Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Benjamin H. Grumbles
Director

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

Decision to Grant AZPDES Permit #AZ0025241

July 8, 2010

LTF ID: 50986
Place ID: 21018

City of Mesa
Greenfield Water Reclamation Plant
Attn: Jennifer Hetherington, Water Compliance Specialist
P.O. Box 1466
Mesa, AZ 85211-1466

RE: AZPDES Permit Application No. AZ0025241
Greenfield Water Reclamation Plant
4400 South Greenfield Road, Gilbert, AZ 85296

Dear Ms. Hetherington:

The Arizona Department of Environmental Quality (ADEQ) has completed the public participation and comment period for the above-referenced facility. Comments were received from the City of Mesa during the 30-day comment period. ADEQ's response to the comments is enclosed. No other comments were received during the 30-day comment period. ADEQ has made a final decision to issue the AZPDES permit for discharge from the Greenfield Water Reclamation Plant in Gilbert, Arizona.[1] A copy of the Fact Sheet and signed permit is enclosed. Please note the effective date and expiration date for your permit. If you wish to renew this permit, a complete and accurate application must be submitted no later than 180 days prior to the permit expiration date.

The review of your AZPDES application was subject to the licensing timeframes statute under Arizona Revised Statutes A.R.S. §§ 41-1072 through 41-1079. Therefore, this letter is the written notification of ADEQ's licensing decision required under A.R.S. § 41-1076 and Arizona Administrative Code (A.A.C.) R18-1-507(A).

This decision was made prior to expiration of the licensing time frames governing your application. Please contact me at (602) 771 – 4666 or email me at francis.sondra@azdeq.gov if you have any questions regarding this notice or your permit.

Sincerely,

Sondra M. Francis

Sondra M. Francis, Project Manager
Surface Water Section, Permits Unit
Water Permits Division

enclosures: Signed AZPDES Permit No. AZ0025241
Fact Sheet

SWSPU10:0070 Inventory No.: 105443

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[1]This determination is an appealable agency action under A.R.S. § 41-1092. You have the right to request a hearing and file an appeal under A.R.S. § 41-1092.03. To do this you must file a Request for Hearing or Notice of Appeal **within thirty (30) days of receipt of this notice**. A request for Hearing or Notice of Appeal is filed when it is received by ADEQ's Hearing Administrator as follow**:**

Hearing Administrator
Office of Administrative Counsel
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

The Request or Notice must contain the following:

1. The name of the party that is filing the appeal;
2. The address of the party that is filing the appeal;
3. The action being appealed; and
4. A concise statement of the reasons for the appeal.

Upon proper filing of a Request for Hearing or Notice of Appeal, ADEQ will serve a Notice of Hearing on all parties to the appeal. If you file a timely Request for Hearing or Notice of Appeal, you have the right to request an informal settlement conference with ADEQ under A.R.S § 41-1092.06. This request must be made in writing no later than 20 days before a scheduled hearing and must be filed with the Hearing Administrator at the above address.

RESPONSE TO COMMENTS DURING PUBLIC NOTICE

Permit No.	AZ0025241 / City of Mesa - Greenfield Water Reclamation Plant
Applicant:	City of Mesa - Greenfield Water Reclamation Plant P.O. Box 1466, Mesa, AZ 85211-1466
Permit Action:	Final permit decision and response to comments received on the draft permit public noticed on April 16, 2010. Following is ADEQ's response to comments received on the subject draft permit.
Prepared By:	Sondra M. Francis, AZPDES Project Manager Surface Water Permits Unit Arizona Department of Environmental Quality 1110 West Washington Street, 5415A-1 Phoenix, AZ 85007 602-771-4666
Date:	06/17/2010

One comment was received on the draft permit from the City of Mesa. The comment is provided below followed by ADEQ's response.

City of Mesa letter to Sondra M. Francis dated May 3, 2010

COMMENT

City of Mesa requests the use of one significant digit for Cadmium monthly average and daily maximum and Cyanide monthly average. The change for Cyanide would be consistent with the current permit limits. The Cadmium limit would allow the lab to meet permit limits without having to report a result below the reporting detection limit of 1 µg/L. The following changes are requested:

Cadmium monthly average: 1 µg/L
Cadmium daily maximum: 2 µg/L
Cyanide monthly average: 8 µg/L

RESPONSE

When setting limits or assessment levels in permits, ADEQ uses the same number of significant figures as are used for that parameter in the Water Quality Standards. For cadmium, the standard is expressed as three (3) significant figures (1.02) but no more than two (2) decimal places. Cyanide is expressed as two (2) significant figures (9.7). Please note, both cadmium and cyanide are assessment levels in the permit, not limits. Reporting below the reporting limit with appropriate flag is acceptable. No change has been made to the permit or fact sheet.

ADEQ Inventory No. P-105443
LTF No. 50986

Permit No. AZ0025241

AUTHORIZATION TO DISCHARGE UNDER THE ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Article 3.1; the Federal Water Pollution Control Act, (33 USC §1251 et. seq., as amended), and Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 9 and 10, and amendments thereto,

City of Mesa
Greenfield Water Reclamation Plant
P.O. Box 1466
Mesa, AZ 85211-1466

is authorized to discharge treated domestic wastewater from the wastewater treatment plant located at 4400 South Greenfield Road, Gilbert serving the city of Mesa and the towns of Queen Creek and Gilbert in Maricopa County, Arizona into the East Maricopa Floodway (EMF), tributary to the Gila River in the Middle Gila River Basin at:

Outfall No.	Latitude	Longitude	Legal
001	33°15' 47" N	111°43' 33" W	Township 2 S, Range 6 E, Section 15

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein, and in the attached "Standard AZPDES Permit Conditions."

This permit shall become effective on August 11, 2010.

This permit and the authorization to discharge shall expire at midnight, August 10, 2015.

Signed this 7th day of July, 2010.

Michael A. Fulton, Director
Water Quality Division
Department of Environmental Quality

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PART I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Effluent Limitations and Monitoring Requirements

The permittee shall limit and monitor discharges to the East Maricopa Floodway (EMF) from Outfall 001 as specified in Table 1 which follows. These requirements are based on a design capacity of 60560 m^3/day (16 MGD).

TABLE 1: Effluent Limitations and Monitoring Requirements

Parameter	Maximum Allowable Discharge Limitations						Monitoring Requirement (4) (8)	
	Mass Limits			Concentration Limits				
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Monitoring Frequency	Sample Type
Discharge Flow (MGD)	REPORT (1)	---	REPORT	---	---	---	Continuous	Metered
Biochemical Oxygen Demand (BOD) (5-day)	1816.8 Kg/day	2725.2 Kg/day	---	30 mg/L	45 mg/L	---	1x / Week	24 Hour Composite (5)
BOD (2)	---	---	---	85% REMOVAL MINIMUM	---	---	1x / Week	24 Hour Composite (5)
Total Suspended Solids (TSS)	1816.8 Kg/day	2725.2 Kg/day	---	30 mg/L	45 mg/L	---	1x / Week	24 Hour Composite (5)
TSS (2)	---	---	---	85% REMOVAL MINIMUM	---	---	1x / Week	24 Hour Composite (5)
E. coli (3)	---	---	---	126 cfu/100 mL (3)	---	576 cfu/100 mL(3)	1x / Week	Discrete
Total Residual Chlorine (7)	0.55 Kg/day	---	1.09 Kg/day	9 µg/L	---	18 µg/L	5x / Week	Discrete
Copper (9) (10)	0.92 Kg/day	---	1.8 Kg/day	15 µg/L	---	30 µg/L	1X / Month	24 Hour Composite (5)
Hardness ($CaCO_3$) (9)	REPORT mg/L		REPORT mg/L	REPORT mg/L		REPORT mg/L	1X / Month	24 Hour Composite (5)
pH (6)	Not less than 6.5 standard units (S.U.) nor greater than 9.0 S.U.						5X / Week	Discrete

Footnotes:

(1) Monitoring and reporting required. No limit is set at this time (NOTE: This permit does not authorize discharges into the EMF in excess of those allowed by the intergovernmental agreement IGA FCD 2006A009 between the City of Mesa and the Flood Control District of Maricopa County). In addition to the average and maximum flows reported on the Discharge Monitoring forms, daily discharge flow shall be recorded on the **discharge flow record** provided in Appendix B. See Part II.B for reporting requirements.
(2) Both the influent and the effluent shall be monitored.
(3) cfu = colony forming units. The monthly average for *E. coli* is calculated as a geometric mean. A minimum of 4 samples are required in order to report a geometric mean. See the definition for "Monthly or Weekly Average Concentration Limit" in Appendix A.
(4) At a minimum, one sample each month must coincide with one of the Whole Effluent Toxicity Test (WET) samples taken each month. See Part IV of the permit.
(5) For this permit, "24-hour composite" means at least three samples will be collected at equal time intervals and proportional to the flow rate over a "24-hour" period.
(6) pH must be measured at the time of sampling and does not require use of a certified laboratory.
(7) Sampling required only when chlorine or bromine compounds are used for disinfection. See Part II.A. 5. for specific monitoring requirements for chlorine.
(8) If discharge is infrequent see Part I.D for minimum effluent characterization monitoring requirements.
(9) Limits listed are based on a hardness of 237 mg/L as $CaCO_3$. The effluent must be tested for hardness at the same time that these metal samples are taken. Please see the hardness definition in Appendix A. Part B.
(10) All metals effluent limits are for total recoverable metals.

B. Trace Substance Monitoring

1. The permittee shall monitor discharges from Outfall 001 as specified in Table 2. Data results above the assessment levels (ALs) listed below do not constitute a permit violation, but may trigger evaluation of reasonable potential (RP) by ADEQ. The permittee shall use an approved analytical method with a level of quantification (LOQ) lower than the AL values.

TABLE 2: Trace Substance Monitoring Requirements

Parameter	Assessment Levels (1) (2)		Monitoring Requirements (3) (4)	
	Concentration			
	Monthly Average	Daily Maximum	Monitoring Frequency	Sample Type
Ammonia	(5) mg/L	(5) mg/L	2x / Month	Discrete
Cadmium (2) (7)	0.84 µg/L	1.68 µg/L	1x / Month	24 Hour Composite
Chromium (Total) (8)	Report	Report	1x / Month	24 Hour Composite
Chromium VI (2) (8)	8.0 µg/L	16 µg/L	1x / Month	Discrete
Cyanide	7.9 µg/L	16 µg/L	1x / Month	Discrete
Hydrogen Sulfide (6)	2 µg/L	3 µg/L	1x / Month	Discrete
Mercury	0.01 µg/L	0.02 µg/L	1x / Month	24 Hour Composite
Selenium	2 µg/L	3 µg/L	1x / Month	24 Hour Composite
Sulfides	(6)	(6)	1x / Month	Discrete
Oil and grease	10 mg/L	15 mg/L	1x / Quarter	Discrete
Hardness ($CaCO_3$) (7)	Report mg/L	Report mg/L	1x / Month	24 Hour Composite
Temperature	REPORT in °Celsius		2x / Month	Discrete

Footnotes:

(1) Concentration values are calculated based on Arizona Water Quality Standards. Monitoring and reporting required.
(2) All metals effluent assessment levels are for total recoverable metals, except for chromium VI, for which the assessment levels listed are dissolved.
(3) At a minimum, one sample must coincide with one of the WET samples taken each month. See Part IV of the permit.
(4) If discharge is infrequent see Part I.D for minimum effluent characterization monitoring requirements.
(5) The ammonia assessment level is dependent on pH and temperature. In addition to reporting the ammonia values on the DMRs the ammonia data log shall also be completed including values of pH and temperature at the time the ammonia sample is taken. See Part II.B of the permit.
(6) With a detection limit no higher than 100 µg/L, any detection of sulfides shall trigger monthly monitoring for hydrogen sulfide for the remainder of the permit term. Monitoring for hydrogen sulfide is only required if sulfide is detected.
(7) Assessment levels listed are based on a hardness of 237 mg/L as $CaCO_3$. The effluent water must be tested for hardness at the same time that these metal samples are taken. Please see the hardness definition in Appendix A. Part B.
(8) If total chromium exceeds 8 µg/L, the permittee must conduct sampling for chromium VI for the remainder of the permit. Otherwise, monitoring for chromium VI is not required.

C. Whole Effluent Toxicity Monitoring

1. The permittee shall limit and monitor effluent discharges from outfall 001 for Whole Effluent Toxicity (WET) as specified in Tables 3a and 3b which follows. If toxicity is detected above a limit or an action level specified as follows, the permittee must perform follow-up testing and, as applicable, follow the TIE/TRE processes in Part IV.E of the permit.

TABLE 3.a.: WET Testing LIMITS

Effluent Characteristic (1)	Limits		Monitoring Requirements	
	Daily Maximum (2) (5)	Monthly Median (2)	Monitoring Frequency (3)	Sample Type (4)
Chronic Toxicity *Selenastrum capricornutum* (Green algae) (6)(7)	1.6 TUc	1.0 TUc Median	1X / Month	24 Hour Composite
Chronic Toxicity *Pimephales promelas* (Flathead minnow) (6)	1.6 TUc	1.0 TUc Median	1X / Month	24 Hour Composite
Chronic Toxicity *Ceriodaphnia dubia* (Water flea) (6)	1.6 TUc	1.0 TUc Median	1X / Month	24 Hour Composite

Footnotes:

(1) See Part IV for additional requirements for testing and reporting Whole Effluent Toxicity (WET).
(2) Any exceedance of these values or if an acute WET test fails will require follow-up testing by the permittee. See Part IV.E of the permit for details.
(3) If discharge is infrequent see Part I.D for minimum effluent characterization monitoring requirements.
(4) For this permit, "24-hour composite" means at least three samples will be collected at equal time intervals and proportional to the flow rate over a 24-hour period.
(5) Since completion of one chronic WET test takes more than 24 hours, the daily maximum is considered to be the highest allowable test result.
(6) If discharge is LESS THAN four (4) days and not repeated within a period of 30 consecutive days, Acute toxicity testing will apply. Chronic toxicity limit applies if discharges occur for four (4) days or more or are repeated more frequently than every 30 days.
(7) Also known as *Raphidocelis subcapitata.*

TABLE 3.b.: WET Testing ACTION LEVELS

Effluent Characteristic (1)	Action Levels		Monitoring Requirements	
	Daily Maximum (2)	Monthly Median	Monitoring Frequency	Sample Type
Acute Toxicity (3) *Pimephales promelas* (Fathead minnow)	N/A	Fail	1X / Month	24-hr Composite
Acute Toxicity (3) *Ceriodaphnia dubia* (Water flea)	N/A	Fail	1X / Month	24-hr Composite

Footnotes:

(1) See Part IV for additional requirements for testing and reporting Whole Effluent Toxicity (WET).
(2) If an acute WET test fails follow-up testing by the permittee is required. See Part IV.E of the permit for details.
(3) The requirement for an acute test applies when duration of discharge does not allow for chronic tests to be conducted. See Part IV.
(4) If discharge is infrequent see Part I.D for minimum effluent characterization monitoring requirements.

D. Effluent Characterization Testing

The permittee shall monitor to characterize the facility's effluent for the parameters listed in Tables 4.a–f, whether discharging or not. When the facility discharges, monitoring is to be conducted at the frequency indicated in Tables 1 through 3. No limits or ALs are established, but the level of quantification (LOQ) must be low enough to allow comparison of the results to the applicable surface water quality standards (SWQS). If a LOQ below the SWQS cannot be achieved, then the permittee shall use the method expected to achieve the lowest LOQ, as defined in Appendix A of this permit. Samples are to be representative of any seasonal variation in the discharge:

TABLE 4.a.: Effluent Characterization Testing (General Chemistry and Microbiology)

Parameter	Reporting Units	Monitoring Requirements	
		Monitoring Frequency (1)	Sample Type
Ammonia (as N) (2)	mg/L	1X / Quarter	Discrete
Biochemical Oxygen Demand (BOD-5)	mg/L	1X / Quarter	24 Hour Composite
Chlorine, Total Residual (TRC) (3) (4)	µg/L	1X / Quarter	Discrete
Dissolved Oxygen (3)	mg/L	1X / Quarter	Discrete
E. coli	Cfu/100 mL	1X / Quarter	Discrete
Nitrate/Nitrite (as N)	mg/L	1X / Quarter	24 Hour Composite
Nitrogen, Total Kjeldahl (TKN)	mg/L	1X / Quarter	24 Hour Composite
Oil and Grease	mg/L	1X / Quarter	Discrete
pH (3)	S.U.	1X / Quarter	Discrete
Phosphorus	mg/L	1X / Quarter	24 Hour Composite
Temperature (3)	°Celsius	1X / Quarter	Discrete
Total Dissolved Solids (TDS)	mg/L	1X / Quarter	24 Hour Composite
Total Suspended Solids (TSS)	mg/L	1X / Quarter	24 Hour Composite

Footnotes:

(1) If more frequent monitoring of any of these parameters is required by another part of this permit, those sampling results may be used to satisfy Table 4.a. requirements.
(2) When sampling for ammonia, temperature and pH must be determined concurrently and the results recorded on the **Ammonia Data Log** provided in Appendix C. See Part II.B. for reporting requirements.
(3) Temperature, pH, TRC and dissolved oxygen must be measured at the time of sampling and do not require use of a certified laboratory. See Part II.A.6 for methods of analyses for chlorine.
(4) Sampling required only when chlorine or bromine compounds are used for disinfection.

TABLE 4.b.: Effluent Characterization Testing – Selected Metals, Trace Substances, and WET

Parameter (1)	Reporting Units	Monitoring Requirements	
		Monitoring Frequency (2)	Sample Type
Antimony	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Arsenic	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Beryllium	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Cadmium	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Chromium	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Chromium VI	µg/L	Once / year in years 2,3,4 of permit term	Discrete
Copper	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Lead	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Mercury	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Nickel	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Selenium	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite

TABLE 4.b.: Effluent Characterization Testing – Selected Metals, Trace Substances, and WET

Silver	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Thallium	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Zinc	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Hardness	mg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Cyanide	µg/L	Once / year in years 2,3,4 of permit term	Discrete
Whole Effluent Toxicity-chronic (all 3 species)	TUc	4x/permit term, once per season (3)	24-hour Composite

Footnotes:

(1) All metals analyses shall be for total recoverable metals, except chromium VI, which is dissolved.
(2) If more frequent monitoring of any of these parameters is required by another part of this permit, those sampling results may be used to satisfy Table 4.b. requirements.
(3) If chronic toxicity is detected above the Action Levels specified in Table 4 or an acute test fails, the permittee must perform follow-up testing and, as applicable, follow the TRE/TIE processes in Part IV.E of the permit, whether discharging or not. See Part IV for additional information on requirements for testing and reporting Whole Effluent Toxicity (WET).
(4) Four tests shall be conducted during the permit term, one each in summer, winter, spring, and fall.

TABLE 4.c.: Effluent Characterization Testing - Selected Volatile Organic Compounds

Parameter	Reporting Units	Monitoring Requirements	
		Monitoring Frequency (1)	Sample Type
Acrolein	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Acrylonitrile	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Benzene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Bromoform	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Carbon tetrachloride	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Chlorobenzene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Chlorodibromomethane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Chloroethane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
2-chloroethylvinyl ether	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Chloroform	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Dichlorobromomethane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
1,1-dichloroethane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
1,2-dichloroethane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Trans-1,2-dichloroethylene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
1,1-dichloroethylene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
1,2-dichloropropane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
1,3-dichloropropylene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Ethylbenzene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Methyl bromide	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Methyl chloride	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite

Methylene chloride	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
1,1,2,2-tetrachloroethane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Tetrachloroethylene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Toluene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
1,1,1-trichloroethane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
1,1,2-trichloroethane	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Trichloroethylene	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite
Vinyl chloride	µg/L	Once / year in years 2,3,4 of permit term	24-hour Composite

Footnotes:

(1) Samples for volatile organic compounds must be collected as four (4) discrete samples and composited per approved methods by the laboratory running the analyses.

TABLE 4.d.: Effluent Characterization Testing - Selected Acid-extractable Compounds

Parameter	Reporting Units	Monitoring Requirements	
		Monitoring Frequency	Sample Type
P-chloro-m-cresol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2-chlorophenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2,4-dichlorophenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2,4-dimethylphenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
4,6-dinitro-o-cresol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2,4-dinitrophenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2-nitrophenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
4-nitrophenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Pentachlorophenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Phenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2,4,6- trichlorophenol	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite

TABLE 4.e.: Effluent Characterization Testing - Selected Base-neutral Compounds

Parameter	Reporting Units	Monitoring Requirements	
		Monitoring Frequency	Sample Type
Acenaphthene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Acenaphthylene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Anthracene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Benzidine	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Benzo(a)anthracene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Benzo(a)pyrene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
3,4 benzofluoranthene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Benzo(ghi)perylene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite

Benzo(k)fluoranthene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Bis (2-chloroethoxy) methane	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Bis (2-chloroethyl) ether	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Bis(2-chloroisopropyl) ether	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Bis (2-ethylhexyl) phthalate	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
4-bromophenyl phenyl ether	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Butyl benzyl phthalate	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2-chloronaphthalene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
4-chlorophenyl phenyl ether	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Chrysene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Di-n-butyl phthalate	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Di-n-octyl phthalate	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Dibenzo(a,h)anthracene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
1,2-dichlorobenzene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
1,3-dichlorobenzene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
1,4-dichlorobenzene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
3,3-dichlorobenzidine	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Diethyl phthalate	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Dimethyl phthalate	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2,4-dinitrotoluene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2,6-dinitrotoluene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
1,2-diphenylhydrazine	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Fluoranthene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Fluorene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hexachlorobenzene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hexachlorobutadiene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hexachlorocyclopentadiene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hexachloroethane	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Indeno(1,2,3-cd)pyrene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Isophorone	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Naphthalene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Nitrobenzene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
N-nitrosodi-n-propylamine	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
N-nitrosodimethylamine	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
N-nitrosodiphenylamine	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Phenanthrene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Pyrene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
1,2,4-trichlorobenzene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite

TABLE 4.f.: Effluent Characteristic Testing Based on Designated Uses

Additional Parameters from the Arizona Surface Water Quality Standards, Appendix A: Tables 1 & 2

Parameter	Reporting Units	Monitoring Requirements	
		Monitoring Frequency	Sample Type
Alachlor (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Aldrin	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Atrazine (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Barium	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Boron	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Carbofuran (Furadan) (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Chlordane	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
1,2-cis-Dichloroethylene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Chlorpyrifos	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Dalapon (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
1,2-Dibromoethane (EDB) Ethylene dibromide	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
4,4-DDD (p,p,- Dichlorodiphenyldicholoroethane)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
4,4-DDE (p,p- Dichlorodiphenyldichloroethylene)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
4,4-DDT ((p,p- Dichlorodiphenyltrichloroethane)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2,4-Dichlorophenoxyacetic acid (2,4-D) (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Dieldrin	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Di (2-ethylhexyl) adipate	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Dinoseb (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Diquat (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Endosulfan sulfate	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Endosulfan (Total)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Endothall (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Endrin	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Endrin aldehyde	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Fluoride	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Glyphosate (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Guthion	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Heptachlor	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Heptachlor epoxide	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hexachlorocyclohexane alpha (Alpha-BHC)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hexachlorocyclohexane beta	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hexachlorocyclohexane delta	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hexachlorocyclohexane gamma (lindane)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Hydrogen Sulfide (2)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Malathion	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite

Manganese	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Methoxychlor (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Mirex	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Oxamyl (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Parathion	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Paraquat	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Permethrin	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Pichloram (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Polychlorinated biphenyls (PCBs)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Simazine (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Styrene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2,3,7,8-Tetrachlorodibenzo-p-dioxin	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Toxaphene	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
2-(2,4,5,-Trichlorophenoxy) Proprionic Acid (1)	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Tributyltin	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite
Xylenes	µg/L	Once / year in years 2,3,4 of permit term	24-Hour Composite

Footnotes:

(1) There may be no approved wastewater methods for analyses of these parameters in 40 CFR 136. As such 500 series drinking water methods may be used; in this case, a 10X sample dilution is acceptable for these parameters. Appropriate data qualifiers are to be used.
(2) The permittee may initially monitor for sulfide instead of hydrogen sulfide. The limit of quantification shall be no higher than 100 µg/L, and any detection of sulfides shall trigger monitoring for hydrogen sulfide for the reminder of the permit term.

E. The discharge shall be free from pollutants in amounts or combinations that:

1. Settle to form bottom deposits that inhibit or prohibit the habitation, growth or propagation of aquatic life;

2. Cause objectionable odor in the area in which the surface water is located;

3. Cause off-flavor in aquatic organisms;

4. Are toxic to humans, animals, plants or other organisms;

5. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth or propagation of other aquatic life or that impair recreational uses;

F. The discharge shall be free from oil, grease and other pollutants that float as debris, foam, or scum; or that cause a film or iridescent appearance on the surface of the water; or that cause a deposit on a shoreline, bank or aquatic vegetation.

G. The discharge shall not cause an increase in the ambient water temperature of more than 3.0 degrees Celsius.

H. The discharge shall not cause the dissolved oxygen concentration in the receiving water to fall below 3 mg/L from 3 hours after sunrise to sunset and 1 mg/l from sunset to 3 hours after sunrise, unless the percent saturation of oxygen remains equal to or greater than 90%.

I. Samples taken for the monitoring requirements specified in Part I shall be collected at the following locations:

1. Influent samples shall be taken after the last addition to the collection system and prior to the first treatment process.

2. Effluent samples shall be taken downstream from the last treatment process and prior to mixing with the receiving waters.

PART II. MONITORING AND REPORTING

A. Sample Collection and Analysis

1. The permittee is responsible for the quality and accuracy of all data required under this permit.

2. Quality Assurance (QA) Manual

The permittee shall keep a QA Manual on site that describes the sample collection and analyses processes. If the permittee collects samples or conducts sample analyses in house, the permittee shall develop a QA Manual that addresses these activities. If a third party collects and/or analyzes samples on behalf of the permittee, the permittee shall obtain a copy of the applicable QA procedures. The QA Manual shall be available for review by ADEQ upon request. The QA Manual shall be updated as necessary to reflect current conditions, and shall describe the following:

a. Project Management, including:

- Purpose of sample collection and sample frequency;
- When and where samples will be collected;
- How samples will be collected;
- Who will collect samples and their qualifications;
- Laboratory(s) that will perform analyses;
- Any field tests to be conducted (detail methods and specify equipment, including a description of any needed calibrations); and
- Pollutants or analytes being measured and for each, the permit-specific limits, assessment levels, or thresholds, (e.g. the associated detection limits needed.)

b. Sample collection procedures including

- Equipment to be used;
- Type and number of samples to be collected including QA/QC samples (i.e., background samples, duplicates, and equipment or field blanks);
- Types, sizes, and number of sample bottles needed;

- Preservatives and holding times for the samples (see methods under 40 CFR 136 or 9 A.A.C. 14, Article 6 or any condition within this permit that specifies a particular test method); and
- Chain of custody procedures.

c. Specify approved analytical method(s) to be used and include;

- Limits of detection (LOD) and limits of quantitation (LOQs);
- Required quality control (QC) results to be reported (e.g., matrix spike recoveries, duplicate relative percent differences, blank contamination, laboratory control sample recoveries, surrogate spike recoveries, etc.) and acceptance criteria; and
- Corrective actions to be taken by the permittee or the laboratory as a result of problems identified during QC checks.

d. How the permittee will perform data review; complete DMRs and records used to report results to ADEQ; resolve data quality issues; and identify limitations on the use of the data.

3. Sample collection, preservation and handling shall be performed as described in 40 CFR 136 including the referenced Edition of *Standard Methods for the Examination of Water and Wastewater*, or by procedures referenced in A.R.S. Title 9, Chapter 14 of the Arizona Department of Health Services (ADHS) Laboratory Licensure rules. The permittee shall outline the proper procedures in the QA Manual, and samples taken for this permit must conform with these procedures whether collection and handling is performed directly by the permittee or contracted to a third-party.

4. Analytical requirements

a. The permittee shall use a laboratory licensed by the ADHS Office of Laboratory Licensure and Certification that has demonstrated proficiency within the last 12 months under R9-14-609, for each parameter to be sampled under this permit. However, this requirement does not apply to parameters which require analysis at the time of sample collection as long as the testing methods used are approved by ADHS or ADEQ. (These parameters may include flow, dissolved oxygen, pH, temperature, and total residual chlorine.)

b. The permittee must utilize analytical methods specified in this permit. If no test procedure is specified, the permittee shall analyze the pollutant using:

i. A test procedure listed in 40 CFR 136 which is also approved under A.A.C. R9-14-610;
ii. An alternative test procedure approved by EPA as provided in 40 CFR 136 and which is also approved under A.A.C. R9-14-610;
iii. A test procedure listed in 40 CFR 136, with modifications allowed by EPA or approved as a method alteration by ADHS under A.A.C. R9-14-610(C); or
iv. If no test procedure for a pollutant is available under (3)(b)(i) through (3)(b)(iii) above, any Method approved under A.A.C. R9-14-610(C) for wastewater may be used, except the use of field kits is not allowed unless otherwise specified in this permit. If there is no approved wastewater method for a parameter, any other method identified in 9 A.A.C. 14, Article 6 that will achieve appropriate detection and reporting limits may be used for analyses.

c. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods.

d. The permittee shall use analytical methods with a limit of quantitation (LOQ) that is lower than the effluent limitations, assessment levels, action levels, or water quality criteria specified in this permit. If all methods have LOQs higher than applicable water quality criteria, the permittee shall use the approved analytical method with the lowest LOQ.

e. The permittee shall use a standard calibration curve when applicable to the method, where the lowest standard point is equal to or less than the LOQ.

f. The permittee shall participate in the annual NPDES DMR/QA study and submit the results of this study to ADEQ and ADHS for all laboratories used in monitoring compliance with this permit.

5. Mercury Monitoring

The permittee shall use a "clean hands/dirty hands" sampling technique such as EPA Method 1669 and an ADHS-certified low-level mercury analytical method if necessary to achieve a reporting limit at or below the effluent limitations or assessment levels for mercury as specified in this permit.

6. Chlorine Monitoring

Because of the short holding time for chlorine, samples may be analyzed on-site using Hach Method No. 10014. Other methods are also acceptable for chlorine if the Method has a LOQ lower than discharge limits specified in this permit.

7. Metals Analyses

In accordance with 40 CFR 122.45(c), all effluent metals concentrations, with the exception of chromium VI, shall be measured as "total metals". Discharge limits and assessment levels in this permit are for total metals, except for chromium VI for which the levels listed are dissolved.

B. Reporting of Monitoring Results

1. The permittee shall report monitoring results on Discharge Monitoring Report (DMR) forms supplied by ADEQ, to the extent that the results may be entered on the forms. The permittee shall submit results of all monitoring required by this permit in a format that will allow direct comparison with the limitations and requirements of this permit. If no discharge occurs during a reporting period, the permittee shall specify "No discharge" on the DMR. The results of all discharge analyses conducted during the monitoring period shall be included in calculations of the monthly average and daily maximums reported on the DMRs if the analyses were by methods specified in Part II.A above.

2. DMRs and attachments are to be submitted (see Appendix A- definitions) by the 28th day of the month following the end of a monitoring period. For example, if the monitoring period ends January 31st, the permittee shall submit the DMR by February 28th. The permittee shall submit original copies of these and all other reports required in this Part, signed by an authorized representative, to ADEQ at the following address:

ADEQ Water Quality Compliance Section
Data Unit Mailcode: 5415B-1
1110 West Washington Street
Phoenix, AZ 85007

or fax to (602) 771-4505.

For each month, the permittee shall complete and submit a copy of the **AZPDES Discharge Flow Record** (found in Appendix B) with the DMR for that month, along with copies of the original lab results for all parameters monitored during the reporting period.

3. When sampling for ammonia, the temperature and pH of the sample must be recorded at the time of sample collection. Results for all three parameters shall be recorded on the **Ammonia Data Log** provided in Appendix C, as well as on DMRs. The ammonia data log shall be submitted to ADEQ annually to the address in Part II.B.2, above.

4. The permittee shall submit results of the NPDES DMR/QA study to ADEQ and ADHS for all laboratories used in monitoring compliance with this permit by December 31st of each year. The permittee shall also participate in the DMR-QA study for any DMR-QA parameters that the permittee analyzes (typically pH and chlorine) and submit the results along with the laboratory results. The results shall be submitted to the following addresses:

Arizona Department of Environmental Quality
ADEQ Surface Water Permits Unit
Mailcode: 5415A-1
1110 West Washington Street
Phoenix, AZ 85007

Arizona Department of Health Services
Attn: DMRQA Coordinator
250 N 17th Avenue
Phoenix, AZ 85007

5. For the purposes of reporting, the permittee shall use the limit of quantitation.

6. For parameters with daily maximum limits or daily maximum assessment levels in this permit, the permittee shall review the results of all samples collected during the reporting period and report as follows:

Use the following tables for information on how to report data on the DMR when the LOQ for a parameter is greater than the permit limits or standards:

For Daily Maximum Limits/Assessment Levels	The Permittee shall Report on the DMR
When the maximum value of any analytical result is greater than the LOQ	The maximum value of all analytical results
When the maximum value detected is greater than or equal to the laboratory's LOD but less than the LOQ (1)	The numeric result with E4 or E8 flag as applicable (AZ qualifier)
When the maximum value is less than the laboratory's LOD (2)	"< ND" (specify the LOD level, i.e.,< 10 µg/L)

Footnotes:

(1) Not Quantifiable
(2) Below Detection

7. For parameters with monthly average limits or monthly average assessment levels in this permit, the permittee shall review the results of all samples collected during the reporting period and report:

For Monthly Average Limits/Assessment Levels		The Permittee shall Report on the DMR
If only one sample is collected during the reporting period (monthly, quarterly, annually, etc.) (In this case, the sample result **is** the monthly average.)	When the value detected is greater than the LOQ.	The analytical result.
	When the value detected is greater than or equal to the laboratory's LOD, but less than the LOQ.	The numeric result with E4 or E8 flag as applicable (AZ qualifier).
	When the value is less than the laboratory's LOD.	"< LOD" (specify the LOD level, i.e., < 10µg/L).
If more than one sample is collected during the reporting period.	All samples collected in the same calendar month must be averaged. ▪ When all results are greater than the LOQ, all values are averaged; ▪ If some results are < LOQ, use the LOD value in the averaging; ▪ Use '0' for values less than the LOD.	The highest monthly average which occurred during the reporting period.

8. If the information below is not included on the laboratory reports required in Part II.B.2, the permittee shall attach a report to each DMR that includes, for all analytical results during the reporting period:

   a. The analytical result.

   b. The number or title of the approved analytical method, preparation and analytical procedure utilized by the laboratory, and LOD and the LOQ for the analytical method for the pollutant.

   c. Any applicable data using Arizona Data Qualifiers Revision 3.0 (9/20/2007).

C. Twenty-four Hour Reporting of Noncompliance

The permittee shall orally report any noncompliance which may endanger the environment or human health within 24 hours from the time the permittee becomes aware of the event to:

ADEQ 24 hour hotline at (602) 771-2330

The permittee shall also notify the Water Quality Compliance Section Manager at (602) 771-2209 by phone call or voice mail by 9 a.m. on the first business day following the noncompliance. The permittee shall also notify the Water Quality Compliance Section in writing within 5 days of the noncompliance event. The permittee shall include in the written notification: a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and, if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

D. Monitoring Records

The permittee shall retain records of the following monitoring information:

1. Date, exact location and time of sampling or measurements performed, preservatives used;
2. Individual(s) who performed the sampling or measurements;
3. Date(s) the analyses were performed;
4. Laboratory(s) which performed the analyses;
5. Analytical techniques or methods used;
6. Chain of custody forms;
7. Any comments, case narrative or summary of results produced by the laboratory. These comments should identify and discuss QA/QC analyses performed concurrently during sample analyses and should specify whether analyses met project requirements and 40 CFR 136. If results include information on initial and continuing calibration, surrogate analyses, blanks, duplicates, laboratory control samples, matrix spike and matrix spike duplicate results, sample receipt condition, or holding times and preservation, these records must also be retained.
8. Summary of data interpretation and any corrective action taken by the permittee.

PART III. BIOSOLIDS/ SEWAGE SLUDGE REQUIREMENTS

Note: "Biosolids" refers to non-hazardous sewage sludge as defined in 40 CFR 503.9 and Arizona Administrative Code (A.A.C.) R18-9-1001.7. Sewage sludge that is hazardous as defined in 40 CFR 261 must be disposed of in accordance with the Resource Conservation and Recovery Act (RCRA). Sludge with PCB (polychlorinated biphenyls) levels greater than 50 mg/kg must be disposed of in accordance with 40 CFR 761.

A. Use or Disposal Requirements

All biosolids/sewage sludge generated and/or prepared at this facility shall be used or disposed of in compliance with the applicable portions of 18 A.A.C. Chapter 9, Article 10 and

1. 40 CFR 503 Subpart C: for biosolids that are placed on the land (surface disposal) for the purpose of disposal (dedicated land disposal sites, lagoons, or monofills).
2. 40 CFR 258: for biosolids disposed of in municipal solid waste landfills; and
3. 40 CFR 257: for all biosolids use and disposal practices not covered under 40 CFR 258 or 503.

B. Biosolids Preparer's Responsibility

The permittee is responsible for ensuring that all biosolids/sewage sludge produced or accepted at this facility are used or disposed of in accordance with 40 CFR 503 Subpart C, 257, 258 and 18 A.A.C. Chapter 9, Article 10, as applicable, whether the permittee uses or disposes of the biosolids itself or transfers them to another party for further treatment, use, or disposal. The permittee is responsible for informing any subsequent transporters, preparers, applicators, and disposers of the requirements that they must meet under 18 A.A.C. Chapter 9, Article 10.

C. Duty to Mitigate

The permittee shall take all reasonable steps to prevent or minimize any biosolids use or disposal which has a likelihood of adversely affecting human health or the environment.

D. General Requirements

The permittee shall ensure that:

1. No biosolids generated and/or prepared at this facility enter wetlands or other waters of the United States;

2. Biosolids treatment, storage, use or disposal does not contaminate surface water or groundwater. *(Note: Surface disposal or land treatment sites for biosolids must be permitted under the aquifer protection program per A.A.C. R18-9-1002.E.2. and may also require a separate AZPDES permit. The permittee shall ensure a site has appropriate permits before directing biosolids to a surface disposal or land treatment site.)*

3. Biosolids treatment, storage, and use or disposal does not create a nuisance such as malodorous smell or attraction of flies or other disease carrying vectors.

4. Biosolids generated and/or prepared at this facility are not applied to the land or placed on a surface disposal site if the biosolids are likely to adversely affect a threatened or endangered species as listed under section 4 of the Endangered Species Act (16 U.S.C 1533), or its designated critical habitat as defined in 16 U.S.C. 1532;

5. Land application sites receiving bulk biosolids generated and/or prepared at this facility are registered with ADEQ in accordance with A.A.C. R18-9-1004; and

6. No biosolids generated and/or prepared at this facility are incinerated in the state of Arizona.

E. Biosolids Storage

1. Biosolids shall not be stored on land for over two years from the time they are generated unless a permit for surface disposal is obtained per 18 A.A.C. Chapter 9, Article 10 and 40 CFR 503 Subpart C, or written notification has been submitted to the ADEQ Biosolids Coordinator with the information in 40 CFR 503.20.b that sufficiently demonstrates the need for longer temporary storage.

2. For the protection of public health, biosolids shall not be stored uncovered on-site or off-site unless the permittee can demonstrate that prior to placement in storage:

   a. Biosolids meet Class A or B pathogen reduction requirements established in A.A.C. R18-9-1006.D or E, and

   b. Biosolids meet one of the vector attraction reduction alternatives in A.A.C. R18-9-1010 subsections A.1 through A.8.

   c. For biosolids which are classified as EQ or Class A, or as Class B through pathogen reduction Alternative 1, the permittee must also sample for pathogen reduction following storage and within 30 days prior to reuse/disposal or distribution (see Part III.J.2.d). Sampling before and after storage shall occur at least at the minimum frequency given in Part III.I.1 below.

3. Prior to storing biosolids at an off-site storage location, the permittee shall notify the ADEQ Biosolids Coordinator in writing where the biosolids will be stored and the expected date of final use or disposal.

F. Surface Water Protection

The permittee must design and operate all on-site treatment, disposal, or storage areas for biosolids to:

- divert surface run-on from adjacent areas to prevent contact with biosolids;
- protect the site boundaries from erosion; and
- prevent any drainage that has contacted biosolids from escaping the site.

These features shall be designed to be protective for at least a 25-year 24-hour storm event. If the permittee sends biosolids off-site that are not EQB, the permittee shall ensure all treatment, disposal, or storage areas that receive those biosolids have the same level of protection.

G. Facilities with Pretreatment Programs

Permittees with pretreatment programs shall:

1. Sample and analyze biosolids for all the priority pollutants listed under Section 307.a.1 of the Clean Water Act except asbestos. This shall consist of an annual full priority pollutant scan, with quarterly samples analyzed only for those pollutants detected in the full scan.

2. Sample and analyze biosolids quarterly for the following Pollutants of Concern:

Arsenic	Copper	Mercury	Selenium
Cadmium	Cyanide	Molybdenum	Silver
Chromium	Lead	Nickel	Zinc

3. If any biosolids generated and/or prepared at this facility are or will be land applied, the permittee shall design local limits to achieve the ceiling and monthly average pollutant concentration levels for pollutants given in the table at Part III.J.1.a of this permit. If pollutants in the biosolids exceed any of these monthly average pollutant concentration levels, the permittee shall revise its local limits as necessary in order to meet these levels.

H. Inspection and Entry

The permittee shall allow, directly or through contractual arrangements with their biosolids management contractors, authorized representatives of ADEQ and EPA to:

1. Enter upon all premises where biosolids are treated, stored, used, or disposed, either by the permittee or by another party to whom the permittee transfers the biosolids for treatment, storage, use, or disposal;

2. Have access to and copy any records that must be kept under the conditions of this permit and per 18 A.A.C. Chapter 9 Article 10 (including those in 40 CFR 503 Subpart C) by the permittee or by another party to whom the permittee transfers the biosolids for further treatment, storage, use, or disposal; and

3. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations used in biosolids treatment, storage, use, or disposal by the permittee or by another party to whom the permittee transfers the biosolids for treatment, use, or disposal.

I. General Biosolids Monitoring Requirements (dry weight testing)

1. Biosolids Self-monitoring Frequency

Unless otherwise specified in this permit, the permittee shall conduct self-monitoring events at least at the frequency listed in the table that follows for any sampling required in Part III of this permit. [More frequent monitoring is to be conducted whenever necessary to ensure public health is protected.]

Biosolids Monitoring Frequency

Amount of Biosolids Prepared per Calendar Year (dry metric tons)	Minimum Monitoring Frequency
> 0 - < 290	One sampling event per year
≥ 290 - < 1500	One sampling event per quarter
≥ 1500 - < 15,000	One sampling event per 60 days
≥ 15,000	One sampling event per month

2. Sampling and Analysis Methods

The permittee shall ensure biosolids are tested using the methods specified in 40 CFR 503.8, as required in A.A.C. R18-9-1012.G. Testing shall be performed at a laboratory operating in compliance with A.R.S. § 36-495. Because of the potential for re-growth of pathogens, for Class A or EQ biosolids, samples demonstrating pathogen reduction shall be taken within 30 days before biosolids are shipped off-site, so verification that requirements are met is obtained before the biosolids leave the site.

3. Representative Sampling

The permittee shall ensure that sampling conducted during a monitoring period adequately represents the quality of all biosolids used/treated/disposed over the monitoring period. This may

entail taking several samples per sampling event and/or sampling more frequently than the minimum specified.

4. **Testing Stockpiled/Accumulated Biosolids Prior to Distribution or Use**

If, after treatment, biosolids classified as EQ or Class A, or as Class B demonstrated through Alternative 1, are stockpiled or accumulated on-site prior to reuse/disposal, the permittee shall develop a sampling plan that ensures samples representative of the entire stockpile are collected and analyzed for pathogens within 30 days before distribution or use. The plan shall detail the number and location of samples to be taken from a cross section of **each** pile or area. The plan must include at least 1 sample for each 0-290 metric dry ton increments. More sampling is appropriate when the biosolids are inconsistent in nature or non-uniformly treated.

The permittee must collect and analyze representative samples per the sampling plan. Distribution or use/disposal shall not occur until the permittee verifies that the biosolids sampled meet all applicable requirements for its use/disposal.

5. **Testing for Hazardous Waste Determination.**

The permittee shall test biosolids at least annually, and more frequently as necessary, to determine if biosolids are hazardous in accordance with 40 CFR 261. Initial screening of the biosolids may be conducted by analyzing biosolids for the total amount of a pollutant. This screening test is all that is required each monitoring period if the total amount does not exceed the 20X TCLP screening value in the table below. If the total amount of a pollutant exceeds the 20X TCLP screening value, then the leachable amount must be determined using the Toxicity Characteristic Leaching Procedure (TCLP). The disposal of biosolids that test hazardous is not covered under this permit, and all such biosolids must be disposed of in accordance with the Resource Conservation and Recovery Act (RCRA).

Toxicity Characteristic Leaching Procedure Test

Parameter	TCLP Limit mg/L	20 X TCLP Screening Value mg/kg (dry weight)	Minimal Monitoring Frequency per Generator
Metals			
Arsenic	5	100	Once / year
Barium	100	2000	Once / year
Cadmium	1	20	Once / year
Chromium	5	100	Once / year
Lead	5	100	Once / year
Mercury	0.2	4	Once / year
Selenium	1	20	Once / year
Silver	5	100	Once / year

Volatiles and Semi-Volatiles			
Benzene	0.5	10	Once / year
Carbon Tetrachloride	0.5	10	Once / year
Chlorobenzene	100	2000	Once / year
Chloroform	6	120	Once / year
1,2-Dichloroethane	0.5	10	Once / year
1,1-Dichloroethylene	0.7	14	Once / year
Methyl ethyl ketone	200	4000	Once / year
Tetrachloroethylene	0.7	14	Once / year
Trichloroethylene	0.5	10	Once / year
Vinyl Chloride	0.2	4	Once / year
1,4-Dichlorobenzene	7.5	150	Once / year
o-cresol (1)	200	4000	Once / year
m-cresol (1)	200	4000	Once / year
p-cresol (1)	200	4000	Once / year
Cresol (total) (1)	200	4000	Once / year
2,4-Dinitrotoluene	0.13	2.6	Once / year
Hexachlorobenzene	0.13	2.6	Once / year
Hexachlorobutadiene	0.5	10	Once / year
Hexachloroethane	3	60	Once / year
Nitrobenzene	2	40	Once / year
Pentachlorophenol	100	2000	Once / year
Pyridine	5	100	Once / year
2,4,5-Trichlorophenol	400	8000	Once / year
2,4,6-Trichlorophenol	2	40	Once / year
Herbicides / Pesticides			
2,4-D	10	200	Once / year
2,4,5-TP (Silvex)	1	20	Once / year
Chlordane	0.03	0.6	Once / year
Endrin	0.02	0.4	Once / year
Heptachlor	0.008	0.16	Once / year
Heptachlor epoxide	0.008	0.16	Once / year
Lindane	0.44	8.8	Once / year

Methoxychlor	10	200	Once / year
Toxaphene	0.5	10	Once / year

Footnotes:

(1) If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/L.

J. Biosolids Limitations and Monitoring Requirements for Land Application

The permittee shall monitor biosolids generated and/or prepared at this facility for land application and limit their use as follows:

1. Metals Concentrations for Land Application

a. Biosolids shall be sampled for the metals listed in the following table at a frequency not less than the minimum indicated for the amount of biosolids prepared annually. Samples shall be taken after all treatment and blending processes, but prior to land application.

Pollutant	Ceiling Concentrations (milligrams/ kilogram) (1)	Monthly Average Pollutant Concentrations (milligrams/ kilogram) (1)	Minimum Monitoring Frequency per Volume Prepared Annually
Arsenic	75.0	41.0	0 to < 290 dry metric tons – 1 sampling event /year ≥ 290 to < 1500 dry metric tons – 1 sampling event /quarter ≥ 1500 to < 15,000 dry metric tons – 1 sampling event /60 days ≥ 15,000 dry metric tons – 1 sampling event /month
Cadmium	85.0	39.0	
Chromium	3000.0	Not Applicable	
Copper	4300.0	1500.00	
Lead	840.0	300.00	
Mercury	57.0	17.0	
Molybdenum	75.0	Not Applicable	
Nickel	420.0	420.00	
Selenium	100.0	100.0	
Zinc	7500.0	2800.00	

Footnotes

(1) Dry-weight basis

b. The permittee shall not land apply biosolids with pollutant concentrations that exceed any of the ceiling concentrations in the preceding table. The permittee shall not sell or give away biosolids for land application if pollutant concentrations exceed any of the ceiling concentrations in the preceding table.

c. If biosolids exceed any ceiling concentration in the preceding table, the permittee must:

- Notify the ADEQ Biosolids Coordinator;

- Find alternative disposal methods other than land application for the biosolids represented by that sampling event; and

- Identify the source of the pollutants and take appropriate source control measures to reduce the presence of the pollutant(s) of concern.

d. If biosolids exceed a monthly average pollutant concentration listed in the table in Part III.I.1. above:

- The biosolids shall not be applied as bulk biosolids to a lawn or garden.

- The biosolids shall not be sold or given away if any annual pollutant loading rate listed in Table 3 of A.A.C. R18-9-1005.D will be exceeded. The annual pollutant loading rate shall be determined using the methodology in18 A.A.C. Chapter 9, Article 10, Appendix A.

- The biosolids shall not be applied to a site if any cumulative pollutant loading rate in Table 4 of A.A.C. R18-9-1005.D will be exceeded. The cumulative pollutant loading rate shall be determined using the methodology in A.A.C. R18-9-1005.D.

e. The permittee shall not apply, sell, or give away biosolids for application to a lawn or garden unless they are exceptional quality (EQ) biosolids.

f. The permittee shall be able to demonstrate that all biosolids meet the definition of EQ biosolids in order to claim exemption from the management practices in A.A.C. R18-9-1007 and R18-9-1008. If claiming biosolids are EQ, during the first two years of this permit, the permittee shall submit the results of all biosolids testing and details about the pathogen and vector control treatment processes to the ADEQ Biosolids Coordinator. The permittee shall receive written confirmation from ADEQ that the results demonstrate the biosolids meet EQ requirements prior to selling or giving away or land applying any biosolids for uses requiring an EQ biosolids classification.

2. **Pathogen Reduction Requirements for Land Application**

a. Biosolids must meet Class A or Class B pathogen reduction requirements established in A.A.C. R18-9-1006 at the time the biosolids are land applied and, if stored uncovered prior to land application, at the time the biosolids are stored. The permittee shall also verify that the reduction is met within 30 days prior to distribution (see Part III.I.4). The permittee shall document and retain records of the treatment used to achieve Class A or Class B pathogen reduction levels and, if demonstrating treatment to Class A, the fecal coliform or *Salmonella sp.* density. Retesting is required within 30 days of distribution for EQ and Class A biosolids and for Class B biosolids if pathogen reduction was demonstrated through Alternative 1.

b. Biosolids sold or given away in a bag or other container for land application, or applied on a lawn or home garden, shall meet the Class A pathogen reduction requirements established in A.A.C. R18-9-1006.D.

c. The permittee shall maintain daily records of the operating parameters for the pathogen reduction treatment alternative used. If using A.A.C. R18-9-1006.D Alternative 4, the permittee shall demonstrate acceptable levels of enteric virus and viable helminth ova through monitoring.

d. Microbiological monitoring for fecal coliforms or *Salmonella sp.* to demonstrate pathogen reduction during a given monitoring period shall be conducted as close to the actual distribution or disposal of the biosolids as feasible. The analytical results must demonstrate effective pathogen reduction is achieved prior to distributing or disposing of the biosolids. If the permittee stores biosolids before they are distributed for use or disposal, microbiological testing must take place within 30 days prior to distribution or disposal.

e. In order to demonstrate Class B pathogen reduction using A.A.C. R18-9-1006.E Alternative 1;

- At least seven individual grab samples must be taken and analyzed for fecal coliform during each monitoring event (unless an alternate sampling plan has been approved by ADEQ).
- The geometric mean of the results must be <2,000,000 MPN/gram or CFU/gram of total solids (dry-weight basis).
- Samples are to be taken over a 14-day period to adequately represent sludge variability.

(Note: A 'monitoring event' includes the period of time that samples are collected, analyzed, and the sample results provided to the permittee.)

f. In order to demonstrate Class A pathogen reduction, in addition to meeting one of the alternative pathogen treatment options in A.A.C. R18-9-1006.D;

- At least seven individual grab samples must be collected and analyzed for fecal coliform during each monitoring event (unless an alternate sampling plan has been approved by ADEQ) and all seven samples must be < 1,000 MPN/gram.; or
- At least seven individual grab samples must be collected and analyzed for *Salmonella sp.* during each monitoring event (unless an alternate sampling plan has been approved by ADEQ) and each must be <3 MPN/4 grams total solids (dry-weight basis).
- Samples are to be taken over a 14-day period to adequately represent sludge variability.

g. If demonstrating Class A pathogen reduction using A.A.C. R18-9-1006.D Alternative 4;

- One composite sample consisting of at least seven grab samples must be collected and analyzed for enteric virus during each monitoring event and the arithmetic mean of 4 duplicate analyses of that composite must be < 1 PFU/ 4 grams total solids (dry-weight basis). Grab samples are to be taken over a 14-day period prior to compositing them to adequately represent sludge variability, and the maximum holding time is 2 weeks.

- One composite sample consisting of at least seven grab samples must be collected and analyzed for viable helminth ova during each monitoring event and the arithmetic mean of 4 duplicate analyses of that composite must be < 1 viable ova/ 4 grams total solids (dry-weight basis). Grab samples are to be taken over a 14-day period prior to compositing them to adequately represent sludge variability.

3. **Vector Attraction Reduction Requirements for Land Application**

   a. The permittee shall ensure that all biosolids generated and/or prepared at this facility meet the vector attraction reduction requirements established in A.A.C. R18-9-1010 when the biosolids are land-applied. If biosolids are stored uncovered prior to land application, one of the vector attraction reduction alternatives established in A.A.C. R18-9-1010 subsections A.1 through A.8 must be met prior to storage. The permittee shall document and retain records of the operational parameters or application methods used to achieve the vector attraction reduction requirements.

   b. The permittee shall ensure that all biosolids generated and/or prepared at this facility that are sold or given away in a bag or other container, or applied to a lawn or home garden, meet one of the vector attraction reduction alternatives established in A.A.C. R18-9-1010 subsections A.1 through A.8. The permittee shall document and retain records of the operational parameters or application methods used to achieve the vector attraction reduction requirements.

4. **Nitrogen Testing for Land Application**

   The permittee shall ensure that biosolids generated and/or prepared at this facility for land application are tested for organic-N, ammonium-N, and nitrate-N at least at the applicable minimum frequency in Part III.I and that the most recent test results are provided to any subsequent preparer, user, or disposer.

K. Management Practices for Land Application

The permittee shall ensure that all non-EQ bulk biosolids generated and/or prepared at this facility are land applied in accordance with the management practices in A.A.C. R18-9-1007, unless the bulk biosolids are land applied for reclamation.

If the permittee generates or prepares non-EQ bulk biosolids that are land applied for reclamation, the permittee shall ensure that the biosolids are land applied in accordance with the management practices in A.A.C. R18-9-1008.

If the permittee generates or prepares non-EQ biosolids placed in a bag or other container for distribution/land application or reclamation, the permittee shall distribute a label or information sheet to the person receiving the material. This label or information sheet shall contain the information in A.A.C. R18-9-1007.B.

L. Biosolids/Sewage Sludge Limitations and Monitoring Requirements for Surface Disposal

The permittee shall ensure that any sewage sludge or biosolids directed to or placed in a surface disposal unit meets the requirements of 40 CFR 503 Subpart C. The permittee shall also ensure the surface disposal site is permitted under the aquifer protection program and has a valid AZPDES permit prior to disposal of any biosolids in the unit.

M. Biosolids Monitoring Requirements for Disposal in a Municipal Landfill

Biosolids placed in a municipal landfill shall be tested by the Paint Filter Test (method 9095) at the frequency in Part III.J.1 above or more often as necessary to demonstrate that there are no free liquids. The permittee shall keep records documenting that biosolids disposed in a municipal landfill did not contain free liquids.

N. On-site Management Plan

The permittee shall submit a Management Plan (Plan) within 180 days of permit issuance or maintain a previously submitted Plan for the on-site management operations.

1. This Plan shall detail how sludge/biosolids are managed from the time that they are generated at the facility until they are shipped off-site. The Plan shall give specific protocols to be followed to ensure that the material generated at this facility will consistently meet all applicable requirements in 18 A.A.C. Chapter 9, Article 10 and 40 CFR Part 503 Subpart C and the provisions of this permit. The Plan must address issues of potential concern such as storage areas; run-on and run-off control; odor and dust control; and include a professional diagram of facilities/areas used in the operation and the area surrounding the operation. The Plan shall specify how and when representative samples of biosolids will be taken and contain a contingency plan for managing biosolids that exceed the requirements for the expected end use/disposal.

O. Record Keeping

1. The permittee shall collect and retain all biosolids information required by this permit and A.A.C. R18-9-1013.A.1 through A.6 for at least five years.

2. The permittee shall keep analytical test results and all documentation that supports the biosolids classification on-site and available for review.

3. All biosolid records are subject to periodic inspection, and copying by ADEQ.

P. Notification Requirements

The permittee, either directly or through contractual arrangements with their biosolids management contractors, shall comply with the following:

1. Notification of Noncompliance

a. The permittee shall notify ADEQ of any noncompliance with the biosolids provisions of this permit or with 18 A.A.C. Chapter 9 Article 10, which may endanger health or the environment. The permittee shall provide the information orally within 24 hours from the time the permittee becomes aware of the circumstances (See Part II.C of this permit.)

b. For other instances of noncompliance with the biosolids provisions, the permittee shall notify the ADEQ Biosolids Coordinator in writing within five working days of becoming aware of the circumstances.

c. Permittees shall require their biosolids management contractors to notify ADEQ of any noncompliance within the time-frames specified in Sections P.1.a and b.

2. **Notification of Shipment to another State**

If biosolids are shipped to another State or to Indian Lands, the permittee shall send a notice of the shipment to the NPDES permitting authorities in the receiving State or Indian Land (the EPA Regional Office for that area and the State/Indian authorities) with a copy to the Arizona Biosolids Coordinator. The notice shall be sent at least 60 days before the biosolids are planned to be shipped.

3. **Notification of Change in Land Application Sites, Applicators, or Disposal Methods**

a. Prior to sending, placing or applying any bulk biosolids generated and/or prepared at this facility to a site that the permittee has not previously utilized for biosolids use/disposal within the last five years, the permittee must verify that the application site has been registered in accordance with A.A.C. R18-9-1004 and shall notify the ADEQ Biosolids Coordinator of the planned change. The notification shall include a description and topographic map of the proposed site(s), latitude and longitude coordinates at the center of each field/site, slope of land surface, names and addresses of the applicator(s) and site owner(s), a listing of any state or local permits which must be obtained, a description of the crops or vegetation to be grown at each site, proposed loading rates and determination of agronomic rates.

b. Prior to selling or giving away bulk biosolids for land application to an applicator that the permittee has not sold or given biosolids to within the last five years, the permittee shall notify the ADEQ Biosolids Coordinator of the planned change. The notification shall include: the name, address, and telephone number of the applicator and any agent of the applicator; the name and telephone number of a primary contact person who has specific knowledge of the land application activities of the applicator; and whether the applicator holds a NPDES or AZPDES permit, and, if so, the permit number.

c. Prior to changing the method of biosolids use, treatment or disposal that was identified in the permittee's application for this permit, the permittee shall notify the ADEQ Biosolids Coordinator of the planned change in writing. If ADEQ determines that the newly proposed practice is not covered under this permit, the permittee shall request and receive a permit modification prior to making the change.

d. The permittee shall keep records of site registration verifications and of all notifications made to ADEQ.

4. **Notification of Land Application of Biosolids that Exceed Monthly Average Pollutant Concentrations**

The permittee must notify the ADEQ Biosolids Coordinator and any subsequent biosolids handlers if biosolids generated and/or prepared at this facility do not meet any of the monthly average pollutant concentration values listed at Part III.J.1.a above. The permittee shall ensure that bulk biosolids exceeding a monthly average pollutant concentration will not be applied to a site if any cumulative pollutant loading rate (Table 4 in A.A.C. R18-9-1005) will be exceeded per A.A.C. R18-9-1005.D.2.

5. **Notification to Subsequent Land Applicators**

   The permittee shall notify the applicator of all the applicator's requirements under Title 18 Chapter 9 Article 10 including the requirement that the applicator certify that management practices, site restrictions, and any applicable vector attraction reduction requirements have been met.

6. **Notification of Surface Disposal**

   Prior to disposal in a new or previously unreported surface disposal site, the permittee shall notify the Biosolids Coordinator in writing. Notice shall include a description and a topographic map of the proposed site; the names of the site operator and site owner; whether the site has any permits; and shall include a description of procedures for ensuring public access and grazing restrictions until three years following site closure. The permittee shall not direct biosolids to the surface disposal site without prior written approval from ADEQ.

Q. Annual Report for All Permittees

The permittee shall submit an annual biosolids report to ADEQ by **February 19 of each year** for the period covering the previous calendar year. The report shall be filled out on forms prescribed by ADEQ and shall include:

1. The amount of biosolids received/generated the previous calendar year and the amount stored at the beginning and end of the previous calendar year, in dry tons or dry metric tons (prefer metric tons), and the amount distributed.

2. The results of all biosolids analytical monitoring conducted during the previous calendar year and copies of the laboratory analytical reports. Metals (other than TCLP metals) shall be reported on a 100% dry weight basis. Note: make certain microbiological testing submitted meets required holding times.

3. Descriptions of pathogen reduction methods and vector attraction reduction methods used during the previous calendar year. The permittee must submit sludge processing data used to demonstrate how treatment alternative(s) in A.A.C. R18-9-1006 and R18-9-1010 were attained, (such as time, temperature, percent solids, pH etc.) as applicable.

4. Names, mailing addresses, and street addresses of all persons who received biosolids generated and/or prepared at this facility for storage, further treatment, disposal in a municipal waste landfill, or for other use/disposal methods not covered under 40 CFR 258 or 503, and the amount delivered to each.

5. Except for biosolids that are demonstrated to be EQ, the following information shall be submitted by the permittee for land application sites, unless the permittee requires its biosolids management contractors to report this information directly to ADEQ:

   a. Locations of land application sites (with field names and numbers) used that calendar year, size of each field applied to, applier, and site owner;

   b. Volumes applied to each field (in wet tons and dry metric tons), nitrogen applied, calculated plant available nitrogen;

c. Crop(s) planted, date of planting, harvesting;

d. For any biosolids exceeding A.A.C. R18-9-1005 Table 2 metals concentrations, the locations of sites where applied and cumulative metals loading at each of these sites to date;

e. Certifications of management practices in A.A.C. R18-9-1007 or A.A.C. R18-9-1008; and

f. Certifications of site restrictions in A.A.C. R18-9-1009.

6. For surface disposal sites, the permittee shall ensure that the following information is submitted, the permittee requires its biosolids management contractors to report this information directly to ADEQ:

a. Locations of sites, site operator, site owner, size of parcel on which disposed;

b. Results of any required groundwater monitoring;

c. A description of and certifications of management practices in 40 CFR 503.24; and

d. For closed sites, date of site closure and certifications of management practices for the three years following site closure.

R. Reporting Location

ADEQ Biosolids Coordinator
Water Quality Compliance Section (5415B-1)
1110 West Washington Street
Phoenix, AZ 85007
602-771-4612

PART IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. General Conditions

1. The permittee shall conduct monthly chronic or acute toxicity tests on a 24-hour composite samples of the final effluent. The requirement to conduct chronic toxicity testing is contingent upon the frequency or duration of discharges. See Part IV.C.1 below for details. If chronic testing is conducted a separate acute test is not required. However, the acute endpoint shall be reported from the chronic test.

2. Final effluent samples must be taken following all treatment processes, including chlorination and dechlorination, and prior to mixing with the receiving water. The required WET tests must be performed on unmodified samples of final effluent. **WET tests conducted on samples that are dechlorinated after collection are not acceptable for compliance with this permit.**

3. Chemical testing for ammonia (NH_3-N) and all the parameters listed in Part I.A, Tables 1 and 2 of this permit shall be performed on a split of the acute sample and/or a split of at least one of the three composite samples taken for each chronic WET test performed. Analysis of the split

sample(s) may be used to fulfill the monitoring requirements in Part I.A., but only for parameters whose required sample type is a composite.

4. Definitions related to toxicity are found in Appendix A.

B. Acute Toxicity

1. The permittee shall conduct 96-hour acute toxicity tests with renewal at 48 hours on two species; *Ceriodaphnia dubia* and.*Pimephales promelas* using 100% effluent and a control. The acute test may be completed as a non-renewal 48-hour acute test when a second sample for renewal at 48 hours cannot be taken due to a cessation of the discharge after an acute test has been initiated.

2. The permittee must follow the USEPA 5th edition manual, "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012) for all acute toxicity testing. The presence of chronic toxicity shall be estimated as specified in the method for each species tested.
3. The acute toxicity action level is any failing test result. The test fails if survival in 100% effluent is less than 90%, and is significantly different from control survival (which must be 90% or greater), as determined by hypothesis testing. Section 11.3 of the acute manual referenced above must be followed to determine pass or fail. Any result of fail requires follow-up testing per Part IV, Section E.

4. The permittee shall report results as pass or fail.

C. Chronic Toxicity

1. The permittee shall conduct short-term chronic toxicity tests on three species: the waterflea, *Ceriodaphnia dubia* (survival and reproduction test); the fathead minnow, *Pimephales promelas* (larval survival and growth test); and the green alga, *Selenastrum capricornutum* (growth test). Chronic WET testing is required in any given month when discharge occurs on four (4) consecutive calendar days and/or is repeated during a period of 30 consecutive days. The discharge does not have to be continuous to fall under this requirement. Examples that would require chronic WET testing: 1) Continuous discharge begins on day 1 at 5pm and ends at 8am on day 4. 2) Intermittent discharges occur for six (6) hours on day 1, eight (8) hours on day 2, four (4) hours on day 3, two (2) hours on day 4.

2. The permittee must follow the USEPA 4th edition manual, "*Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821-R-02-013) for all chronic compliance toxicity testing.

3. The chronic toxicity action levels are any one test result greater than 1.6 TUc or any calculated monthly median value greater than 1.0 TUc. If chronic toxicity is detected above these values, follow-up testing is required per Part IV, Section E. A chronic toxicity unit (TUc) shall be calculated as TUc = 100/NOEC.

4. The chronic WET test shall be conducted using a series of five dilutions and a control. The following dilution series must be used: 12.5, 25, 50, 75, and 100% effluent.

D. Quality Assurance

1. Effluent samples must be maintained between 0 and 6°C from collection until utilized in the toxicity testing procedure. When a composite sample is required, each aliquot making up the composite must be chilled after collection and throughout the compositing period. The single allowable exception is when a grab sample is delivered to the performing laboratory for test initiation no later than 4 hours following the time of collection.

2. Control and dilution water should be receiving water or lab water as appropriate, as described in the 40 CFR Part 136.3 approved method. If the dilution water used is different from the culture water, a second control, using culture water shall also be used.

3. Reference toxicity tests, (a check of the laboratory and test organisms' performance), shall be conducted at least 1 time in a calendar month for each toxicity test method conducted in the laboratory during that month. Additionally, any time the laboratory changes its source of test organisms, a reference toxicity test must be conducted before or in conjunction with the first WET test performed using the organisms from the newer source. Reference toxicant testing must be conducted using the same test conditions as the effluent toxicity tests (i.e., same test duration, etc.)

4. If either the reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the 40 CFR Part 136.3 approved WET methods, then the permittee must re-sample and re-test within 14 days of receipt of the test results. The re-sampling and re-testing requirements include laboratory induced error in performing the test method.

5. The chronic reference toxicant and effluent tests must meet the upper and lower bounds on test sensitivity as determined by calculating the percent minimum significant difference (PMSD) for each test result. The test sensitivity bound is specified for each test method (see Section 10, Table 6 in EPA/821-R-02-013). There are five possible outcomes based on the PMSD result.

    a. *Unqualified Pass*- The test's PMSD is within bounds and there is no significant difference between the means for the control and the effluent. The regulatory authority would conclude that there is no toxicity.

    b. *Unqualified Fail*- The test's PMSD is larger than the lower bound (but not greater than the upper bound) in Table 6 and there is a significant difference between the means for the control and the effluent. The regulatory authority would conclude that there is toxicity.

    c. *Lacks Test Sensitivity*- The test's PMSD exceeds the upper bound in Table 6 and there is no significant difference between the means for the control and the effluent. The test is considered invalid. An effluent sample must be collected and another toxicity test must be conducted within 14 days of receipt of the test results.

    d. *Lacks Test Sensitivity*- The test's PMSD exceeds the upper bound in Table 6 and there is a significant difference between the means for the control and the effluent. The test is considered valid. The regulatory authority will conclude that there is toxicity.

    e. *Very Small but Significant Difference*- The relative difference between the means for the control and effluent is smaller than the lower bound in Table 6 and this difference is statistically significant. The test is acceptable and the NOEC should be determined.

E. Toxicity Reduction Evaluation (TRE)/Toxicity Identification Evaluation (TIE) Processes

1. If acute and/or chronic toxicity is detected above a WET action level or limit specified in this permit and the source of toxicity is known (for instance, a temporary plant upset), the permittee shall conduct one follow-up test within two weeks of receipt of the sample results that exceeded the action level or limit. The permittee shall use the same test and species as the failed toxicity test. If toxicity is detected in the follow-up, the permittee shall immediately begin developing a TRE plan and submit the plan to ADEQ for review and approval within 30 days after receipt of the toxic result. Requirements for the development of a TRE are listed in paragraph 3 below. The permittee must implement the TRE plan as approved and directed by ADEQ.

2. If acute and/or chronic toxicity is detected above an action level or limit specified in this permit and the source of toxicity is unknown, the permittee shall begin additional toxicity monitoring within two weeks of receipt of the sample results that exceeded the action level. The permittee shall conduct one WET test approximately every other week until either a test exceeds an action level or limit or four tests have been completed. The follow-up tests must use the same test and species as the failed toxicity test. For intermittent discharges, testing shall be conducted on the next four discharge events using the same test and species as the failed toxicity test.

   a. If none of the four tests exceed a WET action level or limit, then the permittee may return to the routine WET testing frequency specified in this permit.

   b. If a WET action level or limit is exceeded in any of the additional tests, the permittee shall immediately begin developing a TRE plan and submit the plan to ADEQ for review and approval within 30 days after receipt of the toxic result. Requirements for the development of a TRE are listed in subsection 3, below. The permittee must implement the TRE plan as approved and directed by ADEQ.

3. The permittee shall use the EPA guidance manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, 1999 (EPA/833/B-99/002) in preparing a TRE plan. The TRE plan shall include, at a minimum, the following:

   a. Further actions to investigate and identify the causes of toxicity, if unknown. The permittee may initiate a TIE as part of the TRE process using the following EPA manuals as guidance: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I,* 1992 (EPA/600/6-91/005F); *Methods for Aquatic Toxicity Identification Evaluations: Phase I, Toxicity Characterization Procedures*, 2nd Edition, 1991 (EPA/600/6-91/003); *Methods for Aquatic Toxicity Identification Evaluations: Phase II, Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity,* 1993 (EPA/600/R-92/080); and *Methods for Aquatic Toxicity Identification Evaluations: Phase III, Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity,* 1993 (EPA/600/R-92/081).

   b. Action the permittee will take to mitigate the impact of the discharge and to prevent the recurrence of toxicity; and

   c. A schedule for implementing these actions.

F. WET Reporting

1. The permittee shall report chronic toxicity results on DMRs in Chronic Toxicity Units (TUc). The TUc for DMR reporting shall be calculated as TUc = 100/NOEC.

2. In addition to reporting WET results on DMRs, the permittee shall submit a copy of the full lab report(s) for all WET testing conducted during the monitoring period covered by the DMR. The lab report should report TUc as 100/NOEC **and** as $100/IC_{25}$. If the lab report does not contain any of the following items, then these must also be supplied in a separate attachment to the report: 1) sample collection and test initiation dates, 2) the results of the effluent analyses for all parameters required to be tested concurrently with WET testing as defined in Part I, Tables 1 and 2, and Part IV, Section A.3 of this permit, and 3) copies of completed "AZPDES Discharge Flow Records" for the months in the WET monitoring period.

3. WET lab reports and any required additional attachments shall be submitted to ADEQ by the 28th day of the month following the end of the WET monitoring period, or upon request, to the following address:

   Arizona Department of Environmental Quality
   ADEQ Surface Water Permits Unit, Mailcode: 5415A-1
   1110 West Washington Street
   Phoenix, AZ 85007

(NOTE: This is not the same ADEQ address as the one specified under Part II.B.1 of this permit.)

PART V. SPECIAL CONDITIONS

A. OPERATION

The permittee shall ensure that the facilities or systems are operated by or under the supervision of an operator currently certified by ADEQ at the level appropriate for the facility or system.

B. PRE-TREATMENT REQUIREMENTS

1. The Town of Gilbert shall submit a complete pretreatment program within one year of the effective date of the permit per 40 CFR 403.8(b). ADEQ will send written notification when the program is approved.

2. As facility co-owners, the City of Mesa and Towns of Queen Creek and Gilbert (the City and Towns) share in the efforts to implement pretreatment programs in their respective jurisdictions. With regards to pretreatment programs, the City of Mesa is recognized as the lead agent for purposes of this permit but program responsibility also resides with the Towns of Queen Creek and Gilbert, respectively. The City and Towns are on notice they shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR Part 403, including any subsequent regulatory revisions to Part 403. Where Part 403 or subsequent revision places mandatory actions upon the City and Towns as Control Authorities but does not specify a timetable for completion of the actions, the City and Towns shall complete the required actions within six months from the issuance date of this permit or the effective date of the Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the City and

Towns shall be subject to enforcement actions, penalties, fines and other remedies by the U.S. Environmental Protection Agency (EPA) or other appropriate parties, as provided in the Act. EPA may initiate enforcement action against a non-domestic user for noncompliance with applicable standards and requirements as provided in the Act.

3. The City and Towns shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The City and Towns shall cause all non-domestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new non-domestic user, upon commencement of the discharge.

4. The City shall perform the pretreatment functions as required in 40 CFR Part 403 including, but not limited to:

   a. Implement the necessary legal authorities as provided in 40 CFR Part 403.8(f)(1);

   b. Enforce the pretreatment requirements under 40 CFR Part 403.5 and 403.6;

   c. Implement the programmatic functions as provided in 40 CFR Part 403.8(f)(2); and

   d. Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR Part 403.8(f)(3).

5. As the lead agent, the City of Mesa shall submit annually a report to EPA, Region 9 and the State describing the City and Towns' pretreatment activities over the previous year. In the event the City and Towns are not in compliance with any conditions or requirements of this permit, then the City and Towns shall also include the reasons for noncompliance and state how and when the City and Towns shall comply with such conditions and requirements. This annual report shall cover operations from January 1 through December 31 and is due on February 28 of each year. The report shall contain, but not be limited to, the following information:

   a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants EPA has identified under section 307(a) of the Act which are known or suspected to be discharged by non-domestic users. This will consist of an annual full priority pollutant scan, with quarterly samples analyzed only for those pollutants detected in the full scan. The City and Towns are not required to sample and analyze for asbestos. Sludge sampling and analysis are covered in the sludge section of this permit. The City and Towns shall also provide any influent or effluent monitoring data for non-priority pollutants which the City and Towns believes may be causing or contributing to interference or pass through. Sampling and analysis shall be performed with the techniques prescribed in 40 CFR Part 136;

   b. A discussion of upset, interference or pass through incidents, if any, at the treatment plant which the City and Towns know or suspect were caused by non-domestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the non-domestic user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through or interference;

c. An updated list of the significant industrial users (SIUs) discharging to this facility, including their names and addresses, and a list of deletions, additions and SIU name changes keyed to the previously submitted list. The City and Towns shall provide a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limitations;

d. The City and Towns shall characterize the compliance status of each SIU by providing a list or table which includes the following information:

1. Name of the SIU;
2. Category, if subject to federal categorical standards;
3. The type of wastewater treatment or control processes in place;
4. The number of samples taken by the POTW during the year;
5. The number of samples taken by the SIU during the year;
6. For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
7. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;
8. Whether the facility is in significant noncompliance (SNC) as defined at 40 CFR 403.12(f)(2)(vii) at any time during the year; and
9. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action, final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;

e. A brief description of any programs the POTW implements to reduce pollutants from non-domestic users that are not classified as SIUs;

f. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal authority, enforcement policy, funding levels, or staffing levels;

g. A summary of the annual pretreatment budget of the City and Towns, including the cost of pretreatment program functions and equipment purchases; and

h. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 40 CFR 403.8(f)(2)(vii).

6. As the lead agent, the City of Mesa shall submit quarterly SIU compliance status reports to EPA, Region 9 and the State. The reports shall cover the periods of January 1 through March 31, April 1 through June 30, July 1 through September 30, and October 1 through December 31. Each report shall be submitted by the end of the month following the quarter except the report for October 1 through December 31, which may be included in the annual report. (When these requirements are applied for the first time: This quarterly reporting requirement shall commence for the first full quarter following the issuance of this permit.) The reports shall contain:

a. The name and address of all SIUs which violated any discharge or reporting requirements during that quarter;

b. A description of the violations including whether any discharge violations were for categorical standards or local limits;

c. A description of the enforcement or other actions that were taken to remedy the noncompliance; and

d. The status of active enforcement and other actions taken in response to SIU noncompliance identified in previous reports.

7. As the lead agent, the City of Mesa shall submit the annual report pertaining to pre-treatment activities, and the quarterly compliance reports as discussed above to the following EPA Region 9 and State Pretreatment Coordinator addresses:

Keith Silva	Pretreatment Coordinator
EPA Region 9	Arizona Department of Environmental Quality
75 Hawthorne Street	Mail Code: 5415B-1
San Francisco, CA 94105	1110 West Washington Street
	Phoenix, AZ 85007

C. REOPENER

This permit may be modified per the provisions of A.A.C. R18-9-B906, and R18-9-A905 which incorporates 40 CFR Part 122. This permit may be reopened based on newly available information; to add conditions or limits to address demonstrated effluent toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if Assessment Levels in this permit are exceeded.

APPENDIX A PART A: ACRONYMS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
EQ	Exceptional Quality (biosolids)
AZPDES	Arizona Pollutant Discharge Elimination System
A.R.S.	Arizona Revised Statutes
CFR	Code of Federal Regulations
CFU	Colony Forming Units
Director	The Director of ADEQ or any authorized representative thereof
DMR	Discharge Monitoring Report
EPA	The U.S. Environmental Protection Agency
kg/day	kilograms per day
MGD	Million Gallons per Day
mg/L	milligrams per Liter, also equal to parts per million (ppm)
MPN	Most Probable Number
NPDES	National Pollutant Discharge Elimination System
PFU	Plaque-Forming Unit
QA	Quality Assurance
SSU	Sewage Sludge Unit
µg/L	micrograms per Liter, also equal to parts per billion (ppb)

APPENDIX A PART B: DEFINITIONS

ACTIVE SEWAGE SLUDGE UNIT means a sewage sludge unit that has not closed.

ACUTE TOXICITY TEST is a test used to determine the concentration of effluent or ambient waters that produces an adverse effect (lethality) on a group of test organisms during a short-term exposure (e.g., 24, 48, or 96 hours). Acute toxicity is measured using statistical procedures (e.g., point estimate techniques or hypothesis testing) and is reported as PASS/FAIL or in TUas, where TUa = $100/LC_{50}$.

ACUTE-to-CHRONIC RATIO (ACR) is the ratio of the acute toxicity of an effluent or a toxicant to its chronic toxicity. It is used as a factor for estimating chronic toxicity on the basis of acute toxicity data, or for estimating acute toxicity on the basis of chronic toxicity data.

AGRONOMIC RATE means the whole biosolids application rate on a dry-weight basis that meets the following conditions:
a.) The amount of nitrogen needed by existing vegetation or a planned or actual crop has been provided, and
b.) The amount of nitrogen that passes below the root zone of the crop or vegetation is minimized.

ANNUAL POLLUTANT LOADING RATE means the maximum amount of a pollutant that can be applied to an acre or hectare of land during a 365-day period.

APPLICATOR means a person who arranges for and controls the site-specific land application of biosolids in Arizona.

BASE FLOOD means a flood that has a one percent chance of occurring in any given year (or a flood that is likely to occur once in 100 years).

BULK BIOSOLIDS means biosolids that are transported and land-applied in a manner other than in a bag or other container holding biosolids of 1.102 short tons or 1 metric ton or less.

CHRONIC TOXICITY TEST is a test in which sublethal effects (e.g., reduced growth or reproduction) are measured in addition to lethality. Chronic toxicity is measured as TUc = 100/NOEC or TUc = 100/Ecp or 100/ICp. The ICp and ECp value should be the approximate equivalent of the NOEC calculated by hypothesis testing for each test method.

COMPOSITE SAMPLE means a sample that is formed by combining a series of individual, discrete samples of specific volumes at specified intervals. Composite samples characterize the quality of a discharge over a given period of time. Although, composite samples can be time-weighted or flow-weighted, this permit requires the collection of flow-proportional composite samples. This means that samples are collected and combined using aliquots in proportion to flow rather than time. Also see Flow-Proportional Composite.

CUMULATIVE POLLUTANT LOADING RATE means the maximum amount of a pollutant applied to land application site.

DAILY MAXIMUM CONCENTRATION LIMIT means the maximum allowable discharge of a pollutant in a calendar day as measured on any single discrete sample or composite sample.

DAILY MAXIMUM MASS LIMIT means the maximum allowable total mass of a pollutant discharged in a calendar day.

DISCRETE or GRAB SAMPLE means an individual **sample of at least 100 mL** collected from a single location, or over a period of time not exceeding 15 minutes.

DRY-WEIGHT BASIS means the weight of biosolids calculated after the material has been dried at 105 °C until reaching a constant mass.

EFFECT CONCENTRATION POINT (ECP) is a point estimate of the toxicant (or effluent) concentration that would cause an observable adverse effect (e.g., survival or fertilization) in a given percent of the test organisms, calculated from a continuous model (e.g., USEPA Probit Model).

EXCEPTIONAL QUALITY BIOSOLIDS means biosolids certified under R18-9-1013(A)(6) as meeting the pollutant concentrations in R18-9-1005 Table 2, Class A pathogen reduction in R18-9-1006, and one of the vector attraction reduction requirements in subsections R-18-9-1010(A)(1) through R18-9-1010(A)(8).

FLOW PROPORTIONAL COMPOSITE SAMPLE means a sample that combines discrete samples collected over time, based on the flow of the discharge being sampled. There are two methods used to collect this type of sample. One collects a constant sample volume at time intervals that vary based on stream flow. The other collects discrete samples that are proportioned into aliquots of varying volumes based on stream flow, at constant time intervals (i.e. flow-weighted composite sample).

HARDNESS means the sum of the calcium and magnesium concentrations, expressed as calcium carbonate ($CACO_3$) in milligrams per liter.

HYPOTHESIS TESTING is a statistical technique (e.g., Dunnetts test) that determines what concentration is statistically different from the control. Endpoints determined from hypothesis testing are NOEC and LOEC. The two hypotheses commonly tested in WET are:

- Null hypothesis (H_0): The effluent is not toxic.
- Alternative hypothesis (H_a): The effluent is toxic.

INHIBITION CONCENTRATION (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., USEPA Interpolation Method). IC25 is a point estimate of the toxicant concentration that would cause a 25% reduction in a non-lethal biological measurement.

LAND APPLICATION or LAND APPLY means spraying or spreading biosolids on the surface of the land, injecting biosolids below the land's surface, or incorporating biosolids into the soil to amend, condition, or fertilize the soil.

LAND TREATMENT FACILITY means an operation designed to treat and improve the quality of waste, wastewater, or both, by placement wholly or in part on the land surface to perform part or all of the treatment. A land treatment facility includes

a facility that performs biosolids drying, processing, or composting, but not land application performed in compliance with 18 A.A.C. 9, Article 10.

LC50 is the toxicant (or effluent) concentration that would cause death in 50 percent of the test organisms.

LIMIT OF QUANTITATION (LOQ) means the minimum levels, concentrations, or quantities of a target variable such as an analyte that can be reported with a specific degree of confidence. The calibration point shall be at or below the LOQ. The LOQ is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all of the method-specified sample weights, volumes, and processing steps have been followed.

LIMIT OF DETECTION (LOD) means an analyte and matrix-specific estimate of the minimum amount of a substance that the analytical process can reliably detect with a 99% confidence level. This may be laboratory dependent and is developed according to R9014-615(C)(7).

METHOD DETECTION LIMIT (MDL) - See LOD.

MIXING ZONE is an area where an effluent discharge undergoes initial dilution and may be extended to cover the secondary mixing in the ambient waterbody. A mixing zone is an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented.

MONTHLY OR WEEKLY AVERAGE CONCENTRATION LIMIT, other than for bacteriological testing, means the highest allowable average calculated as an arithmetic mean of consecutive measurements made during calendar month or week, respectively. The "monthly or weekly average concentration limit" for *E. coli* bacteria means the highest allowable average calculated as the geometric mean of a minimum of four (4) measurements made during a calendar month or week, respectively. The geometric mean is the nth root of the product of n numbers. For either method (CFU or MPN), when data is reported as "0" or non-detect then input a "1" into the calculation for the geometric mean.

MONTHLY OR WEEKLY AVERAGE MASS LIMITATION means the highest allowable value that shall be obtained by taking the total mass discharged during a calendar month or week, respectively, divided by the number of days in the period that the facility was discharging. Where less than daily sampling is required by this permit, the monthly or weekly average value shall be determined by the summation of all the measured discharges by mass divided by the number of days during the month or week, respectively, when the measurements were made.

NO OBSERVED EFFECT CONCENTRATION (NOEC) is the highest tested concentration of effluent or toxicant, that causes no observable adverse effect on the test organisms (i.e., the highest concentration of toxicant at which the values for the observed responses are <u>not</u> statistically significant different from the controls).

PATHOGEN means a disease-causing organism.

POINT ESTIMATE TECHNIQUES such as Probit, Interpolation Method, Spearman-Karber are used to determine the effluent concentration at which adverse effects (e.g., fertilization, growth or survival) occurred. For example, concentration at which a 25 percent reduction in fertilization occurred.

REFERENCE TOXICANT TEST is a toxicity test conducted with the addition of a known toxicant to indicate the sensitivity of the organisms being used and demonstrate a laboratory's ability to obtain consistent results with the test method. Reference toxicant data are part of the routine QA/QC program to evaluate the performance of laboratory personnel and test organisms.

RUNOFF means rainwater, leachate, or other liquid that drains over any part of a land surface and runs off of the land surface.

SEWAGE SLUDGE UNIT means land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include navigable waters.

SIGNIFICANT DIFFERENCE is defined as statistically significant difference (e.g., 95% confidence level) in the means of two distributions of sampling results.

SINGLE CONCENTRATION ACUTE TEST is a statistical analysis comparing only two sets of replicate observations. In the case of WET, comparing only two test concentrations (e.g., a control and 100% effluent). The purpose of this test is to determine if the 100% effluent concentration differs from the control (i.e., the test passes or fails).

STORE BIOSOLIDS or STORAGE OF BIOSOLIDS means the temporary holding or placement of biosolids on land before land application.

SURFACE DISPOSAL SITE means an area of land that contains one or more active sewage sludge units.

SUBMIT, as used in this permit, means post-marked, documented by other mailing receipt, or hand-delivered to ADEQ.

TEST ACCEPTABILITY CRITERIA (TAC) are specific criteria for determining whether toxicity tests results are acceptable. The effluent and reference toxicant must meet specific criteria as defined in the test method.

TON means a net weight of 2000 pounds and is known as a short ton.

TOTAL SOLIDS means the biosolids material that remains when sewage sludge is dried at 103° C to 105° C.

TOXIC UNIT (TU) is a measure of toxicity in an effluent as determined by the acute toxicity units or chronic toxicity units measured. Higher the TUs indicate greater toxicity.

TOXIC UNIT ACUTE (TUa) is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end of an acute toxicity test (i.e., TUa = 100/LC50).

TOXIC UNIT CHRONIC (TUc) is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of a chronic toxicity test (i.e., TUc = 100/NOEC).

TOXICITY IDENTIFICATION EVALUATION (TIE) is a set of procedures used to identify the specific chemical(s) causing effluent toxicity.

TOXICITY REDUCTION EVALUATION (TRE) is a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

TOXICITY TEST is a procedure to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of effect of a specific chemical or effluent on exposed test organisms.

VECTORS means rodents, flies, mosquitoes, or other organisms capable of transporting pathogens.

WHOLE EFFLUENT TOXICITY is the total toxic effect of an effluent measured directly with a toxicity test.

APPENDIX B

AZPDES Discharge Flow Record
Greenfield Water Reclamation Plant - AZ0025241

Discharge to East Maricopa Floodway, tributary to the Gila River in the Middle Gila River Basin

Month : _____ **Outfall No: 001**

Date							
Flow Rate							
Flow Duration							
(1) Weekly maximum extent of flow in wash.							
Date							
Flow Rate							
Flow Duration							
(1) Weekly maximum extent of flow in wash.							
Date							
Flow Rate							
Flow Duration							
(1) Weekly maximum extent of flow in wash.							
Date							
Flow Rate							
Flow Duration							
(1) Weekly maximum extent of flow in wash.							
Date							
Flow Rate							
Flow Duration							
(1) Weekly maximum extent of flow in wash.							

Report effluent flow that is discharged under this permit in MGD.
If no discharge occurs on any given day, report "ND" for the flow for that day.
Please copy and complete for each month of each year for permit term.
(1) For weekly maximum extent of effluent flow, provide the best possible estimate of the location of (or distance to) the furthest extent of flow within the East Maricopa Floodway for the week.

Signature of Authorized Representative _____

APPENDIX C

Ammonia Data Log

Greenfield Water Reclamation Plant - AZ0025241

Date of Sample	Ammonia Value In Effluent (mg/L N)	pH (in effluent)	Temperature (in effluent) (Celsius)	Ammonia Standard as Determined from Ammonia Criteria Tables (attached)

Please copy and complete for each month of each year for permit term. Attach any additional pages as necessary.

Signature of Authorized Representative_____

APPENDIX C - AMMONIA SPECIAL REPORTING REQUIREMENTS

The Arizona Administrative Code, Title 18, Chapter 11 Department of Environmental Quality Water Quality Standards contains acute and chronic ammonia standards that are contingent upon temperature and/or pH values. The chronic criteria are more stringent than the acute ammonia criteria, so the effluent ammonia will be compared to the chronic ammonia standards. The chronic table for Aquatic and Wildlife warm will follow below. The permittee may refer to these tables to determine the ammonia standard that applies each time an ammonia sample is taken. The permittee must record all data results for ammonia, pH, temperature and sampling dates in a log. The required minimum sampling frequency for these parameters may be found in Table 1 of this permit. Anytime an ammonia sample is found to be above the corresponding ammonia standard for the pH and temperature at the time the sample was taken, the permittee must highlight this on the ammonia data log. These results must also be reported on DMRs with any exceedances noted. Annual submittal of the ammonia data log is required (See Part II.B.3)

A&W Designated Uses

Determination of Chronic Total Ammonia Criteria in mg N / L

Based on pH and Temperature at Time of Sampling (1) (2)

pH	Temperature, °C									
	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.5	3.07	2.7	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.3	3.78	3.32	2.92	2.57	2.25
7	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.5	3.08	2.7	2.38	2.09
7.2	5.39	5.39	4.9	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.3	3.78	3.33	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.9	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.5	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.8	2.8	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03

Determination of Chronic Total Ammonia Criteria in mg N / L Based on pH and Temperature at Time of Sampling (1) (2)										
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.1	2.1	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.7	0.615	0.541	0.475
8.5	1.09	1.09	0.99	0.87	0.765	0.672	0.591	0.52	0.457	0.401
8.6	0.92	0.92	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.48	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9	0.486	0.486	0.442	0.389	0.342	0.3	0.264	0.232	0.204	0.179

Footnotes:

(1) pH and temperature are field measurements taken at the same time and location as the water samples destined for the laboratory analysis of ammonia.

(2) If field measured pH and/or temperature values fall between the Chronic Total Ammonia tabular values, round field measured values according to standard scientific rounding procedures to nearest tabular value to determine the ammonia standard.

Determination of Acute Total Ammonia Criteria in mg N / L Based on pH at Time of Sampling (1) (2)		
pH	A&W c	A&Ww and A&Wedw
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0

7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.885	1.32

(1) pH and temperature are field measurements taken at the same time and location as the water samples destined for the laboratory analysis of ammonia.

(2) If field measured pH and/or temperature values fall between the Acute Total Ammonia tabular values, round field measured values according to standard scientific rounding procedures to nearest tabular value to determine the ammonia standard.

APPENDIX D

STANDARD AZPDES PERMIT CONDITIONS & NOTIFICATIONS

(Updated as of February 2, 2004)

1. Duty to Reapply [R18-9-B904(C)]
Unless the Permittee permanently ceases the discharging activity covered by this permit, the Permittee shall submit a new application 180 days before the existing permit expires.

2. Applications [R18-9-A905(A)(1)(c) which incorporates 40 CFR 122.22]

   a. All applications shall be signed as follows:

      1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

         A) A president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

         B) The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

      2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

      3) For a municipality, State, Federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (i) The chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

   b. All reports required by permits and other information requested by the Director shall be signed by a person described in paragraph (a) of this Section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

      1) The authorization is made in writing by a person described in paragraph (a) of this section;

      2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,

      3) The written authorization is submitted to the Director.

   c. Changes to Authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must

be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

d. Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

3. Duty to Comply [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(a)(i) and A.R.S. §§ 49- 262, 263.01, and 263.02.]

a. The Permittee shall comply with all conditions of this permit and any standard and prohibition required under A.R.S. Title 49, Chapter 2, Article 3.1 and A.A.C. Title 18, Chapter 9, Articles 9 and 10. Any permit noncompliance constitutes a violation of the Clean Water Act; A.R.S. Title 49, Chapter 2, Article 3.1; and A.A.C. Title 18, Chapter 9, Articles 9 and 10, and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or denial of a permit renewal application.

b. The issuance of this permit does not waive any federal, state, county, or local regulations or permit requirements with which a person discharging under this permit is required to comply.

c. The Permittee shall comply with the effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Clean Water Act within the time provided in the regulation that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

d. Civil Penalties. A.R.S. • 49-262(C) provides that any person who violates any provision of A.R.S. Title 49, Chapter 2, Article 3.1 or a rule, permit, discharge limitation or order issued or adopted under A.R.S. Title 49, Chapter 2, Article 3.1 is subject to a civil penalty not to exceed $25,000 per day per violation.

e. Criminal Penalties. Any a person who violates a condition of this permit, or violates a provision under A.R.S. Title 49, Chapter 2, Article 3.1, or A.A.C. Title 18, Chapter 9, Articles 9 and 10 is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4, which may include the possibility of fines and/or imprisonment.

4. Need to Halt or Reduce Activity Not a Defense [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(c)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(d)]

The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(e)]

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory

controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

7. Permit Actions [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(f)]

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

8. Property Rights [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(g)]

This permit does not convey any property rights of any sort, or any exclusive privilege.

9. Duty to Provide Information [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(h)]

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

10. Inspection and Entry [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(i)]

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and such other documents as may be required by law, to:

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the terms of the permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring equipment or control equipment), practices or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by A.R.S. Title 49, Chapter 2, Article 3.1, and A.A.C. Title 18, Chapter 9, Articles 9 and 10, any substances or parameters at any location.

11. Monitoring and Records [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(j)]

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application, except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503). This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

1) The date, exact place and time of sampling or measurements;

2) The individual(s) who performed the sampling or measurements;

3) The date(s) the analyses were performed;

4) The individual(s) who performed the analyses;

5) The analytical techniques or methods used; and

6) The results of such analyses.

d. Monitoring must be conducted according to test procedures specified in this permit. If a test procedure is not specified in the permit, then monitoring must be conducted according to test procedures approved under A.A.C. R18-9-A905(B) including those under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 (for sludge).

e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both for first conviction. For a second conviction, such a person is subject to a fine of not more than $20,000 per day of violation, or imprisonment for not more than four years, or both.

Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4, which includes the possibility of fines and/or imprisonment.

12. Signatory Requirement [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(k)]

a. All applications, reports, or information submitted to the Director shall be signed and certified. (See 40 CFR 122.22 incorporated at R18-9-A905(A)(1)(c))

b. The CLEAN WATER ACT provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both for a first conviction. For a second conviction, such a person is subject to a fine of not more than $20,000 per day of violation, or imprisonment of not more than four years, or both.

13. Reporting Requirements [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(l)]

a. Planned changes. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations of additions to the permitted facility. Notice is required only when:

1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b) (incorporated by reference at R18-9-A905(A)(1)(e)); or

2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1) (incorporated by reference at R18-9-A905(A)(3)(b)).

3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. (R18-9-B905) This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under Arizona Revised Statutes and the Clean Water Act.

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

2) If the Permittee monitors any pollutant more frequently than required by the permit, then the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR, or sludge reporting form specified by the Director.

3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

f. Twenty-four hour reporting.

1) The Permittee shall report any noncompliance which may endanger human health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

2) The following shall be included as information which must be reported within 24 hours under this paragraph.

a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR 122.41(g) which is incorporated by reference at R18-9-A905(A)(3)(a)).

b) Any upset which exceeds any effluent limitation in the permit.

c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. (See 40 CFR 122.44(g) which is incorporated by reference at R18-9-A905(A)(3)(d)).

g. Other noncompliance. The Permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.

h. Other information. Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

14. Bypass [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(m)]

a. Definitions

1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations. The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of paragraphs (c) and (d) of this section.

c. Notice.

1) Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of bypass.
2) Unanticipated bypass. The Permittee shall submit notice of an unanticipated bypass as required in paragraph (f)(2) of section 13 (24-hour notice).

d. Prohibition of bypass.

1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c) The Permittee submitted notices as required under paragraph (c) of this section.

2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (d)(1) of this section.

15. Upset [A.R.S. §§ 49-255(8) and 255.01(E), R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(n)].

a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A Permittee who wishes to establish the affirmative defenses of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1) An upset occurred and that the Permittee can identify the cause(s) of the upset;

2) The permitted facility was at the time being properly operated; and

3) The Permittee submitted notice of the upset as required in paragraph (f)(2) of Section 13 (24-hour notice).

4) The Permittee has taken appropriate measure including all reasonable steps to minimize or prevent any discharge or sewage sludge use or disposal that is in violation of the permit and that has a reasonable likelihood of adversely affecting human health or the environment per A.R.S. § 49-255.01(E)(1)(d).

d. Burden of proof. In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

16. Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers [R18-9-A905(A)(3)(b) which incorporates 40 CFR 122.42(a)]

In addition to the reporting requirements under 40 CFR 122.41(l) (which is incorporated at R18-9-A905(A)(3)(a)), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

1) One hundred micrograms per liter (100 µg/l);

2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7) (which is incorporated at R18-9-A905(A)(1)(b)); or

4) The level established by the Director in accordance with 40 CFR 122.44(f) (which is incorporated at R18-9-A905(A)(3)(d)).

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

1) Five hundred micrograms per liter (500 µg/l);

2) One milligram per liter (1 mg/l) for antimony;

3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7)(which is incorporated at R18-9-A905(A)(1)(b));

4) The level established by the Director in accordance with 40 CFR 122.44(f) (which is incorporated at R18-9-A905(A)(3)(d)).

17. Publicly Owned Treatment Works [R18-9-A905(A)(3)(b) which incorporates 40 CFR 122.42(b)]

This section applies only to publicly owned treatment works as defined at ARS § 49-255(5).

a. All POTW's must provide adequate notice to the Director of the following:

1) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the CLEAN WATER ACT if it were directly discharging those pollutants; and

2) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

3) For the purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharge from the POTW.

b. Publicly owned treatment works may not receive hazardous waste by truck, rail, or dedicated pipe except as provided under 40 CFR 270. Hazardous wastes are defined at 40 CFR 261 and include any mixture containing any waste listed under 40 CFR 261.31 - 261.33. The Domestic Sewage Exclusion (40 CFR 261.4) applies only to wastes mixed with domestic sewage in a sewer leading to a publicly owned treatment works and not to mixtures of hazardous wastes and sewage or septage delivered to the treatment plant by truck.

18. Reopener Clause [R18-9-A905(A)(3)(d) which incorporates 40 CFR 122.44(c)]

This permit shall be modified or revoked and reissued to incorporate any applicable effluent standard or limitation or standard for sewage sludge use or disposal under sections 301(b)(2)(C), and (D), 304(b)(2), 307(a)(2) and 405(d) which is promulgated or approved after the permit is issued if that effluent or sludge standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant or sludge use or disposal practice not limited in the permit.

19. Privately Owned Treatment Works [R18-9-A905(A)(3)(d) which incorporates 40 CFR 122.44]

This section applies only to privately owned treatment works as defined at 40 CFR 122.2.

a. Materials authorized to be disposed of into the privately owned treatment works and collection system are typical domestic sewage. Unauthorized material are hazardous waste (as defined at 40 CFR Part 261), motor oil, gasoline, paints, varnishes, solvents, pesticides, fertilizers, industrial wastes, or other materials not generally associated with toilet flushing or personal hygiene, laundry, or food preparation, unless specifically listed under "Authorized Non-domestic Sewer Dischargers" elsewhere in this permit.

b. It is the Permittee's responsibility to inform users of the privately owned treatment works and collection system of the prohibition against unauthorized materials and to ensure compliance with the prohibition. The Permittee must have the authority and capability to sample all discharges to the collection system, including any from septic haulers or other unsewered dischargers, and shall take and analyze such samples for conventional, toxic, or hazardous pollutants when instructed by the permitting authority. The Permittee must provide adequate security to prevent unauthorized discharges to the collection system.

c. Should a user of the privately owned treatment works desire authorization to discharge non-domestic wastes, the Permittee shall submit a request for permit modification and an application, pursuant to 40 CFR 122.44(m), describing the proposed discharge. The application shall, to the extent possible, be submitted using ADEQ Forms 1 and 2C, unless another format is requested by the permitting authority. If the privately owned treatment works or collection system user is different from the Permittee, and the Permittee agrees to allow the non-domestic discharge, the user shall submit the application and the Permittee shall submit the permit modification request. The application and request for modification shall be submitted at least 6

months before authorization to discharge non-domestic wastes to the privately owned treatment works or collection system is desired.

20. Transfers by Modification [R18-9-B905]

Except as provided in section 21, a permit may be transferred by the Permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made under R18-9-B906, to identify the new Permittee and incorporate such other requirements as may be necessary.

21. Automatic Transfers [R18-9-B905]

An alternative to transfers under section 20, any AZPDES permit may be automatically transferred to a new Permittee if:

a. The current Permittee notifies the Director at least 30 days in advance of the proposed transfer date;

b. The notice includes a written agreement between the existing and new Permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

c. The Director does not notify the existing Permittee and the proposed new Permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under R18-9-B906(B).

22. Minor Modification of Permits [R18-9-B906(B)]

Upon the consent of the Permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following public notice procedures under R18-9-A907 or A908. Minor modifications may only:

a. Correct typographical errors;

b. Update a permit condition that changed as a result of updating an Arizona water quality standard;

c. Require more frequent monitoring or reporting by the Permittee;

d. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;

e. Allow for a change in ownership or operational control of a facility where the Director determines that no other change in their permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittee has been submitted to the Director.

f. Change the construction schedule for a discharger which is a new source. No such change shall affect a discharger's obligation prior to discharge under 40 CFR 122.29 (which is incorporated by reference in R18-9-A905(A)(1)(e)).

g. Delete a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with the permit limits.

h. Incorporate conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 and 403.18 as enforceable conditions of the POTW's permit.

i. Annex an area by a municipality.

23. Termination of Permits [R-9-B906(C)]

The following are causes for terminating a permit during its term, or for denying a permit renewal application:

a. Noncompliance by the Permittee with any condition of the permit;

b. The Permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time;

c. A determination that the permitted activity endangers human health or the environment and can only by regulated to acceptable levels by permit modification or termination; or

d. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit (for example, a plant closure or termination of discharge by connection to a POTW).

24. Availability of Reports [Pursuant to A.R.S. § 49-205]

Except for data determined to be confidential under A.R.S. § 49-205(A), all reports prepared in accordance with the terms of this permit shall be available for public inspection at ADEQ offices. As required by A.R.S. § 49-205(B) and (C), permit applications, permits, and effluent data shall not be considered confidential.

25. Removed Substances [Pursuant to Clean Water Act Section 301]

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

26. Severability [Pursuant to A.R.S. § 49-324(E)]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and remainder of this permit, shall not be affected thereby.

27. Civil and Criminal Liability [Pursuant to A.R.S. § 49-262, 263.01, and 263.02]

Except as provided in permit conditions on "Bypass" (Section 14) and "Upset" (Section 15), nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

28. Oil and Hazardous Substance Liability [Pursuant to Clean Water Act Section 311]

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of the Clean Water Act.

29. State or Tribal Law [Pursuant to R18-9-A904(C)]

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any applicable State or Tribal law or regulation under authority preserved by Section 510 of the Clean Water Act.

ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

FACT SHEET

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a wastewater treatment plant with a design capacity of 16 MGD, and thus is considered to be a major facility under the NPDES program. The effluent limitations contained in this permit will maintain the Water Quality Standards listed in Arizona Administrative Code (A.A.C.) R18-11-101 et. seq. This permit is proposed to be issued for a period of 5 years.

Permittee's Name:	City of Mesa Greenfield Water Reclamation Plant (WRP)
Mailing Address:	P.O. Box 1466 Mesa, AZ 85211-1466
Facility Location:	4400 South Greenfield Road Gilbert, AZ 85296
Contact Person(s):	Christopher Baer, Waste Water Plant Supervisor 480-644-6012
AZPDES Permit No.	AZ0025241
Inventory No.	105443

I. STATUS OF PERMIT(s)

The City of Mesa has applied for a renewal of the Arizona Pollutant Discharge Elimination System (AZPDES) permit for the Greenfield Water Reclamation Plant (WRP). Although the City of Mesa has submitted the application, the Towns of Gilbert and Queen Creek and City of Mesa are all co-owners of the Greenfield WRP. A renewal of the AZPDES permit is requested to allow the discharge of tertiary treated effluent (consisting of domestic and industrial wastewater) from the Greenfield WRP in Gilbert, Arizona to the East Maricopa Floodway (EMF) in Maricopa County, Arizona. This application was received by the Arizona Department of Environmental Quality (ADEQ) on October 21, 2009 and was determined to be administratively complete on December 15, 2009. The City of Mesa is indicated as the operator of Greenfield WRP and currently has an Aquifer Protection Permit (APP) No. P105443 issued by ADEQ for discharges from the Greenfield WRP. The APP regulates discharges to the local aquifer. The City of Mesa obtained coverage under the Multi-Sector General Permit for stormwater discharges at the Greenfield WRP under the name South Water Reclamation Plant on 04/08/2003 (AZMSG-6144).

II. GENERAL FACILITY INFORMATION

The Greenfield WRP is located west of Greenfield Road between Germann Road and Queen Creek Road in Gilbert, in Maricopa County, Arizona.

The facility is a Publicly Owned Treatment Works (POTW) that serves the city of Mesa and towns of Queen Creek and Gilbert, with a combined service population of approximately 160,000 people. The wastewater treatment plant is part of a sanitary sewer system that receives domestic wastewater from residential, commercial and industrial sources. There are two (2) significant industrial dischargers connected to the treatment works: Arch Chemicals, Inc. in Mesa and TRW Vehicular Safety Systems in Mesa. The City of Mesa has a pretreatment program in place for these industrial contributors. Pretreatment programs are also required for the Towns of Gilbert and Queen Creek as contributors and co-owners of the Greenfield WRP facility, which has a design capacity of 16 MGD. A pretreatment program is required for facilities discharging more than 5 MGD.

Construction of the wastewater reclamation plant (WRP) was completed in 2007 and the plant began receiving wastewater in January 2007 for treatment. The first discharges through Outfall 001 began in November of 2007.

Treatment processes at the WRP consist of headworks with bar screens, grinders and grit removal, an influent lift station, primary clarifiers, anoxic and aeration basins for nitrification-denitrification, secondary clarifiers, tertiary filters, ultraviolet (UV) disinfection system, anaerobic sludge digesters, centrifuges for sludge thickening and dewatering, and an effluent pump station. A request for permit modification to the Aquifer Protection Permit (APP) was submitted on February 27, 2009 requesting the use of an installed hypochlorite station at the plant as backup disinfection in the event UV is disabled. Although this request was made to the APP, it does not apply to the AZPDES permit as the plant has no way at this time to dechlorinate before release through Outfall 001 to the EMF. Plans are being made to upgrade the plant to include dechlorination in approximately five years. Sludge is treated on-site and then either hauled by a licensed contractor to the Apache Junction Landfill or land applied as Class B Biosolids, with the back-up capability to pump and discharge to the Baseline Interceptor and send to the City of Phoenix 91st Avenue WWTP for treatment.

The responsibility for reusing and disposing of the effluent is contained in an Intergovernmental Agreement between the three owners, the City of Mesa and Towns of Queen Creek and Gilbert. Each owner is responsible for the use and disposal of effluent committed to Greenfield WRP. The proposed AZPDES permit will authorize discharge of treated effluent to the EMF. The EMF was constructed by the Flood Control District of Maricopa County (FCDMC) to convey regional flood flows to the Gila River. The City of Mesa entered into an intergovernmental agreement (IGA FCD 2006A009) with the FCDMC in 2006 to allow "periodic and emergency" releases of effluent into the EMF when there is more treated effluent in the system than can be handled on site or supplied in water exchanges. This permit does not authorize discharges into the EMF in excess of those allowed by this intergovernmental agreement. Greenfield WRP has indicated that discharge to the EMF will only occur when the volume of treated effluent exceeds reuse-recharge demands.

A review of the discharge flow records submitted and ADEQ Compliance field inspection reports indicates the facility generally discharges during the winter months. The initial discharges occurred between 11/30/2007 and 12/27/2007 with a maximum discharge of 8.94 MGD, a minimum of 1.81 MGD, and an average of 5.5 MGD. Discharges the following years mirrored this trend with the discharges occurring 1/7-22/2008, 2/5/2008, 5/24/08, 11/28/08, 12/18-21/2008, 12/26-28/2008, 1/1/2009, and 5/29-31/2009.

III. RECEIVING WATER

The State of Arizona has adopted water quality standards to protect the designated uses of its surface waters. Streams have been divided into segments and designated uses assigned to these segments. The water quality standards vary by designated use depending on the level of protection required to maintain that use.

The receiving water for Greenfield WRP Outfall 001 is the East Maricopa Floodway (EMF), tributary to the Gila River in the Middle Gila River Basin.

Outfall 001 is located at:

Township 2S, Range 6E, Section 15
Latitude 33°, 15', 47" N, Longitude 111°, 43', 33" W

The receiving water is not on the 303(d) list and there are no TMDL issues associated. The outfall discharges to the EMF, a water of the U.S. and tributary to the Gila River. The point of convergence of the EMF into the Gila River is located on the Gila River Indian Community (GRIC). The uses established in Title 18, Chapter 11, Appendix B, for the similar water segment from Felix Road to the Indian Reservation are as follows:

Aquatic and Wildlife ephemeral (A&We)
Partial Body Contact (PBC)
Agricultural Livestock Watering (AgL)

Per A.A.C. R18-11-113(D), the water quality standards that apply to Effluent Dependent Waters (EDWs) will be applied to derive discharge limitations for any point source discharge of wastewater to an ephemeral water. The AZPDES permit includes discharge limitations and monitoring requirements designed to achieve compliance with A&Wedw standards.

Based on the considerations above, the permit has been drafted to protect the following designated uses:

Aquatic and Wildlife effluent dependent waters (A&Wedw)
Partial Body Contact (PBC)
Agricultural Livestock Watering (AgL)

Given the uses stated above, the applicable narrative water quality standards are described in A.A.C. R18-11-108 and the applicable numeric water quality standards are listed in A.A.C. R18-11-109, and in Appendix A thereof. There are two standards for the Aquatic and Wildlife uses, acute and chronic. In developing AZPDES permits, the standards for all applicable designated use are compared and limits that will protect for all applicable designated uses are developed based on the standards.

IV. DESCRIPTION OF DISCHARGE

Since this facility did not begin discharging until November 30, 2007, and discharges have been limited to the winter months (mostly in January), limited effluent monitoring data is available. The following is the effluent quality based on the submitted application dated 10/21/09.

Parameters	Units	Effluent Avg	Effluent Max	Samples Taken
Biochemical Oxygen Demand (BOD)	mg/L	1.82	9.11	106
Total Suspended Solids (TSS)	mg/L	1	5	47
Total Kjeldahl Nitrogen (TKN)	mg/L	0.76	2.51	40
Fecal Coliform	# / 100 mL	0.27	159	1061

The application indicates that the design removal rate for: BOD is 85%, and TSS is 85%. The facility also submitted sample results totaling 12 for oil & grease, 20 for ammonia and 10 for phosphorus. In addition, between 5 and 9 data points for metals were obtained from Discharge Monitoring Reports (DMRs) and laboratory data reports. Six Whole Effluent Toxicity (WET) tests were also reviewed, and exceedences occurred in December 2007, January 2008, December 2008 and January 2009. No other exceedences were noted.

Further details regarding these data are presented in sections that follow.

V. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT

The files indicate the most recent inspection of this facility was in March 2009; no significant violations were noted as a result of this inspection. In preparing this permit, the DMR files were reviewed for the years 2007 through 2009.

Whole Effluent Toxicity (WET) tests had findings of toxicity as list below:

- *Raphidocelis subcapitata* (chronic) – December 2007 (TUc = 8), January 2008 (TUc = 1.33), December 2008 (TUc = 1.3), and January 2009 (TUc = 1.33);
- *Pimephales promelas* for December 2008 (TUc =2);
- *Ceriodaphnia dubia* December 2008 (TUc = >8).

Retestings were completed in February, March and June of 2008 with findings of no toxicity. January 2009 retesting was required in February 2009 but was not completed until June of 2009; this test also had a finding of no toxicity.

No other exceedences were noted.

A pretreatment program for the Town of Queen Creek was required in the existing (2004) permit for the facility. The Town of Queen Creek's pretreatment program was approved by ADEQ on April 9, 2010.

A pretreatment program for the Town of Gilbert was also required in the existing permit. The Town of Gilbert submitted a pretreatment program for the Gilbert Neely plant, but ADEQ has requested that the program be rewritten to include the Greenfield WRP and resubmitted. The renewal permit specifies that each co-owner is required to have a pretreatment program in place.

VI. PROPOSED PERMIT CHANGES

The following table lists the major changes from the previous permit in the draft permit.

Parameter	Existing Permit	Proposed permit	Reason for change
Hydrogen sulfide	No monitoring required.	Assessment level set with monitoring and reporting required 1X / every other week if sulfides are detected. See sulfides below.	New standard in 2009 for Aquatic and wildlife designated uses (replaces sulfide)
Sulfides	Assessment levels 1X / month.	No limit or assessment level set. Monitoring and reporting required 1X / every other week as an indicator parameter for hydrogen sulfide.	Standard removed in 2009.
Copper	Assessment levels 1X / month.	Permit Limit 1X / month	Data indicates reasonable potential exists for an exceedance of a standard.
Antimony, Arsenic, Beryllium, Boron, Lead, Nickel, Silver, Thallium, Zinc	Assessment Level 1X / month	Effluent Characterization Monitoring 1X / quarter	Data submitted indicated no reasonable potential for an exceedance of a standard.
Ammonia (NH_3)	Monitoring and reporting only	Assessment level set, see Part II.B of the permit and an Ammonia Data Log is required.	New standard for Aquatic and wildlife effluent dependent water (A&Wedw). Ammonia is to be monitored by discrete sample and at the same time as pH and temperature. One sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected an assessment level is set 1X / month.
Whole Effluent Toxicity (WET) testing	Action level set with monitoring required monthly.	Limits set for three species with monitoring required monthly.	Reasonable potential exists based on exceedances of permit action levels.

Anti-backsliding considerations- "Anti-backsliding" refers to statutory (Section 402(o) of the Clean Water Act) and regulatory (40 CFR 122.44(l)) requirements that prohibit the renewal of an existing NPDES permit that contains effluent limits, permit conditions, or standards that are less stringent than those established in the previous permit. The rules and statutes do identify exceptions to these circumstances where backsliding is acceptable. This permit has been reviewed and drafted with consideration of anti-backsliding concerns.

Limits are retained in the permit for parameters where reasonable potential (RP) for an exceedance of a standard continues to exist or is indeterminate. In these cases, limits have been recalculated using the Water Quality Standards revised in 2009 and the method for calculating limits described in Section VII below. In some cases, based on changes in the WQS, this results in less stringent limits; this is considered allowable backsliding.

VII. DETERMINATION OF EFFLUENT LIMITATIONS and ASSESSMENT LEVELS (Part I in Permit)

When determining what parameters need monitoring and/or limits included in the Greenfield WRP permit, both technology-based and water quality-based criteria were compared and the more stringent criteria applied.

Technology-based Limitations: As outlined in 40 CFR Part 133:
The regulations found at 40 CFR §133 require that publicly owned treatment works achieve specified treatment standards for BOD, TSS, and pH based on the type of treatment technology available.

Numeric Water Quality Standards: As outlined in A.A.C. R18-11-109 and Appendix A:
Per 40 CFR 122.44(d)(1)(ii), (iii) and (iv), discharge limits must be included in the permit for parameters with "reasonable potential", that is, those known to be or expected to be present in the effluent at a level that could potentially cause any applicable numeric water quality standard to be exceeded. "Reasonable potential" refers to the possibility, based on the statistical calculations using the data submitted, or consideration of other factors to determine whether the discharge may exceed the Water Quality Standards. The procedures used to determine reasonable potential are outlined in the *Technical Support Document for Water Quality-based Toxics Control (TSD)* (EPA/505/2-90-001). In most cases, the highest reported value for a parameter is multiplied by a factor (determined from the variability of the data and number of samples) to determine a "highest estimated value". This value is then compared to the lowest applicable Water Quality Standard for the receiving water. If the value is greater than the standard, RP exists and a limit is required in the permit. RP may also be determined from best professional judgment (BPJ) based on knowledge of the treatment facilities and other factors. The basis for the RP determination for each parameter with a limit is shown in the table below.

It is assumed that RP exists for exceedance of water quality criteria for the pollutants *E. coli* and total residual chlorine (TRC). These parameters have been shown through extensive monitoring of POTWs to fluctuate greatly and thus are not conducive to exclusion from limitation due to a lack of RP. Therefore the permit contains numeric limits for *E. coli* and TRC.

The proposed permit limits and/or ALs were established using a methodology developed by EPA. Long Term Averages (LTA) were calculated for each designated use and the lowest LTA was used to calculate the average monthly limit (AML) and maximum daily limit (MDL) necessary to protect all uses. This methodology takes into account criteria, effluent variability, and the number of observations taken to determine compliance with the limit and is described in Chapter 5 of the TSD. Limits/ALs based on A&W criteria were developed using the "two-value steady state wasteload allocation" described on page 99 of the TSD. When the limit/AL is based on human health criteria, the monthly average was set at the level of the applicable standard and a daily maximum limit was determined as specified in Section 5.4.4 of the TSD.

Arizona water quality rules require that water quality standards be achieved without mixing zones unless the permittee applies and is approved for a mixing zone. Since the receiving stream for this discharge is ephemeral prior to the discharge, no water is available for a mixing zone and all water quality criteria are applied at end-of pipe. This means that the effluent concentration must meet stream standards.

Permit Limitations and Monitoring Requirements: The tables that follow summarize parameters that are limited in the permit and the rationale for that decision. Also included are some parameters that require monitoring without any limitations or that have not been included in the permit at all and the basis for that decision. The corresponding monitoring requirements are shown for each parameter. In general, the regulatory basis for monitoring requirements is per 40 CFR §122.44(i) *Monitoring requirements*; and 40 CFR §122.48(b), *Required monitoring*; all of which have been adopted by reference in A.A.C. R18-9-A905, *AZPDES Program Standards*.

Parameter	Lowest Standard/ Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP determination	Proposed Monitoring Requirement/ Rationale
Flow	---	---	---	---	---	It is proposed that discharge flow be monitored on a continual basis using a flow meter.
BOD & Suspended Solids (TSS)	30 mg/L 30 day average 45 mg/L 7 day average/ Technology based limits 40 CFR 133.102	9.11 mg/L	106	N/A	Limit for BOD and TSS is always included.	Monitoring for influent and effluent BOD and TSS to be conducted 1X / week using composite samples of the influent and the effluent. The sample type required was chosen to be representative of the discharge. The requirement to monitor influent BOD and suspended solids is included to assess compliance with the 85% removal requirement in this permit. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity if toxicity is detected.
pH	Minimum: 6.5 Maximum: 9.0 A&Wedw, and PBC A.A.C.R 18-11-109(B)	7.2 to 8.0	N/A	N/A	Limit is always included. Technology based limit exists in addition to the limit in A.A.C.R 18-11-109(B).	pH is to be monitored 5X / week using a discrete sample of the effluent. 40 CFR Part 136 specifies that discrete samples must be collected for pH. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity if toxicity is detected. pH sampling must also coincide with ammonia sampling when required.
Total Residual Chlorine	11 µg/L / A&Wedw chronic	N/A	N/A	N/A	RP always exists if Chlorine or Bromine compounds used for disinfection.	TRC is to be monitored 5X / week as a discrete sample only if Chlorine or Bromine compounds are used for disinfection as UV is the main disinfection process per this permit. 40 CFR Part 136 specifies that discrete samples must be collected for chlorine. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity if toxicity is detected.
Temperature	No applicable standard	26°C to 31°C	Sampled daily	N/A	N/A	Effluent temperature is to be monitored 2X / month by discrete sample. 40 CFR Part 136 specifies that discrete samples must be collected for temperature. Additionally, one sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected. Temperature sampling must also coincide with ammonia sampling when required.
Ammonia	Standard varies with temperature and pH.	3.27 mg/L	20	N/A	Indeterminate	Ammonia is to be monitored 2X / month by discrete sample and shall be sampled and reported in mg N/L on the Data Log in Appendix C at the same time as temperature and pH. This reporting shall require the use of the *Ammonia Standards Determination Table* provided in Appendix C of the permit, see Part II.B.3 for reporting requirements. One sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected. An assessment level is set.
Antimony	Applicable standard of 600 µg/L / A&Wedw chronic	< 1 µg/L	9	1.65 µg/L	No RP	Monitoring required 1X / years 2,3,4 of the permit term for effluent characterization.
Arsenic	150 µg/L / A&Wedw chronic	4 µg/L	9	13.2 µg/L	No RP	Monitoring required 1X / years 2,3,4 of the permit term for effluent characterization.

Parameter	Lowest Standard/ Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP determination	Proposed Monitoring Requirement/ Rationale
Cadmium (2)	1.02 µg/L / A&Wedw chronic	< 1 µg/L	9	1.65 µg/L	Indeterminate (based on high reporting limit).	Monitoring required 1X / month and an assessment level is set.
Chromium (total)	1000 µg/L / AgL	5 µg/L	9	16.5 µg/L	No RP	Monitoring required 1X / month as an assessment indicator parameter for Chromium VI.
Chromium VI	11 µg/L / A&Wedw chronic	< 10 µg/L	8	16.5 µg/L	Indeterminate	Monitoring required 1X / month and an assessment level is set. Based on high reporting limits.
Copper (2)	18 µg/L / A&Wedw chronic	17 µg/L	9	56.1 µg/L	RP exists	Monitoring is required 1X / month and a limit is set.
Cyanide	9.7 µg/L / A&Wedw chronic	< RL	19	N/A	Indeterminate (reporting limit not indicated)	Monitoring required 1X / month and an assessment level is set.
E. Coli	30-day geometric mean: 126 cfu /100 mL (4 sample minimum) Single sample maximum: 576 cfu /100 mL/ PBC	1 cfu/100mL	1061	N/A	RP always expected for WWTPs. See explanation above.	*E. coli* is to be monitored 4X / month, on weekly bases, using a grab sample of the effluent. The specified monitoring frequency is the minimum required to ensure compliance with the 30-day geometric mean water quality standards. 40 CFR Part 136 specifies that grab samples must be collected for coliform bacteria. At least one sample per month must coincide with WET testing to aid in the determination of cause of toxicity if toxicity is detected.
Hardness	No Applicable Standard. Hardness is used to determine standards for specific metal parameters.	260 mg/L Per application	17	N/A	N/A	A&W standards for cadmium, chromium III, copper, lead, nickel, silver and zinc used for RP determinations were based on the average hardness value of 237mg/L. Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
Hydrogen Sulfide	2 µg/L / A&Wedw chronic	No Data	N/A	N/A	Indeterminate	Data submitted for sulfides was < 50µg/L. Monitoring and reporting required 1X / month and an assessment level is set.
Lead (2)	6.4 µg/L / A&Wedw chronic	< 1 µg/L	9	1.65 µg/L	No RP	Monitoring required 1X / years 2,3,4 of the permit term for effluent characterization.
Mercury	0.01 µg/L / A&W edw chronic	< 0.2 µg/L	6	0.38 µg/L	Indeterminate based on limited data with non-detect lab data above the standard.	Monitoring required 1X / month and an assessment level is set.
Nickel (2)	107 µg/L / A&Wedw chronic	3 µg/L	9	9.9 µg/L	No RP	Monitoring required 1X / years 2,3,4 of the permit term for effluent characterization.
Nutrients	No Applicable Standards	N/A	N/A	N/A	N/A	Monitoring required 1X / quarter for effluent characterization.

Parameter	Lowest Standard/ Designated Use		Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP determination	Proposed Monitoring Requirement/ Rationale
Selenium	2 µg/L / A&Wedw chronic		< 2 µg/L	9	3.3 µg/L	Indeterminate based on limited data with non-detect lab data above the standard.	Monitoring required 1X / month and an assessment level is set.
Silver (2)	14.2 µg/L / A&Wedw acute		< 1 µg/L	9	1.65 µg/L	No RP	Monitoring required 1X / years 2,3,4 of the permit term for effluent characterization.
Sulfides	No applicable standard		< 50 µg/L	5	N/A	N/A	Indicator parameter for hydrogen sulfide. Monitoring is required 1X / month. If sulfide is detected, monitoring for hydrogen sulfide is required for the remainder of the permit term.
Thallium	75 µg/L / PBC		< 1 µg/L	9	1.65 µg/L	No RP	Monitoring required 1X / years 2,3,4 of the permit term for effluent characterization.
Zinc (2)	243 µg/L / A&W edw for both acute & chronic		40 µg/L	8	132 µg/L	No RP	Monitoring required 1X / years 2,3,4 of the permit term for effluent characterization.
Whole Effluent Toxicity (WET)	No toxicity (A.A.C. R18-11-108.A.6)	*Raphidocelis subcapitata*	8	6	N/A	RP exists	Monitoring is required 1X / month and a limit is set in the permit.
		Pimephales promelas	2	6	N/A	RP exists	Monitoring is required 1X / month and a limit is set in the permit.
		Ceriodaphnia dubia	8	6	N/A	RP exists	Monitoring is required 1X / month and a limit is set in the permit.

Footnotes:

(1) The monitoring frequencies above are required when the facility is discharging through Outfall 001. If there is no discharge, monitoring shall be conducted at the minimum frequencies specified as shown in Tables 3.a. – 3.f. of the permit. (Exception: Discharge Flow metering should remain operational during periods of no discharge.) The resulting data will be needed to characterize the effluent and plant performance, and upon application for permit renewal, if this permit is to be renewed.

(2) The standard for this parameter is based on a hardness value of 237 mg/L.

Assessment Levels:

Assessment levels (ALs) are established in the permit for: ammonia, cadmium chromium (total), chromium VI, cyanide, hydrogen sulfide, mercury, selenium, oil and grease, and temperature. The basis for establishing ALs for each of these parameters is discussed in the table in Section VII above. ALs are listed in Part I.B of the permit. An AL differs from a discharge limit in that an exceedance of an AL is not a permit violation. Instead, ALs serve as triggers, alerting the permitting authority when there is cause for re-evaluation of RP for exceeding a water quality standard, which may result in new permit limitations. The AL numeric values also serve to advise the permittee of the analytical sensitivity needed for meaningful data collection. Trace substance monitoring is required when there is uncertain RP (based on non-detect values, or limited datasets) or a need to collect additional data or monitor treatment efficacy on some minimal basis. A reopener clause is included in the permit should future monitoring data indicate water quality standards are being exceeded.

The requirement to monitor for these parameters is included in the permit according to A.A.C. R18-11-104(C) and Appendix A. ALs listed for each parameter were calculated in the same manner that a limit would have been calculated (See Numeric Water Quality Standards Section above.)

The permittee is required to sample hardness as $CaCO_3$ at the same time the trace metals are sampled because the water quality standards for some metals are calculated using the water hardness values. The hardness value of 237 mg/L (the hardness of the effluent as supplied in the application) was used to calculate the assessment levels for cadmium, copper, lead, nickel, silver and zinc.

The following trace substances were not included as limits or assessment levels in the permit due to a lack of RP based on best professional judgment (BPJ): barium, boron, beryllium, nitrates and manganese. The numeric standards for these pollutants are well above what would be expected from a POTW discharge.

Effluent Characterization Testing:

In addition to monitoring for parameters assigned either a permit limit or an AL, sampling is required to assess the presence of pollutants in the discharge at certain minimum frequencies for additional suites of parameters, whether the facility is discharging or not. This monitoring is specified in Tables 4.a through 4.f., *Effluent Characterization Testing,* as follows:

- Table 4.a. – ammonia, BOD-5, total residual chlorine, dissolved oxygen, total kjeldahl nitrogen, nitrate/nitrite, *E. coli* , oil and grease, pH, phosphorus, temperature, and total dissolved solids and total suspended solids.
- Table 4.b. - Selected metals (total recoverable), hardness, and cyanide. Data from monitoring done per Tables 1 and 2 may be used.
- Table 4.c. – Selected volatile organic compounds
- Table 4. d. – Selected acid-extractible compounds
- Table 4. e. – Selected base-neutral compounds
- Table 4.f. – Additional parameters based on designated Uses (from Arizona Surface Water Quality Standards, Appendix A, tables 1 and 2.)

NOTE: Some parameters listed in Tables 4.a. and 4.b. are also listed in Tables 1 or 2. In this case, the data from monitoring under Tables 1 or 2 may be used to satisfy the requirements of Tables 4.a. and/or 4.b., provided the specified sample types are the same. In the event the facility does not discharge to a water of the U.S. during the life of the permit, effluent characterization testing, of representative samples of the effluent, is still required.

The purpose of *Effluent Characterization (EC) Testing* is to characterize the effluent and determine if the parameters of concern are present in the discharge and at what levels. This monitoring will be used to assess RP per 40 CFR 122.44(d)(1)(iii)). EC monitoring is required in accordance with 40 CFR 122.43(a), 40 CFR 122.44(i), and 40 CFR 122.48(b) as well as A.R.S. § 49-203(A)(7). If pollutants are noted at levels of concern during the permit term, this permit may also be reopened to add related limits or conditions.

Whole Effluent Toxicity:

Whole Effluent Toxicity (WET) testing is required in the permit (Parts I.E. and IV) to evaluate the discharge according to the narrative toxic standard in A.A.C. R18-11-108(A)(5), as well as whether the discharge has RP for WET per 40 CFR 122.44(d)(iv). At a minimum, the results reported on an AZPDES application must include quarterly testing for a 12-month period within the past year using multiple species, or the results from four tests performed at least annually in the 4.5 years prior to the application. ADEQ does not have a numeric standard for Whole Effluent Toxicity. However, ADEQ adopted the EPA recommended chronic toxicity benchmark of 1.0 TUc for a four day exposure period. Using this benchmark, the limitations and action levels for WET included in the permit were calculated in accordance with the methods specified in the *TSD*. The species chosen for WET testing are as recommended in the *TSD* and in *Regions 9 & 10 Guidance For Implementing Whole Effluent Toxicity Testing Programs*.

The permit requires monthly monitoring for three surrogate species [*Ceriodaphnia dubia* (water flea) representing the invertebrate phyla; *Pimephales promelas* (fathead minnow), a vertebrate species; and *Selenastrum capricornutum* (green alga) for evaluating toxicity to plant life]. An exceedance of a limit or an action level will trigger follow-up testing to determine if effluent toxicity is persistent. If toxicity above a limit or an action level is found in a follow-up test, the permittee will be required to conduct a Toxicity Reduction Evaluation (TRE) and possibly a Toxicity Identification Evaluation (TIE) to identify the source of toxicity and reduce toxicity. These conditions are required to ensure that toxicants are not discharged in amounts that are toxic to organisms [A.A.C. R18-11-108(A)(5)]. A reopener clause is included in accordance with 40 CFR Parts 122 and 124 and A.A.C. R18-9-B906.

The required WET monitoring frequency for this facility is consistent with the WET testing frequency required for facilities with a similar design flow. The permit requires WET test results to be reported on discharge monitoring reports and submittal of the full WET lab report to ADEQ.

Parameter	Proposed Monitoring Requirement
Whole Effluent Toxicity (WET)	The permit contains provisions for WET testing for chronic limits or acute action levels toxicity which shall be conducted monthly. Chronic limit applies if discharges occur for four consecutive days or more and/or are repeated more frequently than every 30 days. (See permit Table 3a for specific limits and monitoring requirements.) Acute toxicity testing will apply if discharge is less than four consecutive days and not repeated within a period of 30 consecutive days. (See permit Table 3b for specific action levels and monitoring requirements.) A more frequent sampling requirement is triggered if any of the WET limits or action levels listed in the permit are exceeded. The permit also contains provisions for investigating the sources of toxicity, if detected.

Parameter	Proposed Monitoring Requirement
	Three composite samples are required to complete one chronic WET test. WET sampling must coincide with testing for all the parameters in tables 1 and 2 of the permit to aid in the determination of the cause of toxicity if toxicity is detected. Additional procedural requirements for the WET test are included in the proposed permit.

VIII. NARRATIVE WATER QUALITY STANDARDS

All narrative limitations in A.A.C. R18-11-108 that are applicable to the receiving water are included in Part I, Section E of the permit.

IX. MONITORING AND REPORTING REQUIREMENTS (Part II of Permit)

Section 308 of the Clean Water Act and 40 CFR Part 122.44(i) require that monitoring be included in permits to determine compliance with effluent limitations. Additionally, monitoring may be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. The permittee has the responsibility to determine that all data collected for purposes of this permit meets the requirements specified in this permit and is collected, analyzed, and properly reported to ADEQ.

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. The permittee is responsible for conducting and reporting results to ADEQ on DMRs or as otherwise specified in the permit.

Monitoring locations are specified in the permit (Part I.A) in order to ensure that representative samples of the influent and effluent are consistently obtained.

The permit (Part II. A.1 and 2) requires the permittee to keep a Quality Assurance (QA) manual at the facility, describing sample collection and analysis processes; the required elements of the QA manual are outlined.

For the purposes of this permit, a "24-hour composite" sample has been defined as a flow-proportioned mixture of not less than three discrete samples (aliquots) obtained at equal time intervals. The volume of each aliquot shall be directly proportional to the discharge flow rate at the time of sampling.

These criteria for composite sampling are included in order to obtain samples that are representative of the discharge given the potential variability in the duration, frequency and magnitude of discharges from this facility. Information in the application indicates that the number and average duration of discharges will vary with discharges typically occurring during winter months and rainstorm events. The applicant indicates that the average flow per discharge may vary from 0.1 to 16 MGD.

Discrete (i.e., grab) samples are specified in the permit for parameters that for varying reasons are not amenable to compositing.

The requirements in the permit pertaining to Part II Monitoring and Reporting are included to ensure that the monitoring data submitted under this permit is accurate in accordance with 40 CFR 122.41(e).

Reporting requirements for monitoring results are detailed in Part II.B.1. of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs) and AZPDES Flow Record forms.

The permit also requires annual submittal of an ammonia data log that records the results for temperature, pH, and ammonia samples and date of sampling (Part II.B.3). This requirement is included because the normal method of reporting sampling results (on DMRs) is not sufficient for determining what standard applies. The ammonia standards in Appendix A are contingent upon the pH and temperature at the time of sampling for ammonia; but the format for reporting on DMRs does not link a sample to its particular date of sampling. The requirement to submit an ammonia data log is included to allow evaluation of treatment plant performance and the potential for toxicity in the discharge based on ammonia. Whenever sampling is done for ammonia, sampling must be done for temperature and pH concurrently. Results for these three parameters shall be recorded on the **Ammonia Data Log** provided in Appendix C, as well as on DMRs. The ammonia data log shall be submitted to ADEQ annually.

Requirements for retention of monitoring records are detailed in Part II.D of the permit.

X. BIOSOLIDS REQUIREMENTS (Part III in Permit)

Standard requirements for the monitoring, reporting, record keeping, and handling of biosolids, as well as minimum treatment requirements for biosolids according to 40 CFR Part 503 are incorporated in the permit.

XI. SPECIAL CONDITIONS (Part V in Permit)

Pretreatment:
Standard requirements for implementing and enforcing an approved pretreatment plan are included in the draft permit.

Operation:
This permit condition requires the permittee to ensure that the WWTP has an operator who is certified at the appropriate level for the facility, in accordance with A.A.C. R18-5-104 through -114. The required certification level for the WWTP operator is based on the class (Wastewater Treatment Plant) and grade of the facility, which is determined by population served, level of treatment, and other factors.

Permit Reopener:
This permit may be modified based on newly available information; to add conditions or limits to address demonstrated effluent toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if Assessment Levels in this permit are exceeded (A.A.C. R18-9-B906 and 40 CFR Part 122.62 (a) and (b)).

XII. ANTIDEGRADATION

Antidegradation rules have been established under A.A.C. R18-11-107 to ensure that existing surface water quality is maintained and protected. The discharge from the Greenfield WRF an ephemeral wash which will become (for purposes of this permit) an effluent-dependent water. Except for flows resulting

from rain events, the only water in the wash will be the effluent. Therefore, the discharge and the receiving water will normally be one and the same. Effluent quality limitations and monitoring requirements have been established under the proposed permit to ensure that the discharge will meet the applicable water quality standards. As long as the permittee maintains consistent compliance with these provisions, the designated uses of the receiving water will be presumed protected, and the facility will be deemed to meet currently applicable antidegradation requirements under A.A.C. R18-11-107.C.

XIII. STANDARD CONDITIONS

Conditions applicable to all NPDES permits in accordance with 40 CFR, Part 122 are attached as an appendix to this permit.

XIV. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-A907):
The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a AZPDES permit or other significant action with respect to an AZPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-A908):
Rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C. R18-9-A908(B)):
A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

EPA Review (A.A.C. R18-9-A908(C)):
A copy of this permit and any revisions made to this draft as a result of public comments received, will be sent to EPA Region 9 for review. If EPA objects to a provision of the draft, ADEQ will not issue the permit until the objection is resolved.

XV. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division- Surface Water Permits Unit
Attn: Sondra M. Francis, Project Manager
1110 West Washington Street – Mail Code 5415A-1
Phoenix, Arizona 85007

or, by contacting Sondra M. Francis at (602) 771-4666.

XVI. INFORMATION SOURCES

While developing effluent limitations, monitoring requirements and special conditions for the permit, the following information sources were used:

1. AZPDES Permit Application Form 2A, received October 21, 2009, and along with supporting data, facility diagram and maps submitted by the applicant with the application forms.
2. Supplemental information to the application received by ADEQ on December 11, 2009 and December 15, 2009.
3. ADEQ files on Greenfield Water Reclamation Plant.
4. Memo to file by Sondra M. Francis, Project Manager, October 27, 2009
5. USGS 7.5' Topographic quadrangle map(s): Higley, AZ.
6. Arizona Administrative Code (A.A.C.) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters,* adopted January 31, 2009.
7. AAC Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.
8. Code of Federal Regulations (CFR) Title 40:
   Part 122, *EPA administered permit programs: The National Pollutant Discharge Elimination System.*
   Part 124, *Procedures for decisionmaking.*
   Part 133. *Secondary Treatment Regulation.*
   Part 503, *Standards for the Use or Disposal of Sewage Sludge.*
9. EPA Technical Support Document for Water Quality-based Toxics Control dated March, 1991.
10. *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, US EPA, May 31, 1996.
11. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA /821-R-02-013).
12. *U.S. EPA NPDES Permit Writers' Manual,* December 1996.