



New Mexico Environment Department
 Drinking Water Bureau
 Sustainable Water Infrastructure Group

SWIG CAPACITY ASSESSMENT

TECHNICAL CAPACITY REVIEW

Technical Capacity (from 2014 IUP) – PWSs must show that drinking water sources are adequate, that the system’s source, treatment, distribution and storage infrastructure are adequate and that personnel have the technical knowledge to efficiently operate and maintain the system.

UNACCEPTABLE	POSSIBLE	POINTS	Date: System Name & PWSS#: Reviewer(s):
<input type="checkbox"/> ≤ -5	5		1. System has an operator(s) who is certified at the appropriate ¹ level. <input type="checkbox"/> Yes <input type="checkbox"/> No Required level Highest level employed If projects are proposed, will current level operator be sufficient? (No = -5 pts) Does system have multiple operators or backup operator at required level? (Yes = 5 pts)
<input type="checkbox"/> ≤ -5	0		2. System has had M&R violations ² within the last two years. <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, list number and violation type(s). Do these violations indicate a lack of operator training or experience? (Yes = -5pts)

¹ <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.007.0004.pdf>

² Most recent SDWISFact copy posted at P:\~DATA MANAGEMENT\SDWIS

UNACCEPTABLE	POSSIBLE	POINTS	<p>Date:</p> <p>System Name & PWSS#:</p> <p>Reviewer(s):</p>
<input type="checkbox"/> ≤ -10	0		<p>3. System has an Enforcement Targeting Tool (ETT) score³ of greater than 10.</p> <p><input type="checkbox"/> Yes (-10 pts)</p> <p><input type="checkbox"/> No</p> <p>If yes, list ETT score and date of scoring.</p> <p>If for a funding request, does proposed project addresses the violations? (10 pts)</p> <p>Do these violations indicate a lack of operator training or experience? (Yes = -5pts)</p>
<input type="checkbox"/> ≤ -10	0		<p>4. Deficiencies on the last Sanitary Survey⁴ have been corrected or water system is complying with corrective action plan.</p> <p><input type="checkbox"/> Yes or N/A</p> <p><input type="checkbox"/> No (-10 pts)</p> <p>If no, list unresolved deficiencies.</p> <p>If for a funding request, does proposed project addresses the deficiencies? (10 pts)</p>
<input type="checkbox"/> ≤ 0	15		<p>5. System has an Operations and Maintenance (O&M)⁵ Plan.</p> <p><input type="checkbox"/> Yes (5 pts)</p> <p><input type="checkbox"/> No</p> <p>If yes, does the O&M Plan contain the basic elements outlined on the O&M checklist? (Yes = 5 pts)</p> <p>Are operators trained routinely on O&M plan and other procedures? (Yes = 5 pts)</p>
N/A	5		<p>6. Has the system had positive bacti⁶ samples in the last 24 months?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No (5 pts)</p>
N/A	5		<p>7. Does the system have storage⁷ to contain 2 days of normal water consumption?</p> <p><input type="checkbox"/> Yes (5 pts)</p> <p><input type="checkbox"/> No</p>

³ Most recent ETT report posted at <P:\~ENFORCEMENT\ETT Running Report.xls>

⁴ <http://sdwis.insider/SDWIS/jsp/secure/>

⁵ Checklist attached

⁶ <http://sdwis.insider/DWW/>

⁷ SEO POD reports <http://nmwrrs.ose.state.nm.us/nmwrrs/waterRightSummary.html>
 NMED DWB Facilities Inventory (<http://sdwis.insider/DWW/>)

UNACCEPTABLE	POSSIBLE	POINTS	<p>Date:</p> <p>System Name & PWSS#:</p> <p>Reviewer(s):</p>
<input type="checkbox"/> ≤ 0	20		<p>8. a. Does the system know the water loss?</p> <p><input type="checkbox"/> Yes (5 pts)</p> <p><input type="checkbox"/> No</p> <p>b. Does the system have an asset management plan including a routine water audit or monthly water balance report?</p> <p><input type="checkbox"/> Yes (5 pts)</p> <p><input type="checkbox"/> No</p> <p>c. Does the system have < 10% water loss and no water outages in the last 12 months?</p> <p><input type="checkbox"/> Yes (10 pts)</p> <p><input type="checkbox"/> No</p>
<input type="checkbox"/> ≤ 5	20		<p>9. System has an Emergency Response Plan (ERP)⁸.</p> <p><input type="checkbox"/> Yes (5 pts)</p> <p><input type="checkbox"/> No</p> <p>If yes, does the ERP include basic elements in checklist? (Yes = 5 pts)</p> <p>If yes, is the plan is reviewed and updated annually? (Yes = 5 pts)</p> <p>Are there emergency sources that can be activated when needed? (Yes = 5 pts)</p>
<input type="checkbox"/> ≤ 0	20		<p>10. System has a Source Water Assessment and Protection Plan (SWAPP) or Wellhead Protection Plan⁹.</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>Is the plan is reviewed and updated annually? (Yes = 5 pts)</p> <p>Does the water system have more than one active source? (Yes = 5 pts)</p> <p>Is there future planning for water shortages? (Yes = 5 pts)</p> <p>Are sources routinely monitored for water level and conductivity? (Yes = 5 pts)</p>
N/A	10		<p>11. Has the water system adopted optimization goals¹⁰?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>Is microbial treatment optimized (ground water or surface water)? (Yes = 5 pts)</p> <p>Is the distribution system operation optimized? (Yes = 5 pts)</p>
	100		TOTAL SCORE

⁸ <http://www.nmenv.state.nm.us/dwb/tools/documents/DWBEmergencyResponsePlanningGuide.docx>

⁹ Report from source water staff

¹⁰ Attached AWOP document

UNACCEPTABLE		PROJECT ASSESSMENT ¹¹
<input type="checkbox"/>		<p>12a. If this assessment is conducted for a particular project, what is the overall advantage of the project in terms of compliance¹² and sustainability?</p> <p>12b. Does the project improve the sustainability of the water system? If so describe how.</p> <p>12c. Does the water system have the technical capacity to maintain the new project?</p> <p>12d. What will the impact be on the water system in terms of technical capacity if the project is approved and completed?</p> <p>12e. Are other projects¹³ proposed by the water system? If so, are these other projects compatible with the project under consideration in this assessment?</p> <p>12f. What is the overall impact if all proposed projects are undertaken?</p> <p>12g. Does DWB SWIG feel this project is the best option for water system improvement and funding?</p>
		PROJECT SCORE

SECTION 2: REVIEWER COMMENTS

Please reference the question number with each comment.

¹¹ The reviewer will assign points (-5 points) for each negative response. A sound project within the technical capacity of the water system will result in a score of "0."

¹² The reviewer should consult the most recent SDWISFact copy posted at P:\~DATA MANAGEMENT\SDWIS to determine whether there are water quality violations that should be addressed.

¹³ NMED DWB Engineering Database, P:\~ENGINEERING\Engineering Review Database

SECTION 3: TECHNICAL CAPACITY RATING

- Unacceptable < 40 pts
- Poor 45-55 pts
- Adequate 60-65
- Good 70-80 pts
- Excellent >85 pts

(100 points possible)

Based on the score and rating, does this water system require technical capacity development?

- Yes
- No

If no, are there specific areas needing improvement?

- Yes
- No

If yes, list areas:

If the water system requires overall capacity development or in specific areas, what is the urgency?

- Urgent (high potential risk to public health)
- High (as soon as possible)
- Normal (minimal risk to public health or driven by funding deadline)

Operation and Maintenance (O&M)
Plan Review Essentials

New Mexico Environment Department
Drinking Water Bureau



For guidance when reviewing water system O&M plans. The items below are considered essential for O&M plans. Obviously, not all items will apply to all water systems. Some items may be included as subsections of pertinent chapters or standard operating procedures (SOPs).

	System Description
	Population
	Facilities
	Site map showing facilities and main lines
	Certifications required
	Safety
	General Requirements
	Disinfection (if applicable)
	Confined Space (if applicable)
	Documentation
	Sources and water use
	Treatment
	Storage tank maintenance
	Distribution Programs
	Reporting
	Chlorine residuals (if applicable)
	MORs (if applicable)
	Reporting Triggers (such as turbidity exceedences)
	Lead & Copper (if applicable)
	Source Information
	Startup
	Routine Operation
	Flushing
	Disinfecting
	Treatment
	Startup
	Maintenance
	Emergency procedures (for unit failure)
	Storage
	Routine Maintenance
	Bypassing
	Corrosion Control (if applicable)
	Disinfection
	Booster Stations
	Pressure Tanks
	Distribution
	Flushing Program
	Valve Exercise Program

	PRV Maintenance & Repair Procedures
	Cross Connection Control Program
	Public Notice Procedures
	In-line Meters and Laboratory Instrumentation
	Calibration
	Routine maintenance
	Training Plan

Overall Rating	
	Acceptable
	Acceptable with recommendations
	Unacceptable
Recommendations	
If unacceptable, describe action(s) to be taken	

Recommended Key Performance Indicators– NM AWOP Surface Water Systems¹⁴:

1. Monitoring
 - 1.1 Daily raw water turbidity
 - 1.2 Settled water turbidity at 4-hour time increments from each sedimentation basin
 - 1.3 On-line (continuous) turbidity from each filter
 - 1.4 One filter backwash profile each month from each filter
2. Performance Goals
 - 2.1 Settled water
 - 2.1.1 Turbidity < 1 NTU 95% of the time when the annual average raw turbidity is ≤ 10 NTU
 - 2.1.2 Turbidity < 2 NTU 95% of the time when the annual average raw turbidity is >10 NTU
 - 2.2 Individual Filter
 - 2.2.1 Turbidity < 0.1 NTU 95% of the time (excluding 15-minute period following backwashes) based on the maximum values recorded during 4-hour time increments
 - 2.2.2 Maximum turbidity ≤ 0.3 NTU
 - 2.2.3 Initiate filter backwash immediately after turbidity breakthrough has been observed and before effluent turbidity exceeds 0.1 NTU
 - 2.2.4 Maximum filtered water turbidity following backwash of < 0.3 NTU
 - 2.2.5 Maximum backwash recovery period of 15 minutes (i.e., return to < 0.1 NTU)
 - 2.3 Disinfection

CT values to achieve required log inactivation of *Giardia* and virus

Recommended Key Performance Indicators – NM AWOP Ground Water Systems:

1. Monitoring on a monthly basis for the parameters shown below. Parameters recommended by the NMED DWB Source Water Protection Staff are marked with as asterisk*.
 - 1.1 specific conductance (SC)*
 - 1.2 water temperature*
 - 1.3 sanitary seal at well head (required by state regulations)
 - 1.4 site grading (required by state regulations)

¹⁴ EPA/625/6-91-027 Optimizing Water Treatment Plant Performance Using the Composite Correction Program

2. Performance Goals
 - 2.1 The water system has a written source water protection plan. Information is available at http://www.nmenv.state.nm.us/dwb/water_protection/Index.htm.
 - 2.2 An evaluation is made when SC or water temperature varies more than 10% factoring the tolerance of the instrument.
 - 2.3 Corrective action is scheduled within one business day that a breach in the sanitary seal is observed.
 - 2.4 Corrective action is completed within one calendar week after a breach in the sanitary seal is observed.
 - 2.5 Corrective action is scheduled within one business day of observing that site grading allows water to flow toward the well casing.
 - 2.6 Corrective action is completed within one calendar week after observing that site grading allows water to flow toward the well casing.

Recommended Key Performance Indicators – NM AWOP Distribution Systems:

1. Monitoring¹⁵
 - 1.1 Continuous Monitoring – Pressure
 - 1.2 Daily monitoring - vandalism
 - 1.3 Monthly monitoring (all parameters measured at the same time)
 - 1.3.1 chlorine dose (if applicable)
 - 1.3.2 free chlorine residual (if applicable)
 - 1.3.3 total chlorine residual (if applicable)
 - 1.3.4 water temperature
 - 1.3.5 pH
 - 1.3.6 total coliform
 - 1.4 Monthly monitoring – unaccounted water
 - 1.5 Annual monitoring (all parameters measured at the same time)
 - 1.5.1 pH
 - 1.5.2 calcium
 - 1.5.3 total alkalinity
 - 1.5.4 specific conductance
 - 1.5.5 water temperature
 - 1.6 On the schedule of compliance monitoring

¹⁵ EPA/816/F-06-038 Distribution Systems: A Best Practices Guide

- 1.6.1 total trihalomethanes (TTHM)
 - 1.6.2 haloacetic acids (HAA5)
 - 1.6.3 total organic carbon (TOC) before treatment
2. Performance Goals¹⁶
- 2.1 Maintain distribution system pressure ≥ 20 psi.
 - 2.2 Calculate chlorine demand daily (if applicable).
 - 2.3 95% of the free chlorine residuals measurements are no more than 0.5 mg/L above the chlorine demand (if applicable).
 - 2.4 TTHM ≤ 40 $\mu\text{g/L}$ at every sampling point (if applicable)
 - 2.5 HAA5 ≤ 30 $\mu\text{g/L}$ at every sampling point (if applicable)
 - 2.6 Calculate the Langelier saturation index on an annual basis.
 - 2.7 The water system implements a written cross-connection control program.
 - 2.8 The water system implements a written valve exercising program.
 - 2.9 The water system implements a written flushing program.
 - 2.10 The water system updates the distribution map annually.
 - 2.11 Inspect the storage tank annually.
 - 2.12 Clean storage tank every three years.
 - 2.13 Rehabilitate storage tanks within 1 year of an inspection that indicates the need.
 - 2.14 The water system implements a written corrosion control plan.

¹⁶ Practices outlined in EPA/816/B-04-002 Preventive Maintenance Card File for Small Public Water Systems Using Ground Water and EPA/816/F-06-038 Distribution Systems: A Best Practices Guide were considered in development of performance goals.