Ohio Environmental Protection Agency

Ohio EPA Plan Review Procedures for Drinking Water Facilities

Division of Drinking and Ground Waters
Engineering and Infrastructure

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OHIO EPA PLAN REVIEW PROCEDURES FOR DRINKING WATER FACILITIES

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INTRODUCTION

Chapter 6109 of the Ohio Revised Code (ORC) authorizes the director of environmental protection to safeguard public health by enforcing requirements of the Safe Drinking Water Act. Oversight of public drinking water facilities is the responsibility of the Division of Drinking and Ground Waters of the Ohio EPA (the Division), and is articulated in its mission statement:

Protect human health and the environment by characterizing and protecting ground water quality and ensuring that Ohio's public water systems provide adequate supplies of safe drinking water.

Review of engineering plans and other information pertinent to the proposed project is one of the first in a series of activities undertaken by the Ohio EPA to ensure that adequate quantities of safe drinking water are provided by all drinking water facilities.

PURPOSE

The purpose for this manual is to provide a framework for obtaining plan approval for drinking water facilities in an efficient manner. A well designed and properly equipped water treatment facility and/or distribution facilities are essential in fulfilling the Division's mission.

DEFINITIONS

Agency	Ohio Environmental Protection Agency.
AWWA	American Water Works Association.
Asset Management Plan	A written document that demonstrates the managerial, technical and financial capability of a public water system, as defined by Ohio EPA.
Capability Assurance Plan	As defined in OAC 3745-87. A capability assurance plan must include a general plan, a management plan and a financial plan.
Component	The individual units used to make up a ground water-source, surface water-source or water treatment plant as defined in the Approved Capacity document.

Detail Plans	Engineering drawings in conformance with rule 3745-91-03 of the Ohio Administrative Code and Section 1.2.2 of Recommended Standards for Water Works or Guidelines for Design of Small Public Water Systems (Greenbook).
Director	Director of the Ohio Environmental Protection Agency, or authorized representative.
Division	Division of Drinking and Ground Waters.
DWAF	Drinking Water Assistance Fund
Engineer	engineering professional contracted by and representing the owner in dealings with the Agency.
Facility	a public works designed for the purpose of providing drinking water which meets all applicable drinking water requirements.
General Plans	preliminary design information of a proposed drinking water facility including, as appropriate, its design capacity, description of raw water source(s), treatment processes, basic treatment units and their loading rates, plant layout and proposed service area.
NPDWR	National Primary Drinking Water Regulations.
OAC	Ohio Administrative Code.
ORC	Ohio Revised Code.
Owner	the person or entity legally responsible for a drinking water facility.
Recommended Standards	Recommended Standards for Water Works Great Lakes Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers.
Significant Deficiency	Any defect in a system's design, operation, maintenance, or administration, as well as any failure or malfunction of any system component (sources, treatment, storage, or distribution system), that the director determines to cause, or have the potential to cause, an unacceptable risk to health or that could affect the reliable delivery of safe drinking water.
Specifications	complete, technical information of all appurtenances in conformance with Section 1.3 of Recommended Standards.
USEPA	United States Environmental Protection Agency.
WSRLA	Water Supply Revolving Loan Account
Water Supply Source	The compilation of all water-supply source components for either a surface or ground water water-supply source.
Water Treatment Plant	A compilation of all WTP components in the water treatment plant.

PRE-DESIGN ACTIVITIES

General

Pre-design meetings between the owner, engineer and representatives of the Division's engineering staff are encouraged before submitting detail plans for any drinking water facility. Pre-design meetings should be considered essential for any project with a high degree of complexity, components that do not have established design criteria in Recommended Standards, unusual features and/or deviations from standards and guidelines used by the Agency. A pre-design meeting should also be considered essential for an Owner or Engineer unfamiliar with the Agency's plan review process.

Meetings early in the project can result in a more streamlined plan review process. Benefits of a pre-design meeting include:

- A common understanding of the basic project concepts.
- An understanding of the Agency's plan review process.
- An understanding of whether a change in approved capacity is being requested for either the water-supply source or water treatment plant thereby necessitating submittal of a basis-of-design table for both the source and treatment components.
- An early discovery of facets of a proposed design which may need to be examined, documented and/or further investigated.
- An understanding of whether design criteria exists for a component(s) of either the water-supply source or water treatment plant or whether a bench-, pilot- or full-scale study is required.
- Recognition by both the Agency and the Owner of major design flaws at an early stage, preventing unnecessary investment in an unapprovable project.
- Exploration of alternatives which may not have been considered by the Agency or the Owner.
- Presentation by the Owner of project schedules and any special circumstances relevant to plan review.
- Discussion of system deficiencies which will need to be addressed, when the subject water-supply source or water treatment facility is an existing one.

The following sequence of events should be considered for complex projects:

1. Owner (or Engineer) requests a meeting through the district representative to discuss an upcoming project. This will trigger a file review by Ohio EPA for significant deficiencies that are to be addressed as part of the plan approval.
2. Ohio EPA will send confirmation of the meeting date, time, and location along with a list of items to be considered on the meeting agenda.
3. No later than one week before the meeting, Owner or Engineer should send any pertinent documentation to Ohio EPA for review.

4. The meeting results will be documented and copied to all participants with the next series of activities clearly identified along with a tentative schedule for the next submittal or review.

Additional Permit Requirements

During the pre-design period, the Owner is also responsible for contacting other divisions of the Agency and other state, local, county and federal agencies in order to determine other permits that the project may require. Additional Agency permits commonly required by drinking water facilities include a Permit to Install (PTI) from the Division of Surface Water for onsite waste handling facilities, a National Pollutant Discharge Elimination System (NPDES) permit for waste discharges, a Notice of Intent (NOI) for storm water control of the construction site and a permit from the Division of Air Pollution Control for packed tower aerators used to remove Volatile Organic Chemicals (VOCs). The Division of Air Pollution Control's fugitive dust requirements must also be met. For water facilities capable of withdrawing greater than 100,000 gpd, the Ohio Department of Natural Resources, Division of Water's Water Withdrawal Facility Registration (WWFR) Program must be met. If any streams or wetlands will be disturbed (fill or cut), the U.S. Army Corp of Engineers may require 404/401 Permits. The Owner is responsible for obtaining all necessary permits, licenses and approvals. Plan approval by the Division will in no way imply that other permits, approvals and licenses are not required.

File Review

For projects which involve modifications to or expansion of an existing water-supply source or water treatment facility, the Division will review the files for any documented significant deficiencies and will discuss them with the owner at the meeting. This will include projects relative to capital improvements in the system. For example, detail plans for treatment plant upgrades must address any unaddressed significant deficiencies identified for the existing treatment plant but may not have to address a significant deficiency identified for the source or within the distribution system. If a system has multiple significant deficiencies at the plant and will be submitting separate plan approval packages, they will need to have an acceptable overall plan showing which plan projects will address the significant deficiencies. The Agency may negotiate a reasonable timetable for correction of the significant deficiency, outside the timetable for the current project. The negotiated timetable for correcting significant deficiencies will be tracked as part of the significant deficiency compliance schedule in SDWIS.

Normally, unresolved deficiencies will be brought to the attention of the Owner during the pre-design meeting. However, if plans are submitted without any prior meetings, significant deficiency issues will be noted in the Agency's first review letter.

GENERAL PLANS AND DESIGN STUDIES

General plans and any accompanying Engineer's report (or design study) or bench-, pilot- or full-scale demonstration study report (if required) should be submitted to the Division for review for any project consisting of a new water-supply source or water treatment facility. Submission of general plans for modifications to or expansion of an existing water-supply source or drinking water facility should be submitted for complex designs, non-standard technology, phased implementation, compliance schedules or, deviations from standards and guidelines. General plans are required for SRF funded projects. In these instances, the Owner should contact a representative of the engineering staff for help in deciding whether a general plan submission is warranted. General plans may either be submitted formally or informally and will be reviewed with the same timetable as detail plans. Formally submitted general plans will require a fee for review. (See Appendix A for fees.) Formally submitted general plans will, following satisfactory resolution of all deficiencies, result in approval from the Director. Informally submitted general plans will not require a review fee and will result in one comment letter from the Agency with no subsequent approval. It will be the expectation of the Agency that the comments will be incorporated in the final design. Submission of an Engineer's report in addition to general plans as described in Section 1.1 of Recommended Standards is highly recommended.

REQUIREMENTS FOR NEW WATER-SUPPLY SOURCES

Ground Water Sources

If a new ground water source is to be approved, the Owner must first obtain a site acceptance letter from the appropriate district office. This is done by submitting a well site application followed by an on-site inspection of the proposed site. Detail plans for wells can only be approved following siting, construction and testing of the well. As such, it is critical to ensure proper siting of the well. Site acceptance for a new well (or wells) is performed to ensure that proposed wells are drilled in areas with no nearby sources of contamination. The well site application is available at: http://epa.ohio.gov/ddagw/engineering.aspx

Following site acceptance, the well(s) may be drilled. A pump test as detailed in OAC 3745-9-09 must be completed. Following the pump test the source water must be analyzed at an Ohio EPA certified laboratory for specific contaminants. Acceptability of the proposed well(s) and the required treatment will depend on the results of the bacteriological, chemical, and radiological testing, and results of the pump test. A complete well analysis list of parameters can be found in OAC 3745-9-09 or at: http://epa.ohio.gov/Portals/28/documents/pws/CompleteWellAnalysis.pdf

Details plans of the well must be approved prior to the well being used as a potable water source.

Surface Water Sources

For proposed water treatment plants which are to use a surface water source which is presently being used by an existing surface water treatment plant, no water quality testing is required.

For a proposed surface water source which is not presently being used by a surface water treatment plant, a full year of sampling is required to ensure suitability for treatment by the proposed treatment system. Sampling requirements are listed in OAC 3745-81-71.

DETAIL PLANS

Chapter 3745-91 of the OAC and section 1.2 of Recommended Standards detail requirements for detail plans. Complete detailed technical specifications must accompany the detail plans. Submission of a design summary is recommended. If the project includes water line extensions, storage tanks, pump stations and/or pressure reducing stations and air relief valves, the appropriate project summary sheets should be submitted. See Appendix B, item 10.

All plans need to be submitted to the appropriate district office where they will be separated for District or Central Office review. Plans for new water treatment plants or significant modifications to existing water treatment plants for community water systems (with the exception of plans for mobile home systems) will typically be forwarded to the Central Office for review. All other types of plans will typically be reviewed in the appropriate district office. Turnaround goals for various phases of plan review are listed in Appendix A.

A general description of the plan review process for both district office and central office review of plans is provided in Appendix D. A flowchart of the plan review process is provided in Appendix E.

Ohio EPA Plan Submittal Requirements

Appendix C provides a summary of the information required for plan review by Ohio EPA-DDAGW. These requirements are applicable for both design build and design bid build projects.

Tracking

All plan review submissions are tracked by a network-based computer tracking program (SWEPT) available to review engineers and managers. The program tracks milestones such as the application receipt date, all meetings, review letters, revisions received, and approval dates. Ohio EPA has also written several reports which take the data from the SWEPT tracking program and provide the information in various formats to ensure

goals are met and plans are moving forward. The Agency has implemented a plan to reduce the backlog of inactive plans. If comments were sent by the Agency and revisions are not submitted within a 90-day period, Ohio EPA will issue a letter noting the review of the plans may be cancelled if we don't receive the requested information within 21 days or receive a status update for the project and an acceptable schedule for submitting revisions. If the review of the plans is cancelled, the plan review fee will not be refunded and a new application with the applicable fee will be required for review of the project.

Activities During the Design

A meeting with the Agency at the beginning of the project design phase is recommended for projects with components that do not have established design criteria in Recommended Standards, components for which an alternate design criteria is being supported by an approved bench-, pilot- or full-scale demonstration study, components with other unusual features, or special scheduling needs. While the pre-design meeting focused on project direction and concepts, the design meeting will focus more on project details. Although reviews are completed on a first come first serve basis, the Agency will make every effort possible to accommodate project schedules. The Engineer should contact the Division engineering staff if the design is to be substantially changed from what was presented in pre-design meetings. Examples of substantial changes include changes to the treatment scheme, additions and/or deletions of treatment units or chemical feed systems or changes in unit sizing or capacities.

If no pre-design meetings have been held, the Engineer should contact the Division engineering staff if the design is to involve deviations from requirements, standards or guidelines, in order to minimize revisions to the design.

Review of Detail Plans

The plans and specifications will be reviewed for conformance to Recommended Standards or Greenbook, as applicable, AWWA Standards, all applicable sections of the ORC, OAC, generally acceptable engineering design practices for public water systems and Agency guidelines included in Appendix B. In addition, the plans and specifications will be reviewed for conformance to the Approved Capacity Document and any aspect of the proposed design which will hinder its ability to deliver adequate quantities of water that meets all applicable standards will be brought to the attention of the Engineer.

Normally, the Agency review engineer will send a review letter to both the Engineer and the Owner, with copies to any other parties who may have an interest in the plans being reviewed (this includes a copy to the appropriate district office for Central Office reviewed plans). At the request of the Owner, Engineer, or reviewing engineer, a meeting may be held before the first review letter is sent by the Agency. The optimum time for a meeting would be as soon as the Agency reviewer has completed the initial review of the first submittal. A meeting at this stage of the review would be especially

beneficial for plans which are complex or have unusual features or technologies. This type of meeting may also be useful for clarifying (to the reviewing engineer) any aspect of the plans which may be unclear.

SPECIAL PROCEDURES

Arbitration

During the course of the plan review process there may be situations where DDAGW and the Owner or Engineer are unable to reach a mutually acceptable resolution of conflicts. When DDAGW and the engineer (or owner) are unable to resolve a conflict through the normal review process (comments and revisions), the following framework should be used to reach a resolution:

1. Conflict between the engineer or owner and the DDAGW reviewing engineer should be referred to the reviewing office's engineering supervisor. This will be done by having the supervisor review all comment letters.

2. Conflicts between the engineer and the DDAGW engineering supervisor should be referred to the reviewing office's manager. This will be done by having the second comment letter, regarding a conflict situation, signed by the reviewing office's engineering manager. Prior to this letter going out, the division assistant chief/chief should be made aware of the point(s) of contention and be willing to support denial of the plans if the issue cannot be resolved.

3. Conflicts between the engineer and the DDAGW reviewing office's manager shouldbe referred to the division chief. This will be done by having the third comment letter, regarding a conflict situation, reviewed and signed by the DDAGW Assistant Chief/Chief.

4. Ohio EPA will propose approval or denial of the fourth submittal (proposed denial requires legal and Director's office concurrence that the proposed denial is based on legally required criteria). A meeting among engineering staff, the public water system representatives and DDAGW senior management should occur before denial is proposed.

Self-Certification

The Director may enter into an agreement with any political subdivision or investor owned public utility that owns or operates a public water system which employs a properly licensed professional engineer to bypass the normal review process (for detail plans only) for distribution system projects such as water line extensions, elevated finished water storage tanks and booster pumping stations. The plans are approved without further DDAGW review upon certification by the owner's engineer (who must be an officer or employee of the owner) and payment of an administrative service fee.

Requirements for self-certification are given in Ohio Revised Code Section 6109.07(A)(2), Ohio Administrative Rule 3745-91-12, and a separate self-certification guidance document.

Exemptions

OAC Rule 3745-91-02 provides plan approval exemptions for certain water line replacements provided conditions are met.

Source Water Protection

For all public water supply systems, Ohio has developed a source water protection program which has been endorsed by USEPA. Community public water suppliers serving a minimum of 250 people are required to develop or update a source water protection plan (and submit for endorsement by Ohio EPA) when the system gets plan approval for use of a well. Source water protection plans are voluntary for all other public water systems. For information about Ohio's source water protection program, visit our web site at http://epa.ohio.gov/ddagw/swap.aspx or contact Division of Drinking and Ground Waters personnel in any of Ohio EPA's offices.

Demonstration Studies

Full-scale, pilot, or bench demonstration studies may be necessary should design criteria not meet the specifications of OAC Rule 3745-91-08. Examples of water treatment plant design criteria which do not have specifications in OAC Rule 3745-91-08 include:

- Low-pressure membrane treatment of surface water
- High-pressure membrane treatment other than for removal of hardness from a ground water source
- Granular activated carbon treatment (for a system with an MCL exceedance)
- Alternative design criteria other than those established in Recommended Standards
- No design criteria has been established in Recommended Standards
- Sufficient experience in the state of Ohio has not been demonstrated to establish treatment effectiveness
- Design criteria that differs from that normally approved for conventional treatment processes based on Recommended Standards and/or the Approved Capacity document.

If a proposed water treatment plant is to include a treatment process (component) that involves bench-, pilot- or full-scale demonstration testing, it is imperative that the design engineer meet with the engineering group prior to starting to prepare detail plan documents. Bench-, pilot- or full-scale demonstration testing for surface water treatment processes encompasses at least 6 weeks for data collection. The length of the full demonstration testing process will take longer and include submitting and

acceptance of the protocol, data collection, submitting results and final report acceptance.

Bench-, pilot- and full-scale testing Guidelines have been developed for many new technologies, for increased ratings of conventional treatment processes at surface water treatment plants and for some processes at ground water treatment plants. Each of these Guidelines contains valuable information in three major sections:

- General criteria
- Demonstration study criteria, and
- Approval criteria.

However, if a treatment process is proposed for which no Guideline has been developed, additional time must be allotted for development of a protocol which may, in itself, involve research and data collection. The currently available Guidelines are listed in Appendix B, item 9.

Design-Build

The design-build process is becoming more prevalent as a project delivery system. Under design-build, both design and construction services are contracted to a single entity. This results in a single point of contract responsibility and allows for overlapping the design and construction phases of a project.

An Owner considering a design-build project should notify the Agency as early as possible, to arrange a meeting with the engineering staff. The purpose of the meeting is to allow the Agency to become acquainted with the basic concepts of the project and to explore major issues which may need to be resolved in the early stages of the project.

Submission of general plans should be the next step towards plan approval and should be considered essential in a design-build project.

Following approval of the general plans, the Owner should submit detail plans for review. The detail plans must contain sufficient detail to allow the reviewer to ensure that process units comply with Recommended Standards and any other applicable requirements (See appendix C for minimum plan information required).

Water Supply Revolving Loan Account (WSRLA)

Any project which is to be financed in any part by the WSRLA will need to meet additional requirements as detailed in the Drinking Water Assistance Fund Management and Intended Use Plan. Information on the Drinking Water Assistance Fund Management and Intended Use Plan can be found at:
http://epa.ohio.gov/ddagw/financialassistance.aspx

Capability Assurance

The 1996 Safe Drinking Water Act (SDWA) Amendments included a provision for Capacity Development as part of a broad prevention strategy. Ohio has adopted the terminology “Capability Assurance”.

Capability assurance provisions offer a framework within which the Ohio EPA and water systems can work together to ensure that systems acquire and maintain the technical, financial, and managerial capability needed to achieve consistently public health protection objectives of the SDWA.

In accordance with OAC 3745-87-02 all systems seeking loans from the DWAF and all new community and non-transient non-community public water systems that begin operation must submit an asset management program which demonstrates technical, managerial and financial capability. Additional information on asset management programs can be found in OAC 3745-87 or at:
http://epa.ohio.gov/ddagw/pws.aspx#113435168-asset-management

Watershed Control Plans, 4-log removal, Distribution System Optimization Plans, Corrosion Control Recommendations/Studies and Other “approvals”

Each of these documents will be logged, tracked and formally approved through SWEPT. SWEPT project types include: Detail Plans, Self Certified Plans, General Plan – formal, General Plan – informal, Corrosion Control Recommendation, Corrosion Control Study, Optimal Water Quality Parameters, Distribution System Optimization Plan, Enhanced Coagulation Study/Report, GWR – 4 Log Exemption, Pilot Protocol and Pilot Results.

Special Conditions

Special Conditions can, on an as needed basis, be added to a detail plan approval to ensure a follow-up action is completed pursuant to the detail plan approval. Special conditions may be included when an exemption or variance from the well rules is granted. For example, if a well is installed such that the required isolation radius cannot be met from a gravity sewer line, special conditions for regular ongoing pressure testing of the sewer line and/or additional raw water total coliform or nitrate sampling may be added to the plan approval. Special conditions may be included in a plan approval in lieu of a demonstration study. For example, tank mixing and tank aeration used for DBP Control may include a special condition as part of the plan approval for extra monitoring of distribution system chlorine residuals.

CONSTRUCTION

Any changes from the approved plans must be communicated to the reviewing office. Some changes may require submittal of revised plans for review and approval.

For new water treatment plants, an Operation and Maintenance Manual is recommended. Operator training is also recommended, especially for any water treatment plant with non-traditional treatment processes.

APPENDIX A

Agency Fees and Performance Goals

Fees

The fees for review of plans are as follows:

Informally submitted general plans	No fee
Formally submitted general plans	$150.00
Detail plans	$150.00 + 0.35% of project cost ($20,000.00 maximum)
Self-Certified detail plans	$185.00
Wells	$20.00 per well ODNR fee

Performance Goals

The following are performance goals for plan review milestones (both general and detail plans):

Milestone	Central Office Goal	District Office Goal
Initial review and comment letter or issuance of plan approval	60 days	21 days
Review of revisions and/or issuance of plan approval	30 days	21 days
Total time to approval	180 days for 85% of plans	90 days for 85% of plans

The following are performance goals for demonstration studies (for both the protocol and the report) and other “plan” reviews:

Milestone	Goal
Initial review or acceptance for Demonstration Study	45 days
Subsequent review or acceptance for Demonstration Study	30 days
Corrosion Control Recommendation/Study	45 Days

APPENDIX B

Reference Documents for Plan Approval

The following is a list of documents that are used for reference during the plan approval process:

1. Ohio Administrative Code; available on the Division web site at: http://epa.ohio.gov/ddagw/rules.aspx or at http://codes.ohio.gov/

2. Ohio Revised Code; available at http://codes.ohio.gov/

3. Recommended Standards for Water Works Great Lakes Upper Mississippi River Board of State Public Health and Environmental Managers; available from http://10statesstandards.com/

4. AWWA Standards; available from www.awwa.org

5. Guidelines for Design of Small Public Ground Water Systems (Greenbook). http://epa.ohio.gov/portals/28/documents/engineering/greenbook.pdf

6. Division of Drinking and Ground Water's Water Supply Data Sheet http://epa.ohio.gov/portals/28/documents/engineering/wsds.doc

7. Backflow Prevention and Cross-Connection Control; available from the Division.

8. Approved Capacity - Planning and Design Criteria for Establishing Approved Capacity for: 1) Surface Water And Ground Water Supply Sources, 2) Drinking Water Treatment Plants (WTPs), and 3) Source/WTP Systems. http://epa.ohio.gov/portals/28/documents/engineering/ApprovedCapacity.pdf

9. The following engineering guidance documents are available on the Division web site at: http://epa.ohio.gov/ddagw/rules/tabid/5735/LiveTabId/110545/LiveAccId/115090/Default.aspx

   ENG-01-002: Guidelines for Clarifier and Filter Ratings at Surface Water Treatment Plants
   ENG-02-001: Guidelines for Treatment Process Ratings at Precipitative (e.g., Lime) Softening Ground Water Plants
   ENG-03-002: Detail Plan Submission Guidance for Non-Community Public Water Systems
   ENG-05-001: Guidelines for Obtaining Approval of Membranes to Meet Particulate and Microbiological Removal Requirements for Surface Water

ENG-06-001: Guideline for Evaluation and Implementation of Chloramination (This policy to be replaced by rule revisions).

ENG-07-001: Guidelines for Obtaining Approval of Membranes to Meet Treatment Requirements for Ground Water Treatment

ENG-08-002: ASTM AWWA Pipe Policy

ENG-09-001: Guidelines for evaluating granular activated carbon (GAC) for disinfection by-product (DBP) precursor removal

ENG-10-001: Guidance for Installation of Automatic Flush Hydrants in Distribution Systems

ENG-12-001: Guidelines for Demonstration of On-Site Sodium Hypochlorite Generators to Meet Inactivation/Disinfection Requirements of Drinking Water

ENG-13-001: Guidelines for Obtaining Secondary Filtration Credit for Compliance with the LT2 Rule

10. Project Summary Sheets for pump stations, pressure reducing stations and air relief valves, storage tanks and waterline extensions. http://epa.ohio.gov/ddagw/engineering.aspx.

11. Guidelines for Arsenic Removal Treatment for Small Public Drinking Water Systems. http://epa.ohio.gov/portals/28/documents/engineering/ArsenicManual.pdf

12. Minimum Requirements for a General Plan for Self Certification Agreements; available from the Division.

13. Required Analysis for new public water system wells. A complete well analysis list of parameters can be found in OAC 3745-9-09 or at: http://epa.ohio.gov/Portals/28/documents/pws/CompleteWellAnalysis.pdf

14. State of Ohio Technical Guidance for Sealing Unused Wells. http://epa.ohio.gov/ddagw/gw_support/tabid/6071/LiveTabId/126911/Default.aspx

15. Guidelines for Tracer Studies; available from the Division. (Needs to be formally adopted.)

16. Laboratory Construction and Remodeling. http://epa.ohio.gov/Portals/28/documents/labcert/lab_construction_and_remodel_checklist.pdf

APPENDIX C

Minimum Information Required for Plan Review by Ohio EPA DDAGW

In general, plans submitted to DDAGW for review need to contain sufficient information to allow the reviewer to assess compliance with all relevant requirements contained in:

- *Recommended Standards For Water Works*
- *Planning and Design Criteria for Establishing Approved Capacity for 1) Surface Water and Ground Water Supply Sources, 2) Drinking Water Treatment Plants (WTPs), and 3) Source/WTP Systems (2010)*
- *Guidelines for Arsenic Removal Treatment for Small Public Drinking Water Systems*
- *Guidelines for Design of Small Public Water Systems*
- All applicable rules of the Ohio Administrative Code
- American Water Works Association Standards

The following is a summary of relevant information required for plan review, as applicable for DW projects. **Projects to be funded through the WSRLA loan program will require additional information related to specific loan requirements.**

Additionally, in accordance with HB 512, Ohio EPA requires the owner or operator of a community or nontransient noncommunity water system to conduct a new or updated corrosion control treatment study and submit a new or updated corrosion control treatment plan not later than eighteen months after any of the following events:

(a) The system changes or adds a source from which water is obtained.

(b) The system makes a substantial change in water treatment.

(c) The system operates outside of acceptable ranges for lead, copper, pH, or other corrosion indicators, as determined by the director.

(d) Any other event determined by the director to have the potential to impact the water quality or corrosiveness of water in the system.

Administrative Information

- Complete, current Water Supply Data Sheet with applicable fee payment

- Owner acceptance. This can be done by the owner signing the title sheet of the plans or submitting a letter stating they will own and operate the system (typically

needed for water line extensions when the plans are submitted by the developer and not the PWS which will ultimately own and maintain the system)

- Capability Assurance Plan (CAP) – required for all new community and non-transient non-community systems

- General Plan - required for loan projects other than water line extension or replacement projects.

- Approved capacity basis of design table required if changing capacity of sources or treatment

- Easement Information

Source Water Information

- Information to assure an adequate quantity and quality of raw water.

- For wells:

    - Site approval required. System must complete a well site application and have a well site acceptance letter.
    - Ensure proper construction by submitting a Well Profile and Construction Form
    - Well log
    - Pump test or aquifer test reports
    - Complete well analysis results

- For surface water sources:
    - Safe yield study
    - Source water sampling in accordance with OAC 3745-81-71

Plant Project Information

- Project location
- Site plan
- Demolition plan
- Grading plan
- Yard piping
- Stormwater, sanitary service at site
- Plan view of building and rooms, storage areas, etc. for dimensions and location of equipment
- Floor plan
- Laboratory construction for DES approval

- Containment volume dimensions shown for chemical storage areas (if not provided elsewhere)
- Shared walls for raw and finished water
- Sections which show relevant plant equipment locations and detail of piping
- Process schematics or P&IDs (piping and instrumentation diagrams/drawings)
- Building plan showing process piping from one area to another
- Location of chemical application points in the plan view
- Plan views and cross sections of plant process units to adequately show how all parts of the process work, include dimensions and elevations. Used to determine detention times, loading rates, etc.
- Process equipment specifications
- Waste handling information
- Schedules of HVAC equipment to show adequate HVAC for chemical storage areas
- Plumbing schematic – water and sewer
- Show adequate backflow prevention
- Standby power/generator information
- Plan and profile drawings for distribution system projects.

Additional Items for Gaseous Chlorine Systems

- Electrical details
- HVAC
- Directional views and roof views for exhausts and fans. Door and window details of gaseous chlorine room and any engineering controls.

APPENDIX D

Plan Review Process

District Office Plans
(Based on the process currently in place in the Southeast District Office)

1. Plan package received in District Office. Documents are date stamped by receptionist and the check is logged in. Plan package is given to the District Office Administrative Assistant (DO-AA) who determines if the fees are correct and if the package is administratively complete. If not, the DO-AA holds the package and contacts the project's engineer/owner to request additional information. Once the package is complete, the DO-AA will log the project, stamp plans with payment information, process the check, complete multimedia input forms and give the plan package to the DDAGW-AA. The DDAGW-AA logs the project in Revenues and generates the plan number. The DDAGW-AA enters the plans into SWEPT (DDAGW's plan tracking program). The DDAGW-AA returns a copy of the application to the DO-AA and gives the plan package to the DO Supervisor.

2. The supervisor determines if the plans are to be reviewed in the District or Central Office.

   If plans are to be reviewed in the District Office, they assign plans to a plan review engineer through the SWEPT plan tracking program, update the plan tracking database as needed and deliver the plans to the review engineer.

   If plans are for a project to be WSRLA funded, an additional set of plans and specifications must be submitted and forwarded to DEFA.

   If plans are to be reviewed in the Central Office, the District Office supervisor coordinates with the staff member assigned to oversee the facility to see if we want to provide general comments on the project. The supervisor then prepares a cover memo with or without comments and sends the plan package to Central Office. The reviewing office is changed to CO in SWEPT and SWEPT is updated with the date the plans were sent to CO.

3. Plan review engineer:
   - Review Water Supply Data Sheet.
   - Reviews plan sheets.
   - Reviews specifications.
   - Reviews project summary sheets.
   - If new CWS or NTNC water system, must review CAP.
   - Identify relevant reference documents.

- Talk to staff member assigned to oversee the facility or review the water system files to identify any documented unresolved water system deficiencies, if applicable for the project.
- Make notes of plan features and possible issues; (some plan review engineers may draft the plan approval report at this stage and others may draft the report after the plans are approvable).
- Discuss any unusual features or issues with the supervisor.
- Draft comment letter if required.
- Supervisor and/or manager review of draft comment letter.
- Send comment letter and enter action in SWEPT. (a documented phone call or e-mail may be acceptable depending on the number and complexity of the comments.)

4. Response received from owner or engineer; enter into SWEPT.

5. Review response against comment letter, specifications, plans and any revised plan sheets. Check off items adequately addressed.

6. Prepare an additional comment letter if necessary. Supervisor and/or manager review draft comment letter and enter into SWEPT.

7. Response received from owner; enter into SWEPT.

8. Repeat steps 5 through 8 as necessary (in accordance with the Arbitration Process).

9. Once all issues are resolved and approvable plans are received, prepare the plan approval package.

    - Two sets of plans. (One set is held in the District Office)
    - Plan approval report if appropriate.
    - Plan review work sheet.
    - Draft Director's Letter

10. Final engineering supervisor review and sign off; enter into SWEPT plan tracking module.

11. Forward plan approval package to the ADMIN Unit in DDAGW-CO.

    - Prepare plan approval letter, apply Director's signature as delegated.
    - Stamp approved plans.
    - Mail out approval letters, approved plans and plan approval reports.
    - Issue public notice.

12. Receive a copy of the final Director's letter; enter into SWEPT plan tracking module. Close out SWEPT tracking.

Central Office Plans

1. Plans received in Central Office from a District Office.

2. Supervisor logs plans into SWEPT plan tracking program and in manual log book.

3. Supervisor assigns plans to a plan review engineer; enter into SWEPT.

4. Plan review engineer:

    - Reviews plan sheets.
    - Reviews specifications.
    - Identify relevant reference documents.
    - Reviews water system files and contacts District Office to identify any documented unresolved water system deficiencies.
    - Make notes of plan features and possible issues; (some plan review engineers may draft the plan approval report at this stage and others may draft the report after the plans are approvable).
    - Discuss plans and notes with supervisor; discuss any unusual features or issues with the section manager.
    - Draft comment letter if required.
    - Send comment letter.
    - Enter into SWEPT plan tracking module.

5. Response received from owner or engineer; enter into SWEPT plan tracking module.

6. Review response against comment letter, plans and any revised plan sheets. Check off items adequately addressed.

7. Discuss any outstanding issues with supervisor, discuss disagreements with manager, prepare an additional comment letter if necessary, enter into SWEPT plan tracking module; recommend meeting to resolve outstanding disagreements before submitting a written response.

8. Meet with owner and/or engineer if requested; enter into SWEPT.

9. Response received from owner; enter into SWEPT.

10. Repeat steps 6 through 9 as necessary (in accordance with Arbitration Process).

11. Once all issues are resolved and approvable plans are received, prepare the plan approval package.

- Three sets of plans.
- Plan approval report (three copies).
- Plan review work sheet.

12. Final engineering supervisor review and sign off; enter into SWEPT.

13. Final section manager review and sign off; enter into SWEPT.

14. Forward plan approval package to the ADMIN Unit in DDAGW.

    - Prepare plan approval letter, apply Director’s signature as delegated.
    - Stamp approved plans.
    - Mail out approval letters, approved plans and plan approval reports.
    - Issue public notice.
    - Close out SWEPT tracking.

APPENDIX E

DDAGW-DW PLAN REVIEW FLOWCHART