

# **NPDES PERMIT NO. NM0030490**

## **FACT SHEET**

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

### **I. APPLICANT**

Dona Ana County Utilities Department  
South Central Regional WWTP  
845 N. Motel Blvd.  
Las Cruces, NM 88007

### **II. ISSUING OFFICE**

U.S. Environmental Protection Agency  
Region 6  
1445 Ross Avenue  
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### **III. PREPARED BY**

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### **IV. DATE PREPARED**

March 13, 2008

### **V. PERMIT ACTION**

Proposed reissuance of the current National Pollutant Discharge Elimination System (NPDES) permit initially issued March 14, 2003, modified on February 11, 2005, with an effective date of May 1, 2003, and an expiration date of January 31, 2008.

Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed in Title 40, Code of Federal Regulations, revised as of March 7, 2008.

## VI. CHANGES FROM THE PREVIOUS PERMIT

- A. The pollutant pH has been made more stringent.
- B. E. coli bacteria limits have been added replacing fecal coliform bacteria with a one-month compliance period.

## VII. DISCHARGE LOCATION

As described in the application, the plant site is located at the intersection of East Sloan Road and Montes Road in La Mesa, Dona Ana County, New Mexico. The effluent from the treatment plant is discharged into the Rio Grande in Segment 20.6.4.101 of the Rio Grande Basin. The discharge is on that water at Latitude 32° 05' 22" N and Longitude 106° 39' 36" W.

## VIII. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in "New Mexico State Standards for Interstate and Intrastate Surface Waters," (20.6.4 NMAC, amended through August 1, 2007). The known uses of the receiving water(s) are irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and secondary contact.

## IX. APPLICANT ACTIVITY

Under the Standard Industrial Classification (SIC) Code 4952, the applicant operates a municipal wastewater treatment plant with a design capacity of 1.05 million gallons per day (MGD) serving a population of approximately 8,000. The wastewater treatment process is as follows:

Influent wastewater comes into the treatment plant at the entrance works, including a grinder, fine screen and a conveyor unit. The screened wastewater flows through a grit chamber and travels to one of two sequencing batch reactors (SBR) basins for biological treatment. Sludge is extracted from the SBR basin to a sludge holding tank at regular intervals. Sludge is typically wasted to the sludge press for dewatering until acceptable for final disposal via landfill. The clarified effluent from the SBR flows to the ultra-violet unit for disinfection before discharging to the Rio Grande.

## X. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A dated July 19, 2007, are presented below:

| Parameter  | avg<br>(mg/l unless noted) | max     |
|--|----------------------------|---------|
| Flow, million gallons/day (MGD)                      | 0.28                       | 0.34    |
| Temperature, winter                                  | 18.8 °C                    | 25 °C   |
| Temperature, summer                                  | 25.3 °C                    | 28.5 °C |
| pH, minimum, standard units (SU)                     | ---                        | 6.93 su |
| pH, maximum, standard units (SU)                     | ---                        | 8.38 su |
| Biochemical Oxygen Demand, 5-day (BOD <sub>5</sub> ) | 7.36                       | 19      |
| Fecal Coliform (FCB) (bacteria/100 ml)               | 2                          | 8200    |
| Total Suspended Solids (TSS)                         | 7.2                        | 21      |

|                                |          |       |
|--------------------------------|----------|-------|
| Ammonia (NH <sub>3</sub> )     | 0.5      | 0.58  |
| Chlorine, Total Residual (TRC) | 0.0      | 0.00  |
| Dissolved Oxygen               | 4.7      | 6     |
| Total Kjeldahl Nitrogen (TKN)  | 2.7      | 3.1   |
| Nitrate plus Nitrite Nitrogen  | 9.3      | 10    |
| Oil and grease                 | 4.4      | 7.6   |
| Phosphorus, Total              | <0.05    | <0.05 |
| Total Dissolved Solids (TDS)   | 799      | 805   |
| Zinc                           | 0.030    | ---   |
| Bis(2-Ethylhexyl)phthalate     | 190 ug/l | ---   |
| Aluminum, dissolved            | 0.034    | ---   |
| Arsenic                        | 0.006    | ---   |
| Copper                         | 0.008    | ---   |
| Nickel                         | 0.001    | ---   |
| Boron, dissolved               | 0.384    | ---   |

## **XI. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS**

The proposed effluent limitations for those pollutants proposed to be limited are based on regulations promulgated at [40 CFR 122.44]. The draft permit limits are based on either technology-based effluent limits pursuant to [40 CFR 122.44(a)], on best professional judgment (BPJ) in the absence of guidelines, NM WQS and/or requirements pursuant to [40 CFR 122.44(d)], whichever are more stringent.

### **A. REASON FOR PERMIT ISSUANCE**

It is proposed that the permit be issued for approximately a 5-year term following regulations promulgated at [40 CFR 122.46(a)]. The proposed permit expiration date will coordinate with the EPA Basin Statewide Management Approach to Permitting in New Mexico, adopted March 2, 2000.

### **B. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS**

Following regulations promulgated at [40 CFR 122.44], the draft permit limits are based on either technology-based effluent limits pursuant to [40 CFR 122.44(a)] or on State WQS and requirements pursuant to [40 CFR 122.44(d)], whichever are more stringent.

Technology-based effluent limitations are established in the proposed permit for TSS and BOD<sub>5</sub>.

Water quality-based effluent limitations are established in the proposed permit for TRC, pH and E. coli bacteria.

### **C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS**

Secondary treatment, established at [40 CFR\_133.102(a)] and [40 CFR\_133.102(b)] are 30 mg/l for the 30-day average and 45 mg/l for the 7-day average for BOD<sub>5</sub> and TSS each.

## Final Effluent Limits 1.05 MGD design flow

| EFFLUENT CHARACTERISTICS | DISCHARGE LIMITATIONS |            |                          |             |
|--------------------------|-----------------------|------------|--------------------------|-------------|
|                          | lbs/Day               |            | mg/l (unless noted)      |             |
| Parameter                | 30-Day Avg.           | 7-Day Avg. | 30-Day Avg.              | 7-Day Avg.  |
| Flow                     | N/A                   | N/A        | Measure MGD              | Measure MGD |
| BOD <sub>5</sub>         | 263                   | 394        | 30                       | 45          |
| TSS                      | 263                   | 394        | 30                       | 45          |
| pH                       | N/A                   | N/A        | 6.0 – 9.0 standard units |             |

TSS/BOD<sub>5</sub> loading (lbs/day) = 30 mg/L \* 8.345 lbs/gal \* 1.05 MGD = 263 lbs/day

TSS/BOD<sub>5</sub> loading (lbs/day) = 45 mg/L \* 8.345 lbs/gal \* 1.05 MGD = 394 lbs/day

#### D. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, [40 CFR 122.48(b)], and to assure compliance with permit limitations, [40 CFR 122.44(i)(1)]. Technology based pollutants; BOD<sub>5</sub>, pH and TSS, are proposed to be monitored once per week. Flow is proposed to be monitored continuously using a totalizing meter. These frequencies are the same as the current permit. Sample type for BOD<sub>5</sub> and TSS is "Grab" sample since the facility uses SBR batch discharges and does not have continuous discharges. This is consistent with the previous permit issued on March 14, 2003, and modified on February 11, 2005.

#### E. SEWAGE SLUDGE PRACTICES

The permittee shall use only those sewage sludge disposal or reuse practices that comply with the federal regulations established in [40 CFR Part 503] "Standards for the Use or Disposal of Sewage Sludge". The specific requirements in the permit apply as a result of the design flow of the facility, the type of waste discharged to the collection system, and the sewage sludge disposal or reuse practice utilized by the treatment works.

#### F. WASTE WATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

#### G. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The facility has no significant industrial users; therefore, EPA has determined that the permittee will not be required to develop a full pretreatment program. However, general pretreatment provisions have been required.

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## H. OPERATION AND REPORTING

The applicant is required to operate the treatment facility at maximum efficiency at all times; to monitor the facility's discharge on a regular basis; and report the results monthly. The monitoring results will be available to the public.

### I. WATER QUALITY BASED LIMITATIONS

#### 1. General Comments

Effluent limitations and/or conditions established in the draft permit are in compliance with State water quality standards and the applicable water quality management plan.

#### 2. Post Third Round Policy and Strategy

Section 101 of the Clean Water Act (CWA) states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited..." To insure that the CWA's prohibitions on toxic discharges are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants 49 FR 9016-9019, March 9, 1984." In support of the national policy, Region 6 adopted the "Policy for Post Third Round NPDES Permitting" and the "Post Third Round NPDES Permit Implementation Strategy" on October 1, 1992. The Regional policy and strategy are designed to insure that no source will be allowed to discharge any wastewater which (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical State water quality standard resulting in nonconformance with the provisions of [40 CFR 122.44(d)]; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

#### 3. Implementation

The Region is currently implementing its post third round policy in conformance with the Regional strategy. The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

#### 4. State Water Quality Numerical Standards

##### a. GENERAL COMMENTS

Stated previously, the Rio Grande has designated uses of irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and secondary contact.

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## b. WATER QUALITY STANDARDS

The NM WQCC adopted WQS for the State of New Mexico. The WQS are available on the NMED's website at <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0004.pdf>. The WQCC established the WQS in accordance with, and under authority of, the NM Water Quality Act [Chapter 74, Article 6, NMSA 1978 Annotated].

## c. PERMIT ACTION - WATER QUALITY-BASED LIMITS

Regulations promulgated at [40 CFR 122.44(d)] require limits in addition to, or more stringent than effluent limitation guidelines (technology based). NM WQS that are applicable for this discharge are based on 20.6.4 NMAC.

### i. pH

Stream segment specific (20.6.4.101 NMAC) WQS for pH, 6.6 to 9.0 standard units, are more restrictive than the technology-based limits presented earlier, the draft permit will propose the water quality limits in the draft permit. These limits are more restrictive than the previous permit. The previous permit did not properly account for the manner pH is implemented in permits, and was in error. The draft permit will correct that oversight.

### ii. Bacteria

Stream segment specific WQS for E. coli bacteria are 126 cfu/100 ml monthly geometric mean and 410 cfu/100 ml daily maximum. E. coli are new standards implemented for bacteria compliance since the previous permit was issued and amended.

### iii. Toxics

The Clean Water Act in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at [40 CFR 122.44 (d)] state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criteria, the permit must contain an effluent limit for that pollutant.

All applicable facilities are required to fill out appropriate sections of the Form 2A and 2S, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to Publicly Owned Treatment Works (POTWs), but also to facilities that are similar to POTWs, but which do not meet the regulatory definition of "publicly owned treatment works" (like private domestics, or similar facilities on Federal property). The forms were designed and promulgated to "make it easier for permit applicants to provide the necessary information with their applications and minimize the need for additional follow-up requests from permitting authorities," per the summary statement in the preamble to the Rule. These forms became effective December 1, 1999, after publication of the final rule on August 4, 1999, Volume 64, Number 149, pages 42433 through 42527 of the FRL.

The facility is classified as a "major" discharger with a design flow in excess of 1.0 MGD, and must complete Part D, "Expanded Effluent Testing Data" of form 2A. This data was included

above in Section X “Effluent Characteristics.” The Form 2A submitted by the applicant showed aluminum, arsenic, bis (2-ethylhexyl) phthalate, boron, copper, nickel and zinc at concentrations above minimum quantification levels (MQL).

In the previous permit, the low-flow or 4Q3 was provided by NMED. Data for the nearest appropriate measuring point is Mesilla Dam, and the 4Q3 data calculated 29.7 ft<sup>3</sup>/second (cfs) (19.2 MGD). Hardness and pH for the receiving water was obtained from the samples used for whole effluent testing (WET) conducted as part of the previous permit.

As shown on the attached spreadsheet, none of the tested pollutants listed above, demonstrate a reasonable potential to violate water quality standards consistent with the designated uses for the receiving water.

The previous permit had TRC limits during periods when chlorine is used as either backup bacteria control or when disinfection of plant treatment equipment is required, and this requirement is continued in the draft permit. The draft permit will maintain the 19 ug/l limit from the previous permit.

#### 5. Monitoring Frequency for Limited Parameters

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40 CFR\_122.48(b)] and to assure compliance with permit limitations [40 CFR\_122.44(i)(1)]. The monitoring frequencies for TRC, pH and flow are consistent with the previous permit. Flow shall be sampled continuously, pH shall be monitored once per week and TRC shall be monitored daily during periods when chlorine is used in the treatment process, or is used to disinfect treatment equipment. Monitoring frequency for E. coli shall be proposed at once per week.

#### 6. Whole Effluent Toxicity Limitations

##### a. GENERAL COMMENTS

The State has established narrative criteria, which in part state that:

“...surface waters of the state shall be free of toxic pollutants from other than natural causes in amounts, concentrations or combinations that affect the propagation of fish or that are toxic to humans, livestock or other animals, fish or other aquatic organisms, wildlife using aquatic environments for habitation or aquatic organisms for food, or that will or can reasonably be expected to bioaccumulate in tissues of fish, shellfish and other aquatic organisms to levels that will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors or health risks to human consumers of aquatic organisms....” (NM WQS Section 20.6.4.13.F.)

In a letter from Marcy Leavitt, NMED, to Claudia Hosch, EPA, December 16, 2005, NMED provided Narrative Toxics Implementation Guidance – Whole Effluent Toxicity, (NTIG-WET), an update to the 1995 Implementation Guidance. Previously it was stated that the 4Q3 for the Rio Grande at the point of discharge is 29.7 cfs (19.2 MGD). Utilizing this 4Q3 and the facility design flow of 1.63 cfs (1.05 MGD), the resulting critical dilution for the discharge from this facility into the Rio Grande is determined as follows:

$$C_d = (Q_e \div / (FQ_a + Q_e))$$

Where:

$Q_e$  = the effluent facility flow determined above, 1.05 MGD

$Q_a$  = the critical low-flow determined above, 19.2 MGD

$F$  = the fraction of stream allowed for mixing, and for site specific streams, when conditions such as climatic conditions, channel characteristics and morphology are not known, a value of 1.0 is used.

$$C_d = (1.05 \div / \{(1.0 * 19.2) + 1.05\})$$

$$C_d = 0.051, \text{ rounded to } 5\%$$

When the critical dilution is equal to or less than 10%, the procedures in the NTIG-WET plan provide that in lieu of the more expensive 7-day chronic test, a 48-hour acute test may be run using a 10:1 acute to chronic ratio. The permit will propose a 48-hour acute test using *Daphnia pulex* and *Pimephales promelas* at a once per three-month frequency for the first full year (four tests). If all these four tests pass, then the permit may allow a frequency reduction of once per six-months for *Daphnia pulex* and once per year for *Pimephales promelas*. Any failure shall re-establish all tests for both species to once per three-month for the remainder of the permit.

The permittee shall conduct separate whole effluent toxicity tests in accordance with the following table:

| <u>EFFLUENT CHARACTERISTIC</u>                                  | <u>DISCHARGE</u><br><u>30-DAY AVG MINIMUM</u> | <u>MONITORING</u><br><u>48-Hr. MINIMUM</u> |
|---|---|--|
| Whole Effluent Toxicity Testing<br>(48 Hr. Static Renewal) (*1) |   |  |
| Daphnia pulex   | REPORT  | REPORT                                     |
| Pimephales promelas   | REPORT  | REPORT                                     |

| <u>EFFLUENT CHARACTERISTIC</u>                                  | <u>MONITORING</u><br><u>FREQUENCY</u> | <u>REQUIREMENTS</u><br><u>TYPE</u> |
|---|---------------------------------------|------------------------------------|
| Whole Effluent Toxicity Testing<br>(48 Hr. Static Renewal) (*1) |                                       |                                    |
| Daphnia pulex   | 1/Quarter                             | 24 Hr. Composite                   |
| Pimephales promelas   | 1/Quarter                             | 24-Hr. Composite                   |

**FOOTNOTES**

(\*1) Monitoring and reporting requirements begin on the effective date of this permit. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

**XII. 303(d) LIST**

The Rio Grande in Segment 20.6.4.101 of the Rio Grande Basin, Anthony Bridge to Picacho Bridge, has been identified as impaired on the "State of New Mexico Part 303(d) List for Assessed Stream and River Reaches, 2006-2008." The waterbody is assessed as Category 5/5A

with irrigation, livestock watering, wildlife habitat and marginal warmwater aquatic life uses as fully supporting but the secondary contact is not supporting with probable causes of impairment due to E. coli bacteria. The monitoring schedule is set at for 2010. The facility will meet the published water quality standards for E. coli for this segment and will meet the requirements of [40 CFR 122.44(d)]. The standard reopener language in the permit allows additional permit conditions if a future TMDL is done.

### **XIII. ANTIDegradation**

The NMAC, Section 20.6.4.8 “Antidegradation Policy and Implementation Plan” sets forth the requirements to protect designated uses through implementation of the State water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the State water quality standards and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements and the limits are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

### **XIV. ANTIBACKSLIDING**

The proposed permit is consistent with the requirements to meet antibacksliding provisions of the Clean Water Act, Section 402(o) and [40 CFR 122.44(l)(i)(A)], which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. The proposed permit maintains the mass loading requirements of the previous permit for BOD<sub>5</sub> and TSS. The pollutant pH has been made more stringent and this action is not subject to antibacksliding provisions. All of the changes represent permit requirements that are consistent with the WQS and with WQMP.

### **XV. ENDANGERED SPECIES CONSIDERATIONS**

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, <http://ifw2es.fws.gov/EndangeredSpecies/lists/>, six species in Donna Anna County are listed as endangered (E) or threatened (T). Four of the species are avian and include the Interior least tern (E) (*Sterna antillarum*), Mexican spotted owl (T) (*Strix occidentalis lucida*), Northern aplomado falcon (E) and Southwestern willow flycatcher (E) (*Empidonax traillii extimus*). One plant species is listed, the Sneed pincushion cactus (E) (*Coryphantha sneedii*), and the lone aquatic species, the Rio Grande silvery minnow (E) (*Hybognathus amarus*). The American bald eagle (*Haliaeetus leucocephalus*) was previously listed in Donna Anna County, however, in the Federal Register, July 9, 2007, (Volume 72, Number 130), the U.S. Fish and Wildlife Service, removed the American bald eagle in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife.

In accordance with requirements under section 7(a)(2) of the Endangered Species Act, EPA has reviewed this permit for its effect on listed threatened and endangered species and designated

critical habitat. After review, EPA has determined that the reissuance of this permit will have “no effect” on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1. Permit limitations are unchanged from the previously issued permit, March 14, 2003.
2. No changes have been made to the US Fish and Wildlife list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit.
3. EPA concluded “no effect” during the previous issuance of the permit on March 14, 2003, and has received no additional information since then which would lead to revision of that “no effect” determination.
4. EPA determines that Items 1, 2, and 3 result in no change to the environmental baseline established by the previous permit, therefore, EPA concludes that reissuance of this permit will have “no effect” on listed species and designated critical habitat.

#### **XVI. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS**

The reissuance of the permit should have no impact on historical and/or archeological sites since no construction activities are planned in the reissuance.

#### **XVII. PERMIT REOPENER**

The permit may be reopened and modified during the life of the permit if relevant portions of New Mexico's Water Quality Standards for Interstate and Intrastate Streams are revised or remanded by the New Mexico Water Quality Control Commission. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the Water Quality Standards are either revised or promulgated by the New Mexico Environment Department. Should the State adopt a State water quality standard, and/or develop or amend a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with [40 CFR 122.44(d)]. Modification of the permit is subject to the provisions of [40 CFR 124.5].

#### **XVIII. VARIANCE REQUESTS**

No variance requests have been received.

#### **XIX. CERTIFICATION**

The permit is in the process of certification by the State agency following regulations promulgated at [40 CFR 124.53]. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

**XX. FINAL DETERMINATION**

The public notice describes the procedures for the formulation of final determinations.

**XXI. ADMINISTRATIVE RECORD**

The following information was used to develop the proposed permit:

**A. APPLICATION(s)**

EPA Application Form 2A received September 24, 2007.

**B. 40 CFR CITATIONS**

Sections 122, 124, 125, 133, 136

**C. STATE OF NEW MEXICO REFERENCES**

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through August 1, 2007.

Region 6 Implementation Guidance for State of New Mexico Standards for Interstate and Intrastate Stream, May 1995.

Statewide Water Quality Management Plan, December 17, 2002.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2006 -2008.

**D. MISCELLANEOUS REFERENCES**

EPA Region 6 "Policy for Post Third Round NPDES Permitting" and "Post Third Round NPDES Permit Implementation Strategy," October 1, 1992.