***HACH** COMPANY*
PO Box 389 · Loveland, Colorado 80539-0389
970-669-3050 · Fax: 970-669-2932
http://www.hach.com

Hach Methods approved/accepted by the USEPA

Effective: December 1, 1999

Dear Customer,

Hach is providing the attached copy of United States Environmental Protection Agency letter, dated June 17, 1996, as a service to you to help you document your compliance with USEPA regulatory reporting requirements.

These Hach methods for drinking water and wastewater analysis have been reviewed by the USEPA and are either approved or accepted by the Agency for regulatory monitoring.

Additionally, for Hach methods that received USEPA Acceptance or Approval *after* June 17, 1996, Federal Register citations and individual USEPA letters are provided as follows:

USEPA-APPROVED HACH METHODS[1]:

On December 1, 1999, two Hach methods received USEPA Approval for Drinking Water compliance monitoring. Documentation for these methods can be found in the Federal Register (Dec. 1, 1999, FR Vol. 64, No. 230, 67449-67467) and will be published in 40 CFR 141. The two USEPA-Approved methods are:

- Hach Method 10029, m-ColiBlue24® Method for the Determination of Total Coliforms and *E.coli* for use in Total Coliform Rule compliance monitoring[2].

- Hach Method 1001, Determination of Lead, for use in Lead and Copper Rule compliance monitoring.

USEPA-ACCEPTED HACH METHODS[1]:

- The attached letter dated March 1, 1999, accepts Hach Method 8190 for Determination of Total Phosphorous for use in NPDES compliance monitoring.
- The attached letter dated March 1, 1999 also accepts Hach Method 8048 for Determination of Orthophosphate for use in NPDES and NPDWR compliance monitoring.
- The letter dated April 20, 1998, accepts Hach Method 8195 for Determination of Turbidity, which cites Hach StablCal® Standards as primary calibration standards, for use in NPDES and NPDWR compliance monitoring.

- The USEPA letter dated February 26, 1997, accepts Hach Method 10014, Ultra Low Range Total Residual Chlorine (DPD Method), and Hach Method 10025, Total Residual Chlorine by Amperometric Back Titration, for NPDES compliance monitoring.

  Note: There is an error in the Hach Method Number for the dichromate reflux titration method for Chemical Oxygen Demand. In the USEPA letter the Hach Method Number is given as 8230; the correct method number is 8116.

  Note: As of May 1999, Hach Method 8005 for Total Recoverable Oil and Grease is no longer accepted for reporting purposes.

HACH EQUIVALENT METHODS[1]:

The final pages list Hach Methods that have been determined by Hach to be equivalent to USEPA reference methods. These methods meet or exceed the specification criteria stated in applicable USEPA methods.

If you have any questions, please contact a Hach customer service representative or Regulatory Affairs at 1-800-227-4224 or 970-669-3050.

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footnotes:

[1] *USEPA-Approved Methods*: The USEPA has evaluated and approved new technological methods developed by Hach Company. All USEPA-Approved methods are cited in the Federal Register and compiled in the Code of Federal Regulations.

USEPA-Accepted Methods: The USEPA has reviewed Hach methods and accepted them for use in compliance monitoring. These methods are defined by USEPA as acceptable versions of previously approved methods. These methods are not published in the Federal Register nor in the Code of Federal Regulations. The USEPA documents Acceptance in a formal letter to Hach Company. A facsimile of the USEPA- Acceptance letter is available upon request.

Hach Equivalent Methods: All USEPA-Approved methods have specification criteria built into their procedural steps. When Hach methods meet or exceed these specification criteria, as determined by Hach, they are deemed to be equivalent. Analysts wishing to use these methods for reporting purposes should contact the appropriate regulatory bodies to determine if equivalency must be established for their specific case.

[2] On p. 67451 of the December 1, 1999 Federal Register, two errors appear in section III.A.9: The term "E.coli." has been accidentally omitted, and m-ColiBlue24® is cited as being applicable to source water monitoring under the Surface Water Treatment Rule.

A correct citation appears in Sect IV. C. 2. where m-ColiBlue24® is correctly discussed as being suitable for, and listed in the CFR table as being approved for, determinations of the presence or absence of both total coliforms and E. coli. in drinking water for monitoring under the Total Coliform Rule.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

AUG 2 9 2000

Rick Dunn
Regulatory Affairs Coordinator
Hach Company
PO Box 389
Loveland Colorado 80539-0389

Dear Mr. Dunn:

We are, pleased to inform you that based on our revicw of your application (ATP Case No. D99- 0004), the Analytical Methods Staff (AMS) and the Office of Ground Water and Drinking Water (OGWDW) have determined that Hach Method 10126 (Version 2.0; November 15, 1999] for the determination of chlorine dioxide in drinking water is an acceptable version of the EPA-approved Standard Method 4500-ClO_2 D [19 th Edition]. Therefore, Hach Method 10126 is acceptable for National Primary Drinking Water Regulations (NPDWR) compliance monitoring. Both the Standard Method and the Hach Method use DPD (N,N-diethyl-*p*-phenylenediamine) reagent chemistry and colorimetry in an equivalent fashion to determine chlorine dioxide concentration.

We, appreciate Hach's continued interest in the development of compliance monitoring methods. If you have any questions regarding our review of your applications, please contact Maria Gomez-Taylor (AMS) at 202/260-1639 or 14erb Brass (OGWDW) at 513/569-7936 at your convenience.

Sincerely,

William A. Telliard, Director
Analytical Methods Staff
Engineering and Analysis Division (4303)

Herb Brass, Ph.D,
Technical Support Center (MS-140)
Office of Ground Water and Drinking Water

CC: USEPA Regional Administrators (all Regions)
Quality Assurance Managers (all Regions)
Water Management Division Directors (all Regions)
ATP Coordinators (all Regions)
James Westrick, USEPA, OGWDW
Maria Gomez-Taylor, USEPA, EAD
Khouane Ditthavong, USEPA, EAD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL EXPOSURE RESEARCH LABORATORY
CINCINNATI, OH 45268

OFFICE OF
RESEARCH AND DEVELOPMENT

DATE: June 17, 1996

SUBJECT: Approved/Accepted Hach Methods

FROM: James W. O'Dell, Jr.
ATP Coordinator
Alternate Test Procedure Program
National Water Quality Assurance Programs Branch

TO: Addresses

This is in response to a number of requests concerning the approval/acceptance of Hach Company methods used for USEPA required compliance monitoring.

The following Hach methods are cited in Table 1A of 40 CFR Part 136.3 as approved for NPDES compliance monitoring.

Parameter	Method	Approval Date
Chemical Oxygen Demand (COD)	8000	April 21, 1980
Copper--Total	8506	May 29, 1980
Iron--Total	8008	June 27, 1980
Manganese--Total	8034	June 14, 1979
Nitrite (as N)	8507	May 1, 1979
Zinc--Total	8009	May 29, 1980

The following Hach methods were reviewed by the Alternate Test Procedure (ATP) program and recommended as acceptable for NPDES compliance monitoring.

Parameter	Method	Review Date
Acidity, as CaCO3	8010	February 17,1983
Ammonia, (as N)	8038	February 17, 1983
Arsenic--Total	8013	February 17, 1983
Biochemical Oxygen Demand (BOD)	8043	July 7, 1994
Calcium--Total	8222	February 17, 1983
Chemical Oxygen Demand (COD)	8230	December 24,1985
Chloride	8224	January 4, 1988
Chloride	8225	December 3, 1987
Chlorine--Total residual	8167	April 28, 1995
Chlorine--Total residual	8168	February 17, 1983
Chlorine--Total residual	10014	June 29, 1994
Chromium VI dissolved	8023	February 17, 1983
Fluoride--Total	8029	February 17, 1983
Hardness--Total	8226	February 17, 1983
Hydrogen Ion (pH)	8156	February 17, 1983

Lead--Total	8033	May 27, 1987
Nickel--Total	8037	December 4, 1985
Oil and Grease--Total recoverable	8005	February 17, 1983
Orthophosphate (as P)	8048	February 17, 1983
Oxygen, Dissolved	8157	February 17, 1983
Oxygen--Dissolved	8229	February 17, 1983
Phenols	8047	January 5, 1987
Phosphorous--Total	8190	February 17, 1983
Residue--Nonfilterable (TSS)	8158	February 17, 1983
Specific Conductance	8160	February 17, 1983
Sulfate (as SO4)	8051	February 17, 1983
Sulfide (as S)	8131	May 29, 1987
Sulfite (as SO3)	8071	February 17, 1983

The following Hach methods were reviewed by the ATP program and recommended as acceptable for Drinking Water compliance monitoring.

Contaminant	Method	Review Date
Conductivity	8160	February 17, 1983
Fluoride	8029	February 17, 1983
pH	8156	February 17, 1983

Residual	Method	Review Date
Free Chlorine	8021	January 20, 1987
Total Chlorine	8167	April 28, 1995
Total Chlorine	8168	February 17, 1983
Total Chlorine	8370	June 29, 1994

Organism	Method	Review Date
Total Coliform	8001	February 17, 1983
Fecal Coliform	8001	February 17, 1983

EPA approval/acceptance applies to the method version and reagent formulations specified at the time of review. Additional quality control procedures may be required to meet specific program monitoring requirements.

Addressees:
Arthur Clark, USEPA, Region I
John Bourbon, USEPA, Region II
Charles Jones, Jr., USEPA, Region III
Wayne Turnbull, USEPA, Region IV
Dennis Wesolowski, USEPA, Region V
Charles Ritchey, USEPA, Region VI
Doug Brune, USEPA, Region VII
Rick Edmonds, USEPA, Region VIII
Roseanne Sakamota, USEPA, Region IX
Bruce Woods, USEPA, Region X
William Telliard, OW, OST
Richard Reding, OGW & DW, TSD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 1 1999

OFFICE OF WATER

David Gustafson
Coordinator of Regulatory Affairs
Hach Company
PO Box 389
Loveland Colorado 80539-0389

Dear Mr. Gustafson:

We are pleased to inform you that in the judgement of the Analytical Methods Staff (AMS), Hach Method 8190 [version 1.0, August 1998] for determination of total phosphorus (ATP case No. N95-0015) and Hach Method 8048 [version 1.0, August 1998] determination of orthophosphate (ATP case No. N95-0014) are acceptable versions of EPA Method 365.2, approved at 40 *Code of Federal Regulations* (CFR) part 136 for use in National Pollution Discharge Elimination System (NPDES) compliance monitoring.

AMS and the Office of Ground Water and Drinking Water (OGWDW) also have determined that Hach Method 8048 [version 1.0, August 1998] for determination of orthophosphate (ATP case No. D95-0011) is an acceptable version of EPA Method 365.1, approved at 40 CFR part 141 National Primary Drinking Water Regulation (NPDWR) compliance monitoring.

We appreciate Hach's continued interest in the development of environmental compliance monitoring methods. If you have any questions regarding this determination or review of your applications, please contact Maria Gomez-Taylor (AMS) at 202/260-1639 or Herb Brass (OGWDW) at 513/569-7936 at your convenience.

Sincerely,

William A. Telliard, Director
Analytical Methods Staff
Engineering and Analysis Division (4303)

for Herbert J. Brass
Team Leader, Analytical Methods
Office of Ground Water and Drinking Water
(MS 140- Cincinnati)

cc: USEPA Regional Administrators (all Regions)
Quality Assurance Managers (all Regions)
Water Management Division Directors (all Regions)
Maria Gomez-Taylor, USEPA, EAD
James Westrick, USEPA, TSC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 20 1998

OFFICE OF
WATER

Mr. David Gustafson
Hach Company
PO Box 389
Loveland, CO 80539-0389

Dear Mr. Gustafson:

We are pleased to inform you that based on our review of your alternate test procedure application (N97-0005), the Analytical Methods Staff (AMS) and the Office of Ground Water and Drinking Water (OGWDW) have determined that Hach Method 8195, dated December 1997, is an acceptable version of the approved EPA Method 180.1 and may be used for NPDES and NPDWR compliance monitoring. We thank you for your interest in the development of environmental methods.

If you have questions regarding this determination or review of your application, please contact Maria Gomez-Taylor (AMS) at 202/260-1639 or Herb Brass (OGWDW) at 513/569-7936 at your convenience.

Sincerely,

William A. Telliard, Director
Analytical Methods Staff
Engineering and Analysis Division (4303)

James J. Westrick, Chief
Technical Support Center (MS-140)
Office of Ground Water and Drinking Water

cc: USEPA Regional Administrators (all Regions)
Quality Assurance Managers (all Regions)
Water Management Division Directors (all Regions)
Maria Gomez-Taylor, USEPA, AMS/EAD
Herb Brass, USEPA, TSC/OGWDW

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 26 1997

OFFICE OF
WATER

David Gustafson
Coordinator of Regulatory Affairs
Hach Company
P.O. Box 389
Loveland, CO 80539-0389

RE: ATP Case N93-0021 and N94-0005

Dear Mr. Gustafson:

I am pleased to inform you that in the judgement of the technical staff at EPA's National Exposure Research Laboratory in Cincinnati, Ohio (NERL-Ci), Hach's Ultra Low Range Spectrophotometric Method No. 10014 Revision 1, dated 10/8/96, is an acceptable version of 18th Edition Standard Method 4500-CL G for Total Residual Chlorine approved at 40 Code of Federal Regulations (CFR) Part 136 for use in National Pollutant Discharge Elimination System (NPDES) compliance monitoring, and Hach's Amperometric Back Titration Method No. 10025 Revision 1, dated 9/19/96, is an acceptable version of 18th Edition Standard Method 4500-CL C for Total Residual Chlorine approved at 40 CFR Part 136 for use in NPDES compliance monitoring. Therefore, fulfillment of the alternate test procedure study requirements is not necessary.

Thank for your efforts in the development of environmental methods.

Sincerely,

William A. Telliard, Director
Analytical Methods Staff
Engineering and Analysis Division (4303)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 15 2000

OFFICE OF
WATER

Rick Dunn
Regulatory Affairs Coordinator
Hach Company
P.O. Box 389
Loveland, Colorado 80539-0389

Dear Mr. Dunn:

This letter regards your inquiry as to the status of Hach Method 8001A in National Pollutant Discharge Elimination System (NPDES) compliance monitoring.

In an April 30, 1981 letter, Robert Booth of USEPA informed Hach that its "Multiple Tube Fermentation Technique for Total and Fecal Coliforms is acceptable for USEPA compliance monitoring purposes." This letter also suggested edits to "eliminate possible sources of confusion" to the end user. Hach made these edits and subsequently divided the "Multiple Tube Fermentation" procedure into two separate methods: Hach Method 8001 for potable (drinking) waters, and Hach Method 8001A for non-potable waters (e.g., wastewaters).

The use of Hach Method 8001 in drinking water compliance monitoring has been discussed in previous USEPA correspondence, but there has been some recent confusion about the acceptability of Hach Method 8001A for NPDES compliance monitoring. To clarify, if Hach reagent formulations have not changed since the original review, then Hach Method 8001A is an acceptable version of Most Probable Number (MPN) 5-tube/3-dilution procedures for determination of total and fecal coliforms (e.g., Standard Methods 9221B and 9221E, respectively) approved at 40 CFR part 136 for NPDES compliance monitoring. This follows the recommendations of the 1981 letter.

I hope this letter clarifies matters for you. If I can be of any additional assistance on this matter or others, please contact me at (202) 260-7120 at your convenience.

Sincerely,

Maria Gomez-Taylor

for William A. Telliard, Director
Analytical Methods Staff
Engineering and Analysis Division (4303)

cc: Maria Gomez-Taylor, USEPA, EAD
Khouane Ditthavong, USEPA, EAD
James Boiani, DynCorp I&ET, SCC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 2 6 2006

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Recommendation for Use of Hach Method 10360 [Revision 1.1, January 2006] (ATP Case No. N04-0013)

FROM: Robin K. Oshiro, Ph.D.
ATP Coordinator
Engineering and Analytical Support Branch (4303 T)

TO: USEPA Regional Administrators (all Regions)

We have reviewed the Hach Method 10360 (Revision 1.1, January 2006, *Luminescence Measurement of Dissolved Oxygen in Water and Wastewater*), and the supporting validation data in ATP Case No. N04-0013. We have determined that this method meets all requirements for measurements of dissolved oxygen in water and wastewater. That is, the performance of this method is substantially similar to part 136 methods for measurement of dissolved oxygen (DO) in wastewater. We believe that this method also may be used to measure DO when a Part 136 method requires measurement of DO in determining biochemical oxygen demand in wastewater.

We will recommend that this method be included in future regulatory actions in which we periodically update the methods approved at 40 CFR Part 136.3. Meanwhile, Regions may wish to exercise their authority under 40 CFR part 136.5 to allow use of this method.

If I can be of any additional assistance on this matter or others, please contact me at oshiro.robin@epa.gov.

cc: Quality Assurance Managers (all Regions)
Water Management Division Directors (all Regions)
ATP Coordinators (all Regions)
Carey Jackson, Ph. D., Hach Company
Kevin Roberts, CSC, SCC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AUG 19 2003

Cary B. Jackson, Ph.D.
Regulatory Chemist
Hach Company
5600 Lindburgh Drive
PO Box 389
Loveland, Colorado 80539-0389

Dear Dr. Jackson:

Per your request, this letter confirms that extension of the calibration range of an EPA approved or accepted test procedure (analytical method) is within the scope of the method and does not require regulatory approval, provided that the upper limit of the linear range of the instrument or analytical system is not exceeded.

Sincerely yours,

Marion Kelly

for William A. Telliard, Director
Analytical Methods
Office of Science and Technology (MC 4303T)

CONCURRENCES								
SYMBOL	SAB							
SURNAME	Kelly							
DATE	8/15/03							

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Hach Methods Determined by Hach to Meet or Exceed USEPA Specification Criteria

The Hach methods listed below have been determined by Hach to meet or exceed the specification criteria stated in applicable USEPA reference methods.

DRINKING WATER

Parameter	Hach Method
Alkalinity, Titration	8221
Coliform Bacteria, Fecal, MPN	8368
Heterotrophic Bacteria, Pour Plate	8241
Chloride, Titration	8225
Chlorine, Free, Titration	8334
Total and Fecal Coliforms, *E. Coli*, MF	8074
Total and Fecal Coliforms, *E. Coli*, P/A	10018
Total and Fecal Coliforms, *E. Coli*, MF	8074
Color, APHA Platinum-Cobalt	8025
Nitrogen, Ammonia, Electrode	10001
Fluoride, Electrode	8323
Hardness, Calcium, Titration	8222
Orthophosphate, Colorimetric	8048
Ozone, Colorimetric	8311
Silica, Colorimetric	8186
Temperature, Thermometric	8375

WASTEWATER

Parameter	Hach Method
Alkalinity, Titration	8221
Fecal Coliforms, MPN (sludges)	10027, 10028
Total and Fecal Coliforms, *E. Coli*, MF	8074
Fecal Coliforms, MPN (A-1 Medium)	8368
Fecal Streptococci, MPN	8172
Fluoride, Electrode	8323
Nitrogen, Ammonia, Electrode	10001
Nitrogen, Ammonia, Electrode, Known Addition	10002
Residue, Total Filterable	8163
Residue, Settleable Matter	8165
Residue, Total, Nonfilterable	8158
Residue, Total Solids	8271
Residue, Volatile, Nonfilterable	8164
Residue, Volatile, Filterable (dissolved)	8277
Residue, Volatile, Total Solids	8276

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