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 Solids Handling Facility (SHF) at a Water Treatment Plant (WTP) with a maximum discharge flow rate of 5.3 million gallons per day (mgd) and is considered to be a **major** facility 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.

I. PERMITTEE INFORMATION	
Permittee's Name:	City of Phoenix
Permittee's Mailing Address:	2474 South 22nd Avenue, Building 31 Phoenix, AZ 85009
Facility Name:	Val Vista Water Treatment Plant – Solids Handling Facility
Facility Address or Location:	3200 East McDowell Road Mesa, AZ 85213
County:	Maricopa
Contact Person(s): Phone/e-mail address	Troy Hayes, Assistant Director (602) 534-7928 / troy.hayes@phoenix.gov
AZPDES Permit Number:	AZ0023442
Inventory Number:	102221
LTF Number:	73541

II. STATUS OF PERMIT(s)	
AZPDES permit applied for:	Renewal
Date application received:	**September 19, 2018**
Date application was determined administratively complete:	October 3, 2018
Previous permit number (if different):	N/A
Previous permit expiration date:	March 19, 2019

208 Consistency:

In accordance with A.A.C. R18-9-A903(6), a permit cannot be issued for any discharge inconsistent with a plan or plan amendment approved under section 208(b) of the Clean Water Act.

208 Plan consistency is not required for industrial facilities.

II. STATUS OF PERMIT(s)		
The City of Phoenix has the following permits issued by ADEQ applicable to the Val Vista Water Treatment Plant:		
Type of Permit		
Type 3.01 General Aquifer Protection Permit (APP)	P105384	Regulates discharges to the local aquifer

III. GENERAL FACILITY INFORMATION	
Type of Facility:	Industrial facility; Water Treatment Plant – Solids Handling Facility
Facility Location Description:	The Val Vista WTP SHF is located on a 199-acre site on McDowell Road between Lindsey and Val Vista Roads and approximately 5 miles northeast of downtown Mesa.
Design Discharge Flow:	Maximum Discharge Flow Rate = 5.3 mgd (Hydraulic Capacity)
Facility Processes:	Grit basins and pre-sedimentation are used to remove solids. Pre-sedimentation and final sedimentation basin blowdown and filter backwash water are treated in the SHF. The SHF consists of equalization basins, chemical conditioning, gravity thickeners, lagoons, drying beds, and centrifuge dewatering. The coagulant used for sedimentation and flocculation is ferric chloride; used to reduce the volume of chemical used for treatment which reduces the volume of solids produced. Granular activated carbon (GAC) contactors have been added to achieve additional removal of organic material, and chlorine dioxide added for oxidation to reduce quantity of chlorine needed during the treatment process. Acrylamide is used at the end of the treatment process to separate solids and liquids.
Nature of facility discharge:	The discharge will consist of partially treated residuals from the pre-sedimentation and sedimentation basins and filter backwash after passing through gravity thickeners.
Average flow per discharge:	There have been no discharges to the canal during the current permit term.
Continuous or intermittent discharge:	Intermittent; generally a zero discharge facility unless there is a high turbidity event.
Discharge pattern summary:	No discharge flow records were submitted for the current permit term. The facility only discharges from to the canal when there is increased solids loading or for startup or shutdown of the WTP.

IV. 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 :	South Canal; a Phoenix area canal Granite Reef Dam to all municipal WTP intakes
River Basin:	Middle Gila River Basin

IV. RECEIVING WATER	
Outfall Location(s):	Outfall 001: Township 2 N, Range 6 E, Section 32 Latitude 33˚ 28’ 15” N, Longitude 111˚ 45’ 45” 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:	Agricultural Irrigation (AgI) Agricultural Livestock watering (AgL) Domestic Water Supply (DWS)
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. 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.	

V. DESCRIPTION OF DISCHARGE

The facility had no discharges during the current permit term. The following is the discharge quality based on samples taken on August 21, 2018 from the gravity thickeners. Although these samples were not taken during a high turbidity event, the data are included as an estimate of discharge quality.

Parameters	Units	Maximum Daily Discharge Concentration
Total Suspended Solids (TSS)	mg/L	2210
Chlorine, Total Residual (TRC)	mg/L	< 0.22
pH	S.U.	6.9
Arsenic	µg/L	150
Boron	µg/L	217
Chromium, Total	µg/L	201
Lead	µg/L	141
Manganese	µg/L	8,110

VI. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT	
Date of most recent inspection:	04/18/2018; no potential violations were noted as a result of this inspection.
DMR files reviewed:	05/2016 through 11/2018
Lab reports reviewed:	05/2014 through 10/2018
DMR Exceedances:	No exceedances were noted due to no discharge.
NOVs issued:	None
NOVs closed:	N/A
Compliance orders:	None

VII. 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.
Mixing zone for chromium (total)	No mixing zone for chromium (total)	Mixing zone included for chromium (total) and monitoring required upstream and downstream from the outfall	A mixing zone for chromium (total) was applied for and approved.

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 discharge 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.

No limits have been removed from the permit. 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.

VIII. DETERMINATION OF DISCHARGE 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:

No Technology-based Limitations have been promulgated for Potable Water Treatment Plants. During the development of the June 22, 1998 permit, the City of Phoenix conducted an analysis of the technology-based discharge limitations for WTP discharges and issued a report: "Study to Develop BCT for NPDES Permit Limits" in 1994. The study was amended in January 1997. In addition to establishing the best practicable control technology currently available (BPT) pursuant to A.A.C. R18-9-A905.A.4 (which incorporates 40CFR 125.3(d)(2)), the BCT study evaluated various treatment alternatives to determine best conventional pollutant control technology (BCT) as required by A.A.C.R18-9-A905.A.4 (which incorporates 40CFR 125.3(d)(2).). This study concluded that none of the BCT alternatives met the two tests of cost effectiveness; therefore, permit limitations were developed based on BPT. The study identified dewatering lagoons/solar drying beds as the most appropriate BPT, for the purpose of establishing costs. Dewatering lagoons were estimated to remove approximately 85% of the solids from the discharge. Land availability at the plant prohibited using only dewatering lagoons to achieve this solids removal level and additional alternatives were evaluated in the amended study.

The final technology-based limit for solids removal from influent to the SHF was determined to be 85% removal of intake solids calculated as a (calendar) monthly average.

VIII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS

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 discharge 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 discharge 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 on page 9.

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, discharge 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

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. The previous permit for the Val Vista WTP – SHF contained a mixing zone for arsenic, lead, and manganese. The mixing zone is a health based mixing zone based on the designated uses associated with drinking water standards. The City has requested this mixing zone be renewed for these parameters. The permit reestablishes a mixing zone for arsenic, lead, and manganese as requested.

Upon evaluation of the Val Vista WTP - SHF, ADEQ determined there would be a reasonable potential for chromium (total) to exceed the applicable water quality standard. The City thus requested to establish a mixing zone for chromium (total). ADEQ determined the request met the requirements of the Arizona mixing zone rules based on the dilution ratios associated with the discharge to the South Canal and approved the chromium (total) mixing zone.

The following factors in Arizona mixing zone rules listed in A.A.C. R18-11-114(D) were considered upon approving the request:

Factor	Consideration
Assimilative capacity of the receiving water	Results from a steady-state mass balance model of the discharge to the canal indicates there will be more than 50% available assimilative capacity of chromium (total) remaining in the canal.
Likelihood of adverse human health effects	The most stringent health based standard for chromium (total) is 100 µg/L, which is substantially greater than the hypothetical resultant in-stream chromium (total) concentration in the model results on page 7.

VIII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS	
Location of drinking water plant intakes and public swimming areas	Modeled chromium (total) concentrations in the receiving water are below standards for drinking water standards. In addition the nearest WTP intake is approximately 9.8 miles away.
Predicted exposure of biota and the likelihood that resident biota will be adversely affected	N/A - The receiving water does not have aquatic and wildlife designated uses.
Bioaccumulation	N/A – The receiving water does not have aquatic and wildlife designated uses.
Size of the zone of initial dilution	The receiving water does not have aquatic and wildlife uses and thus determining acute lethality to organisms in the zone of initial dilution does not apply. The discharge will be modeled using a steady-state mass balance model.
Known or predicted safe exposure levels for the pollutant for which the mixing zone is granted	Discharge concentration are well below safe exposure levels for chromium (total).
Size of the mixing zone	It is assumed the discharge will be completely mixed prior to a water treatment plant intake.
Location of the mixing zone relative to biologically sensitive areas in the surface water	The receiving water doesn't have aquatic and wildlife designated uses.
Concentration gradient of the pollutant within the mixing zone	The receiving water doesn't have aquatic and wildlife designated uses. A complete mix is assumed.
Sediment deposition	None
Potential for attracting aquatic life to the mixing zone	None
Cumulative impacts of other mixing zones and other discharges to the surface water	Not applicable

Rapid and complete mixing occurs when the lateral variation in the concentration of a pollutant in the direct vicinity of the outfall is small. Outfall 001 from the Val Vista SHF enters into the South Canal approximately 9.8 miles upstream from the nearest WTP intake. It is assumed the discharge will be fully mixed before reaching a water treatment plant intake and the steady state dilution model is used to calculate the mixing zone.

The following steady-state mass balance formula was used to determine reasonable potential for chromium (total) in consideration of the applicant's request for a mixing zone:

$Q_sC_s + Q_dC_d = Q_rC_r$

Where:

Q_s = background in-stream flow above discharge point during critical conditions based on data provided by SRP (harmonic mean flow; human health criteria)

VIII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS

C_s = maximum background in-stream chromium (total) concentration based on raw data provided by SRP for the past 5 years

Q_d = facility design capacity was used for maximum waste discharge flow

C_d = highest estimated maximum discharge concentration for chromium (total) (using the highest reported value from gravity thickener data)

Q_r = stream flow below outfall (discharge flow plus upstream flow)

C_r = resultant in-stream pollutant concentration.

Model Results:

Q_s (Average annual flow in the canal upstream of outfall) = 244 MGD

C_s (Maximum background concentration of chromium (total) upstream of outfall) = 6.1 µg/L

Q_d (Facility design flow rate; hydraulic capacity) = 5.3 MGD

C_d (Maximum gravity thickener sample concentration for chromium (total)) = 201 µg/L

Q_r (Average annual canal flow below outfall) = 249 MGD

C_r (Resultant in-stream chromium (total) concentration) = 10 µg/L

RP is determined based on the projected maximum receiving water concentration at the edge of the mixing zone. This is determined by solving for C_r using the critical inputs into the steady-state mass balance formula. Solving for C_r to determine RP yields:

$C_r = (Q_sC_s + Q_dC_d)/ Q_r$

C_r = 10 µg/L

Because the C_r value of 10 µg/L is less than the chromium (total) standard of 100 µg/L it was determined that there would not be RP for an exceedance of the domestic water source chromium (total) standard.

See Section XII for the mixing zone discussion.

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).

Whole Effluent Toxicity (WET)

ADEQ no longer requires WET testing if the receiving water has no aquatic and wildlife designated uses. Although the narrative standard prohibiting the discharge of toxic pollutants applies to all discharges, the test species are not appropriate for these receiving waters and no alternative tests are readily available. Therefore, WET testing is not required in this permit, and Part IV for WET testing is shown as “not applicable.”

VIII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS

Discharge Characterization (DC)

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. If the facility does not discharge, sampling of additional suites of parameters will be from a solids handling facility settling location most representative of a potential discharge. This monitoring is specified in Table 3 – Discharge Characterization Testing – Selected Metals and Trace Substances.

• Table 3 – Discharge Characterization Testing – Selected Metals, and Trace Substances

NOTE: Some parameters listed in Tables 3 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 3 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, DC monitoring of representative samples of the discharge is still required.

The purpose of Discharge Characterization (DC) monitoring 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)). DC 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.
Total Suspended Solids (TSS)	Limit for percent removal is included. No numeric limit is set for either concentration or mass of TSS. However, 85% removal of TSS by weight on a monthly average is required. This requirement is based on case-specific BPT and BCT studies done during development of the 1998 permit as specified in A.A.C. R18-9-A905.A.4 and discussed above.	2210 mg/L	1	N/A	Technology-based limit (BPJ)	Monitoring for influent (to the water treatment plant) and discharge TSS is to be conducted daily during periods of discharge (2). Composite samples are required. Monthly average shall be calculated assuming 100% removal of TSS on days when no discharge occurs.
Chlorine, Total Residual (TRC)	4,000 µg/L/ Drinking Water Standard (DWS)	< 220 µg/L	1	N/A	N/A	Chlorination of the drinking water has been moved to after the major sources of SHF influent, therefore, high chlorine residuals are anticipated. Monitoring is required during discharge (2) and an assessment level remains in the permit.
pH	Minimum: 6.5 Maximum: 9.0 AgL A.A.C. R18-11-109(B)	6.9	1	N/A	WQBEL is included.	pH is to be monitored once daily (2) using a discrete sample of the discharge and a WQBEL is set. 40 CFR Part 136 specifies that grab samples must be collected for pH.
Antimony	6 µg/L/ DWS	< 40 µg/L	1	N/A	RP Indeterminate (Insufficient Data and High LOQ)	An assessment level remains in the permit and monitoring is required when discharge occurs (2).
Arsenic	10 µg/L/ DWS	150 µg/L	1	N/A	RP Exists	A WQBEL remains in the permit and monitoring is required at the mixing zone when discharge occurs (2).
Beryllium	4 µg/L/ DWS	3.4 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.
Boron	1,000 µg/L/ AgI	217 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	An assessment level remains in the permit and monitoring is required when discharge occurs (2).
Cadmium	5 µg/L/ DWS	< 4 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.
Chromium (Total)	100 µg/L/ DWS	201 µg/L	1	N/A	No RP based on mixing zone model results	Monitoring is required daily at the mixing zone for the duration of any discharge (2).
Chromium VI	21 µg/L/ DWS	No Data	N/A	N/A	RP Indeterminate (No Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs, only if chromium (total) exceeds 8 µg/L.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Copper	500 µg/L/ AgL	295 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	An assessment level remains in the permit and monitoring is required when discharge occurs (2).
Cyanide	200 µg/L/ DWS and AgL	< 5 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.
Lead	15 µg/L / DWS	141 µg/L	1	N/A	RP Exists	A WQBEL remains in the permit and monitoring is required at the mixing zone when discharge occurs (2).
Manganese	980 µg/L/ DWS	8,110 µg/L	1	N/A	RP Exists	A WQBEL remains in the permit and monitoring is required at the mixing zone when discharge occurs (2).
Mercury	2 µg/L/ DWS	< 0.2 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.
Nickel	140 µg/L/ DWS	99 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.
Selenium	20 µg/L/ AgI	2.1 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.
Silver	35 µg/L/ DWS	< 10 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.
Thallium	2 µg/L/ DWS	0.77 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.
Total Trihalomethanes (THM)	80 µg/L DWS	7.2 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	An assessment level remains in the permit and monitoring is required when discharge occurs (2).
Zinc	2,100 µg/L/ DWS	309 µg/L	1	N/A	RP Indeterminate (Insufficient Data)	Sampling for discharge characterization remains in the permit and monitoring is required when discharge occurs.

Footnotes:
(1) The monitoring frequencies are required as specified in the permit when the facility is discharging.
(2) Monitor daily for a maximum of 4 samples per month. Monitoring required only in months when discharge occurs.

IX. 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 D and E of the draft permit.

X. 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 discharge limitations or to monitor discharge impacts on receiving water quality.

For the purposes of this permit, a "composite" means a collection of a constant sample volume at timed intervals that vary based on the stream (discharge) flow.

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.F) in order to ensure that representative samples of the influent and discharge 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), 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.

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 required 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.

XI. BIOSOLIDS REQUIREMENTS

Not applicable – this is an industrial facility.

XII. SPECIAL CONDITIONS (Part V in Permit)

Mixing Zone

A mixing zone has been reestablished for arsenic, lead, and manganese in the South Canal. The mixing zone for these parameters has not changed from the previous permit and will remain as extending for 341 meters downstream of the outfall. Monitoring is required upstream of Outfall 001 and 341 meters downstream of Outfall 001. Permit limits must be met at the downstream location for arsenic, lead, and manganese.

This permit establishes a new mixing zone for chromium (total). The analysis of the discharge into the canal using a steady-state mass balance model indicated there would be no reasonable potential for chromium (total) to exceed the applicable water quality standard. Monitoring for chromium (total) upstream and downstream of Outfall 001 during a discharge event is required.

Operation

This permit condition requires the permittee to ensure that the WTP has an operator who is certified at the appropriate level for the facility, in accordance with A.A.C. R18-4-202.A.2.

Best Management Practices (BMPs)

The City of Phoenix is required to maintain a BMP Plan. The BMP Plan identifies actions required prior to startup and shutdown and discharge.

Permit Reopener

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

XIII. 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 Val Vista Water Treatment Plant will be to a canal which is subject to Tier 1 antidegradation protection. 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.

XIV. STANDARD CONDITIONS

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

XV. 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.

XV. ADMINISTRATIVE INFORMATION

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.

XVI. 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: Devin McAllister
1110 West Washington Street
Phoenix, Arizona 85007

Or by contacting Devin McAllister at (602) 771 – 4374 or by e-mail at mcallister.devin@azdeq.gov.

XVII. INFORMATION SOURCES

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

1. AZPDES Permit Application Forms 1 and 2C received September 19, 2018, along with supporting data, facility diagram, and maps submitted by the applicant with the application forms.

2. Mixing Zone application received by ADEQ on December 18, 2018.

3. Supplemental information to the application discussed during conference call received by ADEQ on December 18, 2018.

4. ADEQ files on Val Vista Water Treatment Plant – Solids Handling Facility.

5. ADEQ Geographic Information System (GIS) Web site.

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

7. A.A.C. 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 Decision Making*.

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

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