

Aquifer Protection Permit Inspections: Top 10 Violations

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Clean Air, Safe Water,
Healthy Land for Everyone

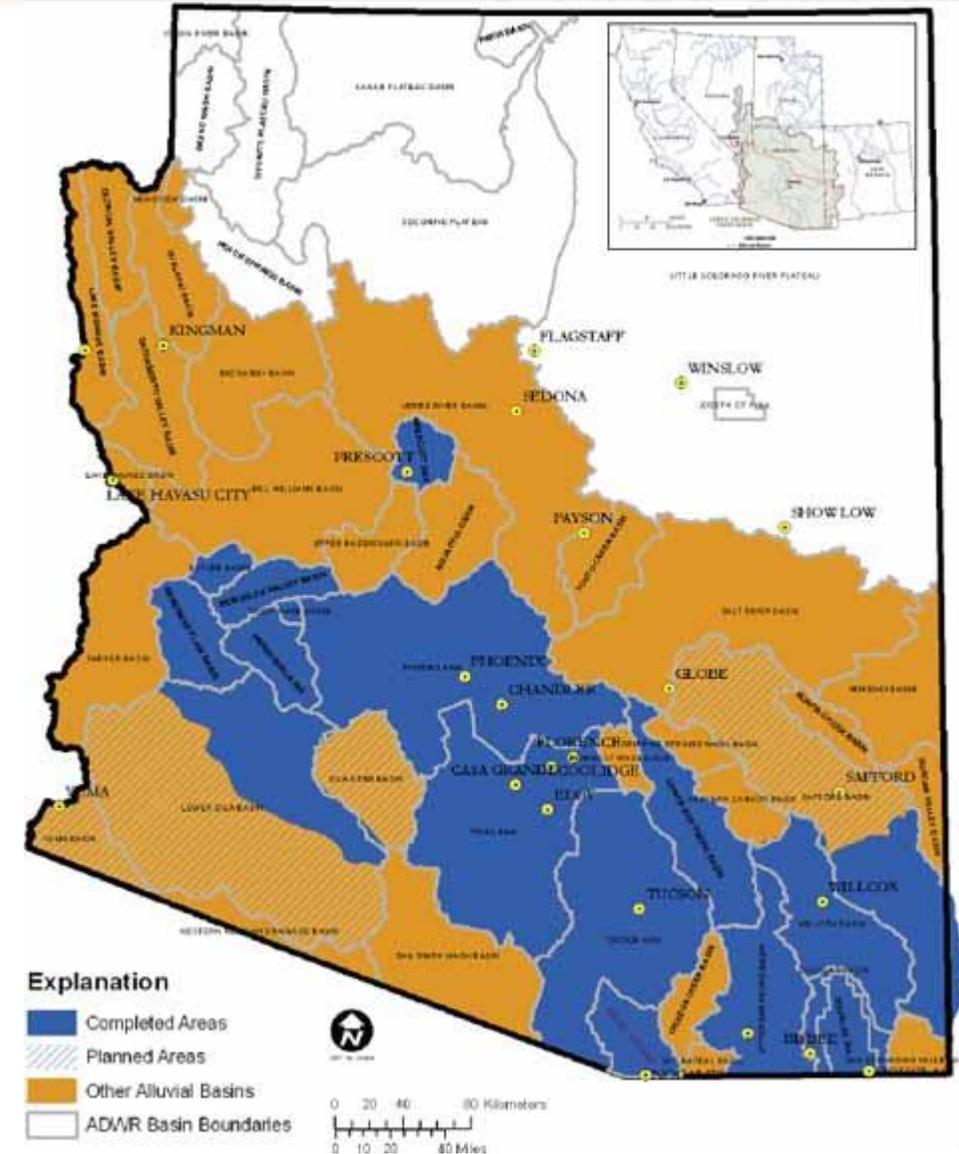


ADEQ Mission

To protect and enhance public health and the environment in Arizona.

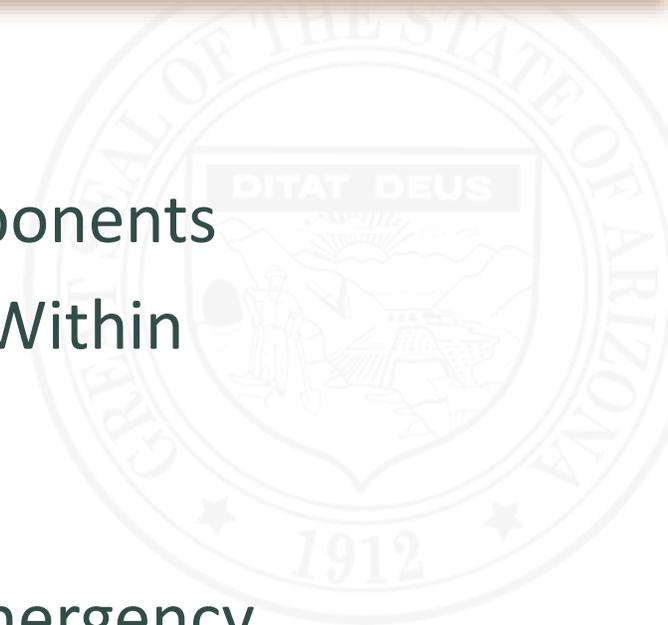
ADEQ's Water Quality Division

Protects and enhances public health and the environment by ensuring healthy drinking water is provided by public water systems and by controlling current and future sources of surface and groundwater pollution.



Top 10 Violations

1. Permit Requirements
2. Erosion of Berms
3. Point of Compliance Well Condition
4. Reuse Permits
5. Excess Scum and/or Floating Solids
6. Treatment Components
7. Vegetation/Soil Within Impoundments
8. Liner Condition
9. Contingency/Emergency Response Plan
10. Inspection Logbook



Number 1: Permit Requirements

- ARS § 49-243(K)
 - K. The director shall consider and may prescribe in the permit the following terms and conditions as necessary to ensure compliance with this article:
 1. Monitoring requirements
 2. Record keeping and reporting requirements
 3. Contingency plan requirements
 4. Discharge limitations
 5. Compliance schedule requirements
 6. Closure requirements and, for a facility that cannot achieve clean closure, post-closure monitoring and maintenance requirements
 7. Alert levels that, when exceeded, may require adjustments of permit conditions or appropriate actions as required by the contingency plans
 8. Such other terms and conditions as the director deems necessary to ensure compliance with this article



Number 1: Permit Requirements

- Current Permit
- Amendments
- Read your compliance monitoring tables, including the footnotes
- Know your alert levels (AL), discharge limits (DL) and aquifer quality limits (AQL)
- Common parameters: E. Coli, Coliform, Nitrogen

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IA
ROUTINE DISCHARGE MONITORING (continued)

Sampling Point Number	Sampling Point Identification		Latitude		Longitude
3	Downstream of the UV disinfection unit		34° 44' 46.5" N		112° 00' 51.4" W
Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Nutrients and Pathogens:					
<i>E. coli</i> : Single sample maximum	No Limit	23.0	MPN ¹⁰	Daily ¹¹	Quarterly
<i>E. coli</i> : four (4) of seven (7) samples in a week ¹²	Non-detect	Non-detect ¹³	MPN	Weekly Calculation	Quarterly
Total Nitrogen ¹⁴ : Five-sample rolling geometric mean	8.0	10.0	mg/l	Monthly Calculation 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

Number 1: Permit Requirements



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

frequency of monitoring for the pollutants set in Section 4.2, Table IIB as follows:

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

Number 2: Erosion of Berms

- Impoundment maintenance is a BADCT requirement
- Berms erosion can be caused by rain, stormwater, or even rodents
- Any identified erosion should be repaired by the facility as quickly as possible
- Erosion can lead to failure of an impoundment and loss of capacity

Table 3A
Operational Monitoring for the Unlined Surface Impoundment

Parameter	Performance Level	Monitoring Method	Monitoring Frequency	Reporting Frequency to ADEQ
Maximum ¹ Operating Level (Freeboard)	Must maintain a minimum 2 (two) foot freeboard for unlined surface impoundment per Section 2.3.1. and Section 2.6.2.1.A.	Field Observation of staff gauge	Daily	Quarterly
Evidence of overtopping of the pond	Discharge to land Surface per Section and Section 2.6.2.1.B	Field Observation	Daily	Quarterly
Sudden drops in the liquid level of the pond that cannot be attributed to pumpage out of the pond.	Greater than One foot per day with the daily volume of fluid pumped out of the unlined impoundment accounted for in accordance with Section 2.6.2.1.C	Field Observation	Daily	Quarterly
Sediment Management	Sediment accumulation shall not impair effective management and operation of the pond or substantially reduce the pond holding capacity.	Field Observation	Weekly	Quarterly
Berms, embankment slopes, slope integrity	No substantial erosion; No evidence of fractures or cracks in the inside slopes; No damage to the interior surface of the pond.	Field Observation	Weekly	Quarterly

Number 2: Erosion of Berms



Number 2: Erosion of Berms



Number 3: Point of Compliance Well Condition

- Best practices for operating, calibration and maintenance procedures regarding well/sampling
- Once a year, remove all dedicated pumps from the wells in order to:
 - Visually inspect the pump and service it if needed
 - Measure the total depth of the well
- Malfunction pumps → serviced or replaced
- Inspect the integrity of well screen and casing
- Well development (every 5 years)



Number 3: Point of Compliance Well Condition



Number 3: Point of Compliance Well Condition



Number 4: Reuse Permits

- Renewals:
 - Type 1 – no renewal required if conditions of the permit and A.A.C. R18-9 Article 7 are met
 - Type 2 and 3 – Valid for 5 years from date of issuance.
 - Online renewal through MyDEQ
- Ensure you have proper signage (A.A.C. R18-9-B702 Table 1)

Table 1. Signage and Notification Requirements for Direct Reuse Sites

Reclaimed Water Class	Hose Bibbs	Residential Irrigation	Schoolground Irrigation	Other Open Access Irrigation	Restricted Access Irrigation	Mobile Reclaimed Water Dispersal
A+, A	Each bibb at valve	Front yard, or all entrances to a subdivision if the signage is supplemented by written yearly notification to individual homeowners by the homeowner's association.	On premises visible to staff and students	None	None	On dispersal equipment and visible to the public

Number 4: Reuse Permits

- Type 2 and 3 Recycled Water General Permits.
- Annual Reporting:
 - Requirements depend on class of water.
- Record Maintenance:
 - Maintain records for 5 years.



Number 4: Reuse Permits



Number 5: Excess Scum and/or Floating Solids

- A person shall operate a permitted on-site wastewater treatment facility so that activities at the site do not adversely affect the operation
- Floating sludge is most often caused by:
 - Denitrification – small nitrogen gas bubbles float the sludge in the basin creating floating sludge chunks with small bubbles entrapped
 - Fats, Oils and Grease – simply put, FOG floats on water. When entrapped in floc, excessive grease or oil can cause floating biomass. This appears as a scum blanket that can cover the entire basin

Number 5: Excess Scum and/or Floating Solids



Number 5: Excess Scum and/or Floating Solids



Number 6: Treatment Components

- ALL treatment components in good working condition.
- Pump integrity:
 - Cycle on once weekly to check if it's working properly
- If monitoring is required:
 - Type and method of monitoring
 - Frequency of monitoring
 - Requirements for the installation, use, or maintenance of monitoring equipment
 - Intervals at which the permittee reports the monitoring results to ADEQ



Number 6: Treatment Components



Number 6: Treatment Components



- Vegetation and/or soil within impoundments BADCT
- Sediment Management:
 - Shall not impair effective management and operation
 - Shall not substantially reduce holding capacity
- Basin Vegetation Removal:
 - No vegetation within a specific distance of basin
 - No vegetation greater than specific height



Number 7: Vegetation/Soil within Impoundments

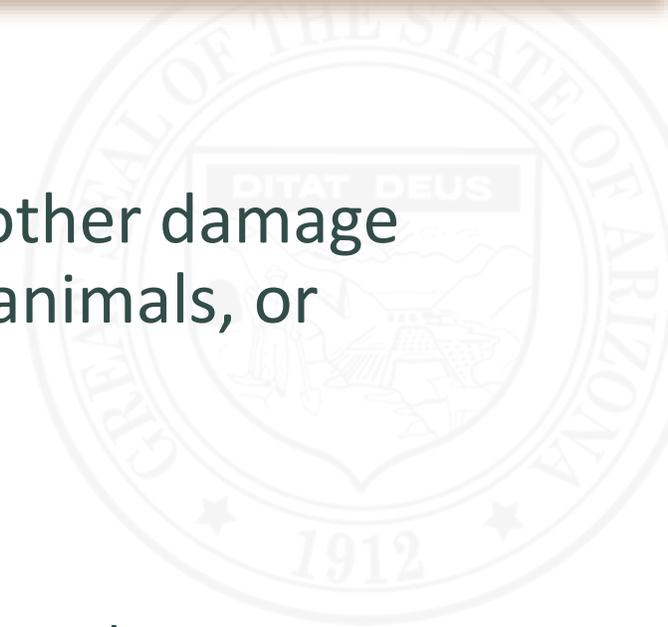


Number 7: Vegetation/Soil within Impoundments

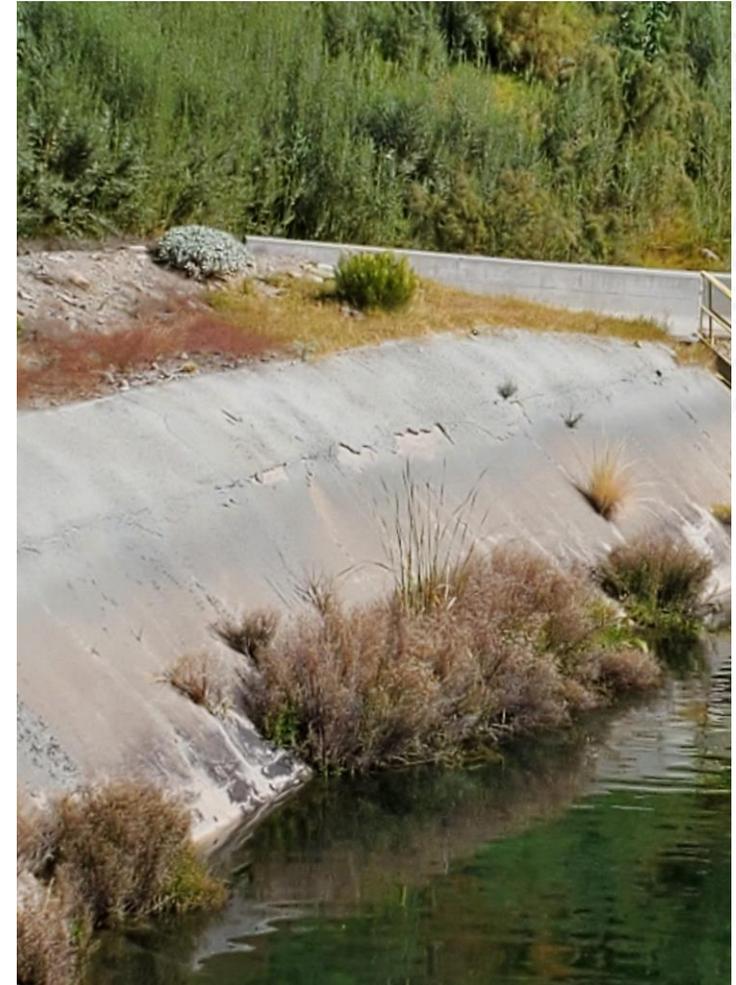


Number 8: Liner Condition

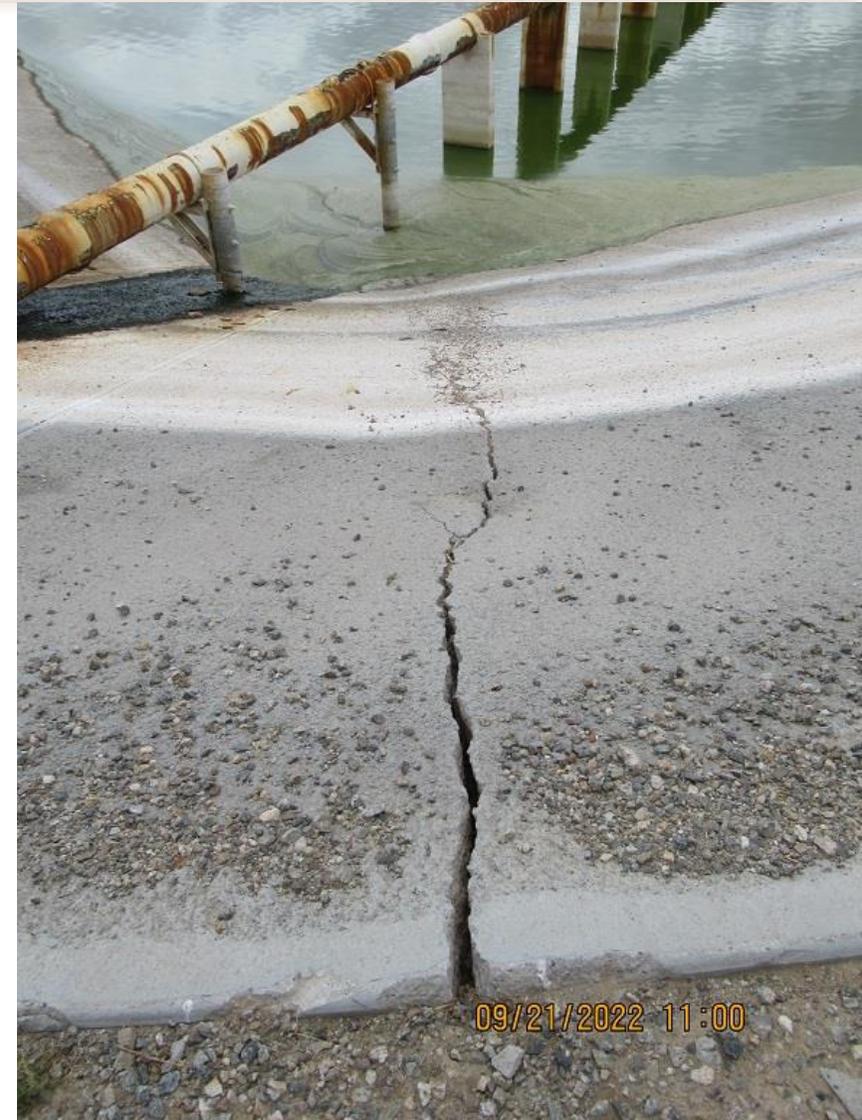
- Liner integrity:
 - No visible tears, punctures, cracks, deformities, or other damage due to sunlight, wind, weather, debris, vegetation, animals, or other adverse condition
 - Freeboard:
 - Sudden loss of fluid level
 - Check as specified in permit and after significant storm events.
- Leak Collection and Removal System (LCRS):
 - No obstruction in the inspection sump
 - Fluid level maintained below sump capacity
 - Pump(s) maintained in good operational condition



Number 8: Liner Condition



Number 8: Liner Condition



Number 9: Contingency/Emergency Response Plan

- A contingency plan shall contain emergency response provisions to address an imminent and substantial endangerment to public health or the environment
- Maintained at the location where day-to-day decisions regarding the operation of the facility are made
- Permittee shall promptly revise the contingency plan upon any change to the information contained in the plan:
 - Emergency name and contact information

Number 9: Contingency/Emergency Response Plan

- <https://azdeq.gov/GWProtection>



Forms

[APP Contingency Reporting Form >](#)

[Pre-Inspection Checklist for Mines >](#)

[Pre-Inspection Checklist for WWTPs :](#)

[Sanitary Sewer Overflow Report Form](#)

[WWTP Contingency Plan Template >](#)

Groundwater Protection Program

Revised On: Jan. 12, 2024 - 12:30 p.m.

The Groundwater Protection Program characterizes groundwater quality in each of Arizona's 51 basins. Following a sample plan approval, comprehensive sampling is conducted to determine groundwater quality, including random sampling, systematic grid-based random sampling, stratified random sampling, and occasionally, higher density sampling around targeted land uses.

In addition, ADEQ also monitors the amount of pesticides found in aquifers from routine use of agricultural pesticide products through the Arizona Pesticide Groundwater Quality Protection Program | [Learn More >](#)

Importance of Groundwater Testing

An estimated 300,000 or more Arizonans get their drinking water from private wells – wells not subject to public water system regulations. ADEQ basin studies provide important information about expected basin groundwater quality and any changes over time, as well as where specific groundwater quality problems may occur. These studies are a valuable resource for private well users in meeting water quality standards set by the federal Safe Drinking Water Act (SDWA).

Testing Groundwater Quality

ADEQ collects samples for SDWA inorganic analysis as well as oxygen and hydrogen isotopes at each

ARE YOU REPORTING A Sanitary Sewer Overflow (SSO) Bypass Event?

SSO and bypass reporting have gone paperless with mADEQ.

[Learn More >](#)

Contact Us

See More

Forms

- [APP Contingency Reporting Form >](#)
- [Pre-Inspection Checklist for Mines >](#)
- [Pre-Inspection Checklist for WWTPs >](#)
- [Sanitary Sewer Overflow Report Form >](#)
- [WWTP Contingency Plan Template >](#)

Emergency Response Plan / Contingency Plan



Name of Facility.

(Address: Click or tap here to enter text.)

Phone: Click or tap here to enter text.

Fax: Click or tap here to enter text.

Date

Approved By:

(Name and Title)

Date

Reviewed By:

(Name and Title)

Date

- Operation Inspection / Log Book Recordkeeping:
 - Name of inspector
 - Date and shift inspection was conducted
 - Condition of applicable facility components
 - Any damage or malfunction:
 - Date and time any repairs were performed
 - Documentation of sampling date and time
 - Any other information required by the permit



Number 10: Inspection Logbook

- Log books should be legible (by anyone):
 - Print if writing in a notebook, use word processing if needed
- A log book (paper copies, forms, electronic data) of the inspection and measurements required by the permit shall be maintained at a location where day-to-day decisions are made
- Log book shall be retained for ten years from the date of each inspection



- Can you maintain electronic logs, or are paper logs required?
 - Yes, electronic is fine
- How do I sign up for or update MyDEQ?
 - MyDEQ User Guides & Help Center <https://azdeq.gov/node/1952>
- Emergency Response/Contingency Plan Template:
 - http://static.azdeq.gov/wqd/gw/wwtp_contingencyplan_template.docx
- What are the proper sampling procedures for compliance sampling?
 - https://static.azdeq.gov/wqd/gw/well_maintenance.pdf
- What are the flow meter calibration requirements?
 - Mag meters are calibrated at the factory, other meters should be calibrated yearly as BMP
- Do I need to have a certified operator at my facility?
 - **Who Must Be Certified?**
 - Grade 3 and 4 facilities require an on-site operator
 - Grade 1 and 2 facilities require an on-site representative
 - Grade 1 distribution facilities serving fewer than 100 people do not need an on-site representative



For More Information:



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Compliance Assistance

Air Quality Permits

- [Permitting & Reporting Help | Learn More >](#)
- [Clarification Regarding EPA Method 9 Certification Requirements | View PDF >](#)
- [Understanding Common Violations | Learn More >](#)

Aquifer Protection Permits (APP)

- [Ensuring your operator has the correct certification for the facility | Learn More >](#)
- [Guidance for Reporting Total Coliform \(TC\) Sampling | Learn More >](#)
- [Mining/Non-Mining | Learn More >](#)

Contact

Water Quality Permit
Liaisons

Groundwater:

Ph: 602-771-0175

[Email >](#)

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Thank You! Questions?



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