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 riparian habitat restoration area which requires the discharge of up to approximately 3.62 MGD of groundwater. Based on the National Pollutant Discharge Elimination System (NPDES) Permit Rating Criteria, the facility scored 20 points which is below the maximum 80 points allowed for minor dischargers. As a result, this facility is considered to be a minor industrial discharger under the NPDES program. The discharge 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 Phoenix – Parks and Recreation Department
Permittee's Mailing Address:	200 W. Washington Street, 16th Floor Phoenix, Arizona 85003
Facility Name:	Rio Salado Habitat Restoration Area
Facility Address or Location:	Salt River, Between Interstate 10 crossing and 19th Avenue, Phoenix, Arizona
County:	Maricopa County
Contact Person(s): Phone/e-mail address	Mr. Alonso Avitia, Deputy Parks and Recreation Director (602) 495-5486 / alonso.avitia@phoenix.gov
AZPDES Permit Number:	AZ0024554
Inventory Number:	105483

I. STATUS OF PERMIT(s)	
AZPDES permit applied for:	Renewal
Date application received:	**April 3, 2018**
Date application was determined administratively complete:	May 2, 2018
Previous permit number (if different):	N/A
Previous permit expiration date:	September 30, 2018

208 Consistency:

208 Plan consistency is not required for industrial facilities.

II. GENERAL FACILITY INFORMATION	
Type of Facility:	Riparian Habitat Restoration Area
Facility Location Description:	The Rio Salado Habitat Restoration Area is a 595-acre ecosystem restoration area located along a 5-mile section of the Salt River from the Interstate 10 Bridge to 19th Avenue south of downtown Phoenix in Maricopa County, Arizona. The facility boundaries extend to the 100-year flood mark beyond the north and south banks of the river.
Nature of facility discharge:	The water source for the facility consists of five non-potable groundwater production wells: RSSW-2, RSSW-3, RSSW-4, RSSW-5, and RSSW-6. These wells are drilled approximately 220 to 360 feet below ground surface (bgs) and are screened into the upper alluvial unit of the aquifer. The wells pump groundwater to three geotextile lined reservoirs: 7th Avenue Reservoir (supplied by RSSW-5 and RSSW-6), Central Avenue Reservoir (supplied by RSSW-2) and 7th Street Reservoir (supplied by RSSW-3 and RSSW-4). The water in the reservoirs is supplied to the Rio Salado Habitat either by gravity via a canal system or by three dedicated booster pump stations which draw water from the reservoirs and pump to a pressurized irrigation piping grid for distribution to the habitat.
Average flow per discharge:	The maximum daily water demand through the life of the habitat was estimated to be 3.62 mgd during a drought year. The typical demand during a non-drought year is 2.67 mgd. These demands would be met by a combination of wells operating. Each well has the following maximum flow and Average flow rates based on data from the years 20013 to 2017.
Continuous or intermittent discharge:	Continuous

Discharge Flow Rates (2013 – 2017)

Well Number	Maximum Flow (mgd)	Average Flow (mgd)
RSSW-2	4.599	0.190
RSSW-3	No discharge	No discharge
RSSW-4	1.750	0.054
RSSW-5	No discharge	No discharge
RSSW-6	3.790	0.058

There are inactive landfills within and active landfills outside the project boundaries. Based on previously submitted data and the City of Phoenix Treatment Contingency Plan, it was determined that some level of treatment may be needed for certain volatile organic compounds (VOCs). In April 2009, construction of a VOC water treatment facility was completed at 7th Avenue and Lower Buckeye Road. The facility uses air strippers to remove VOCs from RSSW-5 and RSSW-6, but has never been needed. RSSW-5 was taken out of service on March 4, 2009 and remains out of service due to elevated levels of copper and lead detected in February 2009. RSSW-3 was taken out of service on April 3, 2013 due to elevated levels of copper and lead in November 2012. Both RSSW-3 and RSSW-5 are included in the renewal permit to allow for the future use of these wells with the understanding that the City of Phoenix will be in contact with ADEQ prior to bringing the well back on-line and after proper mitigation has occurred.

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 :	The receiving water for the Rio Salado Habitat Restoration Area is the Salt River (from the I-10 Bridge to the 23rd Avenue Wastewater Treatment Plant)
River Basin:	Middle Gila River Basin
Outfall Location(s):	Outfall 002: Township 1 N, Range 3 E, Section 17 Latitude 33º 25’ 28” N, Longitude 112º 04’ 20” W Outfall 003: Township 1 N, Range 3 E, Section 22 Latitude 33º 25’ 11” N, Longitude 112º 02’ 46” W Outfall 004: Township 1 N, Range 3 E, Section 22 Latitude 33º 24’ 56” N, Longitude 112º 02’ 46” W Outfall 005: Township 1 N, Range 3 E, Section 20 Latitude 33º 25’ 19” N, Longitude 112º 04’ 44” W Outfall 006: Township 1 N, Range 3 E, Section 19 Latitude 33º 24’ 60” N, Longitude 112º 04’ 55” 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:	Aquatic and Wildlife warm water (A&Ww) Partial Body Contact (PBC) Fish Consumption (FC)
Is the receiving water on the 303(d) list?	No, and there are no TMDL issues associated.

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

The groundwater is not treated prior to discharge and is generally expected to meet the surface water quality standards. A summary of lab data was submitted with the renewal AZPDES application for the years 2013 through 2017. Data was also obtained from Discharge Monitoring Reports (DMRs) during the renewal process.

V. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT

Date of most recent inspection:	09/30/2013; no potential violations were noted as a result of this inspection.
DMR files reviewed:	10/2013 through 12/2017
Lab reports reviewed:	10/2013 through 12/2017
DMR Exceedances:	None
NOVs issued:	None
NOVs closed:	N/A
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
Reporting Location	Mail in hard copies of DMRs and other attachments	DMRs and other reports to be submitted electronically through myDEQ portal	Language added to support the NPDES electronic DMR reporting rule that became effective on December 21, 2015.
Copper	Limited at Outfalls 003, 004, 005 and 006	Limits removed at Outfalls 004, and 006	Data submitted indicated no reasonable potential (RP) for an exceedance of a standard.
Lead	Limited at Outfalls 002, 003,004, 005, and 006	Limits removed at Outfalls 002, 004, and 006	Data submitted indicated no reasonable potential (RP) for an

			exceedance of a standard.
Iron	Assessment Level at Outfalls 002, 003, 004, 005, and 006	Limited at Outfall 004	Data submitted indicated reasonable potential (RP) for an exceedance of a standard.
Sampling Frequency for Selenium	1 x / month at outfalls 002 and 006	1 x / quarter at Outfalls 002 and 006	All detected concentrations were below the monthly average and daily maximum limits.
Sampling Frequency for Oil and Grease	1 x / quarter at outfalls 002, 003, 004, 005 and 006	1 x / year at Outfalls 002, 004, and 006	All results from the permit term were non-detects and below the monthly average and daily maximum limits.
Sampling Frequency for pH	1 x / month at outfalls 002, 003, 004, 005 and 006	1 x / quarter at Outfalls 002, 004, and 006	pH values from the permit term have been stable and have not approached upper or lower limits.
Sampling Frequency for WET Testing – Table 3: WET Testing	1 x / year	1 x / Permit Term	Consistent with frequencies required for minor facilities to adequately determine compliance.

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.

Limits for the following parameter have 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:

- Lead (Outfall 002)
- Copper and Lead (Outfall 004)
- Copper and Lead (Outfall 006)

This is considered allowable backsliding under 303(d)(4). The effluent limitations in the current permit for these two parameters 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 have been recalculated using the most

current Arizona Water Quality Standards (WQS) 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. No limits were increased in this permit due to changes in the WQS.

VII. DETERMINATION OF EFFLUENT LIMITATIONS and ASSESSMENT LEVELS

When determining what parameters need monitoring and/or limits included in the draft Rio Salado Habitat Restoration Area permit, Water Quality-based criteria were applied.

Technology-based Limitations: As outlined in 40 CFR Part 133:
There are no promulgated technology-based limits for discharges of groundwater to riparian habitat restoration areas. Therefore, no technology-based standards were applied.

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.

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).

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, boron, nitrates, and manganese. The numeric standards for these pollutants are well above what would be expected from the discharge. In addition, hydrogen sulfide and TRC are not included based on BPJ; hydrogen sulfide and TRC are not expected to be present in groundwater.

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 hardness value of 208 mg/L (Outfall 002), 201 mg/L (Outfall 003 - previous permit term average discharge hardness value), 193 mg/L (Outfall 004), 337 mg/L (Outfall 005 - previous permit term average discharge hardness value) and 298 mg/L (Outfall 006), the average hardness of each discharge as supplied in laboratory reports, were used to calculate the limits for copper and lead.

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

WET testing for chronic 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 action levels 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 action level will trigger follow-up testing to determine if effluent toxicity is persistent. In previous permit terms a successful TRE was conducted and failures are believed to be due to bacterial contamination. The bacteria are expected to die off and be non-toxic once exposed to the environment. The follow-up retest samples(s) may be treated with ultraviolet (UV) light prior to running the retest(s) to determine if the failure is due to bacteria that may be destroyed by exposure to sunlight. If toxicity above 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 AAC R18-9-B906.

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.

WET testing for chronic toxicity shall be conducted once per year at Outfalls 002, 003, 004, 005, and 006.The draft permit requires WET test results to be reported on discharge monitoring reports and submittal of the full WET lab report to ADEQ.

Discharge Characterization Testing: 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, if the well is operational within the monitoring period. This monitoring is specified in Tables 4.a. through 4.e., *Discharge Characterization Testing*, as follows:

- Table 4.a. – General Chemistry and Microbiology: *E. coli*, total Kjeldahl nitrogen (TKN), nitrate/nitrite, phosphorus, temperature, total dissolved solids (TDS), and total suspended solids (TSS)
- Table 4.b. – Selected Metals, Trace Substances, and WET
- Table 4.c. – Selected Volatile Organic Compounds
- Table 4. d. – Selected Acid-Extractible Compounds
- Table 4. e. – Selected Base-Neutral Compounds

NOTE: Some parameters listed in Table 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 Table 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 Discharge Characterization Testing is to characterize the discharge 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)). Discharge characterization 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.
Chlorine, Total Residual (TRC)	11 µg/L/ A&Ww chronic	No Data	0	N/A	N/A	Monitoring not required except when chlorine is used as part of the mitigation program – see Part IV B. of the permit.
E. coli	30-day geometric mean: 126 cfu /100 mL (4 sample minimum) Single sample maximum: 575 cfu /100 mL/ PBC	<1 cfu /100 ml	15	N/A	N/A	*E. coli* is to be monitored for discharge characterization at outfalls 002, 003, 004, 005 and 006 as a discrete sample.
pH	Minimum: 6.5 Maximum: 9.0 A&Ww and PBC A.A.C. R18-11-109(B)	7.6 S.U.	162	N/A	WQBEL is always included	pH is to be monitored at Outfalls 002, 003, 004, 005, and 006 using a discrete sample of the discharge and a WQBEL remains in the permit. 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.
Temperature	No applicable numeric standard	24.1ºC (Winter) 29.0ºC (Summer)	3 (Winter) 3 (Summer)	N/A	N/A	Discharge temperature is to be monitored once during summer and once during winter for discharge characterization by discrete sample. 40 CFR Part 136 specifies that discrete samples must be collected for temperature. At least one sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected.
Total Dissolved Solids (TDS)	No applicable standard	No Data	0	N/A	N/A	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
Nutrients (Total Nitrogen and Total Phosphorus)	No applicable standards	N/A	N/A	N/A	N/A	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
Oil & Grease	Narrative standard A.A.C. R18-11-108(B).	**002:** < 6.3 mg/L	17	N/A	N/A	Monitoring required at Outfalls 002, 003, 004 005, and 006 and a WQBEL (based on BPJ) remains in the permit.
		003: No Data	0			
		004: < 6.2 mg/L	17			
		005: No Data	0			
		006: < 6.3 mg/L	17			
Antimony	30 µg/L/ A&Ww chronic	**002:** < 0.15 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: < 0.15 µg/L	1	N/A	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: < 0.15 µg/L	1	N/A	No RP	
Arsenic	80 µg/L/ FC	**002**: 6.2 µg/L	1	82 µg/L	RP Indeterminate (Insufficient Data)	Monitoring required at Outfalls 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: 5.8 µg/L	1	77 µg/L	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: 4.9 µg/L	1	65 µg/L	No RP	
Beryllium	5.3 µg/L/ A&Ww chronic	**002:** < 0.1 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: < 0.1 µg/L	1	N/A	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: < 0.1 µg/L	1	N/A	No RP	
Cadmium (2)	**002:** 3.84 µg/L/ A&Ww chronic	< 0.15 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
	003: 3.7 µg/L/ A&Ww chronic (3)	No Data	0	N/A	RP Indeterminate (No Data)	
	004: 3.64 µg/L/ A&Ww chronic	< 0.15 µg/L	1	N/A	No RP	
	005: 5.4 µg/L/ A&Ww chronic (3)	No Data	0	N/A	RP Indeterminate (No Data)	
	006: 5.01 µg/L/ A&Ww chronic	< 0.15 µg/L	1	N/A	No RP	
Chromium (Total)	No applicable standard	**002:** < 1.2 µg/L	1	N/A	N/A	Monitoring required as an indicator parameter for Chromium VI at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0	N/A	N/A	
		004: < 1.2 µg/L	1	N/A	N/A	

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
		005: No Data	0	N/A	N/A	
		006: < 1.2 µg/L	1	N/A	N/A	
Chromium VI	11 µg/L/ A&Ww chronic	**002:** No Data	0	N/A	RP Indeterminate for 003 and 005 (No Data) No RP for 002, 004 and 006 (Based on total chromium data)	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data				
		004: No Data				
		005: No Data				
		006: No Data				
Copper (2)	**002:** 16.7 µg/L/ A&Ww chronic	< 6 µg/L	50	N/A	No RP	Monitoring required at Outfall 003 and 005 and a WQBEL remains in the permit. Monitoring required at Outfalls 002, 004, and 006 for discharge characterization.
	003: 16.3 µg/L/ A&Ww chronic (3)	No Data	0	N/A	RP Indeterminate (No Data)	
	004: 15.7 µg/L/ A&Ww chronic	< 6 µg/L	51	N/A	No RP	
	005: 25.3 µg/L/ A&Ww chronic (3)	No Data	0	N/A	RP Indeterminate (No Data)	
	006: 22.8 µg/L/ A&Ww chronic	< 6 µg/L	51	N/A	No RP	
Cyanide	9.7 µg/L/ A&Ww chronic	**002:** < 5 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: < 5 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: < 5 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	
Hardness	No applicable standard. Hardness is used to determine standards for specific metal parameters.	**002:** 208 mg/L	51	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 discharge hardness value of 208 mg/L for Outfall 002, 201 mg/L for Outfall 003, 193 mg/L for Outfall 004, 337 mg/L for Outfall 005 and 298 mg/L for Outfall 006. Monitoring for hardness is required
		003: No Data	0			
		004: 193 mg/L	51			

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
		005: No Data	0			whenever monitoring for hardness dependent metals is required.
		006: 298 mg/L	51			
Hydrogen Sulfide	2 µg/L/ A&Ww chronic	No Data	0	N/A	No RP (BPJ)	Monitoring not required. Hydrogen sulfide is not expected to be present in the discharge
Iron	1,000 ug/L / A&Ww chronic	**002:** 75 µg/L	17	180 µg/L	No RP	Monitoring required at Outfalls 002, and 006 for discharge characterization. Monitoring required at Outfall 004 and a WQBEL is set. Monitoring required at Outfall 003 and 005 and an assessment level remains in the permit
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: 610 µg/L	17	1464 µg/L	RP Exists	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: 159 µg/L	16	382 µg/L	No RP	
Lead (2)	**002:** 5.53 µg/L/ A&Ww chronic	1.1 µg/L	51	1.87 µg/L	No RP	Monitoring required at Outfalls 002, 004 and 006 for discharge characterization. Monitoring required at Outfall 003 and 005 and a WQBEL remains in the permit
	003: 5.3 µg/L/ A&Ww chronic (3)	No Data	0	N/A	RP Indeterminate (No Data)	
	004: 5.11 µg/L/ A&Ww chronic	1.5 µg/L	51	2.52 µg/L	No RP	
	005: 9.2 µg/L/ A&Ww chronic (3)	No Data	0	N/A	RP Indeterminate (No Data)	
	006: 8.07 µg/L/ A&Ww chronic	0.91 µg/L	51	1.55 µg/L	No RP	
Mercury	0.01 µg/L/ A&Ww chronic	**002:** < 0.068 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Monitoring required at Outfalls 002, 003, 004, 005 and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: < 0.068 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: < 0.068 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Nickel (2)	**002**: 96.6 µg/L/ A&Ww chronic	<1 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005 and 006 for discharge characterization.
	003: 93.9 µg/L/ A&Ww chronic (3)	No Data	0	N/A	RP Indeterminate (no Data)	
	004: 90.7 µg/L/ A&Ww chronic	<1 µg/L	1	N/A	No RP	
	005: 145 µg/L/ A&Ww chronic (3)	No Data	0	N/A	RP Indeterminate (no Data)	
	006: 131 µg/L/ A&Ww chronic	<1 µg/L	1	N/A	No RP	
Selenium	2 µg/L/ A&Ww chronic	**002:** < 4 µg/L	51	N/A	RP Indeterminate (High LOQ)	Monitoring required at Outfalls 002, 005 and 006 and a WQBEL remains in the permit. Monitoring required at Outfalls 003, and 004 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: 0.42 µg/L	51	0.714 µg/L	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: 1.6 µg/L	51	2.72 µg/L	RP Exists	
Silver (2)	**002:** 11.3 µg/L/ A&Ww acute	< 0.3 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005 and 006 for discharge characterization.
	003: 11 µg/L/ A&Ww acute (3)	No Data	0	N/A	RP Indeterminate (No Data)	
	004: 9.97 µg/L/ A&Ww acute	< 0.3 µg/L	1	N/A	No RP	
	005: 26 µg/L/ A&Ww acute (3)	No Data	0	N/A	RP Indeterminate (No Data)	
	006: 21 µg/L/ A&Ww acute	0.49 µg/L	1	6.47 µg/L	No RP	
Sulfides	No applicable standard	No Data	0	N/A	N/A	Indicator parameter for hydrogen sulfide. No Monitoring required
Thallium	7.2 µg/L/ FC	**002:** < 0.15 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005 and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: < 0.15 µg/L	1	N/A	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		004: < 0.15 µg/L	1	N/A	No RP	

Parameter	Lowest Standard / Designated Use		Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Zinc (2)	**002**: 218 µg/L/ A&Ww chronic& acute		< 2 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005 and 006 for discharge characterization.
	003: 212 µg/L/ A&Ww chronic& acute (3)		No Data	0	N/A	RP Indeterminate (No Data)	
	004: 205µg/L/ A&Ww chronic& acute		< 2 µg/L	1	N/A	No RP	
	005: 328 µg/L/ A&Ww chronic& acute (3)		No Data	0	N/A	RP Indeterminate (No Data)	
	006: 131 µg/L/ A&Ww chronic& acute		5 µg/L	1	5 µg/L	No RP	
Whole Effluent Toxicity (WET)	No toxicity (A.A.C. R18-11-108(A)(6)	*Pseudo-kirchneriella subcapitata (4)*	**002:** 1.0 TUc	5	N/A	RP Indeterminate	Monitoring required at Outfalls 002, 003, 004, 005 and 006 and an action level remains in the permit.
			003: No Data	0			
			004: 1.0 TUc	5			
			005: No Data	0			
			006: 1.0 TUc	5			
		Pimephales promelas	**002:** 1.0 TUc	5	N/A	RP Indeterminate	Monitoring required at Outfalls 002, 003, 004, 005 and 006 and an action level remains in the permit.
			003: No Data	0			
			004: 1.0 TUc	5			
			005: No Data	0			
			006: 1.0 TUc	5			
		Ceriodaphnia dubia	**002:** 1.0 TUc	5	N/A	RP Indeterminate	Monitoring required at Outfalls 002, 003, 004, 005 and 006 and an action level remains in the permit.
			003: No Data	0			
			004: 1.0 TUc	5			
			005: No Data	0			
			006: 1.0 TUcL	5			

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 discharge hardness value of 208 mg/L for Outfall 002, 193 mg/L for Outfall 004, and 298 mg/L for Outfall 006.
(3) Hardness-dependent metal - the standard for this parameter is based on the previous permit term average discharge hardness value of 201 mg/L for Outfall 003, and 337 mg/L for Outfall 005.
(4) Formerly known as *Selenastrum capricornutum or Raphidocelis subcapitata.*

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 discharge 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.

Discrete (i.e., grab) samples are specified in the permit for all parameters. The quality of the discharge is not expected to be highly variable.

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).

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

Electronic reporting. The US EPA has published a final regulation that requires electronic reporting and sharing of Clean Water Act National Pollutant Discharge Elimination System (NPDES) program information instead of the current paper-based reporting (Federal Register, Vol. 80, No. 204, October 22, 2015). Beginning December 21, 2016 (one year after the effective date of the regulation), the Federal rule requires permittees to make electronic submittals of any monitoring reports and forms called for in their permits. ADEQ has created an online portal called myDEQ that allows users to submit their discharge monitoring reports and other applicable reports required in the permit.

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

X. SPECIAL CONDITIONS (Part IV in Permit)

Best Management Practices (BMP) Plan

A BMP Plan was prepared and is being implemented by the permittee. A copy of the Plan was previously submitted to ADEQ. The permittee shall update or amend the Plan, as appropriate, prior to a change in design, construction, operation or maintenance activity, which could have a significant effect on the quality of discharge or if the Plan proves ineffective in achieving compliance with this permit. The permittee shall retain a copy of the BMP Plan and this permit language at the discharge site for use by all operators.

Mitigation Prior to Discharge

In order to prevent discharge of pumped water that exceeds the applicable permit limits for any of the metals, the permittee is required to implement, when necessary, a mitigation program which may include blending water from two or more wells before discharge or removing wells from service.

The permit requires the permittee to initiate a mitigation program when concentration of any of the parameters exceeds the corresponding limit/assessment level two consecutive times. If concentration of a parameter in the pumped water exceeds the monthly average permit limit or assessment level, the permittee shall initiate additional sampling within five (5) calendar days of becoming aware of the exceedance. If the additional sampling results within any calendar month also exceeds the permit limit or assessment level, discharge from the affected supply well shall be stopped until the mitigation program is implemented and further samplings show no additional exceedances. Once the mitigation program has been initiated, frequency of monitoring for the affected parameter(s) will be increased to once every two weeks until a minimum of three consecutive monthly averages show no more exceedances. The permittee may then return to the original monitoring frequency as required in the permit. To resume pumping the affected supply well(s) directly (without treatment or blending) to any of the reservoirs, a minimum of three consecutive monthly averages at wellhead(s) must show no exceedance of the permit limit or assessment level for the affected parameter. In addition, if chlorine is used as part of the mitigation program, a groundwater sample must be collected from the well(s) and analyzed for TRC prior to discharging from the outfall(s). Discharge from the outfall(s) shall not occur if TRC is detected above the reporting limit using an Arizona Department of Health Services (ADHS) approved analytical method (use of an ultra-low level method is not required). The TRC monitoring results shall be provided as a part of the mitigation report. The address where mitigation reports shall be sent to is provided in the permit.

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)].

XI. 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 Rio Salado Habitat Restpration Area will be to a perennial water with Tier 2 antidegradation protection. This is a renewal permit for an existing facility with no new or expanded discharge, and the existing uses have been maintained. Therefore, an antidegradation review is not required at this time. Discharge 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.

XII. STANDARD CONDITIONS

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

XIII. 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.

XIV. 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
Phoenix, Arizona 85007

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

XV. 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 1 and Form 2C, received April 3, 2018, along with supporting data, facility diagram, and maps submitted by the applicant with the application forms.

2. ADEQ files on Rio Salado Habitat Restoration Area.

3. ADEQ Geographic Information System (GIS) Web site

4. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters*, adopted December 31, 2016.

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.