

CITY OF FAYETTEVILLE, ARKANSAS
Fayetteville
ARKANSAS
PREPARED FOR THE

2008 ANNUAL REPORT



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Current Wastewater Operation and Maintenance Information

Owner: City of Fayetteville, Arkansas

Owner Contact: David Jurgens
Utility Department Director
113 West Mountain Street
Fayetteville, Arkansas 72701
479.575.8330

Operator: CH2M HILL OMI

Operator Contact: Duyen Tran
Project Manager
1400 North Fox Hunter Road
Fayetteville, Arkansas 72701
479.443.3292

Facilities: Paul R. Noland Wastewater Treatment Plant
(Noland WWTP)
1400 North Fox Hunter Road
Fayetteville, Arkansas 72701

The Noland WWTP is an 11.2 million gallons per day (mgd) advanced treatment facility with influent fine screens, grit removal, A2/O[®] plug flow biological nutrient removal (BNR) secondary treatment, effluent clarification, Zimpro single-media sand filtration, Trojan ultraviolet (UV) disinfection, post aeration, and split discharge to Mud Creek and White River until June 28, 2008, when discharge to Mud Creek was ceased. Residual biosolids are dewatered via belt filter presses and hauled to landfills. All odors from the facility are captured and treated by three two-stage chemical scrubbers.

West Side Wastewater Treatment Plant
(West Side WWTP)
15 South Broyles Avenue
Fayetteville, Arkansas 72704

The West Side WWTP is a 10-mgd advanced treatment facility with influent fine screens, grit removal, Eimco A2C[™] BNR secondary treatment, effluent clarification,

Facilities (cont.):	<p>Leopold deep bed sand filtration, Wedeco UV disinfection, and post aeration. Effluent discharges to Goose Creek. Residual biosolids are dewatered via belt filter presses and hauled to landfills. All odors from the facility are captured and treated by Bioway biofilters and Siemens carbon adsorbers. OMI also assists with daily monitoring of a 25-acre constructed mitigation wetland site.</p> <p>Farm Site 16464 East Wyman Road Fayetteville, Arkansas 72704</p> <p>The Farm Site is a 670-acre Bermuda grass hay operation that adjoins to the Noland WWTP. Nutrients uptake from the old land application site is achieved through effluent discharge mitigation, hay harvesting, and marketing.</p>
Staff Size:	35 full-time and 5 part-time associates
Hours of Operation:	<p>Noland WWTP operates 14 hours per day Monday through Friday and 4 hours per day on Saturday and Sunday.</p> <p>West Side WWTP operates 24 hours per day; 7 days a week.</p> <p>Farm Site operates 8 hours per day, Monday through Friday.</p>
No. of Sewer Lift Stations:	37
Type of Lift Stations:	Wetwell, drywell, submersible
Other Permitted Programs:	Industrial Pretreatment Program (IPP), No Discharge Permit, Industrial General Stormwater Permit, and Air Permits
Contract Start Date:	January 1987
Renewal Date(s):	January 1989, August 1994, January 2001, May 2003
Completion Date:	December 2009

Executive Summary

OMI is pleased to present the 2008 annual report to our client and partner, the City of Fayetteville (the City). The completion of our work in 2008 marks 22 years of successful partnering between OMI and the City, as well as another year of quality service we've provided to Fayetteville citizens. This report summarizes activities for contract year 2008 and highlights some of last year's accomplishments.

Performance Excellence

Permit Compliance

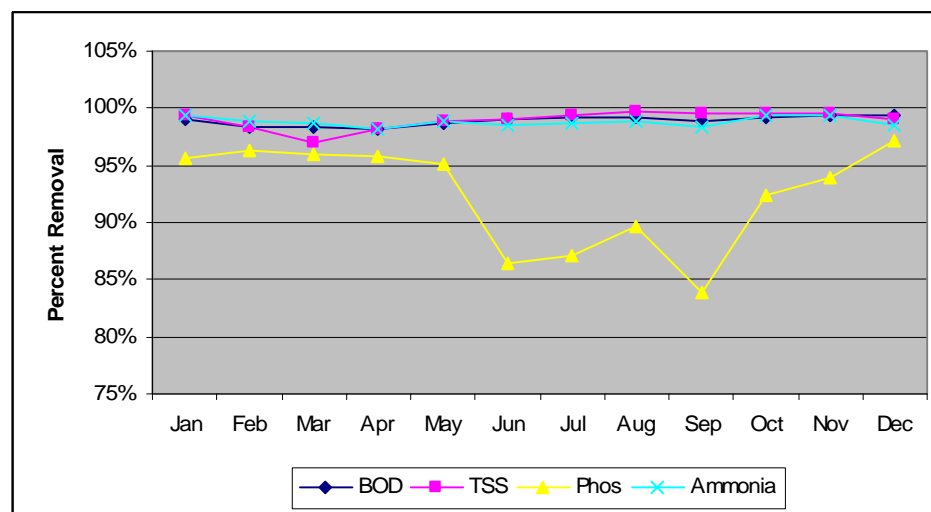
OMI achieved 99.99 percent compliance with the National Pollutant Discharge Elimination System (NPDES) discharge monitoring requirements for both Fayetteville wastewater treatment facilities in 2008.

The Noland WWTP incurred an excursion on a weekly fecal coliform limit in August (1 out of 7,392 monitoring parameters). It was deemed an isolated event. Incurring only one isolated event was a remarkable accomplishment considering the startup of the new West Side WWTP and the many challenges involving collection system flow diversions.

OMI regional technical staff continued to provide invaluable support throughout the year and helped WWTP staff maintain permit compliance.

Exhibit 1 shows the average percent removal efficiency the plant achieved in 2008 for biochemical oxygen demand (BOD), total suspended solids (TSS), phosphorus (Phos), and ammonia.

Exhibit 1
2008 Facility Percent Removal



In 2008, OMI facilitated the following permit applications or renewals:

- Received air permits from Arkansas Department of Environmental Quality (ADEQ) to operate power generators at the new Hamestring Lift Station and the West Side WWTP.
- Renewed the No Exposure Certification (NEC) for exclusion from NPDES Stormwater Permitting for the Noland WWTP.
- Received NEC exemption from NPDES Stormwater Permitting for the West Side WWTP.
- Renewed the No Discharge Permit for the Noland WWTP which deleted the biosolids land application option from the old permit and acquired permission to use plant-treated effluent for landscaping (a sustainable practice).
- Submitted an application for permission to use plant-treated effluent for landscaping and wetland mitigation at the West Side WWTP, however, a final permit has not yet been issued.

Other permitting and compliance accomplishments include:

- Jay Ellis (ADEQ) performed air permit audits for the Hamestring Lift Station and West Side WWTP in July 2008. He found both facilities were in compliance.
- Two inspectors from ADEQ and one inspector from the U.S. Environmental Protection Agency (U.S. EPA) Region VI performed a compliance audit at the Noland WWTP on December 10, 2008. The exit interview with the inspectors did not reveal any non-compliance issues and they found the Noland WWTP was in compliance.
- ADEQ inspected the Fayetteville Industrial Pretreatment Program on December 18 and 19, 2008. The IPP was found to be in compliance. However, ADEQ cited a small local industry, Custom Powder Coating, for discharging rinsate from its alkaline wash process on the driveway that may reach the stormwater system.

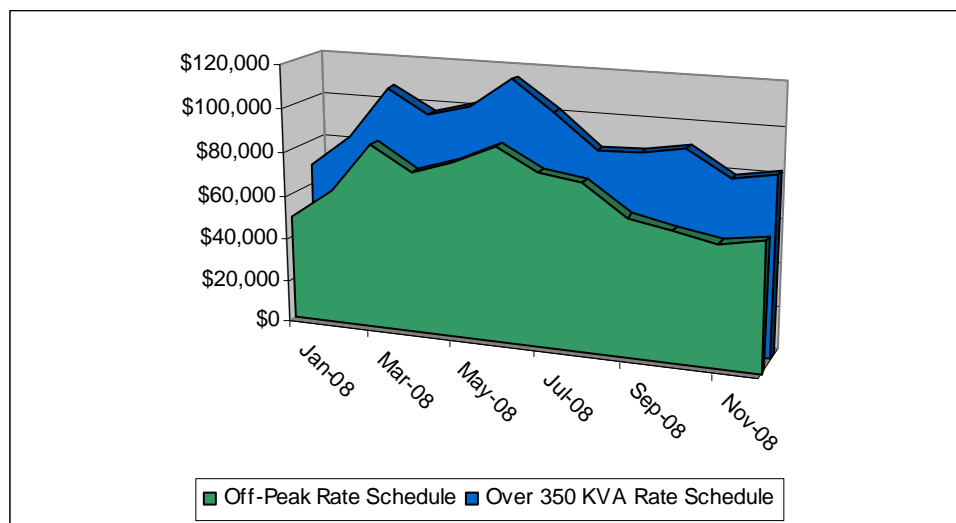
Cost Management

Staff continued to accumulate significant electricity savings in 2008 by using the power generators and implementing our Power Management Plan to maintain the off-peak rate structure for the Noland WWTP, West Side WWTP, and Hamestring Lift Station.

The Power Management Plan uses new 2-megawatt (MW) power generators to operate the facilities during peak demand periods to reduce energy demand. In 2005, we had the Noland WWTP power generator installed as part of the scope of the OMI contract. In 2008, we had the same type of power generators installed at the West Side WWTP and the new Hamestring Lift Station as part of the Wastewater System Improvement Project (WSIP).

Using the generators allowed us to take advantage of off-peak rates, yielding more than \$265,000 in estimated savings in 2008 from both WWTPs and the Hamestring Lift Station, which is approximately \$22,000 per month (**Exhibit 2**).

Exhibit 2
2008 Energy Savings



In collaboration with BlueInGreen, a new local business group, staff agreed to test the supersaturated dissolved oxygen system (SDOX) in 2007. Designed and patented by the University of Arkansas, SDOX's innovative and efficient design restricts oxygen loss to the atmosphere. This practice minimizes the cost of liquid oxygen and is environmentally-friendly.

The City was the first to purchase and install the SDOX – a promising new sustainable technology – at the Noland WWTP near the end of 2007. The system was projected to save 1.6 million cubic feet of liquid oxygen per year, a 92 percent usage decrease and save approximately \$14,000 annually in liquid oxygen and electrical costs.

In 2008, BlueInGreen and OMI staff further optimized the process. These optimization efforts generated approximately \$30,000 in annual savings – more than double the original estimate.

West Side WWTP and Hamestring Lift Station Startups

Preparations for West Side WWTP and Hamestring Lift Station startups, ongoing since August of 2007, greatly intensified in April 2008. Staff attended several equipment startups and technical training sessions provided by the equipment vendors and OMI regional technical staff.

Staff also assisted with purchasing furniture, laboratory equipment, additional tools, spare parts, and chemicals for the plant startup. OMI Regional Health and Safety Manager Mike Rapien conducted a safety walk-through in early May, and OMI Regional Technical Specialist Mike Ross was onsite from April through June to plan and

coordinate the plant startup. OMI Regional Business Manager Billy Ammons provided nearly constant support throughout this period.

A significant number of onsite training sessions prepared the operations and maintenance (O&M) staff to operate the facility at a high performance level from the beginning.

In addition, OMI technical personnel were instrumental in the final integration of the Human-Machine-Interface (HMI) software package with a significant number of plant automation and equipment monitoring sites that exist throughout the facility.

Trucks hauled 40 loads (4,600 gallons each) of activated sludge from the Noland WWTP to the West Side WWTP to seed the new plant. Hamstring Lift Station (LS #7) brought wastewater flow to the plant (in late May) and that water was stored in the equalization basin for a few days. The wastewater treatment process began on May 31, 2008, and treated effluent was first released from the plant to Goose Creek on June 1, 2008.

On June 12, 2008, the City hosted a ribbon-cutting event to celebrate the punctual and technically-successful startup of the West Side WWTP. A grand-opening event on August 24, 2008, celebrated the completion of plant construction.

The collaborative efforts from WSIP staff, the Chamber of Commerce, and OMI staff welcomed more than 100 guests at each event including attendees from ADEQ, Oklahoma Scenic River Commission, Beaver Water District, nearby cities, engineering firms, contractors, local industries, University of Arkansas staff, and City staff. OMI Regional Vice President Rob Kuta, OMI Senior Vice President of Project Delivery Roger Quayle, and CH2M HILL Water Business Group CEO Don Evans attended the celebration.

From June 1, 2008, to the current time, the West Side WWTP has continued to produce an enhanced final effluent (compared to NPDES permit requirements) at less than the originally estimated cost. The plant has been in 100 percent compliance with its NPDES permit requirements since the inception of plant operations.



Guests gather at the West Side WWTP for the grand opening on August 24, 2008.

Wastewater System Improvement Project (WSIP)

OMI staff participated in several elements of the WSIP program and had major accomplishments related to personnel allocation and treating heavy influent flow detailed below.

WSIP West Side Cutover/Tieover Actions, WSIP Subproject WL-9

In conjunction with the West Side WWTP startup, staff managed the diversion of wastewater flows to the new West Side WWTP – a significant part of the WSIP cutover plan. In addition, staff was responsible for several critical WSIP cutover functions as part of an out-of-scope project. Staff completed the WSIP cutover/tieover in a timely fashion and 21 percent under budget. Flows from seven lift stations were diverted to the West Side WWTP (through Hamstring Lift Station), as a result of the successful implementation of the WSIP cutover plan.

Lift Station Electrical Upgrades and Rehabilitation

Staff completed electrical upgrades and rehabilitation for three lift stations:

- Stonebridge Lift Station (LS #13)
- Armstrong Lift Station (LS #14)
- McCollum Lift Station (LS #16)

The total project cost was 27 percent less than the proposed budget, generating a nearly \$20,000 savings. The lift station upgrades included replacing pumps with submersible pumps. Staff completely replaced the electrical systems with new controls and included back-up power generation.



The Stonebridge Lift Station #13.

Personnel Allocation

Staff continued to help keep the costs low on the overall WSIP project by allocating personnel to assist with WSIP construction in many different aspects (attending and contributing to meetings, soliciting quotes for purchases, performing minor repairs and rehabilitation, etc.). OMI personnel also oversaw construction of the Noland Wet Weather Improvements, WSIP Subproject EP-2, to completion.

Excessive Plant Flow

Heavy rainfalls from Hurricanes Gustav (September 3, 2008) and Ike (September 14, 2008) tested the upgraded Noland WWTP, the new West Side WWTP, and the flow diversion scheme. For approximately 30 minutes in the early morning hours of September 14, 2008, the West Side WWTP received influent flow at a rate of 39.3-mgd. All nine influent pumps operated likely producing an instantaneous flow rate slightly

more than 40-mgd. Total plant flow for the day was 19.5-mgd for Noland WWTP and 20.1-mgd for West Side WWTP, marking September 14, 2008, as the day with the highest instantaneous wastewater flow and the highest total flow in the history of Fayetteville wastewater treatment.

Innovation and Our Commitment to Sustainability

By the nature of our business OMI staff is environmentally-focused. Environmental stewardship is something we care deeply about and we implemented several programs to make our environmental impact more “green.” Our 2008 sustainable practices yielded the following results:

- Reduced pollutant emissions to an average of 75 percent under NPDES permit requirements (for five major pollutants) through sustainable practices and process control.
- Saved approximately \$30,000 per year in liquid oxygen and electrical reductions by optimizing SDOX performance.
- Reduced gasoline use by 300 gallons by implementing a no-idling policy and using an onsite bicycle and tricycle to transport staff throughout the WWTP site.
- Recycled nearly 1,000 lbs. of waste and saved approximately \$5,000 by obtaining waste oil from Tyson instead of purchasing new vegetable oil.
- Converted the preventive maintenance (PM) system to paperless by instigating the use of a field PDA, saving about 12,000 pages of paper annually.
- Switched to reusable mugs and prevented 1,200 Styrofoam cups from reaching landfills.
- Eliminate bottled water from WWTP sites, eliminating 100 percent the 300 gallons of bottled water formerly purchased and netting a \$2,160 direct cost savings. This change also reduced environmental emissions by eliminating the bottled water’s delivery transportation.
- Recycled approximately 1,900 lbs. of aluminum, paper, steel, cardboard, electronics, batteries, and plastics through a facility-wide recycling program.
- Recycled 6,530 lbs. of large scrap metal which netted approximately \$2,500 in savings for the City.

On plant grounds, our staff continued to enhance the local wildlife habitat. They installed a feeding station for minks, planted berry-producing shrubs to provide food for three-toed box turtles displaced by local developments, and built nesting boxes to provide shelter for our expanding population of eastern



One of the Bluebird nests that associates built.

bluebirds and resident mockingbird. They maintained a garden of native perennial flowers that provides a home and food for butterflies and contains some non-native, but non-invasive, xerophile vegetation that requires little water. Finally, the bobwhite quail will soon have a home on our grounds, as we are taking steps to create a habitat for them.

Our cumulative efforts have decreased emissions, lessened fossil fuel use, diminished waste, and have reduced the annual operating costs by at least \$43,000. Staff has started using the U.S. EPA's Energy Star rating tool to track future reductions. We are now performing semi-annual vegetation surveys and bird counts to assess our contributions to the wildlife population.

Awards and Recognition

WWTP staff earned several awards for the City in 2008:

- Recognized by the National Safety Council with the NSC Occupational Excellence Achievement Award for no lost-time incidents.
- Operator Thom Dodd received the Water Environment Federation (WEF) William D. Hatfield Award at the 2008 Arkansas Water Works and Water Environment Association (AWW&WEA) conference. The Hatfield Award recognizes WWTP operators for outstanding performance and professionalism.
- Regional Technical Specialist Mike Ross received the Arthur Sidney Bedell Award at the 2008 AWW&WEA conference. This award recognizes an individual for extraordinary personal service in the water pollution control field, related particularly to the problems and activities of the AWW&WEA.
- The Noland WWTP was selected as one of five finalists for the ADEQ Environmental Stewardship (ENVY) Award. David Jurgens, Duyen Tran, and Billy Ammons received the certificate of recognition at the ENVY award ceremony on April 25, 2008.
- The Fayetteville IPP won a U.S. EPA Region VI Pretreatment Association 2008 P2 (Pollution Prevention) Challenge Award.



The Paul R. Noland WWTP was honored as a finalist for the ADEQ ENVY Award recognizing quality and innovation of environmental projects and programs.

Plant Overview

OMI has performed O&M services at the Paul R. Noland WWTP since February 25, 1989, when the plant first began treating wastewater. In May 2005, the City commissioned a major plant upgrade at the Noland WWTP; it was completed in September 2007. In November 2005, the City also commissioned construction of the new West Side WWTP; it was completed in August 2008.

The wastewater treatment process at both plants consists of influent screening and degritting, BNR, effluent clarification, effluent filtration, UV disinfection, post aeration, belt filter press sludge dewatering, sludge hauling, and landfill disposal of biosolids.

The Fayetteville area receives an average of 44 inches of rainfall annually and has a temperate climate.

Fayetteville is primarily a residential community with associated commercial activity. It has a small but significant industrial mix, including nine permitted industrial users. In 2008, the wastewater treatment facilities served 80,530 Fayetteville citizens and the neighboring communities of Greenland, Farmington, Elkins, and part of Johnson.

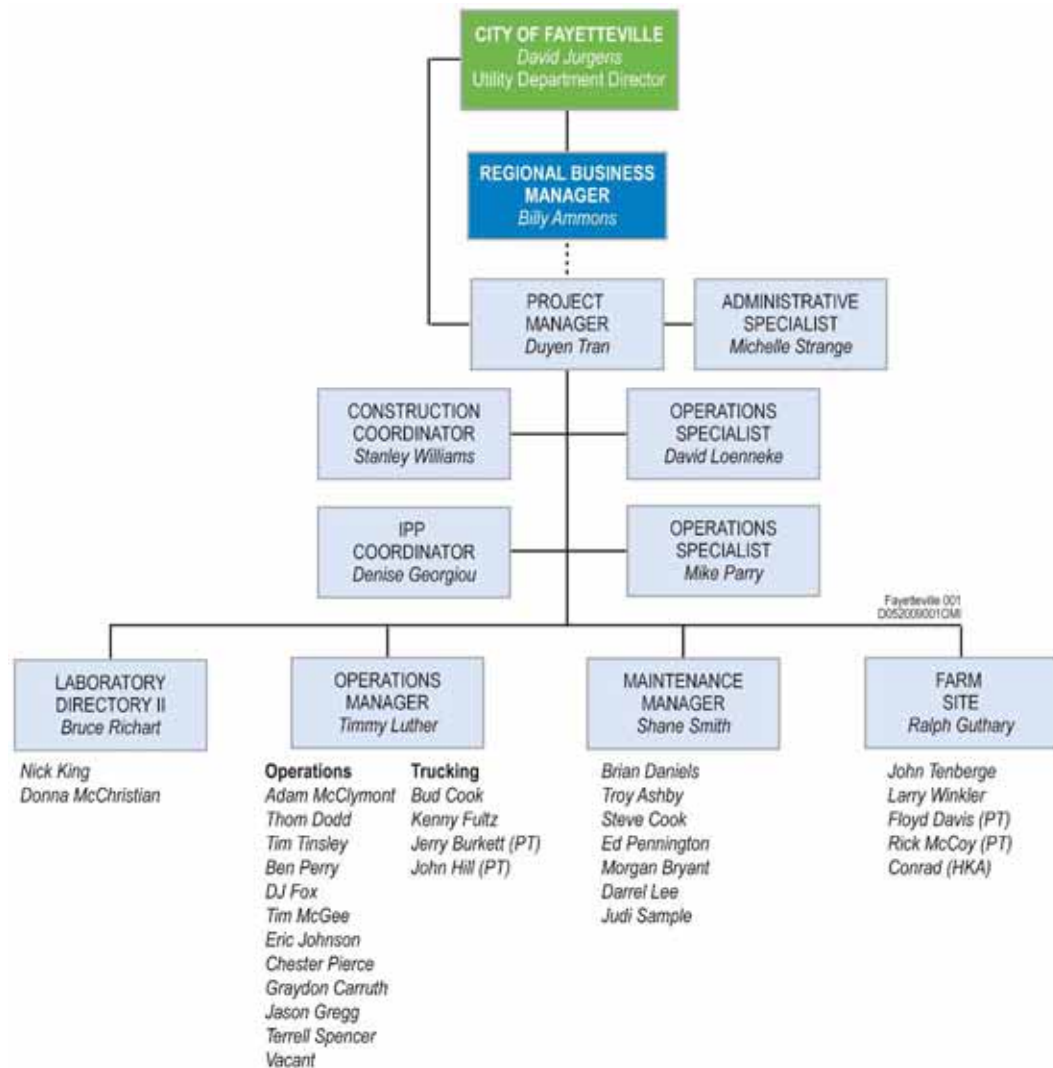
OMI performs complete O&M services including:

- WWTP O&M
- Lift station maintenance
- Supervisory control and data acquisition (SCADA) monitoring
- Hay harvesting and marketing operation with nutrients uptake program
- Wetland mitigation
- Laboratory services
- IPP administration and management
- Capital improvement budgeting and planning
- Rolling stocks maintenance
- Staff training
- Computerized maintenance management and inventory control
- Installation of standard OMI management systems
- Sludge dewatering system and hauling program operation
- Public awareness assistance

Staffing Plan

The WWTP staff participates in an ongoing cross-training program to enable 38 full-time equivalent persons to perform operations 24 hours a day, 7 days a week. Most associates are fully proficient in two to six disciplines, creating a larger pool of human resources to perform the varied tasks required to operate the facility efficiently. **Exhibit 3** displays current OMI Fayetteville staff assignments.

Exhibit 3
OMI Fayetteville Staff Organization



Staff Training

In 2008, several plant associates passed Arkansas Wastewater Operator certification tests. This includes:

- Five associates obtaining Class I certification
- One associate obtaining Class II certification
- Four associates obtaining Class III certification
- One associate obtaining Class IV certification

Regional Technical Specialist Mike Ross taught state-approved wastewater treatment operations classes to OMI operators and operators from neighboring cities. Staff also received training on new equipment operation and process startups in conjunction with the West Side WWTP and Hamestring Lift Station startups.



OMI staff increased staff certification and participated in numerous training opportunities in 2008. Increased knowledge and crosstraining enables them to operate the WWTPs more effectively and efficiently.

IPP Coordinator Denise Georgiou presented Bloodborne Pathogens safety training at the Northwest District of the AWW&WEA (NWD AWW&WEA) meeting in Green Forest in June 2008.

A WEF Sustainability for Wastewater Utilities Webcast was held at the West Side WWTP on behalf of the NWD AWW&WEA in June.

Laboratory Director Bruce Richart delivered a presentation on Clean Sampling Techniques in September 2008 at the AWEA Specialty Conference in Heber Springs, Arkansas.

Staff assisted the Water and Sewer Division hosting the December NWD AWW&WEA meeting at the Town Center which attracted 130 attendees.

Department Overviews

Operations

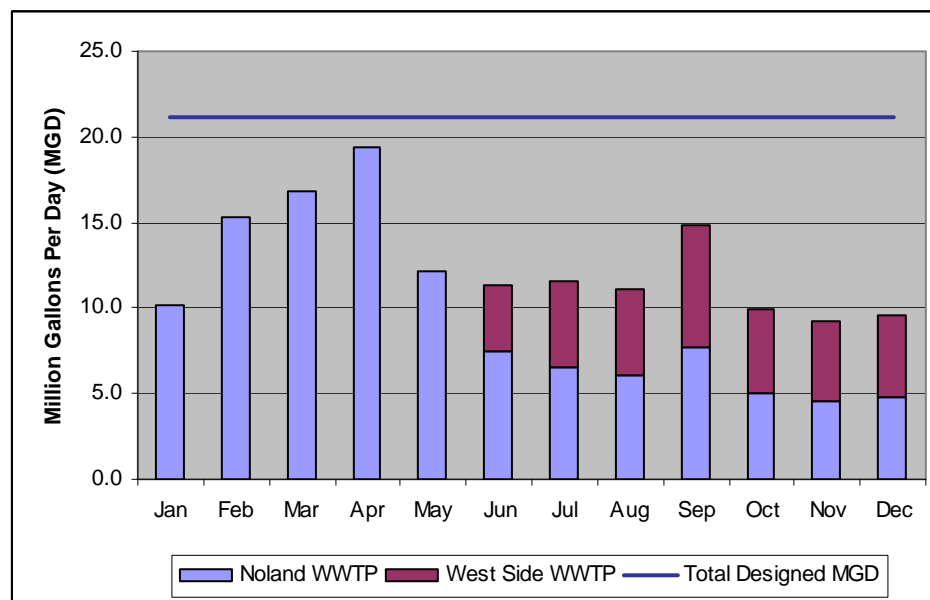
Plant Loadings

The West Side WWTP commenced operations in late May 2008, increasing the City's total designed treatment capacity to 21.2-mgd. The total average daily influent flow from both plants in 2008 was 12.6-mgd, which was 60 percent of the total designed capacity.

Hurricane Gustav produced a maximum peak influent daily flow of 27.5-mgd at the Noland WWTP. Hurricane Ike also produced the maximum peak influent daily flow of 20.1-mgd at the West Side WWTP. September 14, 2008 marked the day with the highest instantaneous wastewater flow and the highest total flow in the history of Fayetteville wastewater treatment. **Exhibit 4** displays average influent flow by month.

Exhibit 4

WWTPs Average Influent Flow (Monthly)



Other plant loadings information for the Noland WWTP is listed in **Exhibit 5** and plant loadings information for the West Side WWTP is listed in **Exhibit 6**.

Exhibit 5

Paul R. Noland WWTP Average Influent Loadings (Monthly)

Month	Influent Max Day Flow (mgd)	Date of Maximum Flow	Monthly Average Flow (mgd)	BOD loading (lbs/d)	TSS loading (lbs/d)	PO ₄ loading (lbs/d)	NH ₃ loading (lbs/d)
January	17.98	08-Jan-08	10.19	18,384	24,516	459	1,472
February	29.49	17-Feb-08	15.27	15,948	22,689	464	1,392
March	33.80	19-Mar-08	16.88	18,969	20,294	585	1173
April	29.52	10-Apr-08	19.39	18,025	22,634	517	1,265
May	18.58	27-May-08	12.19	16,833	25,929	520	1,019
June	13.90	01-Jun-08	7.51	14,439	19,239	306	619
July	12.96	09-Jul-08	6.56	14,923	18,589	265	548
August	10.89	10-Aug-08	6.07	14,237	13,770	299	454
September	27.53	03-Sep-08	7.74	12,076	15,070	173	490
October	7.10	07-Oct-08	4.98	12,417	14,308	241	501
November	6.70	11-Oct-08	4.51	12,470	14,025	306	544
December	6.41	09-Dec-08	4.76	15,242	12,212	234	640

Exhibit 6

West Side WWTP Average Influent Loadings (Monthly)*

Month	Influent Max Day Flow (mgd)	Date of Maximum Flow	Monthly Average Flow (mgd)	BOD loading (lbs/d)	TSS loading (lbs/d)	PO ₄ loading (lbs/d)	NH ₃ loading (lbs/d)
June	5.47	16-Jun-08	3.86	6,382	9,174	117	582
July	10.35	09-Jul-08	5.03	9,199	9,554	191	815
August	10.69	10-Aug-08	5.07	9,548	7,988	216	855
September	20.06	14-Sep-08	7.08	9,452	8,945	120	886
October	5.95	06-Oct-08	4.93	10,215	10,080	214	968
November	5.51	11-Oct-08	4.67	10,530	9,976	255	953
December	7.08	27-Dec-08	4.83	10,344	9,795	210	861

*Note: The West Side WWTP came online in June 2008. There is no plant data for January – May.

Effluent Quality

OMI regional and technical support staff continued to provide guidance and assist the Fayetteville staff in operating the City's plants above and beyond ADEQ and NPDES permit requirements. In 2008, the WWTPs treated and discharged 4,507,800,000 gallons of water. **Exhibit 7** shows treated effluent quality.

Exhibit 7
Average Effluent Characteristics (Monthly)

Month	Carbonaceous biochemical oxygen demand (CBOD) (mg/l)	TSS (mg/l)	Phos (mg/l)	Ammonia (mg/l)
January	2.0	1.8	0.2	0.1
February	2.2	3.0	0.1	0.1
March	2.2	4.0	0.2	0.1
April	2.0	2.4	0.1	0.2
May	2.0	2.3	0.2	0.1
June	1.7	2.4	0.6	0.1
July	1.9	1.6	0.6	0.2
August	2.0	0.7	0.6	0.2
September	1.9	0.9	0.4	0.2
October	1.9	1.1	0.4	0.1
November	1.9	1.4	0.5	0.1
December	1.9	2.0	0.2	0.3

Electricity

Electrical consumption in 2008 increased approximately 7.1 percent over 2007 consumption with a total usage at 15,150,400 kilowatt-hours. The total cost for electricity increased by 21.9 percent to \$836,896.63, or \$2,292.87 per day. The addition of the new West Side WWTP and the increase in the fuel cost adjustment contributed significantly to the overall electrical cost increase in 2008. The Ozarks Electric Cooperative issued a \$5,876.69 annual credit for the Noland WWTP in March 2008.

Solids Production and Disposal

During contract year 2008, OMI did not land apply any biosolids and the option for emergency land application of biosolids was removed from the new No Discharge Permit. The plants generated approximately 19,843 wet tons (3,570 dry metric tons) of biosolids. We transported an average of 2.5 loads of biosolids per day, at 18.2 percent dry solids content, to three different landfills for final disposal.

Staff hauled dewatered biosolids to the American Environmental Landfill (AEL) in Sand Springs, Oklahoma, for the first 8 months of this year until the State of Oklahoma stopped AEL from accepting biosolids from the Northwest Arkansas area. We

temporarily hauled biosolids to the Waste Management landfill at Tontitown for a few weeks until a contract with the Ozarks Ridge Landfill in Russellville, Arkansas, was finalized. We negotiated another contract with the Prairie View Landfill in Lamar, Missouri, to provide more than one option for ultimate biosolids disposal (a critical component of overall wastewater treatment). The change in disposal location caused a more than 300 percent increase in landfill tipping fees.

OMI completed the transfer-of-ownership of the biosolids handling equipment (originally purchased by OMI under near emergency conditions in 2003) to the City in September 2008. The transfer included a 2-meter Andritz belt filter press, three Kenworth tractors, and three Lufkin trailers. This equipment, which was procured and installed in a 40-day period when ADEQ ordered Fayetteville to cease biosolids application to the Noland WWTP farm site, provided complete biosolids dewatering and disposal for more than five years. Each piece of equipment is still in full use today and operates full-time alongside the newly purchased equipment as part of the WSIP project.

Laboratory

In 2008, the OMI Fayetteville laboratory received 3,155 samples. The laboratory conducted 7,431 analyses on these samples and performed 2,352 analyses to verify quality control of the data. The laboratory conducted 1,877 analyses for facility process control. In-house analytical capabilities include 18 parameters.

Noteworthy laboratory accomplishments include:

- Passed the ADEQ annual audit with no findings or recommendations
- Passed the annual U.S. EPA Discharge Monitoring Report Quality Assurance Water Performance Study for all permitted parameters
- Passed the annual National Science Institute Water Performance Study for all permitted parameters
- Received the OMI Outstanding Laboratory Practices Award
- Received the 2008 NWD AWW&WEA Laboratory Professional Award
- Presented Clean Sampling Techniques at the Arkansas Water Environment Association Specialty Conference, in Heber Springs, Arkansas, in September 2008
- Completed ammonia analysis method comparison study
- Conducted West Side WWTP lift station loading studies
- Set up West Side WWTP laboratory, auto analyzers, and auto samplers
- Implemented low-level mercury sample collection to comply with the new method detection limit requirements

Industrial Pretreatment

The IPP includes nine permitted significant industrial users, five of which are metal-based categorical users. Three large food processors participate in the surcharge program for excess TSS and BOD loading. This generated nearly \$450,000 in revenue for the City. Along with administering the program, IPP personnel serve as industrial liaisons who provide education and training for industrial users and the general public. **Exhibit 8** outlines IPP participants and activities in 2008.

Exhibit 8
2008 Fayetteville IPP Activities and Participants

2008 Fayetteville IPP Permitted Industrial Users	2008 Fayetteville IPP Activities
<ul style="list-style-type: none"> • Ayrshire Electronics, LLC • Custom Powder Coating Services, Inc. • Elkhart Products Corporation • Hiland Dairy Company • K-D Tools (Danaher Tool Group) • Marshalltown Company • Pinnacle Foods Corporation • Superior Industries International Arkansas, LLC • Tyson Foods, Inc. 	<ul style="list-style-type: none"> • Conducted 11 compliance inspections • Conducted 18 compliance and surcharge sample collection events • Accepted 16 loads of hauled waste • Experienced 8 unusual discharge/influent cases
2008 Fayetteville IPP Discharging Haulers	
<ul style="list-style-type: none"> • Best Jet 	

In addition to domestic and industrial discharges to the sewer, hauled septic tank, portable toilet waste, or special waste can be discharged into the head of the WWTP or at a wastewater lift station. Use of these options has declined in the past few years because less expensive and more convenient alternatives for disposal are available to liquid waste haulers.

Exhibit 9 displays IPP-generated revenue in 2008.

Exhibit 9
2008 IPP Revenue

Area	Revenue
Industrial Surcharge Fees	\$447,648
Hauled Wastewater Fees	\$800
Application Fees	\$1,500
Administrative Fines	\$0
Total	\$449,948
Note: The City of Fayetteville collected all funds directly	

Noteworthy IPP accomplishments include:

- The Fayetteville IPP won a Region VI Pretreatment Association 2008 Pollution Prevention Challenge Award presented at the annual Region VI conference.
- In June 2008, a portion of the domestic and commercial flow from the Noland WWTP was split to the new West Side WWTP. All industrial discharges still flow to the Noland WWTP. Industries notified IPP staff of potential and planned changes in production and discharges on a regular basis to avoid process upsets.
- Initial meetings to educate representatives on WWTP processes, permits, reporting, and regulations along with e-mail and telephone communication has helped bring new contacts up to date despite significant turnover in pretreatment contacts at local industries. The economic downturn has reduced and changed industrial production schedules. Continued notification to OMI staff of these schedule changes or shutdown days is critical to maintaining an appropriate biological balance at the Noland WWTP.
- IPP staff participated in community events with a wastewater treatment display and distributed a Federal Drug Administration flyer on proper disposal of unused medicines.
- Initiated the industrial wastewater survey required every three years by the approved IPP. This year staff distributed a more detailed survey to more than 1,400 active water and sewer accounts. Final results are expected early in 2009.
- Passed ADEQ annual IPP audit
- Worked with industrial users to maintain a high level of industrial user compliance (**Exhibit 10**).
- Maintained consistent low metal loadings (**Exhibit 11**).



OMI associate Denise Georgiou accepts the P2 Challenge Award from Lyle Milby (right), Region VI Pretreatment Association Chair; and Rudy Molina, U.S. EPA Region VI.

Exhibit 10
Permitted Industries' Limits Violations 1996 – 2008

Figure 1
Permitted Industries
Number of Limits Violations

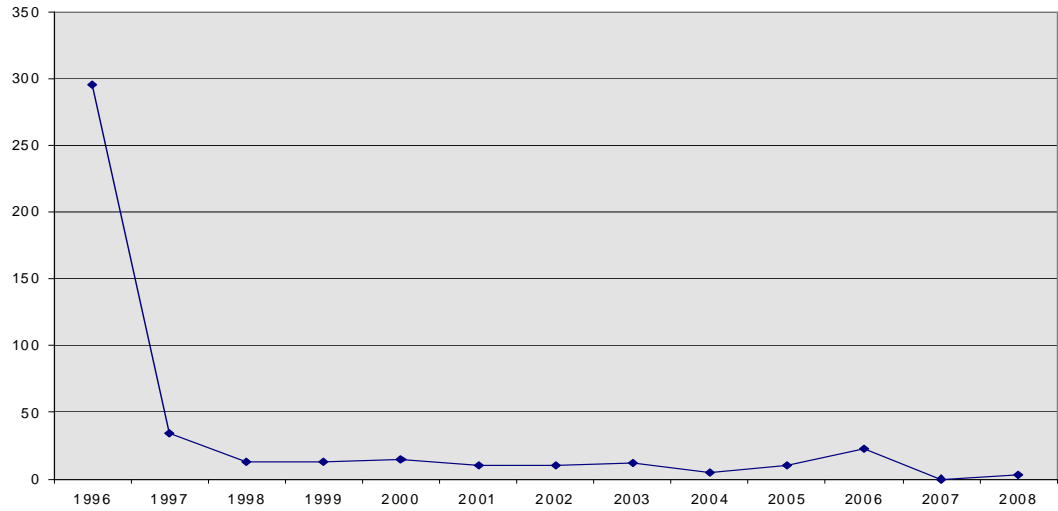
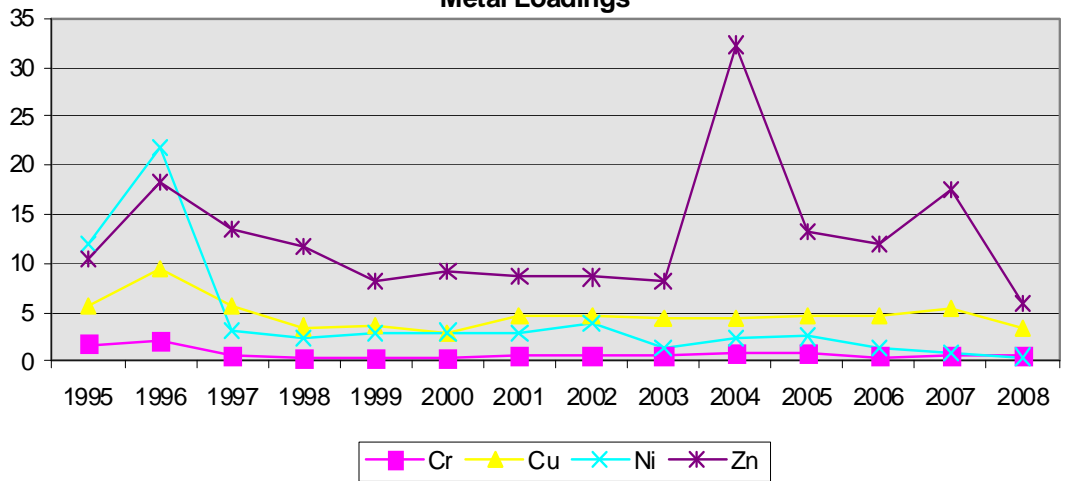


Exhibit 11
Metals Loadings

Figure 2
Metal Loadings



Maintenance

The maintenance department is responsible for preventive maintenance (PM) and corrective maintenance (CM) of all equipment at the WWTPs, 37 currently active lift stations, maintenance of all vehicles, and capital improvement replacement of plant and lift station equipment. We use a computerized maintenance management system to track the maintenance workload, keep work orders flowing smoothly and efficiently, and help maintain a parts inventory and a work order history.

WWTP Maintenance

Maintenance staff completed several significant WWTP maintenance tasks in 2008. During the course of year we completed 7,295 PM work orders and 820 CM work orders. The number of PM work orders increased by 29 percent due to the West Side WWTP startup.

Several significant tasks were completed during the year:

- Painted all catwalks and outside walls of aeration basin at the Noland WWTP. Also painted all equipment on top of the aeration basin (piping, aerators, and motors).
- Painted all equipment in all scum pump huts at Noland WWTP.
- Performed successful integration of new SDOX system.
- Installed numerous walk-through doors at Noland Facility and had all doors keyed alike.
- Moved portable generators from North Street (LS #8) and Porter Road (LS #9) Lift Stations to West Side WWTP and the new Hamestring Lift Station (LS #7). Used these generators temporarily for load shedding purposes until the required air permits for the 2-kilowatt permanent generators could be obtained.
- Drained and cleaned out 60 tons of grit from the West Aeration Basin to prepare for construction. Crane and operator rentals were the only outside services required.
- Performed several large repairs to the Trojan UV System. Replaced more than 100 UV bulbs, 60 hydraulic cylinders, and the hydraulic pump. The system appears to be operating well.
- Pumped out and completely cleaned Secondary Clarifiers Nos. 1, 3, and 4.
- Performed critical phase loss adjustments on PIP No. 2 variable frequency drives (VFDs) at Noland WWTP when the drives were not operating correctly. The phase protection was set so tightly that any voltage fluctuation made them fail especially during rain events. These adjustments corrected the problem.
- Installed several new valve stem protectors at Noland WWTP.

- Created new inventory storage facility on the top floor of old South Operations Building.
- Started replacing ballast kits and lights throughout the Administration Building with energy efficient T-8 units.
- Began construction of a 200 ft. by 100 ft. concrete slab on south side of south operations building.
- Purchased and installed a 40-horsepower (hp) VFD drive to operate an effluent pond return pump. This drive operates a pond return pump. The new VFD greatly improved plant operations during low flow occurrences and industrial shut downs by allowing operations staff to control the amount of water brought back through the system.

Lift Station Maintenance

We completed 1,154 PM work orders and 393 CM work orders for lift stations in 2008 in addition to completing several significant lift stations tasks during the year:

- Successfully started up the new Gregg Avenue (LS #5), Norman Murphy (LS #19), and Stonewood (LS #33) Lift Stations
- Attended several training sessions at the new Hamstring Lift Station on pumps, electrical, HVAC, odor scrubber, etc.
- Performed successful lift station cut over to West Side WWTP
- Started replacing the pump controller at Owl Creek Lift Station (LS #22)
- Completed the Lift Station Aesthetics plan in 2008
- Completed High Flow Response Plan for all lift stations
- Performed a thorough SCADA inspection on all lift stations and addressed several SCADA issues
- Rebuilt several pumps and motors at lift stations
- Replaced several bubbler compressors over the year
- Decommissioned the odor control units at the Old Wire Road (LS #6) and Porter Road (LS #9) Lift Stations
- Replaced lift station signs
- Completed upgrades at Lift Station #s. 13, 14, and 16



The generator at the Armstrong Lift Station #14.

Seventy-five lift station overflows occurred in contract year 2008. Sixty-three of these overflows occurred between January 1 and May 31, 2008, and 12 overflows occurred between June 1 and December 31, 2008. The majority of these overflows, approximately 93 percent, were caused by heavy rain events. The ongoing collection system upgrade components of the WSIP, most of which will be completed in 2009, should help minimize the number of future rainfall-related overflows.

The maintenance staff prevented approximately 125 lift station overflows by:

- Deragging pumps
- Back flushing pumps
- Replacing control components that might affect pumping
- Providing portable generated power during power outages

We responded to 141 emergencies at lift stations.

In late May 2008, we began the critical lift station cut over. Staff decommissioned several lift stations:

- Crystal Springs (LS #3)
- Poplar St (LS #4)
- Old Hamestring (LS #7)
- North St (LS #8)
- Clabber Creek (LS #37)
- Clabber Creek III (LS #42)

Associates set up the Old Wire Road (LS #6) and Porter Road (LS #9) Lift Stations as dual-purpose stations. Under normal conditions the stations use gravity to send wastewater to the West Side WWTP. There also is an option to pump wastewater back to the Noland WWTP through the old piping and infrastructure at these two lift stations.

Gregg Avenue Lift Station (LS # 5) underwent major rehabilitation in 2008. The old station had three flooded suction 250-hp Fairbanks Morse pumps. These pumps delivered approximately 2,600 gallons per minute (gpm) each. The rehabilitated station has four submersible 80-hp KSB pumps. These pumps deliver approximately 4,280-gpm each.

The City built a new lift station on Norman Murphy Road. This station replaced the Mally Wagon Lift Station (LS #19). The old station had two flooded suction 15-hp pumps that delivered 500 gpm each. The new Norman Murphy Road Lift Station has three submersible KSB 24-hp pumps that deliver 900 gpm each.

Farm Site

The farm site (or the old biosolids land application site) comprises 670 acres adjoining the Noland WWTP property. The site is bordered by 12 private property owners. The staff running the land application site has significant and applicable experience and their ingenuity helped complete work in a timely and cost-effective manner in 2008. Their efforts minimized overtime, maintained operations within the budget, and kept repairs to a minimum.

In September 2008, we renewed the No Discharge Permit for the site and removed the option for emergency land application of biosolids from the new permit. The permit requires groundwater monitoring at three existing wells with at least one down-gradient of the effluent land application sites. We did not apply any biosolids to the site in 2008.

OMI staff continued to grow Midland Bermuda grass to facilitate uptake of phosphorus and nitrogen from the farm site. The grass is cut and harvested as hay and sold to local farmers. Staff produced and sold 1,834.67 tons of hay, generating \$128,393.10 in revenue for the City. The average price per ton was \$63.64. Due to the unusually wet weather conditions during the early part of the growing season, staff was not able to continue the trend increasing the average price per ton as was done in the past 4 years. However, associates recorded the second highest average price per ton (see **Exhibit 12**).



Freshly harvested hay.

Exhibit 12 Hay Produced on the Land Application Site

Year	Tons	Average Price/Ton	Total \$
2004	2,128.08	\$40.36	\$85,907.31
2005	2,900.79	\$50.49	\$146,468.44
2006	2,218.42	\$58.63	\$130,083.73
2007	2,970.56	\$66.15	\$196,531.67
2008	1,834.67	\$63.64	\$116,760.20

Hay production was fair due to an extremely wet season that slowed the curing and harvesting process. The wet season also produced an abundance of hay in the Northwest Arkansas area, which turned the selling process into a buyers market. Also due to the excess rain, OMI extended fertilizer application and cutting cycles later in the season than in normal years. This, coupled with a shorter growing season, allowed for only three harvesting cycles in 2008.

Purchasing the Crop Saver Applicator for the hay balers in 2008 was a major factor in maintaining hay quality and earning an above-average selling price for the hay. However, the quality of the end product was compromised considerably due to the inclement weather. All of these factors also contributed to a lower than average protein content at 9.56 percent.

OMI staff used plant-treated effluent for irrigation for 4 days during the first week of August. Irrigation was needed to sustain growth by the last week in July. The site received almost 5 inches of rain toward the end of second week of August 2008. The rains continued with almost 10 inches falling during September. This negated the need for further irrigation through the remainder of the season.

Associates applied a total of 101 lbs/acre of fertilizer to the site in two applications but did not apply lime to the site in 2008 per the University of Arkansas Cooperative Extension Service's recommendations.

Staff applied herbicide during the weeks of March 26 and April 5, 2008. One application sufficiently eliminated top growth from the previous winter. Staff performed wicking between the hay cutting cycles to help reduce unwanted Johnson grass. They completed wicking on most of the site in 2008.

Working in conjunction with Dennis Pratt and his staff, OMI traded:

- Unit No. 712 1983 Ford F8000 for Unit No. 340 2002 Ford F350
- Unit No. 734 1987 Freightliner Cab for Unit No. 741 1996 Mack Semi Tractor Cab
- Unit No. 202 1987 GMC Jimmy for Unit No. 1052 1999 Ford Explorer

Other accomplishments on the farm site in 2008 include:

- Completed monitoring well sounding monthly and collected samples quarterly for permit analysis
- Participated in community involvement activities including Wyman Community Building grounds upkeep and various road cleanups
- Helped with upkeep for fields, the Noland WWTP holding pond, and the wetland at the West Side WWTP

Safety

Staff safety is our highest priority. Our goal is for all OMI associates to go home safely to their families and loved ones every day. In addition to earning the safety award, highlighted on earlier in this report, in 2008, associates generated, implemented, or updated safety initiatives for:

- Vehicle safety operations directive
- Worker working alone policy
- Spill reporting policy
- Drug and alcohol policy

- No-fault accidents
- Reasonable cause testing
- Cell phones
- Return to work program
- Immediate dangers directive

Along with standard weekly and monthly safety training, all staff completed the Smith System Defensive Driving course. OMI also provided a hands-on driving course for all CDL drivers.

Community and Professional Activities

OMI staff participated in several community involvement activities throughout contract year 2008 including:

- Provided 16 plant tours to approximately 230 people.
- Assisted the Arkansas Audubon Society with its annual bird count.
- Participated in Secchi Day on Beaver Lake. This is an annual Water Quality Awareness Day sponsored by the Beaver Water District to measure water clarity and collect water samples.
- Participated in World Water Monitoring Day and the Water For People fundraising activity, both sponsored by CH2M HILL.
- Participated in the annual United Way campaign sponsored by the City.
- Donated money to several local charitable organizations.
- Supported the Curb-The-Clutter program for the fourteenth consecutive year by cleaning up a section of Old Wire Road near Highway 265.
- Maintained an unofficial commitment to clean up Fox Hunter Road near the plant on an annual basis.
- Planted trees at the West Side WWTP in early April. OMI staff also planted 90 trees around the Noland WWTP for wetlands improvement and expansion.



Providing plant tours is one aspect of OMI's community involvement program.

OMI staff is active at the district and state level in water and wastewater professional organizations. Project Manager Duyen Tran continued to serve on the Board of Directors of the NWD AWW&WEA. She also served as Laboratory and Pretreatment Committee Chairperson for the AWEA and as a member of the AWEA Legislative Affairs

Committee. At the end of 2008, Duyen was elected to serve as the NWD Director on the AWW&WEA and the Secretary/Treasurer for the AWEA. Her terms in these new positions begin in April 2009.

Staff held a meeting with the regulated industries at City Hall on May 29, 2008. David Jurgens informed industry representatives of the West Side WWTP startup and the flow diversion plan. He also communicated the potential impacts their discharges may have on the Noland WWTP as the result of the flow diversion. Representatives from all regulated industries, except for Pinnacle Foods, attended the meeting. David asked industries to maintain consistency in their process discharge and keep OMI staff informed of production and/or procedural changes, especially during the 3 months following the presentation.

Dr. Rodney Williams, from the University of Arkansas, requested to use approximately five acres of selected area from the land application site for research. The research involves applying alum-laced sludge from the Beaver Water District water treatment process on the phosphorus bound soil and measuring phosphorus uptake as the end result. The study received approval from City Water and Wastewater Director, David Jurgens and Mo Shaffi, Assistant Director of ADEQ.

Projections for 2009

OMI staff will continue to support to the City's WSIP program throughout 2009. Personnel will continue to attend construction meetings and discussions for Phase Three of the Noland WWTP rehabilitation and lift station conversions and demolitions.

Associates will also continue to provide input and solutions to biosolids disposal alternatives and the potential future 0.1 mg/l phosphorus limitation.

OMI will continue to assess operational efficiencies to address the needs of the new biosolids disposal option and the potentially more stringent phosphorus permit limit.

Staff will minimize increases in the operational budget and absorb additional costs by:

- Capitalizing on the human resource delivery capabilities of our company
- Providing more structure and aggressive crosstraining
- Encouraging improvements generated by our associates
- Exploring new technologies
- Applying the Triple Bottom Line approach in every aspect of our job

OMI remains focused on enhancing our partnership with the City by raising our own expectations for service delivery and striving to exceed contract-required performance standards. Our focus leads to O&M success and efficient, cost-effective WWTP O&M for the City as demonstrated in this report. We look forward to 2009 and the opportunity to continue to provide excellent service to the citizens of the City of Fayetteville.



Noland WWTP butterfly garden.