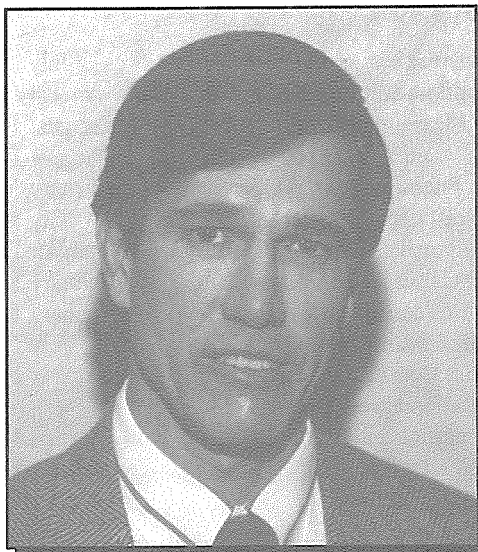


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ALBUQUERQUE'S NPDES WASTEWATER DISCHARGE PERMIT 1994

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BACKGROUND DATA

The 1994 Albuquerque discharge permit was issued three years after the City's previous permit expired in 1991 (Table 1). Significant changes were made in the 1987 Federal Clean Water Act Amendments. The changes added new toxicity criteria to be adopted under state stream standards that translate to new NPDES permit limits. New Mexico followed suit and in 1991 adopted new criteria that materially impacted discharges to surface waters.

In addition, the 1987 Amendments authorized Indian Pueblos to adopt protective stream standards under the same authority as states. The Pueblo of

Isleta was the first Indian Pueblo to pursue this action and the City of Albuquerque was the first NPDES permit holder to be impacted directly by this action. The Pueblo of Isleta held a Public Hearing in 1991 followed by tribal adoption in February 1992, of their stream standards. The U.S. Environmental Protection Agency (EPA) issued a draft of the City's discharge permit in 1991 and another in 1992. It was not until December 1992 that EPA formally approved the Pueblo of Isleta Stream Standards. This brought about yet a third permit drafted by EPA which was communicated to the City in January 1993.

TABLE 1. ALBUQUERQUE NPDES DISCHARGE PERMIT 1994

Last permit expired	July 1991
1st draft permit by EPA	August 1991
New Mexico WQS revisions	August 1991
Isleta Pueblo WQS public hearing	August 1991
Isleta Pueblo adopts WQS	February 1992
2nd draft permit by EPA	July 1992
EPA approval Isleta Pueblo WQS	December 1992
3rd draft permit meeting with EPA	January 1993
City files complaint v. EPA	January 1993
3rd draft permit issued by EPA	July 1993
District Court ruling and appeal	October 1993
Stipulation agreement	
4 parties and permit	April 1994
Permit effective date	June 1994
Permit expiration date	June 1998

The City was informed that both the Isleta Pueblo and New Mexico Stream Standards would apply to the City's discharge permit limits and that the new permit being drafted would immediately place the City in noncompliance and subject to liabilities of enforcement actions. No chance for negotiation or dispute resolution according to other EPA regulations was offered to the City. Many discrepancies existed, and still exist, between the Isleta Pueblo and the State of New Mexico Stream Standards for the Rio Grande. The City had no recourse but to file a complaint in Federal District Court in January 1993, because of the situation.

SETTLEMENT OF APRIL 1994

Deliberations occurred between the EPA, State of New Mexico, Pueblo of Isleta, and the City during 1993 and early 1994. A Settlement Agreement was reached in April 1994, which stipulated a new permit with new limits. The Agreement also stipulated important studies to be performed by the U.S. Geological Survey, funded by the parties to the Agreement. The City of Albuquerque has committed the lion's share of funding for the Agreement, \$150,000.

NEW PERMIT LIMITS

The City's new permit effective June 1, 1994, places limits on conventional parameters such as

Biochemical Oxygen Demand, suspended solids and fecal coliform as well as limits for silver and arsenic (Table 2). Monitoring must be performed for aluminum, ammonia, cyanide, nitrate, and bio-monitoring. Chlorine is limited to nondetection. The City must follow a fast-track program for achieving ammonia removal through nitrification/denitrification by 1998. The estimated capital costs are \$60 million. A pilot wetlands project also is in design stages.

TABLE 2. ALBUQUERQUE'S JUNE 1994-1998 NPDES PERMIT

Ammonia removal by 1998	\$60 million
Arsenic limit	13.7 ppb
Silver limit	3.7 ppb
BOD, TSS, FC	30/30/500
Aluminum	monitor and report
Ammonia	monitor and report
Cyanide	monitor and report
Nitrate	monitor and report
WET - biomonitoring tests	quarterly
Chlorine	zero discharge

Pollutant specific studies @ treatment plant

1. Aluminum
2. Arsenic
3. Cyanide
4. Silver
 - identify sources
 - actions necessary to reduce inputs

NEW STUDIES

The new river studies (Table 3) to be performed are twofold, one being a short-term trace element study at seven sites within the middle Rio Grande. Dr. Howard Taylor, a top USGS researcher, Boulder, Colorado, supervised the study during 1994. Collections were performed during high river flow (June 1994) and low river flow (October 1994).

Secondly, a longer study lasting three years has recently been defined in a Work Plan approved by all parties. USGS will be sampling at some 17 sites addressing both trace metals and arsenic found in fish. This study will include ultra-clean sampling techniques to achieve accurate results. If significant arsenic concentrations are found in fish, EPA will

Albuquerque's NPDES Wastewater Discharge Permit 1994

develop a fishery advisory for consumption of fish in the middle Rio Grande. In addition, a correction to the formula utilized by EPA for developing human health criteria will be developed. Specifically a bioconcentration factor based on fresh water will be developed. The present EPA human health criteria for arsenic are based on an eastern oyster saltwater species.

TABLE 3. RIO GRANDE STUDIES BY USGS, CITY, EPA, NMED, AND ISLETA PUEBLO

1. Short-term - trace elements, middle Rio Grande
 - Completed in 1994
 - High river flow - June 1994
 - Low river flow - October 1994
 - 7 sites
 - Bernalillo to Isleta Diversion Dam
 - Ultra modern protocols
 - Dissolved and total metals, ICP-MS
 - 30+ stream parameters
 - \$40,000 - 50:50 - City/USGS
2. Long-term - water quality study, middle Rio Grande
 - October 1994 to October 1996
 - 2 years sampling
 - River, canals, lakes, POTWS: 17 sites
 - San Felipe to Los Lunas Bridge
 - Ultra clean protocols
 - Dissolved and total metals
 - 30+ stream parameters
 - Metals partitioning coefficients
 - Fish tissue, arsenic - Bioconcentration Factor
 - Health advisory for eating fish, arsenic
 - Future studies, Use Attainability Analysis, Water Effects Ratio
 - Total cost for these long-term studies:
\$300,000-\$400,000

attainability analysis also will likely be addressed as has been proposed in the past by the City, and recommended by EPA previously.

FUTURE PERMIT

Albuquerque's permit will again expire in 1998. At that time, most if not all the previous issues will again be reviewed and in particular the subject of arsenic will again be addressed. Unknown at the present time will be any required regulatory efforts for the parameters of concern including arsenic. Central to the arsenic issue will be the question of reductions in the City's drinking supply. Drinking water arsenic concentrations average 17 ppb within the City system which exceeds the present human health (i.e., fish consumption) criteria ambient stream standards adopted by the Isleta Pueblo. It is likely, in the City's opinion, that additional studies will be required to determine accurately if further controls are scientifically based and justify the costs to achieve them. Significant decisions will be forthcoming and will hopefully be based on scientific data to determine the real environmental benefits to be achieved with further commitment of resources.

SITE SPECIFIC STUDIES

A potential outcome of the ambient river sampling studies will be considerations for further site specific studies looking at the validity of stream standards criteria. In particular, since stream standards are based on laboratory conditions and not site waters, new types of studies have been authorized by EPA to consider the effect of site waters in the development of standards. The issue of use