

**STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-105922
PLACE ID 128761, LTF 45191**

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2, and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A.A.C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, Global Water – Palo Verde Utilities Co. (PVUC) , is hereby authorized to operate the Palo Verde Utilities Campus Area Recharge Facility which will involve several facilities owned by PVUC located in the City of Maricopa, Arizona, in Pinal County, Arizona, over groundwater of the Phoenix Active Management Area in Township 04 S, Range 03E, Section 13, 14, 22, 26, and 27, of the Gila and Salt River Base Line and Meridian.

This permit becomes effective on the date of the Water Quality Division Director's signature and shall be valid for the life of the facility (operational, closure, and post-closure periods) unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate and maintain the permitted facilities:

1. Following all the conditions of this permit including the design and operational information documented or referenced below, and
2. Such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant and as determined at the applicable POC occurs as a result of the discharge from the facility.

1.1 PERMITTEE INFORMATION

Facility Name: Palo Verde Utilities Company Campus 1 Area Recharge Facility
Facility Address: Several facilities owned by PVUC located in the City of Maricopa, Arizona, in Pinal County, Arizona, over groundwater of the Phoenix Active Management Area in Township 04 S, Range 03E, Sections 13, 14, 22, 26, and 27, of the Gila and Salt River Base Line and Meridian.
County: Pinal
Permittee: Global Water – Palo Verde Utilities Company
Permittee Address: 21410 North 19th Avenue, Suite 201
Phoenix, Arizona 85027
Facility Contact: Graham Symmonds, Professional Engineer
Emergency Phone No.: (623) 580-9600, ext. 106
Latitude/Longitude: 33°05' 08.12" N/ 112°00' 38.44" W
Legal Description: Township 04 S, Range 03E, Sections 13, 14, 22, 26, and 27, of the Gila and Salt River Base Line and Meridian in Pinal County, Arizona.

1.2 AUTHORIZING SIGNATURE

Joan Card, Director
Water Quality Division
Arizona Department of Environmental Quality

Signed this _____, day of _____, 2009

THIS PERMIT SUPERCEDES ALL PREVIOUS PERMITS

2.0 SPECIFIC CONDITIONS [A.R.S. §§ 49-203(4), 49-241(A)]**2.1 Facility / Site Description [A.R.S. § 49-243(K)(8)]**

The Global Water – Palo Verde Utilities Company (PVUC) Campus 1 Area Recharge Facility is authorized to discharge to the subsurface up to a total maximum average monthly flow of 6,844 acre-feet per year, equivalent to a monthly average flow of 6.11 million gallons per day (mgd), of tertiary treated denitrified effluent from the Palo Verde Utilities Company (PVUC) Wastewater Reclamation Facility (WRF). The PVUC WRF is regulated under Aquifer Protection Permit (APP) No P-105228 and AZPDES permit AZ0025071. The tertiary treated effluent shall be discharged to Aquifer Storage and Recovery (ASR) wells within a twenty four square mile area called “Campus 1 Area” consisting of five recharge sites located within three Discharge Impact Areas (DIA) of approximately 2 mgd each.

The Campus 1 Area extends throughout the City of Maricopa, and includes the following five recharge sites: Campus 1 recharge WRF site; Maricopa Groves Water Treatment Plant; Rancho El Dorado Water Distribution Center; Villages Lift Station; and Maricopa Grove Well Site. The Campus 1 Area extends approximately 2 miles to the west, south and east of the five sites and is bounded to the southwest by the Ak Chin Indian Community and to the north by the Gila River Indian Community.

The effluent shall flow through a 24 inch diameter pipeline, to a network of up to eighteen aquifer storage and recovery (ASR) wells located at the five recharge sites. The water quality samples shall be obtained at the discharge sample point for the PVUC Water Reclamation Facility APP #105228. Operation of the effluent pipeline is exempt from APP by A.R.S. §49-250(B)(22). There are five inflow points where the pipeline enters the five ASR well sites. Discharge quality samples may be obtained at the inflow point if necessary, or as part of a contingency action. Volume of water discharged will be measured at the inflow points. Proper operation and maintenance of the pipeline should prevent the water quality from changing during transmission to the ASR wells.

There are three ASR well sites designated as “preferred” and two as “contingency” recharge sites. The preferred sites are Campus 1 recharge site (in the setback areas of P-105228), Maricopa Groves recharge site WRF, and Rancho El Dorado WDC recharge site. The contingency sites are Villages Lift Station recharge site and Maricopa Groves Well Site. The ASR wells shall be installed at the three preferred sites in the following order: up to six ASR wells in the set back of the Campus 1 WRF, up to five ASR wells at the Maricopa Groves WTP, up to five ASR wells at Rancho El Dorado WDC, one ASR well at Villages Lift Station and one ASR well Maricopa Groves Well Site recharge site.

The depth to groundwater ranges from approximately 75 to 150 feet below land surface and the direction of groundwater flow is toward the northwest.

The site includes the following permitted ASR well sites:

Facility	Latitude	Longitude	Type of Site
Campus 1 recharge WRF site	33°05'13.18" N	112°00'44.51" W	Preferred site
Maricopa Groves WTP recharge site	32°59'40" N	111°36'08" W	Preferred site
Rancho El Dorado WDC recharge site	33°04'21.64" N	112°01'33.80" W	Preferred site
Villages Lift Station recharge site	33°04'19.71" N	112°01'54.65" W	Contingency site
Maricopa Groves Well Site recharge site	33°02'47.36" N	112°01'50.91" W	Contingency site

Annual Registration Fee [A.R.S. § 49-242]

The Annual Registration Fee for this permit is established by A.R.S. § 49-242(E) and is payable to the Arizona Department of Environmental Quality (ADEQ) each year. The design flow is 6.11 million gallons per day.

Financial Capability [A.R.S. § 49-243(N) and A.A.C. R18-9-A203]

The permittee has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee shall maintain financial capability throughout the life of the facility. The dollar amount demonstrated for closure and post closure cost estimates is \$261,600.00. The financial capability was demonstrated through R18-9-A203.

2.2 Best Available Demonstrated Control Technology [A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

Not applicable as per A.A.C. R18-9-A201(C).

2.2.1 Engineering Design

Not Applicable.

2.2.2 Site-specific Characteristics

Not Applicable.

2.2.3 Pre-operational Requirements

Not Applicable.

2.2.4 Operational Requirements

1. The permittee shall maintain a copy of the new Operation and Maintenance (O & M) Manual at the ASR well sites at all times and shall be available upon request during inspections by ADEQ personnel.
2. The pollution control structures shall be inspected for the items listed in Section 4.2, Table III - FACILITY INSPECTION (OPERATIONAL MONITORING).
3. If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and material(s) used shall be documented on the Self-Monitoring Report Form (SMRF) submitted quarterly to the ADEQ Water Quality Compliance Section, Data Unit (see Section 2.7.5).

2.3 Discharge Limitations [A.R.S. §§ 49-201(14), 49-243 and A.A.C. R18-9-A205(B)]

1. The permittee is authorized to operate the facility with a maximum average monthly flow of 6.11 mgd.
2. Specific discharge limitations are listed in Section 4.2, Tables IA through IF.

2.4 Point of Compliance (POC) [A.R.S. § 49-244]

The Points of Compliance (POCs) are designated at the following locations:

Sampling Point	POC Identification	Latitude	Longitude
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7	POC 1 (55-907127) North edge of the WRF setbacks of P-105228	33°05'11.44"	112°00'45.67"
8	POC 2 (55-205362) Western edge of the Maricopa Groves WTP recharge site	33°02'40.56"	112°01'46.05"
9	POC 3 (Proposed) 750 feet Northwest of the Rancho El Dorado WDC recharge site	33°04'30.36"	112°01'51.05"
10	POC 4 (Proposed) Northwest corner of the Villages Lift Station recharge site	33°04'19.70"	112°01'54.87"
11	POC 5 (Proposed) South edge of the Maricopa Groves Well Site recharge site.	33°02'46.90"	112°01'50.91"

Groundwater monitoring is required as specified in Section 4.2, Tables IIA and IIB. Groundwater recharge mound monitoring is required as specified in Section 4.2 Table IIC.

The Director may amend this permit to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.

2.5 Monitoring Requirements [A.R.S. § 49-243(K)(1), A.A.C. R18-9-A206(A)]

All monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. All sampling, preservation and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained, and Chain-of-Custody procedures shall be followed, in accordance with currently accepted standards of professional practice. The permittee shall consult the most recent version of the ADEQ Quality Assurance Project Plan (QAPP) and Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) PART 136 for guidance in this regard. Copies of laboratory analyses and Chain-of-Custody forms shall be maintained at the permitted facility. Upon request these documents shall be made immediately available for review by ADEQ personnel.

2.5.1 Pre-Operational Monitoring

Ambient groundwater monitoring of AL's and DL's shall be performed for each ASR site prior to discharge at each ASR site as required by section 3.

2.5.2 Discharge Monitoring

The permittee shall monitor the effluent according to Section 4.2, Table IA, IB, IC, ID, IE, and IF. The effluent shall be monitored only for flow. The flow shall be monitored at the flow meter located at the inflow points to the ASR well sites. The permittee shall monitor according to Section 4.2, Table IA through IF. Effluent quality monitoring shall be conducted under the Palo Verde Utilities Company (PVUC) Wastewater Reclamation Facility (WRF) (P-105228) and shall be reported in Table IA.

2.5.4 Groundwater Monitoring and Sampling Protocols

The permittee shall monitor the groundwater quality according to Section 4.2, Table IIA, and IIB. The permittee shall monitor the depth to the top of the recharge mound according to Section 4.2, Table IIC.

Static water elevations shall be measured and recorded prior to sampling. Pump intake elevations shall be noted and recorded. Wells shall be purged of at least three borehole volumes (as calculated using the static water level) or until field parameters (pH, temperature, conductivity) are stable,

whichever represents the greater volume. If evacuation results in the well going dry, the well shall be allowed to recover to 80 percent (%) of the original borehole volume, or for 24 hours, whichever is shorter, prior to sampling. If after 24 hours there is not sufficient water for sampling, the well shall be recorded as “dry” for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures shall be reported and submitted with the SMRF.

2.5.4.1 POC Well Replacement

In the event that one or more of the designated POC wells should become unusable or inaccessible due to damage, insufficient water in the well(s) for more than two (2) sampling events, or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is fifty feet or less from the original well, the alert levels (ALs) and aquifer quality limits (AQLs) established for the previously designated POC well shall apply to the replacement well.

2.5.4.2 Ambient Groundwater Monitoring

Ambient groundwater monitoring shall be conducted at the POC wells in accordance with this permit. Ambient groundwater monitoring shall be performed to establish background water quality in the aquifer at the downgradient edge(s) of the PMA(s). Monthly ambient groundwater sampling shall be conducted with samples collected from the five POC wells for a total of 8 to 12 months in accordance with Table IIA in Section 4.0 of the permit. Ambient Groundwater Monitoring Report shall be submitted to ADEQ in accordance with Section 3.0 of this permit.

2.5.5 Surface Water Monitoring and Sampling Protocols

Routine surface water monitoring is not required under the terms of this permit.

2.5.6 Facility / Operational Monitoring

Operational monitoring inspections shall be conducted according to Section 4.2, Table III.

1. If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and materials used shall be documented on the SMRF submitted quarterly to the ADEQ Water Quality Compliance Section, Data Unit. If none of the conditions occur, the report shall say “no event” for a particular reporting period. If the facility is not in operation, the permittee shall indicate this on the SMRF.
2. The permittee shall submit data required in Section 4.2, Table III regardless of the operating status of the facility unless otherwise approved by the Department or allowed in this permit.

2.5.7 Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state approved methods. If no state approved method exists, then any appropriate EPA-approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods. A list of Arizona state certified laboratories can be obtained at the address below:

Arizona Department of Health Services
Office of Laboratory Licensure and Certification
250 North 17th Ave.
Phoenix, AZ 85007

Phone: (602) 364-0720

2.5.8 Installation and Maintenance of Monitoring Equipment

Monitoring equipment required by this permit shall be installed and maintained so that representative samples required by the permit can be collected. If new groundwater wells are determined to be necessary, the construction details shall be submitted to the ADEQ Groundwater Section for approval prior to installation and the permit shall be amended to include any new monitoring points.

2.6 Contingency Plan Requirements

[A.R.S. § 49-243(K)(3), (K)(7) and A.A.C. R18-9-A204 and R18-9-A205]

2.6.1 General Contingency Plan Requirements

At least one copy of the approved contingency and emergency response plan(s) submitted in the application shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall be aware of and follow the contingency and emergency plans.

Any AL exceedance, or violation of an AQL, discharge limits (DL), or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3.

In the event of the Alert level (s) in Table II-C are exceeded, stop discharge and notify ADEQ Water Quality Compliance Section (by phone or fax, see Section 2.7.5) within five days of becoming aware of the exceedance.

Some contingency actions involve verification sampling. Verification sampling shall consist of the first follow-up sample collected from a location that previously indicated a violation or the exceedance of an AL. Collection and analysis of the verification sample shall use the same protocols and test methods to analyze for the pollutant or pollutants that exceeded an AL or violated an AQL or DL. The permittee is subject to enforcement action for the failure to comply with any contingency actions in this permit. Where verification sampling is specified in this permit, it is the option of the permittee to perform such sampling. If verification sampling is not conducted within the timeframe allotted, ADEQ and the permittee shall presume the initial sampling result to be confirmed as if verification sampling has been conducted. The permittee is responsible for compliance with contingency plans relating to the exceedance of an AL or violation of a DL, AQL or any other permit condition.

2.6.2 Exceeding of Alert Levels/Performance Levels

2.6.2.1 Exceeding of Performance Levels Set for Operational Conditions

1. If an operational performance level (PL) set in Section 4.2, Table III has been exceeded the permittee shall:
 - a. Notify the ADEQ Water Quality Compliance Section (by phone or fax, see Section 2.7.5) within five days of becoming aware of the exceedance.
 - b. Submit a written report to the ADEQ Water Quality Compliance Section within 30 days after becoming aware of the exceedance. The report shall document all of the following:
 - (1) A description of the exceedance and its cause;
 - (2) The period of the exceedance, including exact date(s) and time(s), if known,

and the anticipated time period during which the exceedance is expected to continue;

- (3) Any action taken or planned to mitigate the effects of the exceedance or spill, or to eliminate or prevent recurrence of the exceedance or spill;
 - (4) Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an AWQS; and
 - (5) Any malfunction or failure of pollution control devices or other equipment or process.
2. The facility is no longer on alert status once the operational indicator no longer indicates that a PL is being exceeded. The permittee shall, however, complete all tasks necessary to return the facility to its pre-alert operating condition.

2.6.2.2 Exceeding of Alert Levels (ALs) Set for Discharge Monitoring

1. If an AL set in Section 4.2, Table IA has been exceeded, the permittee shall immediately investigate to determine the cause. The investigation shall include the following:
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the exceedance;
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences; and
 - c. If the investigation procedures indicated in (a) and (b) above fail to reveal the cause of the exceedance, the permittee shall sample individual waste streams composing the wastewater for the parameter(s) in question, if necessary to identify the cause of the exceedance.
2. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to the AL exceedance. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6.
3. Within thirty days of an AL exceedance, the permittee shall submit the laboratory results to the ADEQ Water Quality Compliance Section along with a summary of the findings of the investigation, the cause of the exceedance, and actions taken to resolve the problem.
4. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

2.6.2.2.1. Exceeding Permit Flow Limit

1. If the AL for average monthly flow in Section 4.2, Table IA is exceeded, the permittee shall submit an application to ADEQ for an APP amendment to expand the WRP or submit a report detailing the reasons an expansion is not necessary.
2. Acceptance of the report instead of an application for expansion requires ADEQ approval.

2.6.2.3 Exceeding of Alert Levels in Groundwater Monitoring**2.6.2.3.1 Alert Levels for Indicator Parameters**

No ALs were established for indicator parameters for cations and anions. Monitoring is for informational purposes only.

2.6.2.3.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

1. In the case of an exceedance of an AL for a pollutant set in Section 4.2, Table II, the permittee may conduct verification sampling within five days of becoming aware of the exceedance. The permittee may use

results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.

2. If verification sampling confirms the AL exceedance or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring for the pollutants set in Section 4.2, Table II as follows:

Specified Monitoring Frequency (Section 4.2, Table II)	Monitoring Frequency for AL Exceedance
Daily	Daily
Weekly	Daily
Monthly	Weekly
Quarterly	Monthly
Semi-annually	Quarterly
Annually	Quarterly

In addition, the permittee shall immediately initiate an investigation of the cause of the AL exceedance, including inspection of all discharging units and all related pollution control devices, review of any operational and maintenance practices that might have resulted in an unexpected discharge, and hydrologic review of groundwater conditions including upgradient water quality.

3. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to an AL exceedance. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Groundwater Section, that although an AL has been exceeded, pollutants are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency for approval in writing by the Groundwater Section.
4. Within 30 days after confirmation of an AL exceedance, the permittee shall submit the laboratory results to the Water Quality Compliance Section along with a summary of the findings of the investigation, the cause of the exceedance, and actions taken to resolve the problem.

5. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.
6. The increased monitoring required as a result of an AL exceedance may be reduced to the monitoring frequency in Section 4.2, Table IIA through IIG if the results of four sequential sampling events demonstrate that no parameters exceed the AL.
7. If the increased monitoring required as a result of an AL exceedance continues for more than six sequential sampling events, the permittee shall submit a second report documenting an investigation of the continued AL exceedance within 30 days of the receipt of laboratory results of the sixth sampling event.

2.6.2.3.3 Alert Levels to Protect Downgradient Users from Pollutants without Numeric Aquifer Water Quality Standards

Not required at time of issuance.

2.6.2.3.4. Alert Level for top of mound

Each ASR site shall have a well to monitor the top of the recharge mound(s). 55-902899 is the alert level well for the ASR site with a limit of not less than 45 feet.

2.6.3 Discharge Limit Violation

1. If a DL set in Section 4.2, Tables IA through IF has been violated, the permittee shall immediately investigate to determine the cause. The investigation shall include the following:
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the violation;
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences;
 - c. If the investigation procedures indicated in (a) and (b) above fail to reveal the cause of the violation, the permittee shall sample individual waste streams composing the wastewater for the parameters in violation, if necessary to identify the cause of the violation.

The permittee shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. The permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ approved contingency plan, or separately approved according to Section 2.6.6.

2. The permittee shall comply with the flow monitoring requirements not to exceed per Section 4.2, Tables IA through IF.
3. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.

2.6.4 Aquifer Quality Limit Violation

1. If an AQL set in Section 4.2, Table IIA and IIB, has been exceeded, the permittee may conduct verification sampling within five days of becoming aware of the exceedance. The permittee may use results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If verification sampling confirms that an AQL was violated for any parameter or if the permittee opts not to perform verification sampling, then, the permittee shall increase the frequency of monitoring as follows:

Specified Monitoring Frequency (Section 4.2, Table II)	Monitoring Frequency for AQL Exceedance
Daily	Daily
Weekly	Daily
Monthly	Weekly
Quarterly	Monthly
Semi-annually	Quarterly
Annually	Quarterly

In addition, the permittee shall immediately initiate an evaluation for the cause of the violation, including inspection of all discharging units and all related pollution control devices, and review of any operational and maintenance practices that might have resulted in unexpected discharge.

The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. A verified exceedance of an AQL will be considered a violation unless the permittee demonstrates within 30 days that the exceedance was not caused or contributed to by pollutants discharged from the facility. Unless the permittee has demonstrated that the exceedance was not caused or contributed to by pollutants discharged from the facility, the permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water, or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ approved contingency plan, or separately approved according to Section 2.6.6.

3. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

2.6.5 Emergency Response and Contingency Requirements for Unauthorized Discharges pursuant to A.R.S. § 49-201(12) and pursuant to A.R.S. § 49-241

2.6.5.1 Duty to Respond

The permittee shall act immediately to correct any condition resulting from a discharge pursuant to A.R.S. § 49-201(12) if that condition could pose an imminent and substantial endangerment to public health or the environment.

2.6.5.2 Discharge of Hazardous Substances or Toxic Pollutants

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of suspected hazardous substances (A.R.S. § 49-201(19)) or toxic pollutants (A.R.S. § 49-243(I)) on

the facility site, the permittee shall promptly isolate the area and attempt to identify the discharged material. The permittee shall record information, including name, nature of exposure and follow-up medical treatment, if necessary, on persons who may have been exposed during the incident. The permittee shall notify the ADEQ Southern Regional Office at (520) 628-6724, and the ADEQ Water Quality Compliance Section at (602) 771-4497 within 24 hours of discovering the discharge of hazardous material which: a) has the potential to cause an AWQS or AQL exceedance; or b) could pose an endangerment to public health or the environment.

2.6.5.3 Discharge of Non-hazardous Materials

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of non-hazardous materials from the facility, the permittee shall promptly attempt to cease the discharge and isolate the discharged material. Discharged material shall be removed and the site cleaned up as soon as possible. The permittee shall notify the ADEQ Southern Regional Office at (520) 628-6724, and the ADEQ Water Quality Compliance Section at (602) 771-4497, within 24 hours of discovering the discharge of non-hazardous material which: a) has the potential to cause an AQL exceedance; or b) could pose an endangerment to public health or the environment.

2.6.5.4 Reporting Requirements

The permittee shall submit a written report for any unauthorized discharges reported under Sections 2.6.5.2 and 2.6.5.3 to the ADEQ Southern Regional Office and the ADEQ Water Quality Compliance Section within 30 days of the discharge or as required by subsequent ADEQ action. The report shall summarize the event, including any human exposure, and facility response activities and include all information specified in Section 2.7.3. If a notice is issued by ADEQ subsequent to the discharge notification, any additional information requested in the notice shall also be submitted within the time frame specified in the notice. Upon review of the submitted report, ADEQ may require additional monitoring or corrective actions.

2.6.6 Corrective Actions

Specific contingency measures identified in Section 2.6 have already been approved by ADEQ and do not require written approval to implement.

With the exception of emergency response actions taken under Section 2.6.5, the permittee shall obtain written approval from the Groundwater Section prior to implementing a corrective action to accomplish any of the following goals in response to an AL exceedance, or violation of an AQL, DL, or other permit condition:

1. Control of the source of an unauthorized discharge;
2. Soil cleanup;
3. Cleanup of affected surface waters;
4. Cleanup of affected parts of the aquifer; and/or
5. Mitigation to limit the impact of pollutants on existing uses of the aquifer.

Within 30 days of completion of any corrective action, the operator shall submit to the ADEQ Water Quality Compliance Section (see Section 2.7.5), a written report describing the causes, impacts, and actions taken to resolve the problem.

2.7 Reporting and Recordkeeping Requirements

[A.R.S. § 49-243(K)(2) and A.A.C. R18-9-A206(B) and R18-9-A207]

2.7.1 Self-Monitoring Report Form

1. The permittee shall complete the SMRF provided by ADEQ. The completed SMRF shall be submitted to the Water Quality Compliance Section, Data Unit.
2. The permittee shall complete the SMRF to the extent that the information reported may be entered on the form. If no information is required during a quarter, the permittee shall enter "not required" on the SMRF and submit the report to ADEQ. The permittee shall use the format devised by ADEQ.
3. The tables contained in Section 4.0 list the parameters to be monitored and the frequency for reporting results for compliance monitoring. Monitoring and analytical methods shall be recorded on the SMRF. The permittee reserves the right to request a relaxation of the monitoring frequency for metals and volatile organic compounds through a permit amendment if the data indicate that water quality standards are being achieved consistently.
4. In addition to the SMRF, the information contained in A.A.C. R18-9-A206(B)(1) shall be included for an AL exceedance, or violation of an AQL, DL, or any other permit condition being reported in the current reporting period.

2.7.2 Operation Inspection / Log Book Recordkeeping

A signed copy of this permit shall be maintained at all times at the location where day-to-day decisions regarding the operation of the facility are made. A log book (paper copies, forms, or electronic data) of the inspections and measurements required by this permit shall be maintained at the location where day-to-day decisions are made regarding the operation of the facility. The log book shall be retained for ten years from the date of each inspection, and upon request, the permit and the log book shall be made immediately available for review by ADEQ personnel. The information in the log book shall include, but not be limited to, the following information as applicable:

1. Name of inspector;
2. Date and shift inspection was conducted;
3. Condition of applicable facility components;
4. Any damage or malfunction, and the date and time any repairs were performed;
5. Documentation of sampling date and time; and
6. Any other information required by this permit to be entered in the log book.

Monitoring records for each measurement shall comply with R18-9-A206(B)(2).

2.7.3 Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the Water Quality Compliance Section (see Section 2.7.5) in writing within five days (except as provided in Section 2.6.5) of becoming aware of a an AL exceedance, or violation of any permit condition, AQL, or DL.
2. The permittee shall submit a written report to the Water Quality Compliance Section within 30 days of becoming aware of the violation of any permit condition, AQL, or DL. The report shall document all of the following:
 - a. Identification and description of the permit condition for which there has been a violation and a description of the cause;
 - b. The period of violation including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue;
 - c. Any corrective action taken or planned to mitigate the effects of the violation, or to eliminate or prevent a recurrence of the violation;

- d. Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an AWQS;
- e. Proposed changes to the monitoring which include changes in constituents or increased frequency of monitoring; and
- f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4 Operational, Other or Miscellaneous Reporting

The permittee shall complete the SMRF provided by the Department to reflect facility inspection requirements designated in Section 4.2, Table III and submit to the ADEQ Water Quality Compliance Section, Data Unit (see Section 2.7.5) quarterly along with other reports required by this permit. Facility inspection reports shall be submitted no less frequently than quarterly, regardless of operational status.

If the treatment facility is classified for reclaimed water under this permit, the permittee shall submit the reclaimed water monitoring results and flow volumes to any of the following in accordance with A.A.C. R18-9-703(C)(2)(c):

1. Any reclaimed water agent who has contracted for delivery of reclaimed water from the permittee; and
2. Any end user who has not waived interest in receiving this information.

2.7.5 Reporting Location

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality
Water Quality Compliance Section, Data Unit
Mail Code: 5415B-1
1110 West Washington Street
Phoenix, Arizona 85007
Phone (602) 771-4681

All documents required by this permit to be submitted to the Water Quality Compliance Section shall be directed to both of the following addresses:

Arizona Department of Environmental Quality
Water Quality Compliance Section
Mail Code: 5415B-1
1110 West Washington Street
Phoenix, Arizona 85007
Phone (602) 771-4497
Fax (602) 771-4505

All documents required by this permit to be submitted to the Groundwater Section shall be directed to:

Arizona Department of Environmental Quality
Groundwater Section
Mail Code: 5415B-3
1110 West Washington Street
Phoenix, Arizona 85007
Phone (602) 771-4428

2.7.6 Reporting Deadline

The following table lists the quarterly report due dates:

Monitoring conducted during quarter:	Quarterly Report due by:
January-March	April 30
April-June	July 30
July-September	October 30
October-December	January 30

The following table lists the semi-annual and annual report due dates:

Monitoring conducted:	Report due by:
Semi-annual: January-June	July 30
Semi-annual: July-December	January 30
Annual: January-December	January 30

2.7.7 Changes to Facility Information in Section 1.0

The Groundwater Section and Water Quality Compliance Section shall be notified (see Section 2.7.5) within ten days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person, or Emergency Telephone Number.

2.8 Temporary Cessation [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A209(A)]

The permittee shall give written notice to the Water Quality Compliance Section and the Southern Regional Office before ceasing operation of the facility for a period of 60 days or greater. The permittee shall take the following measures upon temporary cessation:

1. If applicable, direct the wastewater flows from the facility to another state-approved wastewater treatment facility;
2. Correct the problem that caused the temporary cessation of the facility; and
3. Notify ADEQ with a monthly facility status report describing the activities conducted on the treatment facility to correct the problem.

At the time of notification the permittee shall submit for ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Immediately following ADEQ approval, the permittee shall implement the approved plan. If necessary, ADEQ shall amend permit conditions to incorporate conditions to address temporary cessation. During the period of temporary cessation, the permittee shall provide written notice to the Water Quality Compliance Section and the Southern Regional Office of the operational status of the facility every three years. If the permittee intends to permanently cease operation of any facility, the permittee shall submit closure notification, as set forth in Section 2.9 below.

2.9 Closure [A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9-A209(B)]

For a facility addressed under this permit, the permittee shall give written notice of closure to the Water Quality Compliance Section and the Southern Regional Office of the intent to cease operation without resuming activity for which the facility was designed or operated.

2.9.1 Closure Plan

Within 90 days following notification of closure, the permittee shall submit for approval to the Groundwater Section, a closure plan which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3).

If the closure plan achieves clean closure immediately, ADEQ shall issue a letter of approval to the permittee. If the closure plan contains a schedule for bringing the facility to a clean closure configuration at a future date, ADEQ may incorporate any part of the schedule as an amendment to this permit.

2.9.2 Closure Completion

Upon completion of closure activities, the permittee shall give written notice to the Groundwater Section indicating that the approved closure plan has been implemented fully and providing supporting documentation to demonstrate that clean closure has been achieved (soil sample results, verification sampling results, groundwater data, as applicable). If clean closure has been achieved, ADEQ shall issue a letter of approval to the permittee at that time. If any of the following conditions apply, the permittee shall follow the terms of post-closure stated in this permit:

1. Clean-closure cannot be achieved at the time of closure notification or within one year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with the AWQS at the applicable POC;
3. Continued action is required to verify that the closure design has eliminated discharge to the extent intended;
4. Remedial or mitigation measures are necessary to achieve compliance with Title 49, Ch. 2; and
5. Further action is necessary to meet property use restrictions.

2.10 Post-closure [A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9 A209(C)]

Post-closure requirements shall be established based on a review of facility closure actions and will be subject to review and approval by the Groundwater Section.

In the event clean closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Section a post-closure plan that addresses post-closure maintenance and monitoring actions at the facility. The post-closure plan shall meet all requirements of A.R.S. §§ 49-201(30) and 49-252 and A.A.C. R18-9-A209(C). Upon approval of the post-closure plan, this permit shall be amended or a new permit shall be issued to incorporate all post-closure controls and monitoring activities of the post-closure plan.

2.10.1 Post-Closure Plan

A specific post-closure plan may be required upon the review of the closure plan.

2.10.2 Post-Closure Completion

Not required at the time of permit issuance.

3.0 COMPLIANCE SCHEDULE [A.R.S. § 49-243(K)(5) and A.A.C. R18-9-A208]

For each compliance schedule item listed below, the permittee shall submit the required information, including a cover letter that lists the compliance schedule items, to the Groundwater Section. A copy of the cover letter must also be submitted to the ADEQ Water Quality Compliance Section.

Description	Due by:
1. The permittee shall submit an Ambient Groundwater Monitoring Report per R18-9-A202 (A) (6) for POC – 1 (ADWR Well 55-907127) proposing ALs and AQLs per Section 4.0, Table IIA. POC- 1 is located within the setbacks of the PVUC WRF (P-105228). ¹	12 months from permit issuance.
2. Ambient groundwater monitoring shall be required at the three ASR well sites: Rancho El Dorado WDC, Villages Lift Station and Maricopa Groves Well Site. (POC #3, POC #4 and POC#5)	24 months prior to discharge.
3. Propose location and Install alert level wells at the remaining five ASR sites to monitor the top of the mound(s).	Within 8 months prior to discharge at each site.
4. Propose alert levels for depth to water in alert level wells.	Within 7 months prior to discharge at each site.
5. POC #3	
Install a groundwater monitor well at POC#3	Within 30 days of approval from ADEQ.
Submit a Well Installation Report to the Groundwater Section	Within 15 days after installation of the monitoring well at POC #3.
Ambient groundwater monitoring shall be required at the ASR well site(s)	24 months prior to discharge.
Begin collecting eight (8) monthly rounds of ambient groundwater monitoring for the parameters listed in Section 4.0, Table IIA	Within 15 days after installation of the monitoring well POC #3.
Submit an APP amendment application to the Groundwater Section, including an Ambient Groundwater Monitoring Report summarizing the results of all eight (8) rounds of monitoring at POC #3. The APP amendment application shall include proposed ALs, AQLs, sampling and reporting frequencies for routine groundwater monitoring at POC #3.	Prior to discharge to the site.

¹ POC-1 has been drilled but no groundwater data has been submitted. POC-2 has been drilled and based on the data submitted ALs and AQLs have been set as indicated in Table IIB.

6. POC #4	
Install a groundwater monitor well at POC#4	25 months prior to discharge
Submit a Well Installation Report to the Groundwater Section	Within 15 days after installation of the monitoring well at POC #4.
Ambient groundwater monitoring shall be required at the ASR well site(s)	24 months prior to discharge
Begin collecting eight (8) monthly rounds of ambient groundwater monitoring for the parameters listed in Section 4.0, Table IIA	Within 15 days after installation of the monitoring well at POC #4.
Submit an APP Other amendment application to the Groundwater Section, including an Ambient Groundwater Monitoring Report summarizing the results of all eight (8) rounds of monitoring at POC #4. The APP amendment application shall include proposed ALs, AQLs, sampling and reporting frequencies for routine groundwater monitoring at POC #4.	Prior to discharge to the site.
7. POC #5	
Install a groundwater monitor well at POC#5	25 months prior to discharge
Submit a Well Installation Report to the Groundwater Section	Within 15 days after installation of the monitoring well at POC #5.
Ambient groundwater monitoring shall be required at the ASR well site(s)	24 months prior to discharge
Begin collecting eight (8) monthly rounds of ambient groundwater monitoring for the parameters listed in Section 4.0, Table IIA	Within 15 days after installation of the monitoring well at POC #5.
Submit an APP Other amendment application to the Groundwater Section, including an Ambient Groundwater Monitoring Report summarizing the results of all eight (8) rounds of monitoring at POC #5. The APP amendment application shall include proposed ALs, AQLs, sampling and reporting frequencies for routine groundwater monitoring at POC #5.	Prior to discharge to the site.
8. Notify ADEQ within 15 days of the cessation of discharges to the ASR wells.	Within 15 days of the date of the cessation of discharges to the recharge basins.

4.0 TABLES OF MONITORING REQUIREMENTS

4.1 PRE-OPERATIONAL MONITORING (OR CONSTRUCTION REQUIREMENTS)

**TABLE I
INITIAL START-UP PLAN²**

Not applicable at permit issuance

DRAFT

² Monitoring under this table shall continue until permittee ceases to vault and haul and initiates routine monitoring under Section 4.2, Table IA.

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IA³
ROUTINE DISCHARGE MONITORING

Sampling Point Number	Sampling Point Identification		Latitude	Longitude	
1	Effluent pump station of P-105228		33° 05' 13.18" N	112° 00' 44.51" W	
Parameter	AL ⁴	DL ⁵	Units	Sampling Frequency	Reporting Frequency
Flow: Daily	6.11	6.11	mgd	Daily ⁶	Quarterly
Flow: Average Monthly	5.70	6.0	mgd	Monthly ⁷	Quarterly
<i>E. coli</i> : Single sample maximum	Not Established	15	CFU or MPN ⁸	Monthly	Quarterly
<i>E. coli</i> : four (4) of seven (7) samples in a week ⁹	Not Established	Non-detect	CFU or MPN	Monthly	Quarterly
Total Nitrogen ¹⁰ : 5- sampling rolling geometric mean.	8.0	10.0	mg/l	Monthly ¹¹	Quarterly

³ This Table is for monitoring the effluent quality being received at the five recharge sites.

⁴ AL = Alert Level.

⁵ DL = Discharge Limit.

⁶ Flow shall be measured using a continuous recording flow meter.

⁷ Monthly = Calculated value = Average of daily flows in a month.

⁸ CFU = Colony Forming Units / 100 ml sample. MPN = Most Probable Number / 100 ml sample. For CFU, a value of <1 shall be considered to be non-detect. For MPN, a value of <2.2 shall be considered to be non-detect.

⁹ "Week" means a seven (7) calendar days from Sunday through Saturday.

¹⁰ Total Nitrogen = Nitrate as N + Nitrite as N + Total Kjeldahl Nitrogen.

¹¹ A 5-Month Geometric Mean of the results of the 5 most recent samples.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE IA
ROUTINE DISCHARGE MONITORING (Continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Metals (Total):					
Antimony	0.0048	0.006	mg/l	Quarterly	Quarterly
Arsenic	0.04	0.05	mg/l	Quarterly	Quarterly
Barium	1.60	2.00	mg/l	Quarterly	Quarterly
Beryllium	0.0032	0.004	mg/l	Quarterly	Quarterly
Cadmium	0.004	0.005	mg/l	Quarterly	Quarterly
Chromium	0.08	0.1	mg/l	Quarterly	Quarterly
Cyanide (As free cyanide)	0.16	0.2	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Mercury	0.0016	0.002	mg/l	Quarterly	Quarterly
Nickel	0.08	0.1	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Thallium	0.0016	0.002	mg/l	Quarterly	Quarterly

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE IA
ROUTINE DISCHARGE MONITORING (Continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Volatile Organic Compounds (VOCs):					
Benzene	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Carbon tetrachloride	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
o-Dichlorobenzene	0.48	0.6	mg/l	Semi-Annually	Semi-Annually
para-Dichlorobenzene	0.06	0.075	mg/l	Semi-Annually	Semi-Annually
1,2-Dichloroethane	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
1,1-Dichloroethylene	0.0056	0.007	mg/l	Semi-Annually	Semi-Annually
cis-1,2-Dichloroethylene	0.05	0.07	mg/l	Semi-Annually	Semi-Annually
trans-1,2-Dichloroethylene	0.08	0.1	mg/l	Semi-Annually	Semi-Annually
Dichloromethane	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
1,2-Dichloropropane	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Ethylbenzene	0.56	0.7	mg/l	Semi-Annually	Semi-Annually
Monochlorobenzene	0.08	0.1	mg/l	Semi-Annually	Semi-Annually
Styrene	0.08	0.1	mg/l	Semi-Annually	Semi-Annually
Tetrachloroethylene	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Toluene	0.8	1.0	mg/l	Semi-Annually	Semi-Annually
Trihalomethanes (total) ¹²	0.08	0.1	mg/l	Semi-Annually	Semi-Annually
1,1,1-Trichloroethane	0.16	0.2	mg/l	Semi-Annually	Semi-Annually
1,2,4 - Trichlorobenzene	0.056	0.07	mg/l	Semi-Annually	Semi-Annually
1,1,2 - Trichloroethane	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Trichloroethylene	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Vinyl Chloride	0.0016	0.002	mg/l	Semi-Annually	Semi-Annually
Xylenes (Total)	8.0	10.0	mg/l	Semi-Annually	Semi-Annually

¹²Total Trihalomethanes are comprised of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane..

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE IA
ROUTINE DISCHARGE MONITORING (Continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Indicator Parameters / Major Cations and Anions:					
pH (field)	Monitor ¹³	Monitor	S.U.	Quarterly	Quarterly
Iron	Monitor	Monitor	mg/l	Quarterly	Quarterly
Manganese	Monitor	Monitor	mg/l	Quarterly	Quarterly
Total Organic Carbon	Monitor	Monitor	mg/l	Quarterly	Quarterly
Total Dissolved Solids	Monitor	Monitor	mg/l	Quarterly	Quarterly
Sodium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Potassium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Calcium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Magnesium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Chloride	Monitor	Monitor	mg/l	Quarterly	Quarterly
Sulfate	Monitor	Monitor	mg/l	Quarterly	Quarterly
Alkalinity	Monitor	Monitor	mg/l	Quarterly	Quarterly
Specific Conductivity (field)	Monitor	Monitor	µmhos/cm	Quarterly	Quarterly

¹³ Monitoring required, but no limits established. Monitoring is for informational purposes only.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE IB¹⁴
ROUTINE DISCHARGE MONITORING

Sampling Point Number	Sampling Point Identification		Latitude	Longitude	
2	Inflow Point of Campus 1 WRF setbacks		33° 05' 13.18" N	112° 00' 44.51" W	
Parameter	AL ¹⁵	DL ¹⁶	Units	Sampling Frequency	Reporting Frequency
Flow: Daily	1.30	1.63	mgd	Daily ¹⁷	Quarterly
Flow: Average Monthly	1.30	1.63	mgd	Monthly ¹⁸	Quarterly

¹⁴This Table is for monitoring the flow to the wells located at the Campus I recharge site.

¹⁵AL = Alert Level.

¹⁶DL = Discharge Limit.

¹⁷Flow shall be measured using a continuous recording flow meter.

¹⁸Monthly = Calculated value = Average of daily flows in a month.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE IC¹⁹
ROUTINE DISCHARGE MONITORING

Sampling Point Number	Sampling Point Identification		Latitude	Longitude	
3	Inflow Point to Maricopa Groves recharge site		32°59'40"N	111°36'08" W	
Parameter	AL ²⁰	DL ²¹	Units	Sampling Frequency	Reporting Frequency
Flow: Daily	1.27	1.59	mgd	Daily ²²	Quarterly
Flow: Average Monthly	1.27	1.59	mgd	Monthly ²³	Quarterly

¹⁹ This Table is for monitoring the flow to the wells located at the Maricopa Groves recharge site.

²⁰AL = Alert Level.

²¹DL = Discharge Limit.

²²Flow shall be measured using a continuous recording flow meter.

²³Monthly = Calculated value = Average of daily flows in a month.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE ID²⁴
ROUTINE DISCHARGE MONITORING

Sampling Point Number	Sampling Point Identification		Latitude	Longitude	
4	Inflow Point to Rancho El Dorado WDC Recharge site		33°04'21.64" N	112°01'33.80" W	
Parameter	AL ²⁵	DL ²⁶	Units	Sampling Frequency	Reporting Frequency
Flow: Daily	1.29	1.61	mgd	Daily ²⁷	Quarterly
Flow: Average Monthly	1.29	1.61	mgd	Monthly ²⁸	Quarterly

²⁴ This Table is for monitoring the flow to the wells located at the Rancho El Dorado WDC Recharge site.

²⁵AL = Alert Level.

²⁶DL = Discharge Limit.

²⁷Flow shall be measured using a continuous recording flow meter.

²⁸Monthly = Calculated value = Average of daily flows in a month.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE IE²⁹
ROUTINE DISCHARGE MONITORING

Sampling Point Number	Sampling Point Identification		Latitude	Longitude	
5	Inflow Point to Villages Lift Station Recharge site		33°04'19.71" N	112°01'54.65" W	
Parameter	AL ³⁰	DL ³¹	Units	Sampling Frequency	Reporting Frequency
Flow: Daily	0.60	0.75	mgd	Daily ³²	Quarterly
Flow: Average Monthly	0.60	0.75	mgd	Monthly ³³	Quarterly

²⁹ This Table is for monitoring the flow to the wells located at the Villages Lift Station Recharge site.

³⁰AL = Alert Level.

³¹DL = Discharge Limit.

³²Flow shall be measured using a continuous recording flow meter.

³³Monthly = Calculated value = Average of daily flows in a month.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

**TABLE IF³⁴
ROUTINE DISCHARGE MONITORING**

Sampling Point Number	Sampling Point Identification		Latitude	Longitude	
6	Inflow Point to Maricopa Groves Well Site Recharge site		33°02'47.36" N	112°01'50.91" W	
Parameter	AL³⁵	DL³⁶	Units	Sampling Frequency	Reporting Frequency
Flow: Daily	0.42	0.53	mgd	Daily ³⁷	Quarterly
Flow: Average Monthly	0.42	0.53	mgd	Monthly ³⁸	Quarterly

³⁴ This Table is for monitoring the flow to the wells located at the Maricopa Groves Well Site Recharge site.

³⁵ AL = Alert Level.

³⁶ DL = Discharge Limit.

³⁷ Flow shall be measured using a continuous recording flow meter.

³⁸ Monthly = Calculated value = Average of daily flows in a month.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING****TABLE IIA
GROUNDWATER MONITORING**

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
7	POC 1 (55-907127) North edge of the WRF setbacks of P-105228			33° 05' 11.44" N	112° 00' 45.67" W
9	POC 3 (Proposed) 750 feet Northwest of the Rancho El Dorado WDC recharge site			33° 04' 30.36" N	112° 01' 51.05" W
10	POC 4 (Proposed) Northwest corner of the Villages Lift Station recharge site			33° 04' 19.70" N	112° 01' 54.87" W
11	POC 5 (Proposed) South edge of the Maricopa Groves Well Site recharge site.			33° 02' 46.90" N	112° 01' 50.91" W
Parameter	AL ³⁹	AQL ⁴⁰	Units	Sampling Frequency	Reporting Frequency
Total Nitrogen ⁴¹ :	Not Established ⁴²	Reserved ⁴³	mg/l	Monthly	Quarterly
Nitrate-Nitrite as N	Reserved	Reserved	mg/l	Monthly	Quarterly
Total Kjeldahl Nitrogen (TKN)	Reserved	Reserved	mg/l	Monthly	Quarterly
Total Coliform	Reserved	Reserved	CFU or MPN ⁴⁴	Monthly	Quarterly

³⁹ AL = Alert Level⁴⁰ AQL = Aquifer Quality Limit⁴¹ Total Nitrogen is equal to nitrate as N plus nitrite as N plus TKN.⁴² Not Established means monitoring is required, but no limits are specified.⁴³ No limits have been established⁴⁴ CFU = Colony Forming Units per 100 ml, MPN = Most Probable Number per 100 ml.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE IIA
GROUNDWATER MONITORING (Continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Metals (Total):					
Antimony	Reserved ⁴⁵	Reserved	mg/l	Quarterly	Quarterly
Arsenic	Reserved	Reserved	mg/l	Quarterly	Quarterly
Barium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Beryllium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Cadmium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Chromium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Cyanide (As free cyanide)	Reserved	Reserved	mg/l	Quarterly	Quarterly
Fluoride	Reserved	Reserved	mg/l	Quarterly	Quarterly
Lead	Reserved	Reserved	mg/l	Quarterly	Quarterly
Mercury	Reserved	Reserved	mg/l	Quarterly	Quarterly
Nickel	Reserved	Reserved	mg/l	Quarterly	Quarterly
Selenium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Thallium	Reserved	Reserved	mg/l	Quarterly	Quarterly

⁴⁵ No limits have been established

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IIA
GROUNDWATER MONITORING (continued)

Parameter	AL	AQL	Units	Sampling Frequency	Reporting Frequency
Volatile Organic Compounds (VOCs):					
Benzene	Reserved ⁴⁶	Reserved	mg/l	Semi-Annually	Semi-Annually
Carbon tetrachloride	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
o-Dichlorobenzene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
para-Dichlorobenzene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
1,2-Dichloroethane	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
1,1-Dichloroethylene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
cis-1,2-Dichloroethylene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
trans-1,2-	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Dichloromethane	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
1,2-Dichloropropane	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Ethylbenzene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Hexachlorobenzene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Hexachlorocyclopentadien	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Monochlorobenzene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Styrene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Tetrachloroethylene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Toluene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Trihalomethanes (total) ⁴⁷	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
1,1,1-Trichloroethane	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
1,2,4 - Trichlorobenzene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
1,1,2 - Trichloroethane	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Trichloroethylene	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Vinyl Chloride	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually
Xylenes (Total)	Reserved	Reserved	mg/l	Semi-Annually	Semi-Annually

⁴⁶No limits have been established

⁴⁷Total Trihalomethanes are comprised of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING****TABLE IIA
GROUNDWATER MONITORING (continued)**

Parameter	AL	AQL	Units	Sampling Frequency	Reporting Frequency
Indicator Parameters / Major Cations and Anions:					
pH (field)	Monitor ⁴⁸	Monitor	S.U	Quarterly	Quarterly
Iron	Monitor	Monitor	mg/	Quarterly	Quarterly
Manganese	Monitor	Monitor	mg/	Quarterly	Quarterly
Total Organic Carbon	Monitor	Monitor	mg/	Quarterly	Quarterly
Total Dissolved Solids	Monitor	Monitor	mg/	Quarterly	Quarterly
Sodium	Monitor	Monitor	mg/	Quarterly	Quarterly
Potassium	Monitor	Monitor	mg/	Quarterly	Quarterly
Calcium	Monitor	Monitor	mg/	Quarterly	Quarterly
Magnesium	Monitor	Monitor	mg/	Quarterly	Quarterly
Chloride	Monitor	Monitor	mg/	Quarterly	Quarterly
Sulfate	Monitor	Monitor	mg/	Quarterly	Quarterly
Alkalinity	Monitor	Monitor	mg/	Quarterly	Quarterly
Specific Conductivity (field)	Monitor	Monitor	µm	Quarterly	Quarterly

⁴⁸ Monitoring required, but no limits established. Monitoring is for informational purposes only.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING****TABLE IIB
GROUNDWATER MONITORING**

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
8	POC-2 ADWR Well 55-205362			33° 02' 40.56"	112° 01' 46.05"
Parameter	AL⁴⁹	AQL⁵⁰	Units	Sampling Frequency	Reporting Frequency
Total Nitrogen	None	57	mg/l	Monthly	Quarterly
Nitrate-Nitrite as N	None	57	mg/l	Monthly	Quarterly
Total Kjeldahl Nitrogen (TKN)	Not Established	Not Established	mg/l	Monthly	Quarterly
Total Coliform	None	Non-detect	CFU or MPN ⁵¹	Monthly	Quarterly

⁴⁹ AL = Alert Level

⁵⁰ AQL = Aquifer Quality Limit

⁵¹ CFU = Colony Forming Units per 100 ml, MPN = Most Probable Number per 100 ml.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING****TABLE IIB
GROUNDWATER MONITORING (continued)**

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
Metals (total):					
Antimony	0.0048	0.006	mg/l	Monthly	Quarterly
Arsenic	0.04	0.05	mg/l	Monthly	Quarterly
Barium	1.60	2.00	mg/l	Monthly	Quarterly
Beryllium	0.0032	0.004	mg/l	Monthly	Quarterly
Cadmium	0.004	0.005	mg/l	Monthly	Quarterly
Chromium	0.08	0.1	mg/l	Monthly	Quarterly
Cyanide (As free cyanide)	0.16	0.2	mg/l	Monthly	Quarterly
Fluoride	3.2	4.0	mg/l	Monthly	Quarterly
Lead	0.04	0.05	mg/l	Monthly	Quarterly
Mercury	0.0016	0.002	mg/l	Monthly	Quarterly
Nickel	0.08	0.1	mg/l	Monthly	Quarterly
Selenium	0.04	0.05	mg/l	Monthly	Quarterly
Thallium	0.0016	0.002	mg/l	Monthly	Quarterly

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING****TABLE IIB
GROUNDWATER MONITORING (continued)**

Parameter	AL	AQL	Units	Sampling Frequency	Reporting Frequency
Volatile Organic Compounds (VOCs):					
Benzene	0.004	0.005	mg/l	Semi-annual	Semi-annual
Carbon tetrachloride	0.004	0.005	mg/l	Semi-annual	Semi-annual
o-Dichlorobenzene	0.48	0.6	mg/l	Semi-annual	Semi-annual
para-Dichlorobenzene	0.06	0.075	mg/l	Semi-annual	Semi-annual
1,2-Dichloroethane	0.004	0.005	mg/l	Semi-annual	Semi-annual
1,1-Dichloroethylene	0.0056	0.007	mg/l	Semi-annual	Semi-annual
cis-1,2-Dichloroethylene	0.05	0.07	mg/l	Semi-annual	Semi-annual
trans-1,2-	0.08	0.1	mg/l	Semi-annual	Semi-annual
Dichloromethane	0.004	0.005	mg/l	Semi-annual	Semi-annual
1,2-Dichloropropane	0.004	0.005	mg/l	Semi-annual	Semi-annual
Ethylbenzene	0.56	0.7	mg/l	Semi-annual	Semi-annual
Monochlorobenzene	0.08	0.1	mg/l	Semi-annual	Semi-annual
Styrene	0.08	0.1	mg/l	Semi-annual	Semi-annual
Tetrachloroethylene	0.004	0.005	mg/l	Semi-annual	Semi-annual
Toluene	0.8	1.0	mg/l	Semi-annual	Semi-annual
Trihalomethanes (total) ⁵²	0.08	0.1	mg/l	Semi-annual	Semi-annual
1,1,1-Trichloroethane	0.16	0.2	mg/l	Semi-annual	Semi-annual
1,2,4 - Trichlorobenzene	0.056	0.07	mg/l	Semi-annual	Semi-annual
1,1,2 - Trichloroethane	0.004	0.005	mg/l	Semi-annual	Semi-annual
Trichloroethylene	0.004	0.005	mg/l	Semi-annual	Semi-annual
Vinyl Chloride	0.0016	0.002	mg/l	Semi-annual	Semi-annual
Xylenes (Total)	8.0	10.0	mg/l	Semi-annual	Semi-annual
Benzene	0.004	0.005	mg/l	Semi-annual	Semi-annual
Carbon tetrachloride	0.004	0.005	mg/l	Semi-annual	Semi-annual

⁵²Total Trihalomethanes are comprised of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING****TABLE IIB
GROUNDWATER MONITORING (continued)**

Parameter	AL	AQL	Units	Sampling Frequency	Reporting Frequency
Indicator Parameters / Major Cations and Anions:					
pH (field)	Monitor ⁵³	Monitor	S.U.	Quarterly	Quarterly
Iron	Monitor	Monitor	mg/l	Quarterly	Quarterly
Manganese	Monitor	Monitor	mg/l	Quarterly	Quarterly
Total Organic Carbon	Monitor	Monitor	mg/l	Quarterly	Quarterly
Total Dissolved Solids	Monitor	Monitor	mg/l	Quarterly	Quarterly
Sodium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Potassium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Calcium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Magnesium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Chloride	Monitor	Monitor	mg/l	Quarterly	Quarterly
Sulfate	Monitor	Monitor	mg/l	Quarterly	Quarterly
Alkalinity	Monitor	Monitor	mg/l	Quarterly	Quarterly
Specific Conductivity (field)	Monitor	Monitor	µmhos	Quarterly	Quarterly

⁵³ Monitoring required, but no limits established. Monitoring is for informational purposes only.

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING****TABLE IIC****GROUNDWATER MONITORING
(RECHARGE MOUND MONIOTRING)**

Sampling Point	Recharge Site	Well Identification	AL⁵⁴ bgs feet⁵⁵
12	Campus 1	RM-1 (Not Established)	(Not Established)
13	Maricopa Groves	RM-2 (Not Established)	Not Established
14	Rancho El Dorado WDC	RM-3 (Not Established)	Not Established
15	Villages Lift Station	RM-4 (Not Established)	Not Established
16	Maricopa Groves Well Site	RM-5 (Not Established)	Not Established

⁵⁴ AL = Alert level = depth to water

⁵⁵ bgs=below ground surface

4.0 TABLES OF MONITORING REQUIREMENTS**4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

TABLE III
FACILITY INSPECTION

Pollution Control Structures/Parameter	Performance Levels	Inspection Frequency	Reporting Frequency
Pump integrity	Good working condition	Weekly	Quarterly
Recharge wells	Good working condition No biofouling No clogging	Monthly	Quarterly
Land subsidence and earth fissures.	Any observed evidence of subsidence and earth fissures.	Monthly	Quarterly
Flowmeter	Good working condition	Monthly	Quarterly

5.0 REFERENCES AND PERTINENT INFORMATION

The terms and conditions set forth in this permit have been developed based upon the information contained in the following, which are on file with the Department:

1. APP Application, dated: August 13, 2007
2. Contingency Plan, dated: August 13, 2007
3. Final Hydrologist Report, dated: August 13, 2007
4. Final Engineering Report, dated: Not applicable
5. Public Notice, dated:
6. Public Hearing, dated:
7. Responsiveness Summary, dated:

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6.0 NOTIFICATION PROVISIONS

6.1 Annual Registration Fees

The permittee is notified of the obligation to pay an Annual Registration Fee to ADEQ. The Annual Registration Fee is based upon the amount of daily influent or discharge of pollutants in gpd as established by A.R.S. § 49-242(D).

6.2 Duty to Comply [A.R.S. §§ 49-221 through 263]

The permittee is notified of the obligation to comply with all conditions of this permit and all applicable provisions of Title 49, Chapter 2, Articles 1, 2 and 3 of the Arizona Revised Statutes, Title 18, Chapter 9, Articles 1 through 4, and Title 18, Chapter 11, Article 4 of the Arizona Administrative Code. Any permit non-compliance constitutes a violation and is grounds for an enforcement action pursuant to Title 49, Chapter 2, Article 4 or permit amendment, suspension, or revocation.

6.3 Duty to Provide Information [A.R.S. §§ 49-243(K)(2) and 49-243(K)(8)]

The permittee shall furnish to the Director, or an authorized representative, within a time specified, any information which the Director may request to determine whether cause exists for amending or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

6.4 Compliance with Aquifer Water Quality Standards [A.R.S. §§ 49-243(B)(2) and 49-243(B)(3)]

The permittee shall not cause or contribute to a violation of an AWQS at the applicable POC for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an AWQS for a pollutant, the permittee shall not discharge that pollutant so as to further degrade, at the applicable point of compliance for the facility, the water quality of any aquifer for that pollutant.

6.5 Technical and Financial Capability [A.R.S. §§ 49-243(K)(8) and 49-243(N) and A.A.C. R18-9-A202(B) and R18-9-A203(E) and (F)]

The permittee shall have and maintain the technical and financial capability necessary to fully carry out the terms and conditions of this permit. Any bond, insurance policy, trust fund, or other financial assurance mechanism provided as a demonstration of financial capability in the permit application, pursuant to A.A.C. R18-9-A203(D), shall be in effect prior to any discharge authorized by this permit and shall remain in effect for the duration of the permit.

6.6 Reporting of Bankruptcy or Environmental Enforcement [A.A.C. R18-9-A207(C)]

The permittee shall notify the Director within five days after the occurrence of any one of the following:

1. the filing of bankruptcy by the permittee; or
2. the entry of any order or judgment not issued by the Director against the permittee for the enforcement of any environmental protection statute or rule.

6.7 Monitoring and Records [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A206]

The permittee shall conduct any monitoring activity necessary to assure compliance with this permit, with the applicable water quality standards established pursuant to A.R.S. §§ 49-221 and 49-223 and §§ 49-241 through 49-252.

6.8 Inspection and Entry [A.R.S. §§ 49-1009, 49-203(B), and 49-243(K)(8)]

In accordance with A.R.S. §§ 41-1009 and 49-203(B), the permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to enter and inspect the facility as reasonably necessary to ensure compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, and Title 18, Chapter 9, Articles 1 through 4 of the Arizona Administrative Code and the terms and conditions of this permit.

6.9 Duty to Modify [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A211]

The permittee shall apply for and receive a written amendment before deviating from any of the designs or operational practices authorized by this permit.

6.10 Permit Action: Amendment, Transfer, Suspension, and Revocation [A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

This permit may be amended, transferred, suspended, or revoked for cause, under the rules of the Department. The permittee shall notify the Groundwater Section in writing within 15 days after any change in the owner or operator of the facility. The notification shall state the permit number, the name of the facility, the date of property transfer, and the name, address, and phone number where the new owner or operator can be reached. The operator shall advise the new owner or operators of the terms of this permit and the need for permit transfer in accordance with the rules.

7.0 ADDITIONAL PERMIT CONDITIONS**7.1 Other Information [A.R.S. § 49-243(K)(8)]**

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

7.2 Severability [A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition.

7.3 Permit Transfer

This permit may not be transferred to any other person except after notice to and approval of the transfer by the Department. No transfer shall be approved until the applicant complies with all transfer requirements as specified in A.A.C. R18-9-A212(B) and (C).