ADEQ Arizona Department of Environmental Quality

DRAFT FACT SHEET

ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a municipal wastewater treatment plant (WWTP) with a design capacity of 4.0 million gallons per day (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 Goodyear
Permittee's Mailing Address:	City of Goodyear P. O. Box 5100 Goodyear, Arizona 85338
Facility Name:	City of Goodyear 157th Water Reclamation Facility (WRF)
Facility Address or Location:	5424 S. 157th Avenue Goodyear, Arizona 85338
Contact Person(s): Phone/e-mail address	Todd Carpenter, Wastewater Superintendent (623) 882-7643 / Todd.Carpenter@goodyearaz.gov
AZPDES Permit Number:	AZ0022357
Inventory Number:	101324

I. STATUS OF PERMIT(s)	
AZPDES permit applied for:	Renewal
Date application received:	**August 27, 2015**
Date application was determined administratively complete:	October 8, 2015
Previous permit number (if different):	N/A

Previous permit expiration date:	March 16, 2016

208 Consistency:

Based on review of the application, there are no changes to the facility that require a new determination of consistency with the Regional Water Quality Management Plan.

The City of Goodyear has the following permits issued by ADEQ applicable to the 157th Avenue Water Reclamation Facility:

Type of Permit	Permit Number	Purpose
Aquifer Protection Permit (APP)	P 101324	Regulates discharges to the local aquifer.
Reuse Permit	R 101324	Regulates the practice of reusing treated wastewater for beneficial purposes.

II. GENERAL FACILITY INFORMATION	
Type of Facility:	Publicly owned treatment works (POTW)
Facility Location Description:	City of Goodyear 157th Avenue WRF is located at 5424 South 157th Avenue, Goodyear, less than one mile north of the Gila River , in Maricopa County, Arizona.
Permitted Design Flow:	4.0 million gallons per day (mgd)
Constructed Design Flow:	4.0 million gallons per day (mgd)
County:	Maricopa County
Treatment level (WWTP):	Tertiary Treatment Level
Treatment Processes (include sludge handling and disposal/use):	The WRF process consists of an influent pump station, mechanical and manual screens, a grit chamber, three (3) aeration basins with anoxic zones, five (5) clarifiers, three (3) cloth media disc filters, a disinfection system using chlorination, a dechlorination system, an effluent pump station, an emergency effluent storage basin, a 1,000,000 gallon reclaimed water storage tank, and a reuse booster pump station. Sludge is digested in two (2) aerobic digesters, thickened using a gravity thickener, and dewatered using two (2) centrifuges and hauled by a licensed contractor to landfill.
Nature of facility discharge:	Domestic wastewater from residential with some commercial and industrial sources in the City of Goodyear.
Number of significant industrial dischargers (SIUs):	There are currently seven (7)significant industrial dischargers connected to the treatment works: Global Organics (Bio-Flora), Cancer Treatment Center of America, Mineral Biosciences, Perryville Prison, Snyder's – Lance Snacks AZ LLC., Aero Turbine and Schoeller Allibert. Pretreatment requirements are in

	place for these industrial contributors. The pollutants of concern with these SIUs are pH, BOD, TSS, oil and grease, total nitrogen, total phosphorus, ammonia, sulfate, sulfite, silver, metals, phosphate, TKN, and total toxic organics (TTOs). Standard requirements for implementing and enforcing an approved pretreatment plan are included in the draft permit.
Average flow per discharge:	Outfall No: 001: The applicant indicates that the average flow per discharge is approximately 1.7 mgd.
Service Area:	City of Goodyear.
Service Population:	Approximately 31,500 people.
Reuse / irrigation or other disposal method(s):	Currently, all treated effluent is directed to the Palo Verde pipeline for delivery to Palo Verde Nuclear Generating Station, sent to Palm Valley WRF (APP No. P-100310) via pipeline, recharged at the City of Goodyear Soil Aquifer Treatment (SAT) Site (APP No. P-511420), or recharged at the City of Goodyear – Vadose Injection Project (VIP) (APP No. P-511440). All treated effluent from City of Goodyear 157th Avenue WRF may also be beneficially reused under a valid reclaimed water permit. The proposed AZPDES permit will authorize discharge of treated effluent to the Gila River and to the Buckeye Irrigation District (BID) canal.
Continuous or intermittent discharge:	Intermittent, Usually twice (2) a year during the months of April and October.
Discharge pattern summary:	**Outfall - 001:** Usually twice (2) a year during the months of April and October. coinciding with Palo Verde Nuclear Generating Station (PVNGS) pipeline maintenance. The discharge lasts approximately two (2) weeks and averages 1.7 mgd. **Outfall – 002:** No discharge expected during permit term – outfall piping was dismantled in 2010. **Outfall – 003:** No discharge expected during permit term – Outfall not constructed.

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.	
Receiving Water :	**Outfalls 001 and 003** – Into the Gila River. The receiving segment of the Gila

	River is from the confluence with the Salt River to the Gillespie Dam at Latitude 33˚ 13’ 45” N and Longitude 112˚ 46’ 07” W. **<u>Outfall 002</u>** – Into the Buckeye Irrigation District (BID) Canal. The BID Canal is considered a Phoenix Area Canal. The BID canal terminates at the Hassayampa River approximately 21 miles away from the location of Outfall 002. This outfall has been dismantled and no discharge is expected to occur during the permit term. Therefore, the designated uses listed below for discharges to Phoenix area canals apply to this discharge.
River Basin:	Middle Gila River Basin
Outfall Location(s):	**<u>Outfall 001:</u>** Township _1N_, Range _1W_, Section _29_ Latitude _33° 23' 42" N_, Longitude _112° 23' 30" W _ **<u>Outfall 002:</u>** Township _1N _, Range _1W _, Section _30_ Latitude _33° 23' 56" N _, Longitude _112° 24' 03" W _ **<u>Outfall 003:</u>** Township _1N _, Range _1W __, Section _30_ Latitude _33° 23' 41" N__, Longitude _112° 24' 3.9" W _
The outfall discharges to, or the discharge may reach, a surface water listed in Appendix B of A.A.C. Title 18, Chapter 11, Article 1.	
Designated uses for the receiving water listed above:	**<u>Outfalls 001 and 003:</u>** Aquatic and Wildlife effluent dependent water (A&Wedw) Partial Body Contact (PBC) Fish Consumption (FC) Agricultural Irrigation (AgI) Agricultural Livestock watering (AgL) **<u>Outfall 002:</u>** Agricultural Irrigation (AgI) Agricultural Livestock watering (AgL)
Is the receiving water on the 303(d) list?	The Gila River segment that is the receiving water of outfalls 001 and 003 is not listed on the 303 (d) list. This segment of the Gila River was previously listed as impaired for DDT, metabolities, toxaphene and chlordane in fish tissue. On August 7, 2015, the EPA approved the delisting of these impairments. The Buckeye Irrigation District (BID) canal, which is the receiving water of Outfall 002 is not listed on the 303 (d) list. However, this outfall has been assigned a waste load allocation (WLA) in the Gila River TMDL that was approved in December 23, 2015 for boron and selenium impairments.
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 uses are compared and limits that will protect for all applicable designated uses are developed based on the standards.	

IV. DESCRIPTION OF DISCHARGE		
Because the facility is in operation and discharges have occurred, effluent monitoring data are available. The following is the measured effluent quality reported in the application.		
Parameters	**Units**	**Maximum Daily Discharge Concentration**
Biochemical Oxygen Demand (BOD)	mg/L	< 5.0
Total Suspended Solids (TSS)	mg/L	< 5.0
Total Kjeldahl Nitrogen (TKN)	mg/L	2.77
E. coli	cfu / 100 mL	< 1

Facility design removal rates:	BOD _95_ % TSS _98_ % N _80_ %

V. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT	
Date of most recent inspection:	April 9, 2014; no potential violations were noted as a result of this inspection.
DMR files reviewed:	March, 2011 through November, 2015
Lab reports reviewed:	April, 2011 through May, 2015
DMR Exceedances:	Total Suspended Solids (TSS) (April 2011, June 2011, July 2011, August 2011, September 2011, October 2011 and December 2011); Selenium (July 2011, October 2011, and January 2012).
NOVs issued:	April 2, 2012 for selenium, total residual chlorine and cyanide exceedances. Case ID # 130327.
NOVs closed:	NOV Case ID # 130327 was closed on August 9, 2012.
Compliance orders:	None

VI. PROPOSED PERMIT CHANGES			
The following table lists the major changes from the previous permit in this draft permit.			
Parameter	**Existing Permit**	**Proposed permit**	**Reason for change**
Mercury	Limited	Effluent Characterization	Data submitted indicated reasonable potential (RP) does not exist.
Ammonia	Assessment levels based on pH and temperature. No numeric limit	Assessment levels using an Ammonia Impact Ratio (AIR).	The AIR is a trackable numeric value. See Section VII for details.

Whole Effluent Toxicity (WET) testing: Pimephales Promelas	Action Level	Limited	Data submitted indicated reasonable potential (RP) exists
WET Testing	Chronic	Acute and/or Chronic	Acute test may be used if discharge is infrequent (see permit for requirement)
TABLE 4.c: Effluent Characterization Testing - Selected Volatile Organic Compounds.	Sample Type: 24-Hour Composite	Sample Type: Discrete	Correction of an error that all VOCs should be monitored with discrete sample type.
Boron and Selenium	Limited	Limited with Waste load allocations (WLAs)	Monitoring required with assigned WLAs to outfall 002 based on the December 23, 2015 Gila River TMDL.
Boron at outfall 001 and 003	Not Limited for Outfall 001 and 003	Limited for Outfall 001 and 003	Data submitted indicated reasonable potential (RP) exist. This corrects the previous permit where boron was not evaluated for Outfall 001 and 003.

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, reissuance, or modification 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.

The limit for mercury has been removed from the permit because evaluation of current data allows the conclusion that no reasonable potential (RP) for an exceedance of a standard exists. This is considered allowable backsliding under 303(d)(4). The effluent limitations in the current permit for this parameter were based on state standards, the respective receiving waters are in attainment for these parameters, and the revisions are consistent with antidegradation requirements. See Section XII for information regarding antidegradation requirements.

Limits are retained in the draft permit for parameters where reasonable potential (RP) for an exceedance of a standard continues to exist or is indeterminate. In these cases, limits will be recalculated using the most current Arizona Water Quality Standards (WQS). If less stringent limits result due to a change in the WQS then backsliding is allowed in accordance with 303(d)(4) if the new limits are consistent with antidegradation requirements and the receiving water is in attainment of the new standard; see Section XII for information regarding antidegradation requirements.

No limits are less stringent due to a change in the WQS in this permit.

VII. DETERMINATION OF EFFLUENT LIMITATIONS and ASSESSMENT LEVELS

When determining what parameters need monitoring and/or limits included in the draft 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 POTWs achieve specified treatment standards for BOD, TSS, and pH based on the type of treatment technology available. Additionally, oil & grease (a technology-based standard) will be monitored with limits based on best professional judgment (BPJ). The average monthly limit of 10 mg/L and daily maximum of 15 mg/L are commonly accepted values that can be achieved by properly operated and maintained WWTPs. This level is also considered protective of the narrative standard at A.A.C. R18-11-108(B).

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" (RP), 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. RP 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 RP 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 water quality-based effluent limitation (WQBEL) is required in the permit for that parameter. RP may also be determined from BPJ based on knowledge of the treatment facilities and other factors. The basis for the RP determination for each parameter with a WQBEL is shown in the table below.

A TMDL for total boron and total selenium impairments on the Gila River between Centennial Wash and Gillespie Dam was approved by the EPA on December 23, 2015. The TMDL resulted in setting waste load allocations (WLAs) for boron and selenium concentrations to Outfall 002 that discharges to the Buckeye Irrigation Canal. The TMDL listed the WLAs for both of these parameters as average monthly and daily limit concentrations. The WLAs assigned apply only to Outfall 002 and were set as limits in the permit.

It is assumed that RP exists for exceedance of water quality criteria for the pollutants E. coli and, if chlorine or bromine is used in the treatment process, total residual chlorine (TRC). These parameters have been shown through extensive monitoring of WWTPs to fluctuate greatly and thus are not conducive to exclusion from limitation due to a lack of RP. Therefore, the draft permit contains WQBELs for E. coli and TRC.

The proposed permit limits 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 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 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.

Mixing Zone:

The limits in this permit were determined without the use of a mixing zone. Arizona state water quality rules require that water quality standards be achieved without mixing zones unless the permittee applies for and is approved for a mixing zone. Since a mixing zone was not applied for or granted, all water quality criteria are applied at end-of-pipe.

Assessment Levels (ALs): 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 draft permit should future monitoring data indicate water quality standards are being exceeded.

The requirement to monitor for these parameters is included in the draft 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).

Ammonia water quality criteria vary based on the effluent pH and temperature at the time of effluent sampling. As a result, no single ammonia concentration can be included as an assessment level. To overcome this, an Ammonia Impact Ratio (AIR) of one (1) has been established as an assessment level the permit limit for ammonia. The AIR is calculated by dividing the ammonia concentration in the effluent by the applicable ammonia standard based on the effluent pH and temperature at the time of sampling. AIR values will be reported on DMRs and on the Ammonia Data Log which is included as Appendix B in the permit. Any AIR value in excess of 1 will indicate an exceedance of an assessment level

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

Hardness: 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 maximum allowable hardness value of 400 mg/L of the effluent (as supplied in the application) was used to calculate the applicable water quality standards and any assessment levels or limits for the hardness dependent metals (cadmium, chromium III, copper, lead, nickel, silver and zinc).

Whole Effluent Toxicity (WET): WET testing is required in the draft permit (Parts I.C 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.

WET testing for chronic and/or acute toxicity is required. The requirement to conduct chronic toxicity testing is contingent upon the frequency or duration of discharges. Since completion of the chronic WET test requires a minimum of three samples be taken for renewals, the chronic WET test is not required during any given monitoring period in which the discharge does not occur over seven consecutive calendar days and is not repeated more frequently than every thirty days.

WET testing for chronic / acute toxicity shall be conducted using the following three surrogate species:

- *Ceriodaphnia dubia* (water flea) – for evaluating toxicity to invertebrates
- *Pimephales promelas* (fathead minnow) – for evaluating toxicity to vertebrates
- *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum or Raphidocelis subcapitata)* (a green alga) – for evaluating toxicity to plant life

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 for WET included in the draft 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*.

An exceedance of a limit will trigger follow-up testing to determine if effluent toxicity is persistent. If toxicity above a limit 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 AAC R18-9-B906.

The draft permit requires 24-hour composite samples be collected for WET testing. WET sampling must coincide with testing for all the parameters in Parts I.A and B of the draft permit, when testing of those parameters is required, 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.

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

Effluent Characterization (EC): In addition to monitoring for parameters assigned either a 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. – General Chemistry and Microbiology: ammonia, BOD-5, *E. coli*, total residual chlorine (TRC), dissolved oxygen, total Kjeldahl nitrogen (TKN), nitrate/nitrite, oil and grease, pH, phosphorus, temperature, total dissolved solids (TDS), and total suspended solids (TSS)
• Table 4.b. – Selected Metals, Hardness, Cyanide, and WET
• 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, Table 1and 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, EC monitoring of representative samples of the effluent is still required.

The purpose of EC monitoring 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.

Permit Limitations and Monitoring Requirements:
The table that follows summarizes the parameters that are limited in the permit and the rationale for that decision. Also included are the parameters that require monitoring without any limitations or that have not been included in the permit at all and the basis for those decisions. 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 (1)
Flow	- - -	- - -	- - -	- - -	- - -	Discharge flow is to be monitored on a continual basis using a flow meter.
Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS)	30 mg/L 30-day average 45 mg/L 7-day average/ Technology-based limits 40 CFR 133.102	BOD: < 5.0 mg/L TSS: < 5.0 mg/L	BOD: 18 TSS: 18	N/A	TBELs for BOD and TSS are always applicable to WWTPs.	Monitoring for influent and effluent BOD and TSS to be conducted 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.
Chlorine, Total Residual (TRC)	11 µg/L/ A&Wedw chronic	< 16 µg/L	9	N/A	RP always expected when chlorine or bromine is used for disinfection.	TRC is to be monitored as a discrete sample and a WQBEL remains in the permit. 40 CFR Part 136 specifies that discrete samples must be collected for chlorine. At least one sample per month must coincide with WET testing to aid in the determination of the cause of toxicity, if toxicity is detected.
E. coli	30-day geometric mean: 126 cfu /100 mL (4 sample minimum) Single sample maximum: 575 cfu /100 mL/ PBC	< 1 cfu /100ml	15	N/A	RP always expected for WWTPs. See explanation above.	*E. coli* is to be monitored as a discrete sample and a WQBEL remains in the permit.
pH	Minimum: 6.5 Maximum: 9.0 A&Wedw and PBC A.A.C. R18-11-109(B) Minimum: 6.0 Maximum: 9.0 Technology-based limits 40 CFR 133.102	6.9 to 7.9 s.u.	8	N/A	WQBEL or TBEL is always applicable to WWTPs.	pH is to be monitored using a discrete sample of the effluent and a WQBEL is set. 40 CFR Part 136 specifies that grab 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.
Temperature	No applicable numeric standard	30.5 to 30.8 ºC	8	N/A	N/A	Effluent temperature is to be monitored for effluent characterization by discrete sample. 40 CFR Part 136 specifies that discrete samples must be collected for temperature. Temperature sampling must also coincide with ammonia sampling when required.
Total Dissolved Solids (TDS)	No applicable standard	2500 mg/L	18	N/A	N/A	Monitoring required for effluent characterization.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Ammonia	Standard varies with temperature and pH	1.58 mg/L	18	N/A	RP Indeterminate (unknown pH and temperature data associated with the max value) (4) (5)	Ammonia is to be monitored by discrete sample and an assessment level is set in the form of an ammonia impact ratio (AIR) of 1 is set in the permit. An ammonia data log with concurrent pH and temperature monitoring is also required. One sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected.
Nutrients (Total Nitrogen and Total Phosphorus)	No applicable standards	N – 6.7 mg/L P – 7.79 mg/L	N – 17 P – 18	N/A	N/A	Monitoring required for effluent characterization.
Oil & Grease	BPJ Technology-Based Level of 10 mg/L monthly average and 15 mg/L daily maximum	8.3 mg/L	17	N/A	N/A	Monitoring required and a limit remains in the permit.
Antimony	600 µg/L / A&Wedw chronic	< 3 µg/L	16	3.75 µg/L	No RP	Monitoring required for effluent characterization.
Arsenic	80 µg/L/ FC	15 µg/L	16	37.5 µg/L	No RP	Monitoring required for effluent characterization.
Beryllium	5.3 µg/L/ A&Wedw chronic	< 2 µg/L	16	2.5 µg/L	No RP	Monitoring required for effluent characterization.
Boron	Outfall 001 and 003 1,000 µg/L/ AgI Outfall 002 – TMDL WLAs Avg Monthly Limit - 1000 µg/L Daily Max Limit - 1490 µg/L	1000 µg/L	17	2400 µg/L	Outfall 001 and 003 RP Exists Outfall 002 NA - WLAs set	Monitoring required and a limit is set for Outfall 001 and 003. The TMDLWLAs are set for Outfall 002.
Cadmium (2)	6.22 µg/L/ A&Wedw chronic	< 1 µg/L	16	1.25 µg/L	No RP	Monitoring required for effluent characterization.
Chromium (Total)	100 µg/L/ PBC	14 µg/L	16	35 µg/L	No RP	Monitoring required as an indicator parameter for Chromium VI.
Chromium VI	11 µg/L/ A&Wedw chronic	8.9 µg/L	18	21.36 µg/L	RP Exists	Monitoring required and a limit remains in the permit for Outfalls 001 and 003.
Copper (2)	29.28 µg/L/ A&Wedw chronic	190 µg/L	17	456 µg/L	RP Exists	Monitoring required and a limit remains in the permit for Outfalls 001 and 003
Cyanide	9.7 µg/L/ A&Wedw chronic	13 µg/L	19	29.9 µg/L	RP Exists	Monitoring required and a limit remains in the permit for Outfalls 001 and 003.

Parameter	Lowest Standard / Designated Use		Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Hardness	No applicable standard. Hardness is used to determine standards for specific metal parameters.		898 mg/L	16	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 maximum allowed hardness value of 400 mg/L./ Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
Hydrogen Sulfide	2 µg/L/ A&Wedw chronic		< 500 µg/L	16	N/A	RP Indeterminate (High LOQ)	Monitoring is required for sulfides as an indicator parameter for hydrogen sulfide. If sulfides are detected, monitoring for hydrogen sulfide is required for the remainder of the permit term.
Iron	1,000 ug/L / A&Wedw chronic		100 µg/L	16	250 µg/L	No RP	Monitoring required for effluent characterization.
Lead (2)	10.9 µg/L / A&Wedw chronic		< 5 µg/L	18	6 µg/L	No RP	Monitoring required for effluent characterization.
Mercury	0.01 µg/L/ A&Wedw chronic		0.0013 µg/L	16	0.0031 µg/L	No RP	Monitoring required for effluent characterization.
Nickel (2)	168.04 µg/L/ A&Wedw chronic		< 20 µg/L	16	25 µg/L	No RP	Monitoring required for effluent characterization.
Selenium	Outfall 001 and 003 2 µg/L/ A&Wedw chronic Outfall 002 – TMDL WLAs Avg Monthly Limit - 5 µg/L Daily Max Limit - 11 µg/		49 µg/L	21	112.7 µg/L	Outfall 001 and 003 RP Exists Outfall 002 NA - WLAs set	Monitoring required and a limit remains in the permit. for Outfall 001 and 003. The TMDLWLAs are set for Outfall 002.
Silver (2)	34.9 µg/L/ A&Wedw acute		< 10 µg/L	14	13 µg/L	No RP	Monitoring required for effluent characterization.
Sulfides	No applicable standard		< 100 µg/L	17	N/A	N/A	Monitoring is required and an assessment level is set.
Thallium	7.2 µg/L/ FC		< 2.5 µg/L	16	3 µg/L	No RP	Monitoring required for effluent characterization.
Zinc (2)	379.3 µg/L/ A&Wedw acute and chronic		110 µg/L	14	286 µg/L	No RP	Monitoring required for effluent characterization.
Whole Effluent Toxicity (WET)	No toxicity (A.A.C. R18-11-108(A)(6)	*Pseudo-kirchneriella subcapitata (3)*	8 TUc	12	N/A	RP Exists	Monitoring required and a limit remains in the permit for Outfalls 001 and 003.
		Pimephales promelas	3.5 TUc	12	N/A	RP Exists	Monitoring required and a limit remains in the permit for Outfalls 001 and 003.
		Ceriodaphnia dubia	3 TUc	12	N/A	RP Exists	Monitoring required and a limit remains in the permit for Outfalls 001 and 003.

Footnotes:

(1) The monitoring frequencies are as specified in the permit.
(2) Hardness-dependent metal - the standard for this parameter is based on the average hardness value of the effluent or receiving water as indicated above.
(3) Formerly known as *Selenastrum capricornutum or Raphidocelis subcapitata.*
(4) Monitoring with ALs or Action Levels always required for WWTPs for these parameters unless RP exists and limits are set.
(5) An AIR will be calculated by dividing effluent ammonia concentration by the applicable standard using the receiving water pH and temperature.

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, Sections E and F of the draft 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.

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. Monitoring frequencies for some parameters may be reduced in second term permits if all monitoring requirements have been met and the limits or ALs for those parameters have not been exceeded during the first permit term.

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 over a 24-hour period. 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.

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

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

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). The permittee has the responsibility to determine that all data collected for purposes of this permit meet the requirements specified in this permit and is collected, analyzed, and properly reported to ADEQ.

The permit (Part II.A.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.

Reporting requirements for monitoring results are detailed in Part II, Sections B.1 and 2 of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs), Ammonia Data Logs, and AZPDES Flow Record forms.

The permittee is responsible for conducting all required monitoring and reporting the results to ADEQ on DMRs or as otherwise specified in the permit.

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). Because the ammonia standards in 18 A.A.C. 11, Article 1, Appendix A are contingent upon the pH and temperature at the time of sampling for ammonia, the permittee must determine the applicable ammonia standard using the ammonia criteria table(s) and calculate the Ammonia Impact Ratio for that ammonia sample result. The AIR is recorded on the DMR.

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 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 City of Goodyear 157th Ave WRF from Outfalls 001 and 003 will be to an effluent-dependent water. Except for flows resulting from rain events, the only water in the river will be the effluent. Therefore, the discharge and the receiving water will normally be one and the same. The discharge from the City of Goodyear 157th Ave WRF from Outfall 002 will be to a canal which is subject to Tier 1 antidegradation protection. 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.

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 draft 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 draft 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 – AZPDES Individual Permits Unit
Attn: Swathi Kasanneni
1110 West Washington Street – Mail Code 5415B-3
Phoenix, Arizona 85007

Or by contacting Swathi Kasanneni at (602) 771 – 4577 or by e-mail at sk5@azdeq.gov.

XVI. INFORMATION SOURCES

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

1. AZPDES Permit Application Form(s) 2A and 2S (or insert other forms submitted), received August 27, 2015, 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 October 12, 2015.

3. ADEQ files on City of Goodyear – 157th Avenue Water Reclamation Facility.

4. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters,* adopted January 31, 2009.

5. A.A.C. Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.

6. Code of Federal Regulations (CFR) Title 40:
   Part 122, *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.*
   Part 124, *Procedures for Decision Making*.
   Part 133. *Secondary Treatment Regulation.*
   Part 503. *Standards for the Use or Disposal of Sewage Sludge*.

7. EPA Technical Support Document for Water Quality-based Toxics Control dated March 1991.

8. *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, US EPA, May 31, 1996.

9. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA /821-R-02-013).

10. U.S. EPA NPDES Permit Writers' Manual, September 2010.