



DRAFT PERMIT

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ADEQ Inventory No. 100774
LTF No. 65189

Permit No. AZ0023531
Place ID No. 3134

AUTHORIZATION TO DISCHARGE UNDER THE ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

Salt River Project (SRP)
Agricultural Improvement and Power District
P.O. Box 52025
Mail Station: AFS200
Phoenix, Arizona 85072

is authorized to discharge cooling tower blowdown, boiler blowdown, storage pond overflow, other low volume wastes, and stormwater from the Agua Fria Generating Station (AFGS) located at 7302 W. Northern Ave. in Glendale, Maricopa County, Arizona to SRP Irrigation Lateral 20 tributary to the Grand Canal (a Phoenix Area Canal) and New River in the Lower Agua Fria Basin of the Middle Gila River Basin in Maricopa County, Arizona. Discharge is permitted from the AFGS at:

Outfall No.	Latitude	Longitude	Legal
001	33°33' 17.5" N	112° 13' 10.4" W	Township 3N, Range 1E, Section 36

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

Annual Registration Fee [A.R.S. 49-255.01 and A.A.C. R18-14-104]

The annual registration fee for this permit is payable to ADEQ each year. For the purposes of the annual fees, this permit is a Major permit. If the facility is not yet constructed or is incapable of discharge at this time, the permittee may be eligible for reduced fees under rule. Send all correspondence requesting reduced fees to the Water Quality Division of ADEQ. Please reference the permit number, LTF number and why reduced fees are requested under rule.

This permit shall become effective on _____, 2017.

This permit and the authorization to discharge shall expire at midnight, _____, 2022.

Signed this _____ day of _____, 2017.

Trevor Baggio, Director
Water Quality Division
Arizona Department of Environmental Quality

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PART I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Discharge Limitations and Monitoring Requirements

The permittee shall limit and monitor discharges from Outfall 001 as specified in Table 1 which follows.

TABLE 1: Discharge Limitations and Monitoring Requirements

Parameter (7)	Maximum Allowable Discharge Concentration Limits (1)		Monitoring Requirement	
	Monthly Average	Daily Maximum	Monitoring Frequency	Sample Type (2)
Discharge flow (MGD)	REPORT (3)	REPORT (3)	1x/day	Metered (4)
Chlorine, free available (FAC) (5) (6)	0.2 mg/L	0.5 mg/L	1 x/month	Discrete
Chromium, total	0.2 mg/L	0.2 mg/L	1 x/month	24-hour Composite
Hardness (CaCO ₃) - effluent (8)	REPORT (3)	REPORT (3)	1 x/month	24-hour Composite
Oil and grease	15 mg/L	20 mg/L	1 x/month	Discrete
Selenium	20 µg/L	30 µg/L	1 x/month	24-hour Composite
Total suspended solids (TSS)	30 mg/L	100 mg/L	1 x/month	24-hour Composite
Zinc (8)	1000 µg/L	1000 µg/L	1 x/month	24-hour Composite
pH (6)	Not less than 6.5 standard units (S.U.) nor greater than 9.0 S.U.		1 x/week	Discrete

Footnotes:

- (1) mg/L =milligrams per liter; ug/L = micrograms per liter
- (2) For this permit, "24-hour composite" means a mixture of two or more discrete samples (aliquots) obtained at equal time intervals over a 24-hour compositing period. The volume of each aliquot shall be directly proportional to the discharge flow rate at the time of sampling.
- (3) Monitoring and reporting required. No limit set at this time. In addition to the average and maximum flows reported on the Discharge Monitoring Report (DMR) or an equivalent form, daily discharge flow shall be recorded on the **Discharge Flow Record** provided in Appendix B or an equivalent form. See Part II.B for reporting requirements.
- (4) Flow shall be measured using a flow metering device at the outfall or by summing all the contributing flows to the outfall in which case each contributing flow must be measured using a flow metering device.
- (5) Sample when chlorine or bromine compounds are used for disinfection.
- (6) pH and FAC must be measured at the time of sampling and does not require use of a certified laboratory. Measurements must be obtained in accordance with the applicable method and must meet all method quality assurance/quality control requirements to be considered valid data.
- (7) All metals analyses shall be for total recoverable metals.
- (8) Limits listed for zinc are based on a discharge hardness of 400 mg/L as CaCO₃. The discharge must be tested for hardness at the same time that zinc samples are taken. Please see the hardness definition in Appendix A, Part B.

B. Trace Substance Monitoring

N/A

C. Whole Effluent Toxicity Monitoring

N/A

D. Discharge Characterization Testing

The permittee shall monitor to characterize the facility discharges for the parameters listed in Table 2. No limits or assessment levels are established, but the limits of quantitation (LOQs) must be low enough to allow comparison of the results to the applicable surface water quality standards (SWQS). If a LOQ below the SWQS cannot be achieved, then the permittee shall use the method expected to achieve the lowest LOQ, as defined in Appendix A of this permit.

TABLE 2: Discharge Characterization Testing – Selected Metals

Parameter (1)	Reporting Units	Monitoring Requirements	
		Monitoring Frequency	Sample Type
Arsenic	µg/L	1x / 6 months	24-hour Composite
Cadmium	µg/L	1x / 6 months	24-hour Composite
Lead	µg/L	1x / 6 months	24-hour Composite
Mercury	µg/L	1x / 6 months	Discrete
Copper	µg/L	1x / 6 months	24-hour Composite

Footnotes:

(1) All metals analyses shall be for total recoverable metals.

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

1. Settle to form bottom deposits that inhibit or prohibit the habitation, growth or propagation of aquatic life;
2. Cause objectionable odor in the area in which the surface water is located;
3. Cause off-flavor in aquatic organisms;
4. Are toxic to humans, animals, plants or other organisms;
5. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth or propagation of other aquatic life or that impair recreational uses;
6. Change the color of the surface water from natural background levels of color.

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

G. The discharge shall be free from the 126 priority pollutants (except for chromium and zinc) which may be contained in chemicals added for cooling tower maintenance. The list of priority pollutants are provided in Appendix A to Part 423 of 40 CFR which is incorporated by reference in A.A.C. R18-9-A905 (A)(9).

- H. The discharge shall be free from polychlorinated biphenyl compounds (PCBs) such as those commonly used for transformer fluid.
- I. Samples taken in compliance with the monitoring requirements specified above shall be taken after the last addition of flow and prior to discharge to SRP Lateral 20.

PART II. MONITORING AND REPORTING

A. Sample Collection and Analysis

- 1. The permittee is responsible for the quality and accuracy of all data required under this permit.
- 2. Quality Assurance (QA) Manual

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

- a. Project Management, including:
 - Purpose of sample collection and sample frequency;
 - When and where samples will be collected;
 - How samples will be collected;
 - Who will collect samples and their qualifications;
 - Laboratory(s) that will perform analyses;
 - Any field tests to be conducted (detail methods and specify equipment, including a description of any needed calibrations); and
 - Pollutants or analytes being measured and for each, the permit-specific limits, Assessment Levels, or thresholds, (e.g. the associated detection limits needed.)
- b. Sample collection procedures including
 - Equipment to be used;
 - Type and number of samples to be collected including QA/QC samples (i.e., background samples, duplicates, and equipment or field blanks);
 - Types, sizes, and number of sample bottles needed;
 - Preservatives and holding times for the samples (see methods under 40 CFR 136 or 9 A.A.C. 14, Article 6 or any condition within this permit that specifies a particular test method); and
 - Chain of custody procedures.
- c. Specify approved analytical method(s) to be used and include:
 - Limits of Detection (LOD) and Limits of Quantitation (LOQs);

- Required quality control (QC) results to be reported (e.g., matrix spike recoveries, duplicate relative percent differences, blank contamination, laboratory control sample recoveries, surrogate spike recoveries, etc.) and acceptance criteria; and
 - Corrective actions to be taken by the permittee or the laboratory as a result of problems identified during QC checks.
- d. How the permittee will perform data review; complete DMRs and records used to report results to ADEQ; resolve data quality issues; and identify limitations on the use of the data.
3. Sample collection, preservation and handling shall be performed as described in 40 CFR 136 including the referenced Edition of *Standard Methods for the Examination of Water and Wastewater*, or by procedures referenced in A.R.S Title 9, Chapter 14 of the Arizona Department of Health Services (ADHS) Laboratory Licensure rules. The permittee shall outline the proper procedures in the QA Manual, and samples taken for this permit must conform with these procedures whether collection and handling is performed directly by the permittee or contracted to a third-party.
4. Analytical requirements
- a. The permittee shall use a laboratory licensed by the ADHS Office of Laboratory Licensure and Certification that has demonstrated proficiency within the last 12 months under R9-14-609, for each parameter to be sampled under this permit. However, this requirement does not apply to parameters which require analysis at the time of sample collection as long as the testing methods used are approved by ADHS or ADEQ in accordance with A.R.S. 36-495.02(A)(3). (These parameters may include flow, dissolved oxygen, pH, temperature, and total residual chlorine.)
- b. The permittee must utilize analytical methods specified in this permit. If no test procedure is specified, the permittee shall analyze the pollutant using:
- i. A test procedure listed in 40 CFR 136 which is also approved under A.A.C. R9-14-610;
 - ii. An alternative test procedure approved by EPA as provided in 40 CFR 136 and which is also approved under A.A.C. R9-14-610;
 - iii. A test procedure listed in 40 CFR 136, with modifications allowed by EPA or approved as a method alteration by ADHS under A.A.C. R9-14-610(C); or
 - iv. If no test procedure for a pollutant is available under (3)(b)(i) through (3)(b)(iii) above, any Method approved under A.A.C. R9-14-610(B) for wastewater may be used, except the use of field kits is not allowed unless otherwise specified in this permit. If there is no approved wastewater method for a parameter, any other method identified in 9 A.A.C. 14, Article 6 that will achieve appropriate detection and reporting limits may be used for analyses.
- c. For results to be considered valid, all analytical work, including those tests conducted by the permittee at the time of sampling (see Part II.A.4.a), shall meet quality control standards specified in the approved methods.
- d. The permittee shall use analytical methods with a Limit of Quantitation (LOQ) that is lower than the effluent limitations, Assessment Levels, Action Levels, or other water quality criteria, if any, specified in this permit. If all methods have LOQs higher than

the applicable water quality criteria, the Permittee shall use the approved analytical method with the lowest LOQ.

- e. The permittee shall use a standard calibration curve when applicable to the method, where the lowest standard point is equal to or less than the LOQ.
 - f. If requested, the permittee shall participate in the annual NPDES DMR/QA study and submit the results of this study to ADEQ and ADHS for all laboratories used in monitoring compliance with this permit.
5. Chlorine Monitoring

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

6. Metals Analyses

In accordance with 40 CFR 122.45(c), all effluent metals concentrations shall be measured as “total recoverable metals”. Discharge Limits and Assessment Levels in this permit, if any, are for total metals.

B. Reporting of Monitoring Results

1. The permittee shall report monitoring results on Discharge Monitoring Report (DMR) forms supplied by ADEQ, to the extent that the results may be entered on the forms. The permittee shall submit results of all monitoring required by this permit in a format that will allow direct comparison with the limitations and requirements of this permit. If no discharge occurs during a reporting period, the permittee shall specify “No discharge” on the DMR. The results of all discharge analyses conducted during the monitoring period shall be included in determinations of the monthly average and daily maximums reported on the DMRs if the analyses were by methods specified in Part II.A above, as applicable.
2. DMRs and attachments are to be submitted by the 28th day of the month following the end of a monitoring period. For example, if the monitoring period ends January 31st, the permittee shall submit the DMR by February 28th. The permittee shall electronically submit all compliance monitoring data and reports using the myDEQ electronic portal provided by ADEQ. The reports required to be electronically submitted include, but are not limited to, the following:
 - Discharge Monitoring Reports
 - Original copies of laboratory results
 - AZPDES discharge flow records
 - Method detection limit studies (if applicable)
 - Bench sheets or similar documentation for field testing parameters (provided upon request)
3. If requested to participate, the permittee shall submit the results of the annual NPDES DMR/QA Study to ADEQ and ADHS for all laboratories used in monitoring compliance with this permit by December 31st of each year. The permittee shall also conduct any proficiency testing required by the NPDES DMR-QA Study for those parameters listed in the study that

the permittee analyzes in house or tests in the field at the time of sampling (these parameters may include pH and total residual chlorine). All results of the NPDES DMR-QA Study shall be submitted to the email and addresses listed below, or submit by any other alternative mode as specified by ADEQ:

Arizona Department of Environmental Quality
Email: AZPDES@azdeq.gov

Arizona Department of Health Services
Attn: Office of Laboratory Licensure and Certification
250 N 17th Avenue
Phoenix, AZ 85007

4. For the purposes of reporting, the permittee shall use the Limit of Quantitation (LOQ).
5. For parameters with Daily Maximum Limits or Daily Maximum Assessment Levels in this permit, the permittee shall review the results of all samples collected during the reporting period and report as follows:

For Daily Maximum Limits/Assessment Levels	The Permittee shall Report on the DMR
When the maximum value of any analytical result is greater than or equal to the LOQ	The maximum value of all analytical results
When the maximum value detected is greater than or equal to the laboratory's LOD but less than the LOQ (1)	NODI (Q)
When the maximum value is less than the laboratory's LOD (2)	NODI (B)

Footnotes:

- (1) LOQ = Limit of Quantification (Not Quantifiable)
- (2) LOD = Limit of Detection (Below Detection)

6. For parameters with Monthly Average Limits or Monthly Average Assessment Levels in this permit, the permittee shall review the results of all samples collected during the reporting period and report:

For Monthly Average Limits/Assessment Levels	The Permittee shall Report on the DMR	
If only one sample is collected during the reporting period (monthly, quarterly, annually, etc.) (In this case, the sample result is the monthly average.)	When the value detected is greater than or equal to the LOQ	The analytical result
	When the value detected is greater than or equal to the laboratory's LOD, but less than the LOQ	NODI (Q)
	When the value is less than the laboratory's LOD	NODI (B)
If more than one sample is collected during the reporting period	All samples collected in the same calendar month must be averaged. <ul style="list-style-type: none"> • When all results are greater than or equal to the LOQ, all values are averaged • If some results are less than the LOQ, use the LOD value in the averaging • Use '0' for values less than the LOD 	The highest monthly average which occurred during the reporting period

7. For all field testing, or if the information below is not included on the laboratory reports required by Part II.B.2, the permittee shall attach a bench sheet or similar documentation to each DMR that includes, for all analytical results during the reporting period:

- a. the analytical result,
- b. the number or title of the approved analytical method, preparation and analytical procedure utilized by the field personnel or laboratory, and the LOD and LOQ for the analytical method for the parameter, and
- c. any applicable data qualifiers using the most current revision of the Arizona Data Qualifiers (available on line at <http://www.azdhs.gov/lab/license/resources/resources.htm>).

C. Twenty-four Hour Reporting of Noncompliance

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

ADEQ 24 hour hotline at (602) 771-2330

by phone call or voice mail by 9 a.m. on the first business day following the noncompliance. The permittee shall also notify the ADEQ AZPDES Individual Permits Unit in writing within 5 days of the noncompliance event. The permittee shall include in the written notification: a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and, if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

D. Monitoring Records

The permittee shall retain records of the following monitoring information:

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

8. Summary of data interpretation and any corrective action taken by the permittee.

PART III. BIOSOLIDS/ SEWAGE SLUDGE REQUIREMENTS

N/A

PART IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

N/A

PART V. SPECIAL CONDITIONS

A. STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS

The permittee shall review the existing Stormwater Pollution Prevention Plan (SWPPP) for the AFGS, and revise it as necessary to ensure that it fully and accurately addresses all the following provisions. Any updates or revisions needed shall be completed within 90 days of the effective date of this permit.

1. Pollution Prevention Team

The SWPPP shall identify individuals at SRP that are members of a stormwater Pollution Prevention Team who are responsible for assisting the facility management in implementation, maintenance, and revision of the SWPPP. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's SWPPP.

2. Description of Potential Pollutant Sources

The plan shall describe and identify all sources at the facility which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from the facility. These shall include all activities and exposed materials which may potentially be significant pollutant source.

1. Drainage Considerations

- a. The SWPPP must contain a drainage area site map which identifies the locations of any of the following activities or sources which may be exposed to precipitation/surface runoff: storage tanks, scrap yards, general refuse areas; short and long term storage of general materials (including but not limited to: supplies, construction materials, paint equipment, oils, fuels, used and unused solvents, cleaning material, paint, water treatment chemicals, fertilizer and pesticides); landfills, construction sites; stock piles areas (e.g., coal or limestone piles).
- b. Each stormwater outfall shall be clearly identified by narrative in the SWPPP and depicted on a facility map included in the SWPPP. The SWPPP shall

identify the types of pollutants which are likely to be present in the stormwater discharges at each designated outfall. Factors to consider include the toxicity of a chemical; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

2. Inventory of Exposed Materials

The SWPPP shall include an inventory of the types of materials handled at the site that may be exposed to precipitation. This shall include a description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to stormwater; method and location of onsite storage and/or disposal; materials management practices employed to minimize contact of materials with stormwater runoff; the location and a description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives in the annual site compliance evaluation (as applicable).

3. Spills and Leaks

The SWPPP shall contain a list of significant spills and/or leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a stormwater conveyance at the facility since January 1, 2014. This list shall be reviewed and updated, as appropriate, at least annually and included in the annual site compliance evaluation (as applicable).

4. Sampling Data

A summary of existing discharge sampling data describing pollutants in stormwater discharges from the facility, including a summary of sampling data collected during the term of this permit ([see Part V.B for stormwater monitoring required](#)).

5. Risk Identification and Summary of Potential Pollutant Sources

A description of the potential pollutant sources from the following activities: loading and unloading operations; outdoor storage; manufacturing, or processing activities; significant dust or particulate generating processes; and onsite waste disposal practices. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter (e.g., total suspended solids, copper, etc.) of concern shall be identified.

3. Measures and Controls

SRP shall develop and implement effective stormwater management controls for all identified potential sources of pollution. For each identified potential source, the SWPPP shall describe the nature of the potential discharges, including the types of pollutants likely to be present in each. For each identified potential source, the SWPPP shall describe either structural and/or non-structural controls (BMPs) that shall be designed

and implemented to minimize these releases. The controls shall include at least the following components:

1. Good Housekeeping

Good housekeeping requires the maintenance of areas which may contribute pollutants to storm water discharges in a clean, orderly manner. The following areas must be specifically addressed:

a. Bulk Liquid and/or Chemical Delivery Vehicles

The SWPPP must describe, and SRP must implement, measures that prevent or minimize the potential for contamination from delivery vehicles arriving on site. The SWPPP should detail the following:

- i. Procedures for the review of delivery vehicles to ensure overall integrity of the body or container; and
- ii. Procedures to deal with leakage or spillage from vehicles or containers. The SWPPP should also identify the nature and location of protective measures available for personnel and environment.

b. Fuel Oil Unloading Areas

The SWPPP must describe, and SRP must implement, measures that prevent or minimize the potential for contamination from fuel oil unloading areas. SRP must implement the following measures, or an equivalent:

- i. Use of containment curbs in unloading areas;
- ii. Personnel familiar with spill prevention and response procedures must be present during deliveries to ensure that leaks or spills are immediately contained and cleaned up; and
- iii. Use of spill and overflow protection (drip pans, drip diapers, and/or other containment devices shall be placed beneath fuel oil connectors to contain any spillage that may occur during deliveries or due to leaks at such connectors)

c. Chemical Loading/Unloading Areas

The SWPPP must describe, and SRP must implement, measures that prevent or minimize the potential for contamination from chemical loading/unloading areas. SRP must implement the following measures, or an equivalent:

- i. Where practicable, chemical loading/unloading areas are to be covered, and chemicals are to be stored indoors.
- ii. Use of containment curbs at chemical loading/unloading areas to contain spills; and

iii. Personnel familiar with spill prevention and response procedures must be present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up.

d. Miscellaneous Loading/Unloading Areas

The SWPPP must describe, and SRP must implement, measures that prevent or minimize the potential for contamination from loading and unloading areas.

e. Liquid Storage Tanks

The SWPPP must describe, and SRP must implement, measures that prevent or minimize the potential for contamination from above-ground liquid storage tanks. Liquid storage areas for Section 313 water priority chemicals must have secondary containment for at least the entire contents of the largest tank plus sufficient freeboard to allow for the 25-year, 24-hour precipitation event and a strong spill contingency and integrity testing plan. In addition, SRP must implement the following measures, or an equivalent, for any above-ground liquid storage tanks:

i. Use of protective guards around tanks;

ii. Use of containment curbs;

iii. Use of spill and overflow protection (drip pans, drip diapers, and/or other containment devices shall be placed beneath chemical connectors to contain any spillage that may occur during deliveries or due to leaks at such connectors); and

iv. Use of dry cleanup methods.

f. Large Bulk Fuel Storage Tanks

The SWPPP must describe, and SRP must implement, measures that prevent or minimize the potential for contamination from bulk fuel storage tanks. SRP must implement the following measures:

i. Compliance with applicable State and Federal laws, including Spill Prevention Control and Countermeasures (SPCC); and

ii. Use of containment berms, or equivalent.

g. Oil or Chemical Spill

The SWPPP must describe, or reference the appropriate section of the facility's SPCC plan that describes, measures that prevent or minimize the potential for an oil or chemical spill. SRP must implement the measures described. The structural integrity of all above ground tanks, pipelines, pumps and other related equipment shall be visually inspected on at least a

monthly basis. All repairs deemed necessary based on the findings of the review shall be completed immediately to reduce the incidence of spills and leaks occurring from such faulty equipment.

h. Oil Bearing Equipment in Switchyards

If applicable, the SWPPP must describe, and SRP must implement, measures that prevent or minimize the potential for contamination from oil bearing equipment in switchyard areas.

i. Vehicle Maintenance Activities

If vehicle maintenance activities are performed on the plant site, SRP shall minimize contamination of stormwater runoff from all areas used for vehicle / equipment maintenance.

ii. Material Storage Areas

The SWPPP must describe, and SRP must implement, measures that prevent or minimize the potential for contamination from material storage areas (including areas used for temporary storage of miscellaneous products, and construction materials stored in lay down areas).

2. Preventive Maintenance

The SWPPP must describe, and SRP must implement, a preventive maintenance program that includes timely inspection and maintenance of stormwater management devices (e.g., cleaning oil/water separators, catch basins). SRP shall also routinely inspect and test facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and shall ensure appropriate maintenance of such equipment and systems.

3. Spill Prevention and Response Procedures

The SWPPP must clearly identify describe areas where potential spills could contribute pollutants to stormwater discharge, and their accompanying drainage points. The SWPPP shall describe, and SRP shall implement, specific material handling procedures, storage requirements, and use of equipment such as diversion valves if applicable, to prevent spills. The SWPPP shall describe procedures for cleaning up spills, and SRP shall train appropriate SRP personnel to implement these procedures. SRP shall ensure that equipment necessary to implement a clean-up is available to SRP personnel. (Note: these training and equipment requirements do not apply to third-party spill response contractors).

4. Stormwater Inspections

a. SRP shall identify qualified facility personnel and ensure that:

- i. assess the integrity of stormwater discharge diversions, conveyance systems, sediment control and collection systems, and containment structures at least monthly and after significant storm events; visually inspect sediment and erosion BMPs to determine if soil erosion has occurred at least monthly and after significant storm events;
 - ii. visually inspect storage areas and other potential sources of pollution for evidence of actual or potential discharges of contaminated storm water at least monthly and after significant storm events;
 - iii. inspect material handling, and unloading and loading areas daily whenever loading or unloading industrial activities occur in these areas; and
 - iv. inspect processing and transport areas at least monthly to assess the effectiveness of practices to minimize drippage of treatment chemicals on unprotected soils and areas that will come in contact with stormwater discharges.
- b. Records of inspections shall be maintained onsite. SRP shall implement and maintain an effective system for recordkeeping and tracking of follow-up corrective actions needed and taken in response to inspections. Inspection and related records are subject to review by ADEQ, EPA, and state and local agencies with jurisdiction, and must be retained onsite a minimum of 3 years after the date of the inspection.

5. Employee Training

SRP shall ensure that an effective training program is developed and implemented to inform personnel responsible for stormwater management or implementing activities addressed in the SWPPP. Training shall address topics such as goals of the SWPPP, spill prevention and control, proper handling procedures for hazardous wastes, and good housekeeping and material management practices. SRP must hold this training at least annually and the training agenda and records of employee attendance must be maintained as part of the SWPPP.

6. SWPPP Recordkeeping

The permittee shall include in the SWPPP:

- a. a description of incidents (such as spills, or other discharges) that occur in areas exposed to precipitation;
- b. other information describing the quality and quantity of storm water discharges;
- c. documentation of inspections, maintenance activities, and training activities;
- d. any analytical results available that relate to stormwater discharges on-site; and

- e. other certifications or records required by Part II of this permit.

4. Non-storm Water Discharges (Other than those authorized in Part I)

1. SRP shall test or evaluate for the presence of non-stormwater discharges at the facility and shall include an annual certification in the SWPPP. The certification shall identify any potential significant sources of non-stormwater at the site; and describe the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test.
2. Except for flows from fire-fighting activities, SRP must identify and describe in the SWPPP, any sources of non-storm water that are combined with on-site stormwater. The SWPPP must ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
3. If SRP is unable to provide the certification required (testing for non-storm water discharges), SRP must notify ADEQ within 90 days of the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges; and, why adequate tests were not feasible. Non-storm water discharges to waters of the United States which are not authorized by an AZPDES permit are unlawful, and must be terminated.

5. Sediment and Erosion Control

The SWPPP shall identify specific areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion. SRP must include the following areas in the assessment: loading and unloading areas, access roads, material handling areas, storage areas, and any other areas where heavy equipment and vehicle use is prevalent. SRP shall employ effective erosion and sediment controls to minimize the discharge of sediments from the site.

6. Management of Runoff

The SWPPP shall describe stormwater management practices used to divert, infiltrate, reuse, or otherwise manage stormwater runoff in a manner that reduces pollutants in stormwater discharges from the site. Measures SRP determines to be reasonable and appropriate shall be implemented and maintained. SRP shall consider the potential for various sources at the facility to contribute pollutants when determining reasonable and appropriate measures.

7. Comprehensive Site Compliance Evaluation

Qualified personnel shall conduct comprehensive stormwater compliance evaluations at least annually that shall address the following:

1. Areas contributing to a stormwater discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented or whether additional control measures are needed. Structural stormwater management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the SWPPP shall be observed to ensure that they are operating correctly. A visual evaluation of all equipment needed to implement the plan, including spill response equipment, shall be made.
2. Based on the results of the evaluation, SRP shall revise the description of potential pollutant sources (Description of Potential Pollutant Sources) and pollution prevention measures and controls identified in the SWPPP (Measures and Controls) as appropriate within 2 weeks after the evaluation. SRP must implement any changes to the plan within 12 weeks after the evaluation.

B. STORMWATER MONITORING AND REPORTING REQUIREMENTS

1. Monitoring

The permittee is authorized to discharge from Outfall 001 as required by section Part I.A of this permit. Stormwater is commingled with combined cooling tower blowdown and low volume wastes at Outfall 001 and requires no separate stormwater discharge monitoring.

2. Quarterly Visual Examination of Stormwater Quality

SRP shall perform and document a visual examination of stormwater collected onsite prior to it commingling with industrial flows, at the storm water retention basins. Visual examination reports must be maintained on-site in the SWPPP. The report shall include the examination date and time, examination personnel, visual quality of the storm water discharge including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution, and probable sources of any observed storm water contamination. A 72-hour window (3 days) is required between measurable (discharging) storm events before another visual examination needs to be performed.

3. Annual Report

SRP shall make a report summarizing the scope of the annual site compliance evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the SWPPP, and actions taken per Part V, Section B.7.2 of the permit. The report shall be submitted to ADEQ on an annual basis and due on the anniversary of the effective date of this permit. The report shall also be retained as part of the SWPPP for at least 3 years from the date of evaluation. The report shall identify any incidents of noncompliance and recommendations for revisions of the SWPPP. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that SRP is in compliance with the SWPPP and Part V of this permit. The report shall be signed in accordance with Part 12 of the attached "Standard AZPDES Permit Conditions," dated February 3, 2004 (Signatory Requirements).

The annual report shall include a certification that the SWPPP has been reviewed, remains accurate or has been revised as necessary, and that SRP is implementing the SWPPP and the stormwater provisions required by this permit.

C. CHEMICAL ADDITIVES

1. Chemical Use

The permittee shall maintain a chemical use log at the facility of all chemical additives added to the water treatment systems and cooling tower that are eventually discharged from the facility. The chemical use log shall be made available to the Department upon request.

The log shall include a list of the chemicals used, the use of each chemical, the location of use of each chemical, and the approximate quantity of chemical used over a given time period.

The permittee shall notify ADEQ in writing of any additional new chemical additive within one business day of its use in the water treatment system or cooling tower. The notification shall include the name of the chemical additive, the reason for its use, and the approximate quantity to be used over a given time.

2. Discharge Prohibitions

1. Discharge of any product registered under the Federal Insecticide, Fungicide and Rodenticide Act to any waste stream which may ultimately be released to lakes, rivers, streams or other waters of the United States is prohibited unless specifically authorized elsewhere in this permit.
2. Discharge of any waste resulting from the combustion of toxic or hazardous wastes to any waste stream which ultimately discharges to waters of the United States is prohibited, unless specifically authorized elsewhere in this permit.

3. Microbiological Control

WET testing is not applicable for this permit.

4. Reporting

By January 31st of each year, the permittee shall submit to ADEQ, an annual summary of the quantities of all chemicals, listed by both chemical and trade names, which have been used for cooling, water treatment, descaling and/or microbiological control at the facility in the past calendar year. The annual summary shall include an evaluation of what measures the permittee has taken to ensure that the 126 priority pollutants (except for chromium and zinc) are not present in the discharge, in accordance with Part I.G.

D. REOPENER

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

APPENDIX A PART A: ACRONYMS

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

APPENDIX A PART B: DEFINITIONS

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

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

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

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

AMMONIA IMPACT RATIO (AIR) is the ratio of the concentration of ammonia in the effluent and the calculated ammonia standard as determined by the use of effluent/receiving water pH and temperature.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

HARDNESS means the sum of the calcium and magnesium concentrations, expressed as calcium carbonate ($CaCO_3$) in milligrams per liter.

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

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

- Alternative hypothesis (H_a): The effluent is toxic.

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

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

LAND TREATMENT FACILITY means an operation designed to treat and improve the quality of waste, wastewater, or both, by placement wholly or in part on the land surface to perform part or all of the treatment. A land treatment facility includes a facility that performs biosolids drying, processing, or composting, but not land application performed in compliance with 18 A.A.C. 9, Article 10.

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

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

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

METHOD DETECTION LIMIT (MDL) - See LOD.

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

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

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

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

PATHOGEN means a disease-causing organism.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX B

AZPDES Discharge Flow Record		
SRP Agua Fria Generating Station - AZ0023531		
Discharge to SRP's Irrigation Lateral 20 in the Middle Gila River Basin At:		
Outfall No.:001		
Location:33°133' 17.5" N, 112°13' 10.4" W		
Month:		Year:
DATE	Flow Duration ⁽¹⁾ (Total hours per day)	Flow Rate ⁽²⁾ (Total MGD per day)
1		
2		
3		
4		
5		
6		
7		
8		

9		
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30		
31		

Comment:

footnotes:

- (1) Total time of discharge in hours per day. If actual time is not available, use an estimate of flow duration.
- (2) Report flow discharged in MGD. If no discharge occurs on any given day, report 'ND' for the flow for that day