

Post-Approval Process and Reporting



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Post-Approval Process

- Standard Conditions
 - Metering Plan
 - Groundwater Elevation Monitoring Plan
- Special Conditions
 - Monitoring Plan
 - Mitigation Plan
 - Water Resource Development Plan

What are Post-Approval Conditions (and why are they used)

Components of a Docket

Section 1. Approval

Section 2. Project Information

Section 3. Source Information

Section 4. Aquifer Testing

Section 5. Approved Withdrawal Quantities and Limitations

Section 6. Approved Consumptive Use Quantities and Limitations

Section 7. Existing Approved Withdrawals and Consumptive Uses

Section 8. Grandfathering Determination – Withdrawals and Consumptive Use

Section 9. Standard Conditions

Section 10. Special Conditions

Section 11. Term



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Docket No. 201803xx

Approval Date: March 8, 2018

PWS A

Groundwater Withdrawal (30-Day Average) of 4.200 mgd from Well 2,
Groundwater Withdrawal (30-Day Average) of 3.500 mgd from Well 4, and
Total System Withdrawal Limit (30-Day Average) of 6.000 mgd

Standard vs. Special Conditions

Typical Standard Conditions:

Section 9. Standard Conditions

- Comply with Commission regulations
- Meter and report all withdrawals
- Maintain meter accuracy and certify the accuracy once every 5 years
- Monitor groundwater elevation for all wells
- Maintain legal access to withdrawal location for duration of the approval
- Report any exceedances or violations of any withdrawal limits
- ‘Reopener Provision’ - If operation of the project’s withdrawal adversely affects any existing withdrawals, the project sponsor shall be required to provide, at its expense, an alternate water supply or other mitigating measure.

Metering and Monitoring Regulatory Requirements

Commission Regulation 18 CFR § 806.30 Monitoring.

- (a) Project sponsors of projects that are approved under this part shall:
- (1) Measure and record on a daily basis, or such other frequency as may be approved by the Commission, the quantity of all withdrawals, using meters or other methods approved by the Commission.
 - (2) Certify, at the time of installation and no less frequently than once every 5 years, the accuracy of all measuring devices and methods to within 5 percent of actual flow, unless specified otherwise by the Commission.
 - (3) Maintain metering or other approved methods so as to provide a continuous, accurate record of the withdrawal or consumptive use.
 - (4) Measure groundwater levels in all approved production wells, as specified by the Commission.
 - (5) Measure groundwater levels at additional monitoring locations, as specified by the Commission.

Metering Plan

Required plan for most approvals

It applies to surface water or groundwater projects that are:

- New
- Renewal
- Major modification
- Minor modification(as applicable)
- Consumptive use
- Diversion



Metering Plan

The Commission has not had formally-adopted Guidance for project sponsors to use; only Guidelines that were heavily tailored to gas industry surface water projects. The Commission committed to draft Guidance for all project types, such that:

- Clear and concise instructions would be provided to the regulated community.
- Metering Plans would focus on Commission monitoring regulations.
- Metering Plans would become useable by Commission staff and project operators.
- Information in Metering Plans would not include information duplicative of that required by other state agencies.

Lack of formal guidance from the Commission has led to all manner of Metering Plan submittals over the years...

Real Examples

“We have meters”

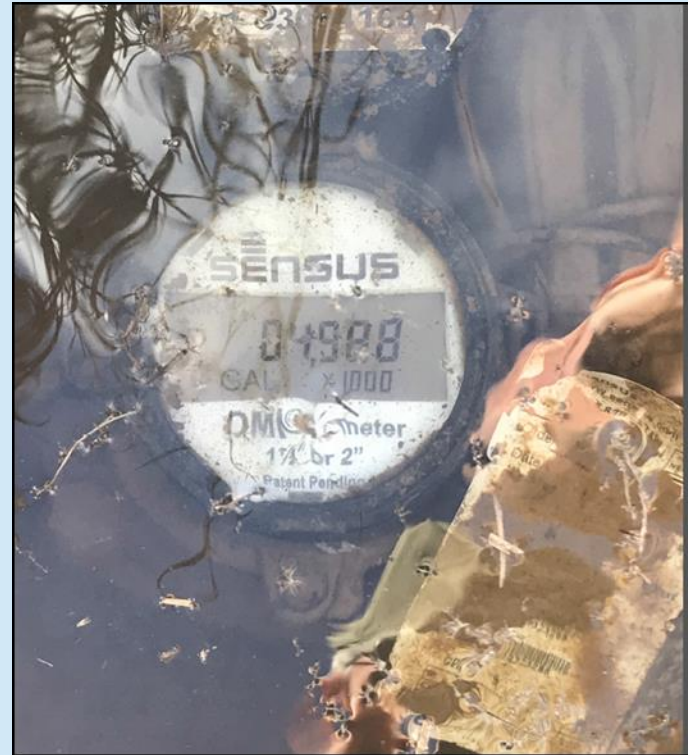
Metering-

Each well is outfitted with an in-line flow meter, with additional metering at a centralized facility.

Daily readings are recorded for pumping rate and total gallons of water pumped per day from each well.

Real Examples

“We have photos”



Real Examples

At the other end of the spectrum, some Metering Plans are so large and contain so much extraneous material, that they become unusable to staff or project operators.

What the Guidance Document Provides

1. Guidance for a facility's entire metering of water source(s), consumptive use(s), diversions, including existing or proposed monitoring equipment, infrastructure, and measurement or monitoring methodologies that will be used.
2. Guidance for a groundwater elevation monitoring plan (GWEMP); this is provided because a project sponsor is required to measure and record groundwater levels in all approved production wells and other wells and monitoring locations.
3. Common meter accuracy certification methods are provided; because a project sponsor is required to certify, at the time of installation and no less frequently than once every five years, the accuracy of all flow measuring devices and methods.

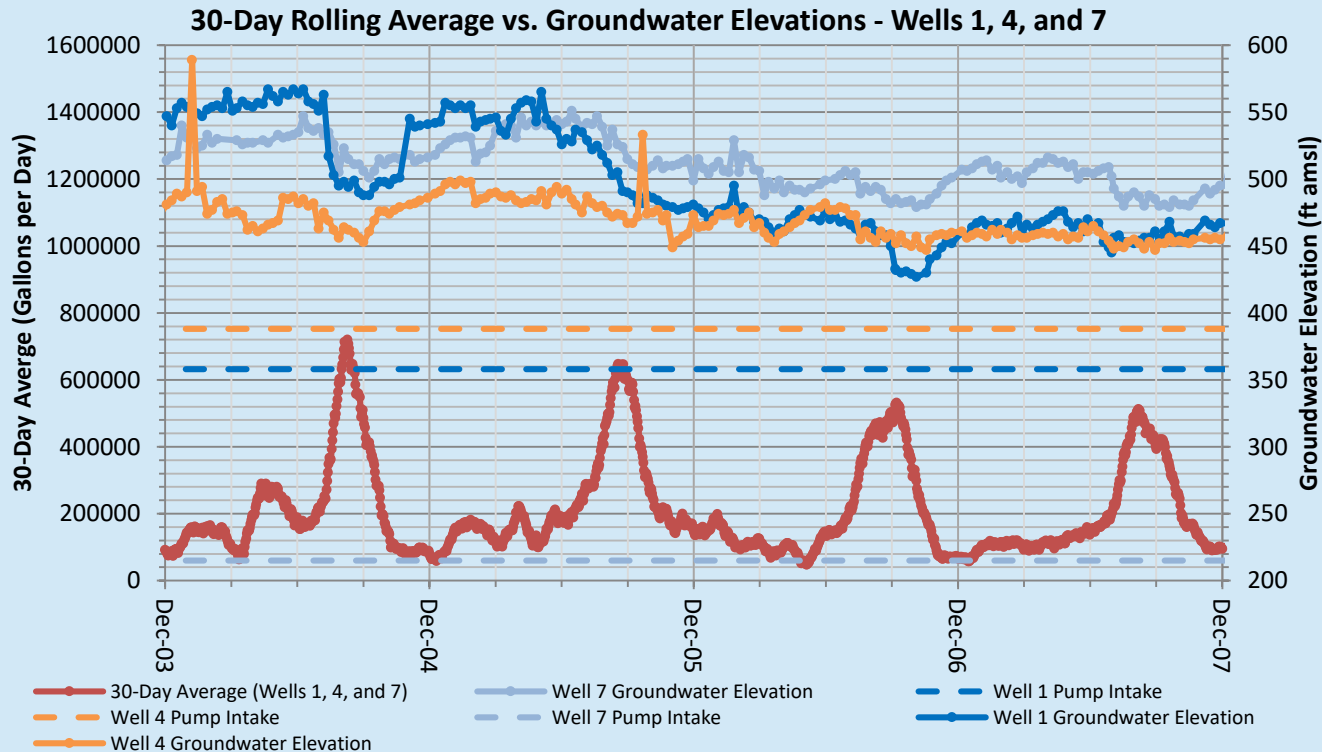
User Friendly

- It offers a concise & general template outline for all projects' Metering Plans, including criteria for:
 - A. General Description of Project Facilities
 - B. Description of Meters, Associated Equipment and Measurement Procedures
 - C. Monitoring Procedures and Record Keeping
 - D. Calibration/Certification of Metering Equipment
- It offers concise narrative sections for GWEMPs that contain specific criteria/instructions.
- It offers several common meter accuracy certification methods acceptable to the Commission.

Groundwater Elevation Monitoring Plan

- Describe wells and monitoring equipment
- Describe measurement and data storage methodology
- Describe measurement to be reported
- Accuracy verification
- Photographs and initial accuracy certification

Groundwater Elevation Monitoring Plan



Standard vs. Special Conditions

Typical Special Conditions:

Section 10. Special Conditions

- **Passby** - The project sponsor shall cease all withdrawals from the approved source when streamflow, as measured at (##), is less than the applicable flow protection threshold specified in (##), and shall not reinstate withdrawals until (##).
- **Water Loss** - The project sponsor shall comply with the water conservation requirements and maintain system water losses to less than twenty (20) percent.
- **RTE Species** - The project sponsor shall adhere to recommendations provided by (agency) in the (PNDI response letter) for avoiding adverse impact to documented occurrences of threatened or endangered species in proximity to the project location.

Post-Approval Conditions

What are post-approval Conditions?

Conditions included in a docket approval that require completion of follow-up actions.

Post-approval conditions are intended to:

- Address items that remain unresolved at the time of approval;
- Document items that cannot be otherwise be documented at the time of the approval;
- Confirm staff's conclusions related to impacts, etc.

Post-approval conditions are not intended to:

- Replace a poorly implemented aquifer test

Post-approval conditions can be expensive and time-consuming;
Staff try to avoid the inclusion of post-approval conditions in dockets when possible.

Post-Approval Conditions

Examples:

- Prior to any withdrawal from Well A, the project sponsor shall install and maintain metering on the withdrawal in accordance with Commission Regulation 18 CFR §806.30.
- Within ## days, the project sponsor shall submit a plan to Commission staff for review and approval for the implementation of a groundwater elevation monitoring program. The plan shall include proposed methods for the daily measurement and recording of groundwater elevations in sources ##.
- The project sponsor shall comply with the water conservation requirements and reduce system water losses to less than 20 percent. The project sponsor shall reduce system losses and achieve compliance with the requirements within five (5) years of the effective date of this docket approval unless an extension of time is granted due to extenuating circumstances described, in writing, by the project sponsor.

Post-Approval Conditions

Additional Examples:

- Prior to the operation of Well A, the PS shall submit a plan for SRBC review and approval that includes long-term monitoring of the aquifer in close proximity to the area utilized by residents of ##. This monitoring will provide data for validation of potential influences to the aquifer during long-term operation of the withdrawals, and specifically in those areas of the aquifer being utilized for private water supply.
- Within six (6) months of this approval, the project sponsor shall submit for review by Commission staff a water resource development plan designed to evaluate the project sponsor's ability to meet its anticipated 15year water needs. The water resource development plan shall identify water resources available for development in the vicinity of the project sponsor's service area and assess the sustainability of future proposed withdrawals through the 1-in-10-year drought reoccurrence interval.

Post-Approval Conditions

Additional Examples:

- Within ninety (90) days of this approval, the project sponsor shall submit for review and approval by Commission staff a water level verification plan for Wells XX to verify water levels collected by the SCADA. The plan shall include an implementation schedule; duration of the testing period, which is expected to include at least three (3) months of water level verification monitoring; and describe procedures that will be used to verify, through various pumping and non-pumping conditions, that the water level data collected by the SCADA system is accurate and reliable. Once approved, the plan shall be implemented within thirty (30) days. Modifications to the approved plan shall not be made until the project sponsor receives written approval of the amended plan.

Post-Approval Conditions

Satisfying Post-Approval Conditions

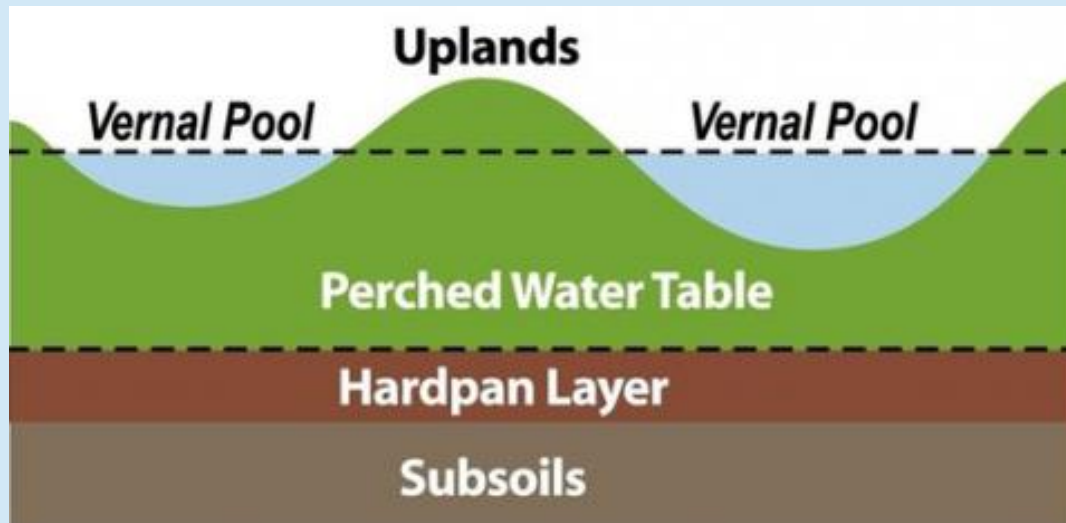
- Complete Monitoring
 - Usually at or near approved withdrawal limits
 - Operational testing may be necessary
- Complete Mitigation
 - Prior to initiating withdrawal
- Approval Modification
 - Could still involve additional testing

Post-Approval Condition Evaluation & Resolution

Case Study

PWS located in rural PA municipality; Service area population of ~4000 persons.

- 2 SW sources, 2 GW sources, Total System Limit of 0.554 mgd.



Docket No. [REDACTED]

Approval Date: [REDACTED]

[REDACTED]

Groundwater Withdrawal (30-Day Average) of 0.554 mgd from Well [REDACTED],
and a Total System Withdrawal Limit (30-Day Average) of 0.554 mgd,
for Public Water Supply,

Docket Findings

- A small vernal pond near test well was monitored during testing (ephemeral pools, are temporary pools of water that provide habitat for distinctive plants and animals).
- Drawdown in the pond and the shallow groundwater observed during the AT indicated the potential for impacts to wetlands features.
- Commission staff and PADEP staff expressed concern that continuous pumping will dewater the wetlands
- Further, water level declines in the wetlands may have been masked to some extent by a rainfall event coincident with the testing.

Public Water Supply Assistance Program Post-Approval Condition Evaluation & Resolution

The max 30-day avg. withdrawal from Well during the monitoring period was 0.348 mgd, approximately 63 % of the approved withdrawal limit of 0.554 mgd.

Although the data summary and analysis satisfactorily follows the Monitoring Plan, data should be collected while operating the well at or near the approved maximum permitted pumping rate for a period of 5 consecutive years to evaluate the potential for impacts to nearby wetlands.

Commission staff determined that the requirement to collect 5 consecutive years of monitoring data remains unchanged.

VEGETATION MONITORING PLOT 1 2017

Common name	Scientific name	Indicator Status	Stratum	% Cover	Plant health at time of survey
American Elm	<i>Ulmus americana</i>	FACW	Tree	15	Good
Swamp White Oak	<i>Quercus bicolor</i>	FACW	Tree	10	Good
Green Ash	<i>Fraxinus pennsylvanica</i>	FACW	Tree	15	Good
Red Maple	<i>Acer rubrum</i>	FAC	Tree	35	Good
American Elm	<i>Ulmus americana</i>	FACW	Sapling	15	Good
Red Maple	<i>Acer rubrum</i>	FAC	Sapling	15	Good
Virginia creeper	<i>Parthenocissus quinquefolia</i>	FACU	Vine	5	Good
Jewel Weed	<i>Impatiens capensis</i>	FACW	H	45	Good
Multiflora Rose	<i>Rosa multiflora</i>	FACU	Shrub	10	Good
Sedges	<i>Carex sp</i>	-	H	25	Good
Moneywort	<i>Lysimachia nummularia</i>	OBL	H	15	Good

Note: given that much of the vegetation overlaps, the totals will always add up to more than 100%.



Public Water Supply Assistance Program Post-Approval Condition Evaluation & Resolution

- PWS discussed their inability to resolve the post-approval monitoring condition with Staff.
- July 6, 2017 - Staff completed a site inspection, met with PWS personnel, and finalized plans for a post-approval operational testing.
- Five commission transducers were deployed in existing wetland piezometers in preparation for constant-rate operational testing



Public Water Supply Assistance Program Post-Approval Condition Evaluation & Resolution

After transducer deployment on, staff completed 6 site inspections to collect and download data on between July 8th and August 1, 2017.

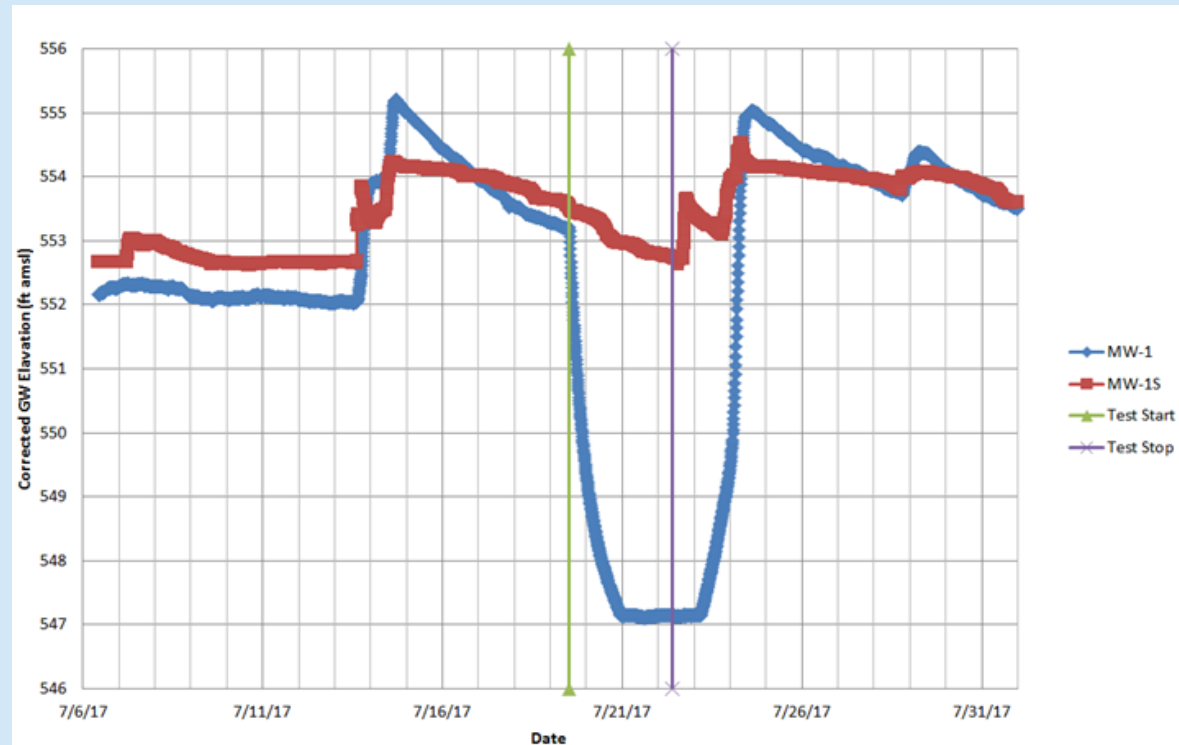
PWS initiated the ~3-day constant rate pumping of Well on 7/19/17 at a target rate of 275 gpm (0.396 mgd)



Public Water Supply Assistance Program Post-Approval Condition Evaluation & Resolution

Findings

- Vernal pond supports habitat primarily during April and May, and is mainly supported by surface water;
- Deeper groundwater head exceeds perched water levels following significant precipitation events and high groundwater conditions;
- Monitoring demonstrated that the pond is not dependent on deeper groundwater system during June and July.



Public Water Supply Assistance Program Post-Approval Condition Evaluation & Resolution

Summary / Conclusion

- EV Wetland / Vernal Pond is functioning at current operational rate without significant impact or habitat loss.
- PWS discussed their inability to resolve the post-approval monitoring condition with Staff, and requested a withdrawal reduction in accordance with their historically used quantity (as opposed to the approved quantity which they cannot use), and the removal of the ongoing monitoring component.
- Seasonal restriction will remain in place. PS is only requesting to remove the monitoring requirement.
- Through PWSAP , Commission providing tangible benefit to small PWS'er.

Reporting

- On-Line Reporting
 - Via the Monitoring Data Website (MDW)
 - Upon approval, you will be provided information regarding the on-line reporting of withdrawals and water levels.
 - Spreadsheet based
 - Copy and paste application
- Other Reporting
 - Also on-line via the Monitoring Data Website
 - Special conditions reports
 - Meter accuracy certifications

Reporting

https://services.srbc.net/reporting/helpandsupport.aspx

Monitoring Data Website

Susquehanna River Basin Commission

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Monitoring Data Website Tutorials

- [Login/Site Basics](#)
- **Non-Gas Industry Reporting**
 - [Submitting Water Withdrawal via Online Calendar](#)
 - [Submitting Water Withdrawal via Paste From Spreadsheet](#)
 - [Submitting Groundwater Withdrawal and Elevation Data via Paste From Spreadsheet](#)
 - [Submitting Total CU Data via Paste From Spreadsheet and Reviewing Exceedances](#)
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QUESTIONS ?

