

NPDES PERMIT NO. NM0029726
STATEMENT OF BASIS

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

APPLICANT: New Mexico Firefighters Training Academy
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ISSUING OFFICE: U. S. Environmental Agency
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PERMIT ACTION: Proposed reissuance of the current National Pollutant Discharge Elimination System (NPDES) permit issued May 25, 2005, with an effective date of June 1, 2005 and an expiration date of May 31, 2009.

DATE PREPARED: March 17, 2009

40 CFR CITATIONS: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations, revised as of January 30, 2009.

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.

FINAL DETERMINATION: On the basis of preliminary staff review and after consultation with the State of New Mexico, the Environmental Protection Agency has made a tentative determination to reissue the permit for the discharge described in the application. The public notice describes the procedures for the formulation of final determinations.

I. PROPOSED CHANGES FROM PREVIOUS PERMIT

It is proposed that the current permit be reissued for a 5-year term.

The major changes from the current permit issued May 25, 2005, with an effective date of June 1, 2005, and an expiration date of May 31, 2009, are:

- a. Delete monitoring requirements for fecal coliform, oil & grease, total organic carbon (TOC), polycyclic aromatic hydrocarbon (PAH), and total residual chlorine (TRC);
- b. Add effluent limitation for COD;
- c. Add whole effluent toxicity (WET) testing requirement;
- d. Add monitoring requirement for dissolved aluminum; and
- e. Delete internal Outfall 101.

II. DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows: BAT - best available technology economically achievable, BMP – best management plan, BOD – five-day biochemical oxygen demand, BPJ - best professional judgment, CD – critical dilution, CFR – Code of Federal Regulations, cfs – cubic feet per second, CIU - Categorical Industrial User's, COD – chemical oxygen demand, COE – United States Corp of Engineers, CWA – Clean Water Act, DMR – discharge monitoring report, EPA – United States Environmental Protection Agency, ESA - Endangered Species Act, FC- fecal coliform, FWS – United States Fish and Wildlife Service, MGD – million gallons per day, NMAC – New Mexico Administrative Code, NMED – New Mexico Environment Department, NMWQS - New Mexico State Standards for Interstate and Intrastate Surface Waters, NPDES – National Pollutant Discharge Elimination System, MQL - minimum quantification level, O&G – oil and grease, POTW – Publicly Owned Treatment Works, RP – reasonable potential, SIC - standard industrial classification, SIU - Significant Industrial User's, su – standard units, SWQB – Surface Water Quality Bureau, TDS – total dissolved solids, TMDL – total maximum daily load, TOC – total organic carbon, TRC – total residual chlorine, TSS – total suspended solids, UAA – use attainability analysis, WET - whole effluent toxicity, WQCC – New Mexico Water Quality Control Commission, and WWTP – wastewater treatment plant.

III. APPLICANT ACTIVITY

Under the SIC Code 9224, the applicant operates a firefighters training academy.

IV. DISCHARGE LOCATION

As described in the application, the facility is located on Aspen Road in Socorro, Socorro County, NM. Discharges are into a dry arroyo, thence to Diversion Channel to the Rio Grande in Stream Segment 20.6.4.105 of the Rio Grande Basin.

V. RECEIVING WATER USES

The general and specific stream standards are provided in the NMWQS (20.6.4 NMAC, amended through August 1, 2007). The designated uses of Rio Grande, in Stream Segment 20.6.4.105 are: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and secondary contact.

VI. DISCHARGE DESCRIPTION AND OPERATIONS

The facility has two sedimentation lagoons to collect fire fighter training water for reuse. Water used for training is treated through an oil & water separator, and then returned to the primary lagoon. The secondary lagoon receives some water from the primary lagoon for next training use. The facility has not discharged for several years. Water samples taken from lagoons were analyzed and reported in the EPA Permit Application Form 2E. The following is a summarization of the information for pollutants reported with the application.

	Primary Pond		Secondary Pond	
	Daily Ave.	Daily Max.	Daily Ave.	Daily Max.
pH (s.u.)	8.23		8.23	
BOD (mg/l)*	27.8	45.1	10.6	20.0
TSS (mg/l)*	59.3	314	18.5	58.0
TRC (mg/l)*	ND	ND	ND	ND
FC (#/100 ml)*	8.3	36.0	1.5	18.0
O&G (mg/l)	ND		ND	
COD (mg/l)	117		750	
TOC (mg/l)	30		180	
TRPH	0.7		ND	
Ammonia (mg/l)	ND		ND	
Arsenic (ug/l)	36.7		99.6	
Selenium (ug/l)	2.0		5.2	

Note: TRPH – Total Recoverable Petroleum Hydrocarbon

*12 measurements were taken. The rest of data were based on one sample.

VII. PROPOSED PERMIT CONDITIONS

The specific effluent limitations and/or conditions will be found in the proposed permit.

VIII. DRAFT PERMIT RATIONALE

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under 40 CFR 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

REASON FOR PERMIT ACTION

The current permit was issued May 25, 2005, with an effective date of June 1, 2005 and an expiration date of May 31, 2009. The permit renewal application was received January 21, 2009.

It is proposed that the current permit be reissued for a 5-year term following regulations promulgated at 40 CFR 122.46(a).

TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at 40 CFR 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR 122.44(a) or on State water quality standards and requirements pursuant to 40 CFR 122.44(d), whichever are more stringent.

Technology-based effluent limitations are established in the proposed permit for the following pollutants: pH, TSS and COD.

Water quality-based effluent limitations are established in the proposed permit for the following pollutants: total arsenic and total recoverable selenium.

A. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. General Comments

Regulations promulgated at 40 CFR 122.44(a) require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgment) in the absence of guidelines, or on a combination of the two.

2. Effluent Limitations

The facility has discontinued pumping treated domestic wastewater into sedimentation ponds. Therefore, Outfall 101 is deleted from the proposed permit. Sampling results from sedimentation ponds indicated that oil and grease was not detected and TRPH results might indicate that monitor of PAH (polycyclic aromatic hydrocarbon) is not necessary. EPA determines not to continue the monitoring requirement for TOC due to lack of information to

establish a BPJ limitation. pH range 6.0 – 9.0 is retained from the current permit as a BPJ limitation because there is no site-specific pH water quality standard for ephemeral streams. On the BPJ basis, EPA proposes a daily maximum effluent limitation of 120 mg/l for COD. The limit of 120 mg/l of COD is based on the benchmark value of storm water from hazardous waste site (Sect K of Multi-sect General Permit for Industrial Activities). Monthly average of 100 mg/l for TSS in the current permit is retained. Sampling results reported in the application indicated that the discharge should be able to meet these limitations. Effluent characteristics from a similar facility in the State of Washington (NPDES No. WA-003138-6) also indicated that the proposed limitations are achievable.

3. Monitoring Frequencies 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 contained in 40 CFR 122.44(i)(1). Because the training used water is collected and settled by sedimentation ponds and discharge may be required only when ponds are scheduled for cleaning and/or repairs on annual or biannual basis, the proposed monitoring frequency for flow, TSS and COD is 1/batch. One sample for TSS and COD shall be taken and analyzed prior to the discharge to ensure the quality of pond water meet TSS and COD limitations and another sample shall be taken during the discharge.

B. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

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, 3/9/84)." 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, and the EPA Region 6 WET Permitting Strategy on May 1, 2005. The Regional policy and strategies 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 strategies. The NPDES permit contains 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

As stated above, the designated uses of the receiving stream are irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and secondary contact.

(b) Revised Water Quality Standards

The WQCC adopted new WQS for the State of New Mexico. The revised WQS as amended through August 1, 2007 are available on the NMED's website at: <http://www.nmenv.state.nm.us/swqb/Standards/20.6.4NMAC.pdf>. The WQCC established the revised WQS in accordance with, and under authority of, the NM Water Quality Act [Chapter 74, Article 6, NMSA 1978 Annotated]. The WQS have been approved by EPA in accordance with Section 303 of the CWA.

(c) Water Quality-based Limit Calculations

Effluent limitations and/or conditions established in the proposed permit are in compliance with State WQS. Standards require that the discharge protect acute aquatic toxicity in all reaches. In order to implement this WQS, the end-of-pipe discharge will have to meet applicable standards. The critical dilution is 100%. The WQS also requires the discharge meet chronic standards at the mixing zone.

To determine if a pollutant has a reasonable potential to exceed a numeric criteria, the following steady state complete mixing zone model is used:

$$Cd = \{(FQa * Ca) + (Qe * 2.13 * Ce)\} / (FQa + Qe)$$

Where:

Cd = Instream waste concentration

F = Fraction of stream allowed for mixing, as applicable, F = 1.0

Ce = reported pollutant concentration

2.13 = Statistical multiplier, an estimate of the 95th percentile) for either a single available effluent concentration, or a geometric mean of effluent data concentration, as discussed in the EPA Region 6 document titled Effluent Variability Policy, dated September 17, 1991, or the most current revision thereof.

Ca = Ambient stream concentration, if available

Qe = Discharge flow in MGD

Qa = Critical low flow, 4Q3, of receiving stream,

- = Harmonic mean flow for long term human health screening, or
- = 0 MGD for acute aquatic life screening.

State WQS presents some acute and chronic toxicity standards as a function of hardness. The average of hardness for the receiving water or effluent if discharges are to intermittent/ephemeral streams is used to calculate hardness dependent standards. The maximum hardness value could be used for calculation is 400 mg/l of CaCO₃ and a default value of 20 mg/l would be used if hardness value is not available. Some of the metals in the State WQS are based on dissolved concentrations and are function of stream total suspended solids (TSS). Linear partition coefficients are used to convert dissolved standards to total standards for screening purpose. If a linear partition coefficient is not available, a ratio of dissolved/total metal concentration is assigned to be 1.0 for both screening and compliance purposes.

Regulations contained in Subsection G of 20.6.11 NMAC state that when limited aquatic life is a designated use, the human health criteria shall apply only if adopted on a segment-specific basis. It further states that persistent toxic pollutants, as identified in Subsection J of 20.6.4.900 NMAC, shall also apply to all tributaries of waters with a designated, existing or attainable aquatic life.

The facility has not discharged since the effective date of the current permit issued in 2005. New data from sedimentation pond samples indicated that future discharge may have a reasonable potential to exceed applicable water quality criteria for total arsenic and total recoverable selenium, therefore effluent limitations for arsenic and selenium are retained in the permit. Data and new information have demonstrated no reasonable potential for FC, O&G, and TRC, therefore monitoring requirements for these parameters are deleted from this draft permit.

(d) Schedule of Compliance

No compliance schedule is proposed.

(e) Monitoring Frequencies for Limited Parameters

Because any discharge would be anticipated due to pond cleaning-up and/or repair, to prevent the discharge from violation of the permit, the monitoring requirement for total arsenic and total recoverable selenium is proposed 1/batch within two weeks prior to scheduled discharge. The permittee shall manage not to discharge if analytical results show exceedance of permit limitations.

(f) Aquatic Toxicity Testing

The State has established narrative criteria, which in part, state that: "Surface waters of the State shall be free of toxic substances attributable to discharges in amounts, concentrations or combinations which affect the propagation of fish or that are toxic to humans, livestock or other animals, fish or other aquatic organisms;..." (NM Standards 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. In accordance with the NTIG-WET, an acute WET for *Daphnia pulex* once per permit term is proposed in the permit.

IX. IMPAIRED WATER- 303(D) LIST

The discharge has a potential to reach the Rio Grande at the segment between San Marcial at USGS gage and Rio Puerco, in segment number 20.6.4.105. This segment of water is not supporting for marginal warmwater aquatic life and secondary contact. The probable causes of impairment are aluminum and *E. coli*. The facility would have no reasonable potential to contribute *E. coli* because it ceased pumping domestic wastewater into the sedimentation ponds. Because analytical result of aluminum was not reported with 2004 application, a monitoring requirement of dissolved aluminum is established.

X. ANTIDegradation

The New Mexico 20.6.4.8 NMAC "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. The permit requirements are protective of the assimilative capacity of the receiving waters, and are protective of the designated uses of that water.

XI. 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)(2)(i)(B), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless information is available which was not available at the time of permit issuance. The removal of internal outfall 101, FC, O&G and TRC from final outfalls is based on new information that domestic wastewater is not discharged into the ponds or analytical results have demonstrated no reasonable potential.

XII. HISTORICAL AND ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

Construction activities are not planned by the permittee that may disturb soil or cause any destruction of historical or archeological structures.

XIII. ENDANGERED SPECIES

The FWS' New Mexico Ecological Services Field Office lists eight endangered species and three threatened species in Socorro County as shown on FWS' website <http://www.fws.gov/southwest/es/NewMexico/SBC.cfm> and they are Socorro isopod, least tern, northern aplomado falcon, southwestern willow flycatcher, Rio Grande silvery minnow, black-

footed ferret, Alamosa springsnail, Socorro springsnail, Chiricahua leopard frog, Mexican spotted owl, and piping plover. Southwestern willow flycatcher, Mexican spotted owl and Rio Grande silvery minnow have designated critical habitats in the county.

The Socorro Isopod lives only in one hot spring system in Socorro County, New Mexico, occupying several small pools and runs between Sedillo Springs and the abandoned Evergreen bathhouse. The Alamosa springsnail lives only at Ojo Caliente and Warm Spring at the head of the Alamosa River in Socorro County. The Socorro springsnail inhabits shallow habitats of Torreon Springs, 15 miles south of Socorro.

Black-footed ferret was last confirmed in New Mexico in 1934. The species is presumed extirpated in New Mexico and is not listed by the New Mexico Department of Game and Fish.

The interior least tern breeds locally along the major tributaries of the Mississippi River drainage basin from eastern Montana south to Texas and east to western Illinois, Missouri, Arkansas and Louisiana. Human development and use of least tern nesting beaches for housing and recreation subsequently lead to rapid population decline. In the interior United States, river channelization, irrigation diversions and the construction of dams contributed to the destruction of much of the terns' sandbar nesting habitat.

Piping Plovers nest on sandy beaches along the Atlantic Coast from Canada to North Carolina, along the shores of Great Lakes, and on river sandbars and shorelines of inland lakes in the northern Great Plains. They spend the winter along the southern Atlantic Coast and Gulf Coast from Florida to Mexico. Piping Plovers have declined because the beaches and lake shores where they nest and spend the winter have changed due to recreational, residential, and commercial development.

The aplomado falcon is typically a species of open habitats in North and Central America, ranging from coastal prairie and other grasslands through tropical savanna to open woodlands containing oaks and pines. Threats include habitat degradation due to brush encroachment and grassland degradation from overgrazing near the turn of the century, conversion of habitat to agriculture, urban and suburban sprawl, and chlorinated pesticide contamination.

Several factors have caused the decline in Southwestern willow flycatcher populations. Extensive areas of suitable riparian habitat have been lost due to river flow-regulation and channelization, agricultural and urban development, mining, road construction, and overgrazing. As a result of habitat fragmentation, cowbird parasitism has increased. The invasion of the exotic salt cedar has also altered the riparian ecosystem in the Southwest. Salt cedar is less favorable than native riparian vegetation to the flycatchers.

Mexican spotted owls have the largest geographic distribution of all spotted owl subspecies. They can be found in forested mountains and canyons from southern Utah and Colorado to the mountains of Arizona, New Mexico, western Texas and even into the mountains of northern and central Mexico. They prefer forested mountains and canyons with mature trees that create high, closed canopies, which are good for nesting. They also nest in stick nests built by other birds, tree cavities, caves and on cliff ledges. The main threats to the Mexican spotted owl are

starvation, fire and loss of habitat due to logging, which also causes a greater risk of predation by great horned owls as a result of increased open space.

Critical habitat for Rio Grande silvery minnow includes the main stream of the Rio Grande from the bridge crossing of State Highway 22 immediately south of Cochiti Dam, Sandoval County, downstream to the Atchison Topeka and Santa Fe Railroad crossing of the river near San Marcial, Socorro County. This fish currently occurs only in the middle Rio Grande from Cochiti Dam downstream to the headwaters of Elephant Butte Reservoir. Threats to the species include dewatering, channelization and regulation of river flow to provide water for irrigation; diminished water quality caused by municipal, industrial, and agricultural discharges; and competition or predation by introduced non-native fish species. The facility has two sedimentation ponds to store fire fighters training water for reuse. The capacity of the primary pond is about 500,000 gallons and the secondary pond is about 1 million gallons. The facility pumped water from the primary pond to the secondary pond when it conducted clean-up and maintenance on the primary pond. The facility expects discharges from the secondary pond when clean-up and maintenance are performed. While a discharge occurs, the effluent travels in a dry arroyo for 0.5 miles before it reaches the division channel of Rio Grande, then the effluent travels 5 miles in the channel to reach the river. It is unlikely the discharge would reach the Rio Grande.

The Chiricahua leopard frog, native to the Southwest, is imperiled by nonnative predators, particularly fish, bullfrogs, and crayfish; loss of habitat, and potential natural events such as floods and drought. The species apparently has disappeared from entire mountain ranges, valleys and river drainages within its historic range. The facility has not had a discharge during the last permit term. So, the discharge frequency may be less than one or two times during the 5-year permit term. The volume of a batch discharge is limited to the one-million-gallon pond capacity and may be last for few days. Therefore, a discharge from the facility would not likely create a permanent water pot hole to support habitat for the frog, nor the effluent characteristics indicate acute toxic to aquatic life.

The reissuance of this permit will not cause a “direct or indirect take” of any listed endangered or threatened species. EPA determines that this permitting action has “no effect” on the listed species.

XIV. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit in accordance with the provisions of 40 CFR 124.5.

XV. VARIANCE REQUESTS

No variance requests have been received.

XVI. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record required by 40 CFR 124.9:

A. PERMIT(S)

NPDES Permit No. NM0029726 issued May 25, 2005, with an effective date of June 1, 2005, and an expiration date of May 31, 2009.

B. APPLICATION(S)

EPA Application Consolidated Forms 1 and 2E received January 1, 2009.

C. STATE WATER QUALITY REFERENCES

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).

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