djerba	Tunisia	79.99	\$473,553	10.56	\$232,637	Designed
	427.8	<u>Europe & Africa Total</u>	w/Jey.6.6, Pristina12 MW					
		-						
<u>ME-#</u>		<u>Middle East</u>						
1	72	Abu Dhabi	UAE	262.44	\$1,553,645	112.32	\$1,266,183	Designed
2	36	Amman	Jordan	131.22	\$776,822	56.16	\$633,092	Designed
3	336	Jeddah	Saudi Arabia	1,224.72	\$7,250,342	524.16	\$5,908,856	Designed
4	24	Trabrikab	Turkey	87.48	\$517,882	37.44	\$422,061	In Negot.
5	12	Ordu	Turkey	94.20	\$725,623	18.96	\$315,684	PreProp.
6	12	Kus-Atak	Turkey	94.20	\$725,623	18.96	\$315,684	PreProp.
	492	<u>Middle East Total</u>						
		-						
		-						

**DR. BARRY LISS, PE - ENVIROPOWER MANAGEMENT
WASTE TO ENERGY POWER PLANT PROJECTS
WATER & WASTEWATER TREATMENT SYSTEMS**

Project List #	Power Plant Size	Location (City or Site or Region)	Country	WTP Capacity (m ³ /hr)	WTP Installed CC (\$US)	WWTP Capacity (m3/hr)	WWTP Installed CC (\$US)	Project Type / Status
		<u>Central/South America</u>						
<u>C/SA-#</u>								
1	36	Villa Maria	Argentina	131.22	\$776,822	56.16	\$633,092	Designed
2	96	Cordoba	Argentina	349.92	\$2,071,526	149.76	\$1,688,244	Designed
3	36	Bower	Argentina	131.22	\$776,822	56.16	\$633,092	Designed
4	72	Quito	Ecuador	262.44	\$1,553,645	112.32	\$1,266,183	Proposal
5	120	Guayaquil	Ecuador	437.40	\$2,589,408	187.20	\$2,110,306	Proposal
6	24	Curacao	Curacao	87.48	\$517,882	37.44	\$422,061	Proposal
7	60	Panama City	Panama	218.70	\$1,294,704	93.60	\$1,055,153	Designed
8	12	David	Panama	94.20	\$725,623	18.96	\$315,684	Designed
9	12	Colon	Panama	94.20	\$725,623	18.96	\$315,684	Proposal
10	24	Pucallpa	Peru	87.48	\$517,882	37.44	\$422,061	Designed
11	36	Trujillo	Peru	131.22	\$776,822	56.16	\$633,092	Proposal
12	48	Chiclayo	Peru	174.96	\$1,035,763	74.88	\$844,122	Designed
13	60	Coho Norte	Peru (Lima)	218.70	\$1,294,704	93.60	\$1,055,153	Designed
14	12	Port Of Spain	Trinidad	94.20	\$725,623	18.96	\$315,684	Designed
15	36	Mexico City (also 12 & 24)	Mexico	131.22	\$776,822	56.16	\$633,092	Proposal
	684	<u>Cen./So. America Total</u>	w/Mex.36MW					
<u>USA-#</u>		<u>USA</u>						
1	48	Las Vegas	USA (NV)	7.00	\$177,610			Permitting
2	36	Honolulu	USA	131.22	\$776,822	56.16	\$633,092	Proposal
3	36	Lafarge	Ohio	131.22	\$776,822	56.16	\$633,092	Designed
4	24	Ft. Campbell	USA (TN)	87.48	\$517,882	37.44	\$422,061	Pending
5	36	Ft. Knox	USA (KY)	131.22	\$776,822	56.16	\$633,092	Designed
6	0.1-2.2	Mobile	USArmy	NA	NA	NA	NA	In Review
	180	<u>USA Total</u>	wo/mobile					
	3484.8	<u>Company Total</u>						

COMPILATION OF GVK TURNKEY WATER AND WASTE WATER TREATMENT PROJECTS

Project	Location	Type	Capacity/Size
Royal Crowntex Inc (RCI)	Sihanouk Ville, Cambodia	Industrial WWTP	1 Million Liters/Day
AENO Fresh	Johor Bahru, Malaysia	Oxygenated Bottled Water	10,000 Bottles/Day
Malee Mineral Water	Mersing, Malaysia	Mineral Water Plant	125,000 Bottles/Day
5E Resources	Pasir Gudang, Malaysia	Industrial WWTP	75,000 Liters/Day
SPM Oil Recycling	Ipoh, Malaysia	Moisture Removal System	10,000 Liters/Day
MSM Food	Batu Pahat, Malaysia	Industrial WWTP	30,000 Liters/Day
Eng Hap Heng Manuf.	Batu Pahat, Malaysia	Industrial WWTP	20,000 Liters/Day
Toan Thang Loi Company	HCM, Vietnam	Lube Oil Re-Refining	8,000 Liters/Day
Good Health Oxygen	Johor Bahru, Malaysia	Oxygenated Bottled Water	200,000 Bottles/Day
VSRO Purified System	Johor Bahru, Malaysia.	Oxygenated & Alkaline Water	60,000 Bottles/Day
Water Works Technology	Calgary, Canada	Industrial WWTP	5 x 20,000 Liters/Day.
Tirupur #1	Tirupur, India	Industrial WWTP/Reuse	10 Million Liters/Day
Tirupur #2	Tirupur, India	Industrial WWTP/Reuse	5 Million Liters/Day
Tirupur #3	Tirupur, India	Industrial WWTP/Reuse	4 Million Liters/Day
Etimaad Engr. Pvt Ltd	Lahore, Pakistan	Municipal WWTP Design	100 Million GPD
Yunan WWTP	Yunan, China	Design Review	5 Million Liters/Day
Cam Tam	HCM, Vietnam	Design Review	
Palm Oil Mill	Ladang Rayat, Malaysia	(CMART) AD-WWT-WTE	1.4 Million Liters/Day

COMPILATION OF NOYES & ASSOCIATES WATER AND WASTE WATER TREATMENT PROJECTS

Project	Location	Type	Capacity/Size
Cypress Klein #1	Harris Co., TX	Municipal/Domestic WWTP	250,000 GPD
CNP #I	TX	Industrial WWTP	250,000 GPD
CNP #II	TX	Industrial WWTP	250,000 GPD
Southwest Chemical & Plastic	TX	Industrial WWTP	212,000 GPD
Harris Co. WC & ID #110	Harris Co., TX	Municipal/Domestic WWTP	250,000 GPD
Bammel U.D.	Harris Co., TX	Municipal/Domestic WWTP	267,000 GPD
City of Friendswood	Harris Co., TX	Municipal/Domestic WWTP	112,500 GPD
Cypress Klein #11	Harris Co., TX	Municipal/Domestic WWTP	250,000 GPD
April Sound	Montgomery Co., TX	Municipal/Domestic WWTP	235,000 GPD
Du Pont – Channelview	Channelview	Industrial WWTP	215,000 GPD
Addicks U.D. Rolling Green #1	Harris Co., TX	Municipal/Domestic WWTP	100,000 GPD
Woodlake #1	Woodlake	Municipal/Domestic WWTP	100,000 GPD
Nucor Steel #1	Leon Co., TX	Industrial WWTP	2-10,000 GPD
Lynes	Harris Co., TX	Industrial WWTP	2-15,000 GPD
Brushy Creek South	Travis Co., TX	Municipal/Domestic WWTP	100,000 GPD
Brushy Creek North	Travis Co., TX	Municipal/Domestic WWTP	100,000 GPD
Harris Co. M.U.D. #104	Harris County, TX	Municipal/Domestic WWTP	100,000 GPD
Texas Instruments	Harris Co., TX	Industrial WWTP	250,000 GPD
Diamond Shamrock	Deer Park, TX	Industrial WWTP	215,000 GPD
Shady Hollow	Travis Co., TX	Municipal/Domestic WWTP	2-100,000 GPD
Mariner	Harris Co., TX	Municipal/Domestic WWTP	2-5,000 GPD
Pyramid Derrick	Harris Co., TX	Industrial WWTP	30,000 GPD
Port Mansfield	Port Mansfield, TX	Municipal/Domestic WWTP	25,000 GPD
Aldine Forest	Harris Co., TX	Municipal/Domestic WWTP	225,000 GPD
Smith Industries	Columbus, TX	Industrial WWTP	50,000 GPD
Diversified Habitat	Matagorda Co., TX	Municipal/Domestic WWTP	215,000 GPD
University of Texas Lab	Smithville, TX	Municipal/Domestic WWTP	250,000 GPD
Lee Rowe	Harris Co., TX	Municipal/Domestic WWTP	212,000 GPD
Plains	Plains, TX	Municipal/Domestic WWTP	250,000 GPD
Velsicol Chemical	Harris Co., TX	Industrial WWTP	2-15,000 GPD
Bryan Power Plant	Brazos Co., TX	Industrial WWTP	2-10,000 GPD
Brazos Co. M.U.D. #1	Brazos Co., TX	Municipal/Domestic WWTP	150,000 GPD
Cypress Klein #111	Harris Co., TX	Municipal/Domestic WWTP	500,000 GPD
Harris Co. WC & ID #78	Harris County, TX	Municipal/Domestic WWTP	600,000 GPD
Rancy Country	Travis Co., TX	Municipal/Domestic WWTP	100,000 GPD
Highland Country Terrace	Harris Co., TX	Municipal/Domestic WWTP	250,000 GPD
Brazoria Co. M.U.D.	Brazoria Co., TX	Municipal/Domestic WWTP	150,000 GPD
Bechtel	Convent, Louisiana	Industrial WWTP	2-12,000 GPD
Harris Co. M.U.D. #19	Harris County, TX	Municipal/Domestic WWTP	235,000 GPD
La Villa Water Plant	Hidalgo Co., TX	Municipal WTP	3,000,000 GPD

Gilbert Crest Utilities	Harris Co., TX	Industrial WWTP	225,000 GPD
Brazoria Co. Subdivision	Brazoria Co., TX	Municipal/Domestic WWTP	100,000 GPD
Buttercup Creek Austin	Travis Co., TX	Municipal/Domestic WWTP	250,000 GPD
Hermitage Oak Trailer Park	Travis Co., TX	Municipal/Domestic WWTP	110,000 GPD
Sommeral	Burleson Co., TX	Municipal/Domestic WWTP	100,000 GPD
Tool Water Plant	Henderson Co., TX	Municipal WTP	2,000,000 GPD
Transco	Matagorda Co., TX	Municipal/Domestic WWTP	210,000 GPD
Brushy Creek South	Brushy Creek	Municipal/Domestic WWTP	530,000 GPD
White Oak	Harris Co., TX	Municipal/Domestic WWTP	250,000 GPD
Richey Rd. M.U.D.	Harris Co., TX	Municipal/Domestic WWTP	150,000 GPD
Crossroads	Travis Co., TX	Municipal/Domestic WWTP	90,000 GPD
Bechtel Cities Services	Travis Co., TX	Industrial WWTP	220,000 GPD
Chasewood U.D.	Harris Co., TX	Municipal/Domestic WWTP	150,000 GPD
Woodlake #II	Harris Co., TX	Municipal/Domestic WWTP	235,000 GPD
Addicks U.D. Rolling Green #II	Harris Co., TX	Municipal/Domestic WWTP	100,000 GPD
Trigg Westland Oil	Harris Co., TX	Industrial WWTP	235,000 GPD
Southpoint	Harris Co., TX	Municipal/Domestic WWTP	500,000 GPD
Harris Co. M.U.D.#1	Harris County, TX	Municipal/Domestic WWTP	250,000 GPD
Highlands Country Terrace #1	Harris Co., TX	Municipal/Domestic WWTP	230,000 GPD
Woodlake	Harris Co., TX	Municipal/Domestic WWTP	500,000 GPD
Hiway Water	La Grange	Municipal/Domestic WWTP	237,500 GPD
Lakeside Airport	Harris Co., TX	Municipal/Domestic WWTP	2-4,000 GPD
Buttercup Creek	Travis Co., TX	Municipal/Domestic WWTP	220,000 GPD
Compaq	Harris Co., TX	Industrial WWTP	100,000 GPD
Mt. Belvieu	Liberty Co., TX	Municipal/Domestic WWTP	90,000 GPD
Brazoria Cty., Detention Ctr.	Brazoria City	Municipal/Domestic WWTP	100,000 GPD
Vidor I.S.D. & M.U.D.	Vidor	Municipal/Domestic WWTP	225,000 GPD
Hardin School	Liberty Co., TX	Municipal/Domestic WWTP	100,000 GPD
Spicewood Springs	Travis Co., TX	Municipal/Domestic WWTP	500,000 GPD
Fina Oil & Gas	Harris Co., TX	Industrial WWTP	10,000 GPD
NW Harris Co. M.U.D.#5	Harris County, TX	Municipal/Domestic WWTP	500,000 GPD
Quantum Chemical	Harris Co., TX	Industrial WWTP	1,000 GPD
Phillips 66	Harris Co., TX	Industrial WWTP	2-1,000 GPD
Chevron	Harris Co., TX	Municipal/Domestic WWTP	1,500 GPD
Morgans Point	Morgans Point, TX	Municipal/Domestic WWTP	300,000 GPD
Harris Co. M.U.D. #133	Harris County, TX	Municipal/Domestic WWTP	3,000,000 MGD
City of Santa Rosa	Cameron Co., Texas	Clarifier	142 ft.
District 99	Harris Co., TX	Clarifier	140 ft.
City of Elsa	City of Elsa	Clarifier	103 ft.
City of Corrigan	Polk Co., TX	Clarifier	135 ft.
Manning U.D.	Manning U.D.	Sludge Concentrator	
ARCO Bio-Plant	Marion, TX	Flocculator	16 ft.

Pine Ridge, South Dakota	Pine Ridge, SD	Arc Bar Screen	
Toluca, D.F. Mexico	Toluca, Mexico	Municipal/Domestic WWTP	285,000 GPD
Cuernavaca, Mexico	Moreles, Mexico	Municipal/Domestic WWTP	3,000 GPD
Paradise, D.F. Mexico	Paradise, D.F. Mexico	Municipal/Domestic WWTP	78,000 GPD
Cancun, Mexico	Cancun, Mexico	Municipal/Domestic WWTP	110,000 GPD
Acapulco, Gurrera, Mexico	Acapulco, Mexico	Municipal/Domestic WWTP	1.95 MPD
Campe Espejo, Argentina	Argentina	Municipal/Domestic WWTP	12.0 MGD
CEAS, D.F. Mexico	Mexico	Municipal/Domestic WWTP	1.4 MGD
N.W. Pine Mobil Park	N.W. Pine	Municipal/Domestic WWTP	100,000 GPD
Boulders Carefree, Arizona	Arizona	Municipal/Domestic WWTP	90,000 GPD
Nucor Steel	Leon Co., TX	Industrial WWTP	210,000 GPD