

This is a  
**CONTROLLED DOCUMENT**

EG&G ROCKY FLATS PLANT

ENVIRONMENTAL MANAGEMENT DEPARTMENT

This is a **RED Stamp**

**ROCKY FLATS PLANT  
EMD OPERATING  
PROCEDURES MANUAL**

**Manual No.: 5-21000-OPS-GW  
Procedure No.: Table of Contents, Rev 16  
Page: 1 of 2  
Effective Date: 06/30/93  
Organization: Environmental Management**

**THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES:**

**VOLUME I: FIELD OPERATIONS (FO)  
VOLUME II: GROUNDWATER (GW)  
VOLUME III: GEOTECHNICAL (GT)  
VOLUME IV: SURFACE WATER (SW)  
VOLUME V: ECOLOGY (EE)  
VOLUME VI: AIR (AP)**

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FOR VOLUME II: GROUNDWATER**

<b>Procedure No.</b>	<b>Title</b>	<b>Rev. No.</b>	<b>Effective Date</b>
GW.01	Water Level Measurements in Wells and Piezometers	2	05/12/92
DCN 92.01	Improve Form	2	10/28/92
DCN 93.01	Measuring Water Levels in Well Points	2	01/28/93
GW.02	Well Development	2	05/12/92
DCN 92.01	Practice Clarification	2	10/05/92
DCN 92.02	Update Forms to Include Form Number	2	10/22/92
DCN 93.01	Well Fluid Volumes	2	04/13/93
DCN 93.02	Well Development Updates	2	05/13/93
GW.03	Pump-In Borehole Packer Testing	2	05/12/92
GW.04	Slug Testing	2	05/12/92
DCN 93.01	Re-title Sect.5.2 and Add Bail-down Test	2	05/05/93
GW.05	Field Measurement of Groundwater Field Parameters	2	05/12/92
DCN 92.01	Eliminate Unsafe Work Practice	2	10/26/92
•DCN 93.01	Calibration Changes	2	06/30/93
GW.06	Groundwater Sampling	2	05/12/92
DCN 92.01	Form Update	2	EXPIRED
DCN 92.02	Update Forms to Include Form Number	2	10/22/92
DCN 93.01	Hydropunch	2	04/15/93
DCN 93.02	New GW Sample Collection Log	2	05/04/93
DCN 93.03	Hydropunch II	2	05/10/93
•DCN 93.04	Turbidity/Field Nitrate Analysis Changes	2	06/30/93

**ADMIN RECORD**

A-SW-001088

**DOCUMENT CLASSIFICATION REVIEW WAIVER  
PER R.B. HOFFMAN, CLASSIFICATION OFFICE  
JUNE 11, 1991**

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<b><u>Procedure No.</u></b>	<b><u>Title</u></b>	<b><u>Rev. No.</u></b>	<b><u>Effective Date</u></b>
GW.08	Aquifer Pumping Tests	1	05/12/92
DCN 92.01	Expired	1	05/22/92
DCN 92.02	Expired	1	05/15/92

**ENVIRONMENTAL MANAGEMENT  
 DOCUMENT CHANGE NOTICE (DCN)**

**This is a RED Stamp**

Procedure Number 5-21000-OPS-GW.5, Rev. 2

Page 1 of 2

Title Field Measurement of Groundwater Field Parameters	Date 6-30-93 <i>SLRD</i>	DCN Number 93.01 5-21000-OPS-GW.5
Expires <u>6-30-94</u> <i>SLRD</i>	Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN Continuation Sheet for Additional Space)																
1	5 of 21	3rd paragraph	Following the third sentence, add the sentence, "Internal calibration standards for dissolved oxygen (photometric) and nitrate/nitrite will be used for instrument calibration unless otherwise specified in a work plan."																
2	6 of 21	Table GW.5-1	<table border="1"> <thead> <tr> <th>Parameter</th> <th>Minimum Frequency</th> <th>Procedure</th> <th>Acceptance Criteria</th> </tr> </thead> <tbody> <tr> <td>Specific Conductance</td> <td><u>Daily</u></td> <td>Calibrate</td> <td>Standard valve <math>\pm</math> <u>2.5%</u></td> </tr> <tr> <td>Turbidity</td> <td>Each <u>well</u></td> <td>Zero instrument</td> <td>0 FTUs</td> </tr> <tr> <td>Baseline<sup>b</sup></td> <td>Each new lot of calibration reagent</td> <td>Check standard solution/ <u>prepare calibration curve based on standard solution serial dilutions if check is &gt; acceptance criteria</u></td> <td><u><math>\pm</math> 6 FTUs (estimated)</u></td> </tr> </tbody> </table> <p>Replace the information for these parameters in Table 5.1 with the above information. <u>Underlined</u> information in columns indicates change from original text. <i>SLRD 6/23/93</i></p>	Parameter	Minimum Frequency	Procedure	Acceptance Criteria	Specific Conductance	<u>Daily</u>	Calibrate	Standard valve $\pm$ <u>2.5%</u>	Turbidity	Each <u>well</u>	Zero instrument	0 FTUs	Baseline <sup>b</sup>	Each new lot of calibration reagent	Check standard solution/ <u>prepare calibration curve based on standard solution serial dilutions if check is &gt; acceptance criteria</u>	<u><math>\pm</math> 6 FTUs (estimated)</u>
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Justification (Reason for change – Provide numbers to reference corresponding items above)

1. Clarify standard field practice.
2. Maintain consistency with the sitewide QAPjP, manufacturer's instructions, and SOP GW.5 section 5.4 discussion. For turbidity baseline, the manufacturer indicates that the accuracy criteria of  $\pm 2$  FTUs cannot be met, and no appropriate accuracy criteria exists for the spectrophotometric method. An estimated  $\pm 6$  FTUs criteria was calculated from manufacturer data for 400 FTUs.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	6/25/93	<i>[Signature]</i>	User	X	6/2/93
<i>[Signature]</i>	FOM	X	6/9/93	<i>[Signature]</i>	<del>User</del> <i>EQS</i>	X	6/23/93
				<i>[Signature]</i>	RPM	X	6/24/93
	<i>DOE</i> <i>SLRD</i> <i>6/24/93</i>	X		<i>[Signature]</i>	FOM	X	6/28/93
Approval of Responsible Manager	Date	Is Posting Req'd?		If Yes, By What Date?		Date Posted	
<i>[Signature]</i>	6/7/93	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		upon receipt			

# ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GW.5, Rev. 2

Page 2 of 2

Title <b>Field Measurement of Groundwater Field Parameters</b>	Date <b>6-30-93</b> <i>SERP</i>	DCN Number <b>93.01</b> <b>5-21000-OPS-GW.5</b> <i>SERP</i>
Expires <u>6-30-94</u> <i>SERP</i> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN Continuation Sheet for Additional Space)
3	21 of 21	Section 5.7.1	After the last bullet add, "If the instrument reading deviates more than $\pm 6$ FTUs from the 400 FTU standard solution, the instrument must be calibrated using a user-supplied calibration curve, generated from a serial dilution of stock solutions, rather than the internally stored program."

Justification (Reason for change – Provide numbers to reference corresponding items above)

*3*  
4. Reliable accuracy criteria do not exist for this method, according to the manufacturer. Given this situation, the only alternative is to manually enter custom calibration data derived from serial dilutions of the standard stock solution. The  $\pm 6$  FTU criteria was calculated from manufacturer-supplied data for 400 FTUs.

*This document change is in response to DOE Quality Assurance Evaluation No. 93-QA-L2-010 for Environmental Groundwater Sampling Activities 165 6/28/93*

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X		<i>[Signature]</i>	User	X	6/7/93
<i>[Signature]</i>	FOM	X	6/9/93	<i>[Signature]</i>	User	X	6/24/93
				<i>[Signature]</i>	EQS	X	6/23/93
	DOE	X	6/24/93	<i>[Signature]</i>	FOM	X	6-28-93
Approval of Responsible Manager <i>[Signature]</i>			Date <b>6/7/93</b>	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? upon receipt		Date Posted