



BUY TO  
ATTENTION:

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, U. S. ARMY GARRISON COMMAND  
1733 PLEASANTON ROAD  
FORT BLISS, TEXAS 79916-6816

November 14, 2008



IMWE-BLS-PWE

Mr. David Cobrain  
State of New Mexico Environment  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505-6303

SUBJECT: SWMU 27B (Dona Ana Pond) and SWMU 76 (Meyer Pond) Wastewater Sampling and Flow Readings

Dear Mr. Cobrain:

In accordance with our Settlement Agreement, Fort Bliss is pleased to forward by FEDEX for your review the following:

1. Wastewater Sampling Results Report, September 2008, Semi-Annual Wastewater Compliance Sampling for Meyer and Dona Ana - New Mexico Range Outfalls at Fort Bliss, Texas, October 2008 by Tetrahedron, Inc. through the Tulsa District Corps of Engineers Contract Number W 912BV-07-D-2050 (encl 1).
2. Wastewater Flow Monitoring Reports for September 2008 – April 2008, by Tetrahedron, Inc. through the Tulsa District Corps of Engineers Contract Number DACA31-00-D-0032 (encl 1).
3. Work Plan for Wastewater, Fort Bliss – New Mexico Operations – February 2008, by Tetrahedron, Inc. through the Tulsa District Corps of Engineers Contract Number DACA31-00-D-0032 (encl 2).

It should be noted that our wastewater quality sampling submitted today and in the future is based on El Paso Water Utilities Regulation No. 9 with additions, as requested by your office.

Should you require additional information or clarification, please contact our Wastewater Program Manager Mr. Jack Lady at (915-568-0558) or by E-mail at Jack.lady@us.army.mil).

Encl (2)

*Sylvia A. Waggoner*  
Sylvia A. Waggoner  
Chief Compliance Branch  
DPW- Environmental Division

**LIBRARY COPY**



---

**WASTEWATER SAMPLING RESULTS REPORT FOR  
SEPTEMBER 2008, SEMI-ANNUAL WASTEWATER COMPLIANCE SAMPLING FOR  
MEYER AND DONA ANA – NEW MEXICO RANGE OUTFALLS**

**AND**

**WASTEWATER FLOW MONITORING REPORTS FOR SEPTEMBER 2008 – APRIL  
2008 FOR MEYER AND DONA ANA – NEW MEXICO RANGE OUTFALLS**

**AT**

**FORT BLISS, TEXAS**

**Prepared for:**

**Directorate of Public Works  
Environmental Division  
Taylor Road South, Bldg. 622  
Fort Bliss, Texas 79916-6812**

**and**

**U.S. Army Corps of Engineers-Tulsa District  
1645 South 101<sup>st</sup> East Avenue  
Tulsa, OK 74128-4629  
Contract No. DACA31-00-D-0032**

**Prepared by:**

**Tetrahedron, Inc.  
1414 Key Highway, Suite B  
Baltimore, Maryland 21230**

## CONTENTS

- I. Wastewater Sampling Results Report for September 2008, Semi-Annual Wastewater Compliance Sampling for Meyer and Dona Ana - New Mexico Range Outfalls at Fort Bliss, Texas, October 2008 by Tetrahedron, Inc. through the Tulsa District Corps of Engineers Contract Number W 912BV-07-D-2050**
  
- II. Wastewater Flow Monitoring Reports for April 2008 – September 2008 by Tetrahedron, Inc. through the Tulsa District Corps of Engineers Contract Number DACA31-00-D-0032**
  - a. Wastewater Flow Monitoring Reports for September 2008**
  - b. Wastewater Flow Monitoring Reports for August 2008**
  - c. Wastewater Flow Monitoring Reports for July 2008**
  - d. Wastewater Flow Monitoring Reports for June 2008**
  - e. Wastewater Flow Monitoring Reports for May 2008**
  - f. Wastewater Flow Monitoring Reports for April 2008**

**Wastewater Sampling Results Report for September 2008, Semi-Annual  
Wastewater Compliance Sampling for Meyer and Dona Ana - New Mexico  
Range Outfalls at Fort Bliss, Texas, October 2008**



US Army Corps  
of Engineers  
TULSA DISTRICT



---

**WASTE WATER SAMPLING RESULTS REPORT FOR  
SEPTEMBER 2008**

**SEMI-ANNUAL WASTEWATER COMPLIANCE SAMPLING  
FOR MEYER AND DOÑA ANA - NEW MEXICO RANGE OUTFALLS**

**AT**

**FORT BLISS, TEXAS**

**Prepared for:**

**Directorate of Public Works  
Environmental Division  
Taylor Road South, Bldg. 622  
Fort Bliss, Texas 79916-6812**

**and**

**U.S. Army Corps of Engineers-Tulsa District  
1645 South 101<sup>st</sup> East Avenue  
Tulsa, OK 74128-4629  
Contract No. W 912BV-07-D-2050  
Task Order No. 0003**

**Prepared by:**

**Tetrahedron, Inc.  
1414 Key Highway, Suite B  
Baltimore, Maryland 21230**

**October 2008**

**WASTE WATER SAMPLING RESULTS REPORT FOR  
SEPTEMBER 2008**

**SEMI-ANNUAL WASTEWATER COMPLIANCE SAMPLING  
FOR MEYER AND DOÑA ANA - NEW MEXICO RANGE OUTFALLS  
AT  
FORT BLISS, TEXAS**

**TABLE OF CONTENTS**

	<u>Page</u>
1.0 INTRODUCTION .....	1
1.1 BACKGROUND .....	1
1.2 FIELD INVESTIGATION AND REPORTING .....	1
2.0 MONITORING LOCATIONS AND REQUIREMENTS.....	3
2.1 SITE ACCESS .....	3
2.2 ISCO SAMPLER PREPARATION & INSTALLATION .....	3
2.3 WASTEWATER COLLECTION CRITERIA .....	3
2.4 WASTE DISPOSAL.....	6
3.0 WASTEWATER ANALYTICAL MONITORING.....	7
3.1 ANALYTICAL SAMPLING .....	7
3.2 WASTEWATER SAMPLING CHRONOLOGY .....	7
3.3 WASTEWATER SAMPLE COLLECTION.....	8
3.4 WASTEWATER MONITORING DATA RESULTS .....	8
3.5 DISCHARGE LIMIT EXCEEDANCES.....	11
3.6 DATA QUALITY ISSUES .....	11
3.7 FIELD QUALITY CONTROL SAMPLES.....	12
3.7.1 Field Duplicates .....	12
3.7.2 VOC Trip Blank and Field Blank.....	12
4.0 CONCLUSIONS.....	14
5.0 REFERENCES .....	15

## APPENDICES

- A Copy of Field Log Pages and pH Calibration Pages for Current Reporting Period for September 2008
- B Laboratory Data Reports for Analytical Samples Collected September 2008
- C Chain of Custody Forms for Analytical Samples Collected September 2008

## TABLES

2-1	Areas Designated for New Mexico Range Outfalls Wastewater Monitoring .....	3
2-2	Numeric Effluent Limitations for El Paso Discharge of Wastewater by EPWU's Rule #9 .....	5
2-3	Additional Analytes Required for New Mexico by NMED Settlement Agreement .....	6
2-4	Additional Parameters Requested by Fort Bliss .....	6
3-1	Summary of Sample Collection Dates/Times at Fort Bliss – New Mexico Range Outfalls .	7
3-2	Composite Sample Analytical Results Summary .....	8
3-3	Composite Sample Analytical Results for Other Metals per NMED Settlement Agreement	9
3-4	Composite Sample - Detectable SVOCs (Method 8270).....	10
3-5	Grab Sample Analytical Results Summary .....	10
3-6	Grab Sample – Other Detectable VOCs (Method 8260).....	11
3-7	Analysis of Composite Sample and QA Duplicate Samples.....	13
3-8	Analysis of Grab Sample and QA Duplicate Samples .....	13

## ACRONYMS

B	indicates an estimated value for inorganics, between MDL and RL
BTEX	benzene, toluene, ethyl benzene, xylene
BOD	Biological Oxygen Demand
COD	Chemical Oxygen Demand
DPW-ED	Directorate of Public Works – Environmental Division
EPA	U.S. Environmental Protection Agency
EPWU	El Paso Water Utilities
J	indicates an estimated value for organics, between MDL and RL
MCAWW	Methods for Chemical Analysis of Water and Wastes
MDL	Method Detection Limit
NMED	New Mexico Environment Department
mg/L	milligrams per liter
µg/L	micrograms per liter
QA	Quality Assurance
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SM19	Standard Methods, 19 <sup>th</sup> Edition
SVOC	Semi-Volatile Organic Compounds
TBLL	Technically Based Local Limits
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
USACE	United States Army Corps of Engineers
VOC	Volatile Organic Compounds
WP	Work Plan



## **1.0 INTRODUCTION**

Tetrahedron, Inc., has been contracted by the United States Army Corps of Engineers (USACE), Tulsa District, under Contract No. W 912BV-07-D-2050, Task Order No. 0003, to prepare this semiannual report summarizing wastewater monitoring efforts conducted for the New Mexico Range Outfalls in September 2008.

Tetrahedron, Inc., in accordance with the 'Work Plan for Wastewater Sampling, Fort Bliss – New Mexico Operations', updated February 2008, mobilized and installed the ISCO samplers, collected wastewater samples, sent them to the laboratory for analysis and prepared this report.

### **1.1 BACKGROUND**

The semi-annual wastewater monitoring at five of the six outfalls in New Mexico has been occurring regularly for more than 7 years. A sixth site, McGregor 2, (5-acre pond) was added to the sites to be sampled in 2006. This monitoring has been for the purpose of in-house information only. These discharges have been analyzed in accordance with EPWU Rule #9 (last amended January 9, 2008) requirements, for consistency. Per settlement agreement with the New Mexico Environment Department (NMED), two oxidation ponds (Doña Ana and Meyer) are reported.

The Doña Ana Outfall monitoring site (32° 8.67'N, 106° 30.32' W) is located about ¼ mile south of the Doña Ana Range Camp and about ¼ mile west of War Road. The Doña Ana Outfall is located behind a locked gate that is located approximately 250 meters from the Doña Ana Base Camp. The outfall is 2' deep, 3' in diameter, with a 24" manhole cover. The input is 8" in diameter and the output consist of two 8" pipes that feed through a soil berm to the sewer pond.

The Meyer Base Camp Monitoring site (32° 1.712'N, 106° 8.887' W) is located approximately 250 meters from a training / temporary prisoner confinement area. The outfall is 6' wide with a 24" manhole cover. This is a sewage lift station.

### **1.2 FIELD INVESTIGATION AND REPORTING**

Discharges to the New Mexico Range Camp Treatment ponds are not regulated. In the absence of New Mexico regulatory standards, the sampling parameters have been and will continue to be in accordance with El Paso's Rule #9 regulating wastewater discharge into El Paso's wastewater system and NMED Settlement Agreement. At the request of Fort Bliss Directorate of Public Works – Environmental Division (DPW-ED), additional metals, VOCs (Method 8260) and SVOCs

(Method 8270) were added to the list of analytes. The EPWU Rule #9 limits are used for purposes of comparability with effluent quality parameters used elsewhere on the installation. Fort Bliss will continue semi-annual wastewater sampling in accordance with the wastewater discharge agreement with EPWU and the Settlement Agreement.

Fort Bliss requires periodic wastewater sampling analyses, at six sites in New Mexico and preparation of reports for the DPW-ED. As part of the Settlement Agreement, Fort Bliss requires semiannual wastewater sampling analyses at two sites in New Mexico and preparation of reports for the Fort Bliss DPW-ED. The samples are required to be taken in September and March. This report covers the September 2008 sampling results.

## 2.0 MONITORING LOCATIONS AND REQUIREMENTS

Fort Bliss has a total of six wastewater outfalls at Fort Bliss – New Mexico Range. Each monitoring site is described in Appendix A of the Wastewater Sampling and Analysis Plan. Table 2-1 lists the sampling locations.

**Table 2-1 Areas Designated for New Mexico Range Outfalls Wastewater Monitoring**

	Site Name	Width of Manhole Cover	Depth to Flow	Base Flow Rate	Notes
1	Meyer	Slab covered pit ~1.5x2 ft	2 feet	Variable	Pipe empties to pit, ISCO has to be mounted outside of pit when sampling
2	Doña Ana	24 inches	2 feet	Low	8 inch pipe inlet, ISCO has to be mounted outside when sampling

### 2.1 SITE ACCESS

Monitoring sites are located at open ponds or beneath access covers. Copies of the field logbook documenting sampling activities conducted by the field sampling crew are found in Appendix A.

### 2.2 ISCO SAMPLER PREPARATION & INSTALLATION

ISCO samplers are cleaned and prepared for mobilization prior to use. The samplers are disassembled, scrubbed to remove any solids or residue, washed with a phosphate-free detergent, and rinsed with tap water. The samplers are then rinsed again with deionized water and allowed to air-dry before being reassembled.

Once clean, each sampler was tested with deionized water to ensure all parts of the sampler are working properly. If necessary, additional parts such as hoses, gaskets, washers or replacement parts are ordered. After the ISCO samplers are air-dried, they are reassembled and stored.

### 2.3 WASTEWATER COLLECTION CRITERIA

Wastewater sampling was accomplished by deployment of automatic compositing samplers (ISCO Model 3710). The samplers are set to withdraw a sample every hour for 24 hours and

composed, resulting in a single 24-hour composite wastewater sample per outfall. Deployment and sample collection procedure was as follows:

- 1) Each sampler was calibrated to withdraw approximately 500 ml of effluent an hour for 24 hours from the outfall for each sample. Necessary program adjustments are made due to the varying lengths of sample tubing.
- 2) Each sampler was secured by locks and chains to prevent tampering or theft.
- 3) Samplers are checked after 24 hours to make sure that adequate sample volume had been collected and that the sampler had performed as desired.
- 4) Grab VOCs, cyanide, oil and grease, and pH samples are collected.
- 5) Field pH readings are taken within 15 minutes from collecting the grab sample from the waste stream.
- 5) All sample containers are labeled with the outfall designator, date, time collected, and analysis requested. Chains-of-custody (COC) forms with outfall designator, date, time collected, analysis requested and sampler's name for each sample are completed and all samples are placed into a cooler (with ice) and sent to the analytical laboratory the same day.

Numeric effluent limitations for discharges of wastewater to inland waters of New Mexico follows El Paso's EPWU Rule #9 and NMED Settlement Agreement. They are presented in Table 2-2 and Table 2-3. Only the most current limits for each sampling event will be used. Additional parameters analyzed at these sites are presented in Table 2-4.

**Table 2-2 Analytes with Numeric Effluent Limitations per El Paso Discharge of Wastewater by EPWUs Rule #9**

Pollutant	TBLL-Maximum Concentration (mg/l)	Analytical Method
Total Arsenic	0.17	SW846 6010
Total Cadmium	0.11	SW846 6010
Total Chromium	1.22	SW846 6010
Total Copper	2.39	SW846 6010
Total Iron	--	SW846 6010
Total Lead	0.66	SW846 6010
Total Mercury	0.002	SW846 7470A
Total Molybdenum	0.15	SW846 6010
Total Nickel	1.71	SW846 6010
Total Selenium	0.35	SW846 6010
Total Silver	0.98	SW846 6010
Total Zinc	5.37	SW846 6010
Cyanide	1.31	MCAWW 335.4
Total Oil and Grease	100	SW846 1664A
Total Dissolved Solids (TDS)	6140	SM19 2540C
Color <sup>1</sup>	300 ADMI	MCAWW 110.1
	<b>TBLL-Maximum Concentration (mg/l)</b>	
Benzene	20.0	SW846 8260
Toluene	17.0	SW846 8260
Ethyl Benzene	16.0	SW846 8260
Xylene	17.0	SW846 8260
pH	5.5-10.5 ph units	SM19 4500H

TBLL = Technically Based Local Limit concentration for each analyte tested

MCAWW = "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 = EPA 1986, etc., *Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)*, Third Edition, Sept. 1986; Final Update I, July 1992; Final Update IIA, August 1993; Final Update II; Final Update IIB, January 1995; Final Update IIIA, December 1996 and IIIB; IVA; and IVB, January 2008.

SM19 = *Standard Methods for the Examination of Water and Wastewater*. 19th Edition, AWWA, APHA, WPCF; Water Pollution Control Federation, Washington, DC, 1995

<sup>1</sup> Color analysis was not performed, since the EPWU Rule #9 requirement is for wastewaters containing dye. Color analysis has been omitted because there are no discharges to the Fort Bliss wastewater collection system that contain dye.

**Table 2-3 Additional Analytes Required for NMED Settlement Agreement**

Pollutant	TBLL-Maximum Concentration (mg/l)	Analytical Method
Total Aluminum	--	SW846 6010
Total Antimony	--	SW846 6010
Total Barium	--	SW846 6010
Total Beryllium	--	SW846 6010
Total Calcium	--	SW846 6010
Total Cobalt	--	SW846 6010
Total Magnesium	--	SW846 6010
Total Manganese	--	SW846 6010
Total Potassium	--	SW846 6010
Total Sodium	--	SW846 6010
Total Thallium	--	SW846 6010
Total Vanadium	--	SW846 6010
Semi-Volatile Compounds (SVOCs) *	--	SW846 8270

SW846 = EPA 1986, etc., *Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)*, Third Edition, Sept. 1986; Final Update I, July 1992; Final Update IIA, August 1993; Final Update II; Final Update IIB, January 1995; Final Update IIIA, December 1996 and IIIB; IVA; and IVB, January 2008.

\* Compounds analyzed for can be found in Appendix B, Laboratory Data Reports

**Table 2-4 Additional Parameters Requested by Fort Bliss**

Biological Oxygen Demand (BOD) <sub>5</sub>	--	SM19 5210B
Chemical Oxygen Demand (COD)	--	SM19 5220C
Total Suspended Solids (TSS)	--	SM19 2540D

SM19 = *Standard Methods for the Examination of Water and Wastewater*. 19th Edition, AWWA, APHA, WPCF; Water Pollution Control Federation, Washington, DC, 1992.

## 2.4 WASTE DISPOSAL

Wastes generated during field activities are classified as household waste and consisted of nitrile gloves, plastic wrappers, foam inserts and paper trash. Wastes are disposed of in Fort Bliss public trash receptacles.

### 3.0 WASTEWATER ANALYTICAL MONITORING

#### 3.1 ANALYTICAL SAMPLING

During the current reporting period, September 2008, Tetrahedron, Inc. collected samples from the designated outfalls (see Table 2-1 for locations) on 16, 19 and 23 of September 2008.

Sample handling, preservation, and analysis are conducted in accordance with the Work Plan for Wastewater prepared by Tetrahedron, Inc.

This is a semiannual monitoring requirement and must be conducted in March and September.

#### 3.2 WASTEWATER SAMPLING CHRONOLOGY

Actual sampling at the range camps was initiated on 15 of September 2008, collection continued through 23 of September 2008. Table 3-1 shows the approximate chronology for sampler set-up. EPWU Rule #9 requires the use of flow or time-proportional sampling for wastewater discharge compliance monitoring (EPWU Rule #9, Section III, B.1).

Dates/times of sample collection for each of the designated outfalls at Fort Bliss – New Mexico Range Outfalls are presented in Table 3-1. Appendix A contains copies of the field logbook notes documenting all field activities.

**Table 3-1 Summary of Sample Placement and Collection Dates/Times at Fort Bliss – New Mexico Range Outfalls**

<b>Outfall Designator</b>	<b>Placement Date/Time</b>	<b>Sample Collection Date/Time</b>
Meyer	15 September 2008 // 11:32	16 September 2008 // 11:15
Doña Ana	18 September 2008 // 15:19	19 September 2008 // 14:25
Doña Ana Duplicate QC	18 September 2008 // 14:25	19 September 2008 // 14:25
Field Blank	---	19 September 2008 // 13:30
Doña Ana and Doña Ana Duplicate BOD5 only **	22 September 2008 // 15:41	23 September 2008 // 14:43

\*\* Site needed to be resampled for BODs due to BOD sample arriving at the laboratory beyond holding time due to delivery error by Federal Express.

### **3.3 WASTEWATER SAMPLE COLLECTION**

Tetrahedron, Inc. collected grab and composite samples from all monitored outfall locations at Fort Bliss for semiannual pollutant monitoring. Analytical results from all designated wastewater outfalls were compared to the numeric effluent limitations set by El Paso's EPWU's Rule #9 and NMED Settlement Agreement (effluent limitations found in Tables 2-2 through 2-4). Analytical Results for the monitoring sites at the Meyer Range Camp and Doña Ana Range Camp are located in Tables 3-2 through 3-6.

A grab wastewater sample was collected for volatiles (including benzene, toluene, ethyl benzene, xylene (BTEX)), pH, cyanide, and oil & grease.

A 24-hour composite sample was also collected for: Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Semivolatile Organic Compounds (SVOCs) and total metals: arsenic, cadmium, chromium, copper, iron, lead, mercury, molybdenum, nickel, selenium, silver and zinc. In addition, NMED requires the following additional total metals, aluminum, antimony, barium, beryllium, calcium, cobalt, magnesium, manganese, potassium, sodium, thallium, and vanadium.

During the current reporting period, samples were collected from all designated outfalls and prepared for shipment to the laboratory (Accutest Laboratories) for analysis. Sample handling, preservation, and analysis were conducted in accordance with the 'Work Plan for Wastewater Sampling, Fort Bliss – New Mexico Operations' (February 2008) prepared by Tetrahedron, Inc.

### **3.4 WASTEWATER MONITORING DATA RESULTS**

A summary of wastewater monitoring data collected for grab and composite samples during this reporting period from the Doña Ana and Meyer outfalls at Fort Bliss – New Mexico Range outfalls is shown in Tables 3-2 through 3-6. These tables show the results by outfall and analyte. All analytical results are within normal and expected ranges for the respective analytes. Copies of the laboratory data reports from Accutest Laboratories can be found in Appendix B and the associated chain of custody forms for samples collected for analysis can be found in Appendix C. Analytical monitoring is a semiannual event and was completed and reported during this current reporting period.

Analytical monitoring data was compared to numeric limitations for the values established in the EPWU's Rule #9 issued to Fort Bliss – New Mexico Ranges outfalls. There are no Rule #9 exceedances.



**Table 3-2 Composite Sample Analytical Results Summary,  
(Regulatory Limits per EPWU Rule #9)**

Outfall Designation	Analytes (all results are mg/L)															
	BOD	COD	TDS	TSS	Arsenic	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
Meyer	99.3	109	631	47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0211
Doña Ana	885	416	678	153	ND	ND	ND	0.0762	1.80	0.0053	ND	ND	ND	ND	ND	0.158
Regulatory Limits (TBLL)	NS	NS	6,140	NS	0.17	0.11	1.22	2.39	NS	0.66	0.002	0.15	1.71	0.35	0.98	5.37
Highest Percent (%) of analyte found based on TBLL (for all sample sites) *	NS	NS	32.1	NS	ND	ND	ND	3.2	NS	0.8	ND	ND	ND	ND	ND	4.0

ND = Not Detected.

TBLL = Technically Based Local Limit concentration for each analyte tested.

NS = Not Specified: there is no TBLL concentration for these analytes.

\* Based on the ratio of the highest concentration found of an analyte from all samples taken to the TBLLs, in percent (%).

**Table 3-3 Composite Sample Analytical Results for Other Metals per NMED Settlement Agreement**

Outfall Designation	Analytes (all results are mg/L)											
	Aluminum	Antimony	Barium	Beryllium	Calcium	Cobalt	Magnesium	Manganese	Potassium	Sodium	Thallium	Vanadium
Meyer	ND	ND	ND	ND	55.1	ND	9.47	ND	15.5	116.0	ND	ND
Doña Ana	1.06	ND	ND	ND	38.9	ND	9.63	0.0675	38.4	112.0	ND	ND

ND = Not Detected.

**Table 3-4 Composite Sample - Detectable SVOCs Summary (Method 8270)  
per NMED Settlement Agreement**

Analyte	Detectable SVOCs (units in mg/L)			
	CAS#	Meyer	Doña Ana	Field Blank
Benzoic acid	65-85-0	ND	0.0481	ND
3&4 Methylphenol	108-39-4/	ND	0.035	ND
Benzyl alcohol	100-51-6	ND	0.0093	ND
4-Chloroaniline	106-47-8	ND	0.001 J	ND
1,4-Dichlorobenzene	106-46-7	ND	0.00096 J	ND
Diethylphthalate	84-66-2	ND	0.0029 J	ND
Dimethylphthalate	131-11-3	0.0012 JB	0.0016 J	0.0017 J
bis(2-Ethylhexyl)phthalate	117-81-7	0.0162	0.0233	ND
Phenol	108-95-2	0.0011J	0.0046 J	ND

ND = Non-detected.

J = Result value is greater than Method Detection Limit (MDL) and less than Reporting Limit (RL)

**Table 3-5 Grab Sample Analytical Results Summary**

Outfall Designation	Analytes						
	Benzene	Ethyl- benzene	Toluene	Xylenes	Cyanide	Oil & Grease	pH
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH units
<b>Meyer</b>	ND	ND	ND	ND	ND	ND	7.7
<b>Doña Ana</b>	ND	ND	0.0015	ND	ND	44.1	6.9
Regulatory Limits (TBLL)	20	16	17	17	1.31	100	5.5-10.5
Highest Percent (%) of analyte found based on TBLL (for all sample sites) *	NC	NC	0.053	NC	1.15	66.0	---

TBLL = Technically Based Local Limit concentration for each analyte tested.

NS = Not Specified; there is no TBLL concentration for these analytes.

ND = Not Detected.

Based on the ratio of the highest concentration found of an analyte from all samples taken to the TBLLs, in percent (%).

J = result > Method Detection Limit and < Reporting Limit.

**Table 3-6 Grab Sample – Other Detectable VOCs (Method 8260)**

Analyte	Detectable VOCs (units in mg/L)			
	CAS#	TBLL (µg/L)	Meyer	Doña Ana
Acetone	67-64-1	NA	ND	0.0231 J
Bromodichloromethane <sup>1</sup>	75-27-4	NA	0.0045	ND
Bromoform <sup>1</sup>	75-25-2	NA	0.0049	ND
Chlorobenzene	108-90-7	NA	ND	0.00047 J
Chloroform <sup>1</sup>	67-66-3	NA	0.0018	0.00050 J
Carbon Disulfide	75-15-0	NA	ND	0.00057 J
Dibromochloromethane <sup>1</sup>	124-48-1	NA	0.0083	ND
Methyl ethyl ketone (MEK)	78-93-3	NA	0.0026	0.0101

<sup>1</sup> These are disinfectant by-products.

NA = Not applicable, this is not an EPWU analyte under Rule #9. There is no TBLL concentration.

ND = Non-detected.

J = Result value is greater than Method Detection Limit (MDL) and less than Reporting Limit (RL).

### 3.5 DISCHARGE LIMIT EXCEEDANCES

All analytical results are well within EPWU Rule #9 limits. There are no EPWU Rule #9 regulatory limits exceeded for these outfalls. These limits are not required to be reported to the EPWU or the NMED and the data is for comparability purposes only with effluent quality parameters used elsewhere on the installation.

### 3.6 DATA QUALITY ISSUES

Upon receipt of analytical results, Tetrahedron, Inc. conducted a thorough data review and quality check of the results. Two QC samples were collected (one composite and one grab) from the Doña Ana outfall location, labeled as Doña Ana QC. Comparison of these results can be found in Tables 3-7 and 3-8.

All MDLs are satisfied and all surrogate recoveries are within acceptable method criteria. All samples are free of contaminants as observed from a method blank that met all criteria. The matrix spike (MS) recoveries met acceptable method criteria. The matrix spike duplicate (MSD) relative percent differences (RPD) are also under control.

### **3.7 FIELD QUALITY CONTROL SAMPLES**

The following types of QC samples are collected in the field and shipped:  
Field duplicate, field blank and trip blank samples.

#### **3.7.1 Field Duplicates**

This type of field duplicate measures the total system variability (field and laboratory variance). Two field duplicates were obtained, one composite and one grab sample from the Doña Ana Outfall location. It must be noted that while the grab samples are true duplicate samples, the composite duplicate is actually a split sample taken from the composite of the original.

Although all composite samples are mixed in an attempt to ensure sample uniformity prior to collection of the split sample, the method of sample capture can result in an unequal partitioning of suspended solids that affect other parameters. The larger RPDs for some parameters, i.e. COD, TSS, copper, iron, zinc, and oil and grease, are driven by the non-homogeneous character of the wastewater samples.

#### **3.7.2 VOC Trip Blank and Field Blank**

Trip blanks, consisting of an aliquot of laboratory grade deionized water, are shipped with VOC sample containers and are used to determine whether the sample bottle was contaminated during shipment from the bottle storage, shipment to the laboratory, or during analysis at the laboratory. Field blanks, filled with distilled water in the field during sample collection, are collected to evaluate potential contamination of samples during sample collection.

**Table 3-7 Analyses of Composite Sample and QC Duplicate Samples**

Outfall Designator	Analytes (all results are mg/L)															
	BOD	COD	TDS	TSS	Arsenic	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
Doña Ana Outfall	885	416	678	153	ND	ND	ND	0.0762	1.80	0.0053	ND	ND	ND	ND	ND	0.158
Doña Ana Outfall QC (Duplicate)	691	831	732	98.0	ND	ND	ND	0.0433	1.14	ND	ND	ND	ND	ND	ND	0.0735
Relative Percent Difference (RPD)*	24.6	66.6	7.66	73.8	NC	NC	NC	55.1	44.9	NC	NC	NC	NC	NC	NC	73.0
Regulatory Limits (TBLL)	NS	NS	6,140	NS	0.17	0.11	1.22	2.39	NS	0.66	0.002	0.15	1.71	0.35	0.98	5.37

ND = Non-detected.

RPD = (S-D)/[(S+D)/2] x 100, where S = first sample value (original), and D = second sample value (duplicate).

NS = Not specified: there is no Technically Based Local Limit concentration (TBLL).

NC = Not calculated due to one or both samples being ND.

\* = Although all composite samples are mixed in an attempt to ensure sample uniformity prior to collection of the split sample, the method of sample capture can result in an unequal partitioning of suspended solids which effect other parameters.

**Table 3-8 Analyses of Grab Sample and QC Duplicate Samples**

Outfall Designator	Analytes						
	Benzene	Ethyl-benzene	Toluene	Xylenes	Cyanide	Oil & Grease	pH
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH units
Doña Ana Outfall	ND	ND	0.0015	ND	ND	44.1	6.9
Doña Ana Outfall QC (Duplicate)	ND	ND	0.0015	ND	ND	30.1	6.6
Relative Percent Difference (RPD)	NC	NC	0.0	NC	NC	37.7	---
Regulatory Limits (TBLL)	20	16	17	17	1.31	100	5.5-10.5

ND = Non-detected.

NC = Not calculated due to one or both samples being ND

RPD = (S-D)/[(S+D)/2] x 100, where S = first sample value (original), and D = second sample value (duplicate).

TBLL = Technically Based Local Limit concentration.

\* = Although attempts to ensure sample uniformity are made, a grab of a non-homogenous mixture can result in an unequal concentration of a parameter.

#### **4.0 CONCLUSIONS**

All wastewater sample results are well within the EPWU Rule #9 TBLLs. There are no sampling anomalies and all QC samples are within normal and acceptable limits.

## 5.0 REFERENCES

*CFR Title 40: Protection of Environment, Part 136—Guidelines Establishing Test Procedures for the Analysis of Pollutants*. On-line at: <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;rgn=div5;view=text;node=40%3A22.0.1.1.1;idno=40;sid=556a1286f4ba65b4fbe12ff50c6a2d8c;cc=ecfr>

El Paso Public Service Board, *Rules and Regulations*: January 9, 2008.  
[http://www.epwu.org/PDF/rules\\_regs.pdf](http://www.epwu.org/PDF/rules_regs.pdf)

EPA. 1983. *Methods for Chemical Analysis of Water and Wastes (MCAWW)*, Environmental Protection Agency, Environmental Monitoring Systems Laboratory—Cincinnati (EMSL—CI), EPA-600/4-79-020 (NTIS PB 84-128677), Revised March 1983 and 1979 where applicable.

EPA 1986, etc., *Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)*, Third Edition, Sept. 1986; Final Update I, July 1992; Final Update IIA, August 1993; Final Update II; Final Update IIB, January 1995; Final Update IIIA, December 1996 and IIIB; IVA; and IVB, January 2008.  
<http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>

EPA. 2000b. *Guidance for Data Quality Assessment, Practical Methods for Data Analysis, EPA QA/G-9, QA00 Update*. Office of Environmental Information, Washington, D.C. EPA/600/R-96-084. July 2000.

Federal Register: March 12, 2007, (Volume 72, Number 47, Pages 11199-11249) for the analysis of cyanide (page 11219) and in the e-CFR (current as of 2 May 2008) at <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div8&view=text&node=40:22.0.1.1.1.0.1.3&idno=40>

Settlement Agreement between New Mexico Environment Department and Fort Bliss, Texas. 2006.

*Standard Methods for the Examination of Water and Wastewater*. 19th Edition, AWWA, APHA, WPCF; Water Pollution Control Federation, Washington, DC, 1995.

*Work Plan for Wastewater Sampling, Fort Bliss – New Mexico Operations*, Tetrahedron, Inc., Baltimore, Maryland, February 2008.

**Field Notes**



Waste Water Sampling 9/15/08

Thompson Klein

Arrived at Shoreland 9:45  
Turned on water in Restrooms

Set up Sampler

First sample 10:10

Depart 10:30

Arrived at Keyes Range 11:20

Set up Sampler

First Sample at 11:32

Departure 11:35

Arrived at Mc Grogan 11:50

Set up Sampler, first Sample at 12:15

Depart 12:20

Arrived at Mc Grogan 2 12:35

Set up Sampler first Sample 12:45

Depart 13:00

Arrived at Nashville 14:10

Set up Sampler first Sample 14:25

Depart 14:35

Arrived at D.H. Shop 15:05

Unpacked and labeled Container for PH+PX

All Samples were calibrated and set for 600 ml.

62

9/16/08

Thompson Klein  
Seymour Restrooms

Arrived at Shoreland 9:30

PH 7.8 Temp 67°F at 9:45

Collected six needed Samples at 9:45

Depart 10:08

Arrived at Keyes Range at 11:05

PH 7.3 Temp 70°F at 11:15

Collected all needed Samples at 11:15

Depart 11:43

Arrived at Mc Grogan 1 at 11:55

PH 7.1 Temp 72°F at 12:05

Collected six needed Samples at 12:05

Depart 12:20

Arrived at Mc Grogan 2 at 12:30

PH 7.8 Temp 72°F at 12:35

Collected all needed Samples at 12:35

Depart 13:00

Arrived at Nashville at 14:10

PH 7.5 Temp 76°F at 14:20

Collected all needed Samples at 14:20

Depart 15:00

63

9/17/88

Thorsben Heinis  
Suzio Pastore

- Arrived at Howe at 8:35
- Set up Sampler
- First Sample at 8:50
- Depart 9:00
- Arrived at Atlas at 9:30
- Set up Traffic Control and Sampler
- First Sample at 10:02
- Depart 10:25
- Arrived at Honda Pass 10:37
- ~~Unable~~ Unable to set up sampler because of Traffic Control for the ongoing construction
- Depart 10:53
- Arrived at Railroad at 11:05
- Set up Sampler
- First Sample at 11:15
- Depart 11:31
- 2nd Attempt at Honda Pass
- Arrived at 11:50

Traffic Control for construction changed. Able to set up Sampler

First Sample at 12:16

Depart 12:45

64 All Samplers were calibrated and set to 600 ml

9/18/88

Thorsben Heinis / Richard Hoffmann

- Arrived at ~~Howe~~ Howe 08:30
- PH 7.1 Temp 64°F at 8:10
- Collected all needed Samples at 8:10
- Collected First Blank samples at 8:20 (Dr. Water)
- Depart 8:45
- Arrived at Atlas 8:57
- PH 7.2 Temp 65°F at 9:05
- Collected all needed Samples at 9:05
- ~~Collected~~ Collected OC Samples at 9:30
- Depart 10:05
- Arrived at Railroad at 10:26
- PH 7.1 Temp 70°F at 10:30
- Collected all needed Samples at 10:30
- Depart 11:00
- Arrived at Honda Pass at 11:15
- PH 6.5 Temp 72°F at 11:20
- Collected all needed Samples at 11:20
- Depart 11:46
- Arrived in Diagramme at 13:55
- Set up Sampler
- First Sample 14:05
- Depart 14:15
- Arrived in Dona Area at 15:05
- First Sample 15:19
- Depart 15:27

65

9/19/08

Thorsten Heinus

- Arrived in Oragrande 12:45  
PH 7.0 Temp 82°F at 13:05  
Collected all needed samples at 13:05

Collected Field Blank Samples at 13:30 (DI Water)

Depart 13:40

- Arrived in Dona Ana at 14:20

PH 6.5 Temp 84°F at 14:25

Collected all needed samples and QC NH at 14:25

Depart 15:10

9/22/08

Thorsten Heinus

Arrived in Dona Ana 15:25

Setup and calibrated samples (500 ml/sample)

First Sample 15:41

Depart 15:50

9/23/08

Thorsten Heinus

Arrived in Dona Ana 14:25

Collected samples at 14:43 for BOD (Dona Ana and QC)

Depart 15:10

## **pH Calibration**

9-16-08									
7:15									
Buffer solution	7	/	4	@	72°				
Calibration	OK								
Test Buffer	7								
Reading	6.99								
9-17-08									
7:05									
Buffer solution	7	/	4	@	74°F				
Calibr.	OK								
Test	7								
Reading	7.00								
9-18-08									
7:05									
Buffer solution	7	/	4	@	74°F				
Calibr.	OK								
Test	7								
Reading	7.02								

9-19-08									
7:00									
Buffer solution	7	/	4	@	73°F				
Calibr.	OK								
Test Buffer	4								
Reading	3.99								
9-22-08									
7:10									
Buffer	7	/	4	@	75°F				
Calibr.	OK								
Test	4								
Reading	3.99								
9-23-08									
9:15									
Buffer	7	/	4	@	75°F				
Calibr.	OK								
Test	7								
Reading	7.01								

**APPENDIX B**

**Accutest Laboratories – Laboratory Data Reports for Analytical Samples Collected  
for the September 2008 Sampling Event**