ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

Janice K. Brewer
Governor

Benjamin H. Grumbles
Director

July 20, 2010

Ms. Jennifer Hetherington
City of Mesa Water Resources Department
P.O. Box 1466
Mesa, AZ 85211-1466

Re: City of Mesa Greenfield Water Reclamation Plant
Other Aquifer Protection Permit Amendment
Inv. No. 105443, LTF No. 49623

Dear Ms. Hetherington:

Enclosed is a signed copy of an Individual APP Other Amendment with Fact Sheet for the above referenced facility. The permit conditions shall apply from July 13, 2010, which is the date of the Water Quality Division Director's signature, and shall be valid for the life of the facility. Thank you for your cooperation in protecting the water quality of the State of Arizona. If you have any questions, please feel free to contact me by phone at (602) 771-4498, or by email at rm4@azdeq.gov.

Sincerely,

Bob Manley

Bob Manley, Project Manager
APP and Reuse Unit
Groundwater Section, Water Quality Division

Attachments (2): Signed APP and Fact Sheet
cc: Asif Majeed, Supervisor, APP and Reuse Unit
Lynne Dekarske, Administrative Unit
Matthew Hodge, Supervisor, Water Quality Compliance Section, Data Unit
Cynthia Campbell, Manager, Water Quality Compliance Section
John Gibbons, Supervisor, Field Services Unit, Compliance Section
Marnie Greenbie, Supervisor, Surface Water Permits Unit
Debra Daniel, Manager, Surface Water Section
Maricopa County Department of Planning and Development
Kevin Chadwick, Maricopa County Environmental Services Department
Drew Swieczkowski, Manager, Water Resources Section, Arizona Department of Water Resources
Stella Murillo, Recharge Coordinator, Recharge Program, Arizona Department of Water Resources
Mohamed Hegazy, ADEQ Project Engineer – Letter Only
Marcy Mullins, ADEQ Reuse Program Coordinator – Letter Only

WRR10:0352

STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-105443
PLACE ID 21018, LTF 49623
OTHER AMENDMENT

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, the City of Mesa is hereby authorized to operate the Greenfield Water Reclamation Plant, located at 4400 South Greenfield Road, Gilbert, Arizona, in Maricopa County, over groundwater of the Phoenix Active Management Area, in Township 2 S, Range 6 E, Section 9, N¼, SE¼ of the Gila and Salt River Baseline 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:	Greenfield Water Reclamation Plant
Facility Address:	4400 South Greenfield Road Gilbert, Arizona 85296
County:	Maricopa
Permittee:	City of Mesa
Permittee Address:	P.O. Box 1466 Mesa, Arizona 85211-1466
Facility Contact:	Jennifer Hetherington
Emergency Phone No.:	(480) 644-3890
Latitude/Longitude:	33° 16' 12" N/ 111° 44' 34" W
Legal Description:	Township 2S, Range 6E, Section 9, N¼, SE¼ of the Gila and Salt River Baseline and Meridian

1.2 AUTHORIZING SIGNATURE

Michael A. Fulton, Director
Water Quality Division
Arizona Department of Environmental Quality

Signed this 13th day of July, 2010

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 City of Mesa is authorized to operate the Greenfield Water Reclamation Plant (WRP) with a total capacity to collect and treat an average annual daily flow of 16.0 million gallons per day (mgd), and a maximum average monthly wastewater flow of 24.0 mgd. The WRP process consists of headworks with bar screens and grit removal, an influent lift station, primary clarifiers, anoxic and aeration basins for nitrification-denitrification, secondary clarifiers, tertiary filters, disinfection by ultraviolet (UV) light or chlorination (hypochlorite), anaerobic sludge digesters, centrifuges for sludge thickening and dewatering, stand-by chemical coagulation facilities, and an effluent pump station.

Effluent shall be disposed by recharge at the Town of Gilbert South Recharge Site (APP No. P-105302), reused under a valid reclaimed water permit, or discharged to the surface, either to the Gila River Indian Community (GRIC) canal via pipeline, or to the East Maricopa Floodway (EMF) under a valid Arizona Pollutant Discharge Elimination System (AZPDES) permit (No. AZ0025241). Discharge to the EMF shall only occur when the effluent cannot be disposed by the other disposal options listed above.

The depth to groundwater is approximately 100 to 150 feet below the land surface and the direction of groundwater flow is toward the east-southeast. The WRP is designed and constructed according to plans approved by the ADEQ Wastewater, Recharge, and Reuse Unit.

All industrial hookups and other non-residential hookups to the treatment system shall be authorized according to the applicable federal, state or local regulations.

The site includes the following permitted discharging facilities:

[illegible]	[illegible]	[illegible]
Center of WRP	33° 16' 12" N	111° 44' 34" W
Discharge to EMF	33° 15' 46" N	111° 43' 26" W
Discharge to Gila River Indian Community Canal	33° 15' 12" N	111° 47' 34" W

The permittee may also discharge the effluent to the following discharge sites permitted under other permits:

[illegible]	[illegible]	[illegible]
Center of the Town of Gilbert South Recharge Site (APP No. P-105302)	33° 15' 07" N	111° 42' 59" W
Center of the Town of Gilbert Reclaimed Water Reservoir (Type 3 Agent Reclaimed Water Permit No. R105757)	33° 16' 17" N	111° 44' 20" W

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 16.0 mgd annual average, with a maximum average monthly flow of 24.0 mgd.

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(A) and (B)(1). The permittee shall maintain financial capability throughout the life of the facility. The estimated dollar amount demonstrated for financial capability is $25,000.

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

The WRP is designed to meet the treatment performance criteria for new facilities as specified in A.A.C. R18-9-B204.

The permittee shall meet the requirements for pretreatment by regulating industrial sources of influent as per A.A.C. R18-9-B204(B)(6)(b)(ii).

The treatment facility shall not exceed a maximum seepage rate of 550 gallons per day per acre for all containment structures within the treatment works.

2.2.1 Engineering Design

The WRP was designed as per the design report prepared by Carollo Engineers, dated October 17, 2003.

2.2.2 Site-specific Characteristics

Not applicable.

2.2.3 Pre-operational Requirements

Prior to initiating operation of the backup chlorine disinfection system, the permittee shall submit a signed, dated, and sealed Engineer's Certificate of Completion in a format approved by the Department per the compliance schedule in Section 3.0. The Certificate shall be submitted to the Groundwater Section and a copy shall be sent to the Water Quality Compliance Section.

2.2.4 Operational Requirements

1. Permittee shall maintain a copy of the up-to-date Operations and Maintenance (O & M) Manual at the WRP site 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.
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 submitted quarterly to the ADEQ Water Quality Compliance Section.

2.2.5 Reclaimed Water Classification
[A.A.C. R18-9-703(C)(2)(a), A.A.C. R18-11-303 through 307]

The WRP is classified as producing Class A+ reclaimed water which may be used for any allowable Class A, B, or C use under a valid reclaimed water permit.

2.2.6 Certified Areawide Water Quality Management Plan Conformance
[A.A.C. R18-9-A201(B)(6)(a)]

Facility operations must conform to the approved Certified Areawide Water Quality Management Plan according to the 208 consistency determination in place at the time of permit issuance.

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 WRP with an average annual daily flow of 16.0 million gallons per day (mgd), and a maximum average monthly wastewater flow of 24.0 mgd.
2. The permittee shall notify all users that the materials authorized to be disposed of through the WRP are typical household sewage and pre-treated commercial wastewater and shall not include motor oil, gasoline, paints, varnishes, hazardous wastes, solvents, pesticides, fertilizers or other materials not generally associated with toilet flushing, food preparation, laundry facilities and personal hygiene.
3. The permittee shall operate and maintain all permitted facilities to prevent unauthorized discharges pursuant to A.R.S. § 49-201(12) resulting from failure or bypassing of applicable BADCT pollutant control technologies including liner failure[1], uncontrollable leakage, overtopping (e.g., exceeding the maximum storage capacity, defined as a fluid level exceeding the crest elevation of a permitted impoundment), of basins, lagoons, impoundments or sludge drying beds, berm breaches, accidental spills, or other unauthorized discharges.
4. Specific discharge limitations are listed in Section 4.2, Tables IA and IB.

2.4 Points of Compliance (POCs) [A.R.S. § 49-244]

The POCs are established by the following designated locations:

1	Within 750 feet east of the Greenfield WRP	33°16'14" N	111°44'21" W
2	Within 750 feet southeast of the AZPDES discharge point into the East Maricopa Floodway (EMF) Wagner Wash	33°15'46" N	111°43'26" W

Groundwater monitoring is not required at the point of compliance wells, except as a contingency action.

The Director may amend this permit to require installation of wells and initiation of groundwater monitoring at the POC or 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 Routine Discharge Monitoring

The permittee shall monitor the effluent according to Section 4.2, Table IA. Representative samples of the effluent shall be collected at the point of discharge from the effluent pump station.

[1]Liner failure in a single-lined impoundment is any condition that would result in leakage exceeding 550 gallons per day per acre.

2.5.2 Reclaimed Water Monitoring

The permittee shall monitor the reclaimed water parameters listed under Section 4.2, Table 1B in addition to the routine discharge monitoring parameters listed in Section 4.2, Table 1A. Representative samples of the reclaimed water shall be collected at the point of discharge from the effluent pump station.

2.5.3 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.

2.5.4 Groundwater Monitoring and Sampling Protocols

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

If groundwater monitoring is required as a contingency action, then static water levels shall be measured and recorded prior to sampling. 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.

2.5.5 Surface Water Monitoring and Sampling Protocols

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

2.5.6 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 Avenue
Phoenix, Arizona 85007
Phone: (602) 364-0720

2.5.7 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, violation of a discharge limit (DL), or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3.

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. 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, 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 within five days of becoming aware of the exceedance.

    b. Submit a written report 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, Tables IA or IB 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 parameters 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 an AL exceedance. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6.

3. Within 30 days of an AL exceedance, the permittee shall submit the laboratory results to the ADEQ Water Quality Compliance Section, Data Unit, 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.

2.6.2.3 Exceeding Permit Flow Limit

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

2.6.3 Discharge Limit Violation

1. If a DL set in Section 4.2, Tables IA or IB has been violated, the permittee shall immediately investigate to determine the cause of the violation. 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; and
   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 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. 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 freeboard requirements as specified in Section 4.2, Table III (Facility Inspections) to prevent the overtopping of an impoundment or sludge drying bed. If an impoundment or sludge drying bed is overtopped, the permittee shall follow the requirements in Section 2.6.5.3 and the reporting requirements of Section 2.7.3.

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

Not applicable.

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 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 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 Water Quality Compliance Section (see Section 2.7.5) within thirty 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 exceedance of an AL or violation of a 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, 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 reporting period, 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.
4. In addition to the SMRF, the information contained in A.A.C. R18-9-A206(B)(1) shall be included for exceeding an AL or violation of a 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 in writing (by mail or by fax - see Section 2.7.5) within five days (except as provided in Section 2.6.5) of becoming aware of a violation of any permit condition, discharge limitation, or of an AL exceedance.

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 or discharge limitation. 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 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 as required in Section 4.2, Table IB 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 the following address:

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[2]:

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:

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 the Water Quality Compliance Section shall be notified 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]A post-mark date no later than the due date is considered meeting the due date requirements under this Section.

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 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 the ADEQ Water Quality Compliance Section 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 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 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 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.

1. If AZPDES discharges to the East Maricopa Floodway (EMF) exceed a total of 60 calendar days per year, the permittee shall perform the following actions:

    a. Notify the ADEQ Water Quality Compliance Section and the Groundwater Section within five (5) days of becoming aware that AZPDES discharges to the EMF will exceed 60 total calendar days during the current year.

    b. Submit a report to the ADEQ Groundwater Section that includes an explanation for exceedance of the 60-day discharge limitation, quality of the effluent discharged, and a proposed design for a monitor well at POC #2. The proposed well shall be designed to monitor groundwater quality within the uppermost portion of the uppermost aquifer at the well site. This report shall be submitted within thirty days (30) after the 60-day discharge limit exceedance.

    c. Install a monitor well at POC #2 within 120 calendar days after submittal of the POC #2 well design.

    d. Collect an initial ambient groundwater quality sample and have it tested for nitrogen species, metals, volatile organics, and DBCP within 30 calendar days after well installation.

    e. Submit an APP amendment application within 30 calendar days after the date of collection of the ambient groundwater quality sample. The amendment application shall include the as-built location of the well at POC #2, and a proposed set of compliance monitoring requirements for POC #2.

4.0 TABLES OF MONITORING REQUIREMENTS

4.1 PRE-OPERATIONAL MONITORING (OR CONSTRUCTION REQUIREMENTS)

Not applicable at the time of permit issuance.

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IA
ROUTINE DISCHARGE MONITORING

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
1	Effluent Pump Station			33° 16' 18" N	111° 44' 25" W
Parameter	AL[3]	DL[4]	Units	Sampling Frequency	Reporting Frequency
Total Flow[5]: Daily[6]	Not Established[7]	Not Established	mgd[8]	Daily	Quarterly
Total Flow: Monthly Average	22.8	24.0	mgd	Monthly Calculation[9]	Quarterly
Total Flow: Annual Average	15.2	16.0	mgd	Annual Calculation[10]	Annually
Reuse Flow - Daily	Not Established	Not Established	mgd	Daily	Quarterly
Reuse Flow - Monthly Average	Not Established	Not Established	mgd	Monthly Calculation	Quarterly
Recharge Flow - Daily	Not Established	Not Established	mgd	Daily	Quarterly
Recharge Flow - Monthly Average	Not Established	Not Established	mgd	Monthly Calculation	Quarterly
AZPDES Flow - Daily	Not Established	Not Established	mgd	Daily	Quarterly
AZPDES Flow - Monthly Average	Not Established	Not Established	mgd	Monthly Calculation	Quarterly

[3]AL = Alert Level
[4]DL = Discharge Limit
[5]Total flow for all methods of disposal (reuse, recharge, AZPDES)
[6]Flow shall be measured using a continuous recording flow meter which totals the flow daily.
[7]Not Established means monitoring is required but no limits are specified.
[8]mgd = million gallons per day
[9]Monthly average of daily flow values.
[10]Annual average of daily flow values.

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IA
ROUTINE DISCHARGE MONITORING (continued)

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
1	Effluent Pump Station			33° 16' 18" N	111° 44' 25" W
Parameter	**AL[11]**	**DL[12]**	**Units**	**Sampling Frequency**	**Reporting Frequency**
E. coli: Single sample maximum	Not established	15.0	CFU or MPN[13]	Monthly	Quarterly
E. coli: Seven-sample median	Not established	Non-detect	CFU or MPN	Monthly	Quarterly
Total Nitrogen[14]: Five-sample rolling geometric mean	8.0	10.0	mg/l	Monthly[15]	Quarterly
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

[11]AL = Alert Level
[12]DL = Discharge Limit
[13]CFU = Colony Forming Units / 100 ml sample. MPN = Most Probable Number / 100 ml sample. For CFU, a value of <1.0 shall be considered to be non-detect. For MPN, a value of <2.2 shall be considered to be non-detect.
[14]Total Nitrogen = Nitrate as N + Nitrite as N + Total Kjeldahl Nitrogen
[15]A five-month geometric mean of the results of the five (5) most recent samples

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	0.056	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)[16]	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

[16]Total Trihalomethanes are comprised of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IA
ROUTINE DISCHARGE MONITORING (continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Radionuclides:					
Gross Alpha (including Radium-226 but excluding Radon and Uranium)	12.0	15.0	pCi/l	Semi-Annually	Semi-Annually
Gross Beta	40.0	50.0	pCi/l	Semi-Annually	Semi-Annually
Radium 226 and Radium 228	4.0	5.0	pCi/l	Semi-Annually	Semi-Annually
Pesticides and PCBs:					
Alachlor	0.0016	0.002	mg/l	Semi-Annually	Semi-Annually
Carbofuran	0.032	0.04	mg/l	Semi-Annually	Semi-Annually
Chlordane	0.0016	0.002	mg/l	Semi-Annually	Semi-Annually
Dalapon	0.16	0.2	mg/l	Semi-Annually	Semi-Annually
1,2-dibromo-3-chloropropane (DBCP)	0.00016	0.0002	mg/l	Semi-Annually	Semi-Annually
2,4,-dichlorophenoxyacetic Acid (2,4-D)	0.056	0.07	mg/l	Semi-Annually	Semi-Annually
Dinoseb	0.0056	0.007	mg/l	Semi-Annually	Semi-Annually
Diquat	0.016	0.02	mg/l	Semi-Annually	Semi-Annually
Endothall	0.08	0.1	mg/l	Semi-Annually	Semi-Annually
Endrin	0.0016	0.002	mg/l	Semi-Annually	Semi-Annually
Ethylene Dibromide (EDB)	0.00004	0.00005	mg/l	Semi-Annually	Semi-Annually
Glyphosate	0.56	0.7	mg/l	Semi-Annually	Semi-Annually
Heptachlor	0.00032	0.0004	mg/l	Semi-Annually	Semi-Annually
Heptachlor Epoxide	0.00016	0.0002	mg/l	Semi-Annually	Semi-Annually
Lindane	0.00016	0.0002	mg/l	Semi-Annually	Semi-Annually
Methoxychlor	0.032	0.04	mg/l	Semi-Annually	Semi-Annually
Oxamyl	0.16	0.2	mg/l	Semi-Annually	Semi-Annually
Picloram	0.4	0.5	mg/l	Semi-Annually	Semi-Annually
Polychlorinated Biphenyls	0.0004	0.0005	mg/l	Semi-Annually	Semi-Annually
Simazine	0.0032	0.004	mg/l	Semi-Annually	Semi-Annually
Toxaphene	0.0024	0.003	mg/l	Semi-Annually	Semi-Annually
2,4,5-Trichlorophenoxypropionic Acid (2,4,5-TP or Silvex)	0.04	0.05	mg/l	Semi-Annually	Semi-Annually

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IB
RECLAIMED WATER MONITORING TABLE - CLASS A+[17]

Sampling Point Number	Sampling Point Identification		Latitude	Longitude
1	Effluent Pump Station		33° 16' 18" N	111° 44' 25" W
Parameter	**DL**	**Units**	**Sampling Frequency**	**Reporting Frequency**
Total Nitrogen[18]: Five-sample rolling geometric mean	10.0	mg/l	Monthly[19]	Quarterly
E. coli[20]: Single-sample maximum	15	CFU or MPN[21]	Daily[22]	Quarterly
E. coli: Four of last seven samples	Non-detect[23]	CFU or MPN	Daily	Quarterly
Turbidity[24]: Single reading	5.0	NTU[25]	Everyday[26]	Quarterly
Turbidity: 24-hour average	2.0	NTU	Everyday	Quarterly

[17]Reclaimed water monitoring under Table 1B shall be performed in addition to routine discharge monitoring required under Section 4.2, Table 1A.

[18]Nitrate N, plus Nitrite N, plus Total Kjeldahl Nitrogen (TKN)

[19]A five-month geometric mean of the results of the five most recent samples.

[20]*E. coli* monitoring results that meet the specified discharge limits are considered to demonstrate compliance with A.A.C. R18-11-303.

[21]CFU = Colony Forming Units per 100 ml; MPN = Most Probable Number per 100 ml. 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.

[22]For *E. coli*, "daily" sampling means every day in which a sample can practicably be obtained and delivered in sufficient time for proper analysis, provided that no less than four (4) samples in each seven-day period are obtained and analyzed.

[23]If at least four of the last seven samples are non-detect, report "yes" in the appropriate space on the SMRF (indicating that the standard has been met). If at least four of the last seven samples have detections of *E. coli*, report "no" in the appropriate space on the SMRF (indicating that the standard has **not** been met).

[24]Turbidimeter shall be placed at a point in the wastewater treatment process after filtration and immediately before disinfection and shall have a signal averaging time not exceeding 120 seconds. Occasional spikes due to back-flushing or instrument malfunction shall not be considered an exceedance. All exceedances must be explained and submitted to the Department with the corresponding quarterly SMRF.

[25]Nephelometric Turbidity Units

[26]For the single turbidity reading, "everyday" means the maximum reading during the 24-hour period.

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE II
GROUNDWATER MONITORING

Not applicable.

TABLE III
FACILITY INSPECTION (Operational Monitoring)

Pollution Control Structures/Parameter	Performance Levels	Inspection Frequency
Pump Integrity	Good Working Condition	Weekly
Treatment Plant Components	Good Working Condition	Weekly
Reclaimed Water Reservoir Berm Integrity	No visible structural damage, breach, or erosion of embankments	Weekly
Reclaimed Water Reservoir Liner Integrity	No cracks or leaks that would exceed a leakage rate of 550 gpd/acre	Weekly

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: February 27, 2009
2. Final Engineering Report dated: March 29, 2010

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. §§ 41-1009, 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).

ADEQ Arizona Department of Environmental Quality

Fact Sheet

Aquifer Protection Permit 105443
Place ID #21018, LTF #49623
OTHER AMENDMENT
Greenfield Water Reclamation Plant

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an amendment to the aquifer protection permit for the subject facility that covers the life of the facility, including operational, closure, and post closure periods unless suspended or revoked pursuant to Arizona Administrative Code (A.A.C.) R18-9-A213. This document gives pertinent information concerning the issuance of the permit. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program: 1) meet Aquifer Water Quality Standards at the Point of Compliance; and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). The purpose of BADCT is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., the local subsurface geology), to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer or to prevent pollutants from reaching the aquifer.

I. FACILITY INFORMATION

Name and Location

Name of Permittee:	City of Mesa
Mailing Address:	City of Mesa, Water Resources Department P.O. Box 1466 Mesa, Arizona 85211-1466
Facility Name and Location:	Greenfield Water Reclamation Plant 4400 South Greenfield Road Gilbert, Arizona 85296

Regulatory Status

This facility is jointly owned by the City of Mesa, the Town of Gilbert, and the Town of Queen Creek. As per A.R.S. § 49-201, it qualifies as a "new facility." The facility is located west of Greenfield Road between Germann Road and Queen Creek Road in Gilbert, Arizona. The facility is operated by the City of Mesa. An Aquifer Protection Permit (APP) was issued on September 9, 2005 which authorized construction of a 16.0 million gallons per day (annual average) facility.

An Inter-governmental Agreement (IGA) between the three owners (the City of Mesa, the Town of Gilbert, and Town of Queen Creek) describes each owner's responsibility for the use and disposal of effluent committed to it. Greenfield Water Reclamation Plant (WRP) discharges up to 8.0 million gallons per day (mgd) to the Town of Gilbert reclaimed water

system through the adjacent Town of Gilbert Reclaimed Water Reservoir (Type 3 Reclaimed Water Agent Permit No. R105757), and up to 9.0 mgd to the Town of Gilbert South Recharge Site (APP No. P-105302). Greenfield WRP discharges the City of Mesa's portion of the effluent via a 54-inch diameter pipeline to the Gila River Indian Community (GRIC) canal located on the Gila River Indian Reservation. At this time, the Town of Queen Creek does not have the ability to dispose its share of the effluent, so it allows Mesa and Gilbert to dispose its share through their respective disposal options. At times when these disposal methods are not sufficient to dispose all of the effluent, Greenfield WRP may also discharge effluent to the East Maricopa Floodway (EMF) under a valid Arizona Pollutant Discharge Elimination System (AZPDES) permit (No. AZ0025241) via a 72-inch diameter pipeline.

Facility Description

The City of Mesa is authorized to operate the Greenfield WRP with a total capacity to collect and treat an average annual daily flow of 16.0 mgd, and a maximum average monthly wastewater flow of 24.0 mgd. The WRP process consists of headworks with bar screens and grit removal, an influent lift station, primary clarifiers, anoxic and aeration basins for nitrification-denitrification, secondary clarifiers, tertiary filters, disinfection by ultraviolet (UV) light or chlorination (hypochlorite), anaerobic sludge digesters, centrifuges for sludge thickening and dewatering, stand-by chemical coagulation facilities, and an effluent pump station. The WRP is classified as generating Class A+ reclaimed water.

Effluent will be disposed by recharge at the Town of Gilbert South Recharge Facility (APP No. P-105302), reused under a valid reclaimed water permit, or discharged to the surface, either to the Gila River Indian Community (GRIC) canal via pipeline, or to the East Maricopa Floodway (EMF) under a valid AZPDES permit (No. AZ0025241). Discharge to the EMF will only occur when the effluent cannot be disposed by the other disposal options listed above.

The depth to groundwater is approximately 100 to 150 feet below the land surface and the direction of groundwater flow is toward the east-southeast. The WRP is designed and constructed according to plans approved by the ADEQ Wastewater, Recharge, and Reuse Unit.

In addition to the APP conditions pertaining to treatment and disposal of sewage sludge, the permittee must also comply with the requirements for any sewage sludge disposal in 40 Code of Federal Regulations (CFR) Part 503 and Title 18 A.A.C. Chapter 9, Article 10.

Amendment Description

This "other" permit amendment was initiated by the City of Mesa for the purpose of adding a chlorine disinfection system as a second source of disinfection, and changing pathogen monitoring requirements in the discharge and reclaimed water monitoring tables from fecal coliform to *E. coli*. Sections in the permit being updated include:

1. Section 2.1 - Facility/Site Description: Added disinfection by chlorination (hypochlorite).
2. Section 4.2, Table IA - Routine Discharge Monitoring: Added flow monitoring and reporting requirements for AZPDES flow, replaced fecal coliform with *E. coli*, and removed the footnotes pertaining to reduction of monitoring frequencies.
3. Section 4.2, Table IB - Class A+ Reclaimed Water Monitoring: Replaced fecal coliform with *E. coli*.
4. Section 5 - References and Pertinent Information: Added information on the "other" APP amendment application and the final engineering report.

In addition, relevant permit language has been changed to conform to the current APP format.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY (BADCT)

Greenfield WRP is designed to meet the treatment performance criteria for new facilities as specified in R18-9-B204.

III. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Monitoring and Reporting Requirements

Existing groundwater contamination is present in the area for nitrates, predominantly as a result of activities related to historical over-irrigation. The nitrate plume is a northwest to southeast trending zone that extends from near Pecos and Lindsay Roads to near Chandler Heights and Higley Road. The western edge of this plume is located approximately 0.25 miles west of the WRP. Nitrate concentrations in the plume range from 10.0 to 32.0 mg/l as nitrogen. Bacteria were not sampled in the groundwater because the vadose zone is generally sufficiently thick enough to prevent coliform from reaching groundwater.

The pesticide, dibromochloropropane (DBCP), has also been found in groundwater in the Chandler Heights area (south of Riggs Road between Recker and Sossaman Roads). One well, located approximately one mile south of the WRP, and 0.5 miles west of the Roosevelt Canal/East Maricopa Floodway had a DBCP concentration of 0.59 mg/l (AWQS: 0.02 mg/l) in January 1995. This well could potentially receive recharged water discharged to the East Maricopa Floodway.

Two pollutant management areas (PMAs) have been designated for the Greenfield WRP. The first PMA has been designated as a line circumscribing all components of the WRP. The Discharge Impact Area (DIA) for this pollutant management area has been designated as nearly identical to the PMA because the WRP components are designed as non-discharging facilities.

The second PMA has been defined by the extent of surficial impact of the effluent discharged to the East Maricopa Floodway. The PMA was defined by a Brown and Caldwell study (November 2003) that demonstrated that a discharge of 16 MGD, lasting more than one day would have a surficial flow distance of ~6.5 miles down the East Maricopa Floodway before infiltrating into the subsurface. A discharge of 52 MGD would flow ~11.5 miles down the Floodway on Day 1, and would reach the Gila River at ~13.5 miles on subsequent days. An estimated 20 MGD of effluent will enter the river if flow lasts more than one day. The discharge impact area is similar in shape to the pollutant management area.

The facility will produce denitrified and tertiary treated effluent that meets the requirement of Class A + reclaimed water. Effluent monitoring is required for flow, metals, all nitrogen forms, *E. coli*, Volatile Organic Compounds (VOCs), pesticides, radionuclides, and turbidity.

Because of these considerations the facility is expected to be in compliance with the AWQS at the point of compliance. No groundwater monitoring is required at the facility, as almost all the discharge is regulated under the Town of Gilbert South Recharge Facility APP (No. P-105302), reused for beneficial purposes, or discharged to the Gila River Indian Community.

Point(s) of Compliance (POCs):

1	Within 750 feet east of the Greenfield WRP	33°16'14" N	111°44'21" W
2	Within 750 feet southeast of the AZPDES discharge point into the East Maricopa Floodway (EMF) Wagner Wash	33°15'46" N	111°43'26" W

Groundwater monitoring is not required at the POCs at the time of permit issuance. Groundwater monitoring may be required if the discharge limits are exceeded as per the compliance schedule (Section 3.0).

The Director may amend the permit to require installation of wells and initiation of groundwater monitoring at the POCs or to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.

IV. GEOLOGIC SETTING AND HYDROGEOLOGY

The Greenfield WRP is located in an alluvial basin called the East Salt River Valley within the Basin and Range Physiographic Province, which is defined by uplifted blocks or mountain ranges with intervening alluvial basins or valleys, created by extensional (pull apart) faulting. The elongated basins and ranges typically trend northwest-southeast and parallel one another.

The alluvial basin which comprises the East Salt River Valley is divided into three major subsurface alluvial units called the Upper, Middle and Lower Alluvial Units:

Upper Alluvial Unit: Generally coarse grained and unconsolidated with an average thickness of ~200 feet near the facility, but can be up to 350 feet thick within the basin. Alluvium is generally derived from alluvial fan deposits of Queen Creek, and farther west, stream channel deposits of the ancestral Salt River.

Middle Alluvial Unit: This is a finer grained unit compared to the Upper Alluvial Unit and is about 600' thick beneath the facility. The thickness of this unit ranges from less than 100 feet near the basin margins to over 1800 feet in the center of the basin.

Lower Alluvial Unit: Coarse-grained deposits, often consolidated. This unit is also called the Lower Conglomerate Unit. This unit is believed to be over 9000 feet thick.

The depth to groundwater in the vicinity of the WRP is approximately 100 to 150 feet below ground surface (bgs) and the direction of groundwater flow is believed to be towards the east-southeast.

V. STORM WATER/SURFACE WATER CONSIDERATIONS

The Greenfield WRP is located in the Middle Gila Surface Water Basin, approximately 0.75 miles west of the westward trending ephemeral Queen Creek. Surface water flow in response to storm events in Queen Creek discharges into the East Maricopa Floodway, which then directs all surface water flow westward towards the Gila River, located approximately 13.5 miles downstream of the facility. A small canal, running north-south is located adjacent to Greenfield Road, the western boundary of the facility. Two other small canals, laterals from the Roosevelt Canal, trend east-west near the facility parallel to Germann and San Tan (Queen Creek) roads.

The Flood Insurance Rate Map (FIRM) submitted with the application indicates a 100-year floodplain located along the Roosevelt Water Conservation District Canal / East Maricopa Floodway and Queen Creek. The East Maricopa Floodway is located approximately 0.5 miles east of the Greenfield WRP site with Queen Creek located ~0.75 miles east and southeast of the site. The Greenfield WRP is not located within a 100-year floodplain.

VI. COMPLIANCE SCHEDULE

If AZPDES discharges to the EMF exceed a total of 60 calendar days per year, the permittee shall notify ADEQ, submit a proposed design for a well at POC #2, install the well, collect and test an initial ambient groundwater sample, then submit an APP amendment application to set groundwater monitoring requirements for POC #2.

VII. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

The City of Mesa has demonstrated the technical competence necessary to carry out the terms and conditions of the permit in accordance with Arizona Revised Statutes (A.R.S.) § 49-243(N) and A.A.C. R18-9-A202(B). The WRP has been designed by Carollo Engineers, a firm that has designed several such facilities in the past. The City of Mesa will operate the WRP using certified operators. The permit requires that appropriate documents be sealed by an Arizona registered geologist or professional registered engineer. This requirement is part of an on-going demonstration of technical capability. The permittee is expected to maintain technical capability throughout the life of the facility.

Financial Capability

The City of Mesa has demonstrated the financial responsibility necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee is expected to maintain financial capability throughout the life of the facility. The is a governmental entity meeting the financial capability requirements of A.A.C. R18-9-A203(B)(1). The estimated cost of closure for this facility is $25,000.

Zoning Requirements

Greenfield WRP has been properly zoned for the permitted use and the permittee has complied with all Town of Gilbert zoning ordinances in accordance with A.R.S. § 49-243(O) and A.A.C. R18-9-A201(A)(2)(c).

VIII. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-108(A))

This is an Other Amendment to an APP that ADEQ issued previously, in accordance with A.A.C. R18-9-A211(D). The Public Notice requirement for an Other Amendment consists solely of a written notification in accordance with A.A.C. R18-9-A211(E). On a monthly basis ADEQ provides a list of permits in process to the county departments of health, association of governments and other federal, state and local entities, as well as private parties who have requested notification. For Other Amendments, the publication of this list satisfies the public participation process.

Public Comment Period (A.A.C. R18-9-109(A))

Not applicable.

Public Hearing (A.A.C R18-9-109(B))

Not applicable.

IX. ADDITIONAL INFORMATION

Arizona Department of Environmental Quality
Water Quality Division - APP & Reuse Unit
Attn: Robert Manley
1110 West Washington Street, Mail Code 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771-4498