

# PERFORMANCE EVALUATION

Quarterly Study  
**WSMIC08-4**

**RT1014**  
RTC Labcode

**WY00002**  
US EPA Labcode

8-Oct-2008 through 21-Nov-2008

Energy Labs  
Steven Carlston  
PO BOX 3258  
Casper WY 82602-3258

Thank you for participating in study WSMIC08-4. Additional information about this study may be found online at [www.rt-corp.com](http://www.rt-corp.com). you have any questions or comments about this study please contact me.

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**This report may contain data that are not covered by the A2LA accreditation.**

Sincerely,



Christopher Rucinski  
Quality Director

2931 Soldier Springs Road  
Laramie, WY 82070  
(307) 742-5452  
[www.rt-corp.com](http://www.rt-corp.com)







Dataset

**WSMIC08-4 Set 1****Accreditors**

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

**Accrediting Labcode WY00002**

Idaho Bureau of Laboratories

**346** Renea Anglin  
Chemistry Program  
2220 Old Penitentiary Road  
Boise ID 83712  
UNITED STATES

**Accrediting Labcode WY00002**Nebraska Health and Human Services System  
Department of Regulation & Licensure

**504** Sandra Irons  
State Certification Officer  
3701 S. 14th Street  
Lincoln NE 68502  
UNITED STATES

**Accrediting Labcode WY00002**

Nevada Division of Env. Protection

**118** Donald Lafara  
901 S. Stewart Street  
Ste. 4001  
Carson City NV 89701-5249  
UNITED STATES

**Accrediting Labcode WY00002**

USEPA Region VIII

**217** Jim Gindelberger  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**606** Sandra Spence  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES



### Microbiology

Analyte

**Total coliforms** 1, 3, 4

2500

#### Series-H

SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED  
(1995) - 20211001

Analyst:

Presence/Absence	Result	Assigned Value	Evaluation
Presence/Absence - Sample 1	Absent	Absent	Acceptable
Presence/Absence - Sample 2	Absent	Absent	Acceptable
Presence/Absence - Sample 3	Absent	Absent	Acceptable
Presence/Absence - Sample 4	Present	Present	Acceptable
Presence/Absence - Sample 5	Absent	Absent	Acceptable
Presence/Absence - Sample 6	Present	Present	Acceptable
Presence/Absence - Sample 7	Present	Present	Acceptable
Presence/Absence - Sample 8	Present	Present	Acceptable
Presence/Absence - Sample 9	Present	Present	Acceptable
Presence/Absence - Sample 10	Present	Present	Acceptable

#### Presence/Absence Evaluation

##### Series-H

Method TechnologyCode	False Positives	False Negatives	Acceptance	
Total coliforms 2500	SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED (1995)	0	0	Acceptable

MPN	Result	Units	Acceptance Limits	Assigned Value	Evaluation
MPN - Sample 1	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 2	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 3	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 4	334.8	MPN/100mL	170 to 496	300	Acceptable
MPN - Sample 5	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 6	31.2	MPN/100mL	13 to 72.2	30.0	Acceptable
MPN - Sample 7	476.4	MPN/100mL	183 to 528	300	Acceptable
MPN - Sample 8	275.2	MPN/100mL	174 to 687	300	Acceptable
MPN - Sample 9	42.2	MPN/100mL	9.11 to 88.8	30.0	Acceptable
MPN - Sample 10	23.8	MPN/100mL	10 to 83.8	30.0	Acceptable

#### MPN Evaluation

##### Series-H

Method TechnologyCode	False Positives	False Negatives	Acceptance	
Total coliforms 2500	SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED (1995)	0	0	Acceptable



Analyte

**Escherichia coli 1, 4**

2525

**Series-H**

SM/APHA 9223 B 18th ED (1992) - 20037609

Technology Code: COLILERT

Analyst:

Presence/Absence	Result	Assigned Value	Evaluation
Presence/Absence - Sample 1	Absent	Absent	Acceptable
Presence/Absence - Sample 2	Absent	Absent	Acceptable
Presence/Absence - Sample 3	Absent	Absent	Acceptable
Presence/Absence - Sample 4	Absent	Absent	Acceptable
Presence/Absence - Sample 5	Absent	Absent	Acceptable
Presence/Absence - Sample 6	Present	Present	Acceptable
Presence/Absence - Sample 7	Absent	Absent	Acceptable
Presence/Absence - Sample 8	Absent	Absent	Acceptable
Presence/Absence - Sample 9	Present	Present	Acceptable
Presence/Absence - Sample 10	Present	Present	Acceptable

**Presence/Absence Evaluation**

**Series-H**

Method TechnologyCode	False Positives	False Negatives	Acceptance
Escherichia coli 2525 SM/APHA 9223 B 18th ED (1992) COLILERT	0	0	Acceptable

MPN	Result	Units	Acceptance Limits	Assigned Value	Evaluation
MPN - Sample 1	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 2	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 3	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 4	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 5	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 6	31.2	MPN/100mL	13 to 72.7	30.0	Acceptable
MPN - Sample 7	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 8	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable
MPN - Sample 9	42.2	MPN/100mL	9.62 to 90.3	30.0	Acceptable
MPN - Sample 10	23.8	MPN/100mL	10 to 90.8	30.0	Acceptable

**MPN Evaluation**

**Series-H**

Method TechnologyCode	False Positives	False Negatives	Acceptance
Escherichia coli 2525 SM/APHA 9223 B 18th ED (1992) COLILERT	0	0	Acceptable



End of WSMIC08-4 Set 1



Dataset

**WSMIC08-4 Set 2****Accreditors**

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UNITED STATES

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State Certification Officer  
3701 S. 14th Street  
Lincoln NE 68502  
UNITED STATES

**Accrediting Labcode WY00002**

Nevada Division of Env. Protection

**118** Donald Lafara  
901 S. Stewart Street  
Ste. 4001  
Carson City NV 89701-5249  
UNITED STATES

**Accrediting Labcode WY00002**

USEPA Region VIII

**217** Jim Gindelberger  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**606** Sandra Spence  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES



### Microbiology

Analyte

**Total coliforms** 1, 3, 4

2500

#### Series-H

SM/APHA 9221 D 19th ED (1995) - 20192409

Analyst:

Presence/Absence	Result	Assigned Value	Evaluation
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>
Presence/Absence - Sample 2	Absent	Absent	<b>Acceptable</b>
Presence/Absence - Sample 3	Absent	Absent	<b>Acceptable</b>
Presence/Absence - Sample 4	Present	Present	<b>Acceptable</b>
Presence/Absence - Sample 5	Absent	Absent	<b>Acceptable</b>
Presence/Absence - Sample 6	Present	Present	<b>Acceptable</b>
Presence/Absence - Sample 7	Present	Present	<b>Acceptable</b>
Presence/Absence - Sample 8	Present	Present	<b>Acceptable</b>
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>
Presence/Absence - Sample 10	Present	Present	<b>Acceptable</b>

#### Presence/Absence Evaluation

Series-H	Method TechnologyCode	False Positives	False Negatives	Acceptance
Total coliforms 2500	SM/APHA 9221 D 19th ED (1995)	0	0	<b>Acceptable</b>



End of WSMIC08-4 Set 2

## Definitions:

**Assigned Value:** Value attributed to a particular quantity and accepted, sometimes by convention, as having an uncertainty appropriate for a give purpose. See ISO Guide 43 for additional information.

**Accept. Window:** The range of values that constitute acceptable performance for a laboratory participation in this PT study.

**Z:** A Z-Score tells how a single data point compares to normal data. A Z-Score says not only whether a point was above or below average, but how unusual the measurement is. Generally, a method result with a Z-Score less than  $|2|$  is considered to be in control, a Z-Score between  $|2|$  and  $|3|$  is considered 'Questionable', but still within control and a Z greater than  $|3|$  is considered not acceptable and the method is out of control.

**Study Mean:** Statistical study mean calculated using a robust statistical model (RTC employs the 'Biweight Program'). Robust statistical techniques to minimize the influence that extreme results can have on estimates of the mean and standard deviation NOTE - These techniques assign less weight to extreme results, rather than eliminate them from a data set.

**Study Std. Dev.:** Standard deviation calculated from study data using robust statisticals (Biweight).

**Gravimetric Value:** The prepared to value, determined by gravimetric means. The uncertainty associated to this value is standard uncertainty and based on RTC's gravimetric tolerances.

Program analyte accrediting footnotes

<sup>1</sup> NELAC


<sup>3</sup> Other

<sup>5</sup> NELAC Experimental

<sup>2</sup> EPA

<sup>4</sup> A2LA

# PERFORMANCE EVALUATION

First Choice for Quality | 

Off-study

## WSMIC08-4-291

23-Dec-2008 through 23-Jan-2009

### RT1014

RTC Labcode

### WY00002

US EPA Labcode

Energy Laboratories  
Steven Carlston  
PO BOX 3258  
Casper WY 82602-3258

Thank you for participating in study WSMIC08-4-291. Additional information about this study may be found online at [www.rt-corp.com](http://www.rt-corp.com).

If you have any questions or comments about this study please contact me.

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Sincerely,



Christopher Rucinski  
Quality Director

2931 Soldier Springs Road  
Laramie, WY 82070  
(307) 742-5452  
[www.rt-corp.com](http://www.rt-corp.com)







Dataset

## **WSMIC08-4-291**

### **Accreditors**

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

**Accrediting Labcode WY00002**

Idaho Bureau of Laboratories

**383** Sandra Radwin  
Micro Program  
2220 Old Penitentiary Road  
Boise ID 83712  
UNITED STATES

**Accrediting Labcode WY00002**

Nebraska Health and Human Services System  
Department of Regulation & Licensure

**504** Sandra Irons  
State Certification Officer  
3701 S. 14th Street  
Lincoln NE 68502  
UNITED STATES

**Accrediting Labcode WY00002**

Nevada Division of Env. Protection

**118** Donald Lafara  
901 S. Stewart Street  
Ste. 4001  
Carson City NV 89701-5249  
UNITED STATES

**Accrediting Labcode WY00002**

USEPA Region VIII

**217** Jim Gindelberger  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**606** Sandra Spence  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**Accrediting Labcode WY00002**

Wyoming DEQ  
Water Quality Division

**206** Edward Mock  
122 W. 25th Street  
Cheyenne WY 82002  
UNITED STATES

### **Microbiology**



### Microbiology (continued)

Analysis  
SM/APHA 9215 B (PCA) 20th ED (1998) Method Number 20181208

	Result Units	Assigned Value	Accept.	Z	Evaluation
Heterotrophic Plate Count, MPN 2555 / MIC-002 - Lot 013101 /Analyst: dkh/ Analysis Date: 1/12/09	<b>231 MPN</b>	176.00	102 to 283		<b>Acceptable</b>

End of WSMIC08-4-291



# Sample Information

## WS-Standard Plate Count

MIC-002 / Lot {EncryptedLotCode}

	Units	Assigned Value	Study Mean	Study Std. Dev.	Gravimetric Value
Heterotrophic Plate Count, MPN 2555 Microbiology	MPN	176.00	167.00	51.10	180

### Definitions:

**Assigned Value:** Value attributed to a particular quantity and accepted, sometimes by convention, as having an uncertainty appropriate for a give purpose. See ISO Guide 43 for additional information.

**Accept. Window:** The range of values that constitute acceptable performance for a laboratory participation in this PT study.

**Z:** A Z-Score tells how a single data point compares to normal data. A Z-Score says not only whether a point was above or below average, but how unusual the measurement is. Generally, a method result with a Z-Score less than |2| is considered to be in control, a Z-Score between |2| and |3| is considered 'Questionable', but still within control and a Z greater than |3| is considered not acceptable and the method is out of control.

**Study Mean:** Statistical study mean calculated using a robust statistical model (RTC employs the 'Biweight Program'). Robust statistical techniques to minimize the influence that extreme results can have on estimates of the mean and standard deviation NOTE - These techniques assign less weight to extreme results, rather than eliminate them from a data set.

**Study Std. Dev.:** Standard deviation calculated from study data using robust statisticals (Biweight).

**Gravimetric Value:** The prepared to value, determined by gravimetric means. The uncertainty associated to this value is standard uncertainty and based on RTC's gravimetric tolerances.

Program analyte accrediting footnotes

1 NELAC

2 EPA

3 Other

4 A2LA

5 NELAC Experimental

# PERFORMANCE EVALUATION

First Choice for Quality |



Quarterly Study

## WSMIC09-1

4-Feb-2009 through 20-Mar-2009

### RT1014

RTC Labcode

### WY00002

US EPA Labcode

Energy Laboratories  
Steven Carlston  
PO BOX 3258  
Casper WY 82602-3258

Thank you for participating in study WSMIC09-1. Additional information about this study may be found online at [www.rt-corp.com](http://www.rt-corp.com). If you have any questions or comments about this study please contact me.

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Sincerely,

A handwritten signature in black ink, appearing to read 'Chris Rucinski', is written over a white background.

Christopher Rucinski  
Quality Director

2931 Soldier Springs Road  
Laramie, WY 82070  
(307) 742-5452  
[www.rt-corp.com](http://www.rt-corp.com)







Dataset

## WSMIC09-1\_Set\_1

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**Accrediting Labcode WY00002**

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Chemistry Program  
2220 Old Penitentiary Road  
Boise ID 83712  
UNITED STATES

**Accrediting Labcode WY00002**

Nebraska Health and Human Services System  
Department of Regulation & Licensure

**504** Sandra Irons  
State Certification Officer  
3701 S. 14th Street  
Lincoln NE 68502  
UNITED STATES

**Accrediting Labcode WY00002**

Nevada Division of Env. Protection

**118** Donald Lafara  
901 S. Stewart Street  
Ste. 4001  
Carson City NV 89701-5249  
UNITED STATES

**Accrediting Labcode WY00002**

USEPA Region VIII

**217** Jim Gindelberger  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**606** Sandra Spence  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**Accrediting Labcode WY00002**

Wyoming DEQ  
Water Quality Division

**206** Edward Mock  
122 W. 25th Street  
Cheyenne WY 82002  
UNITED STATES

### Microbiology



### Microbiology (continued)

Analysis SM/APHA 9215 B (PCA) 20th ED (1998) Method Number 20181208

	Result Units	Assigned Value	Accept.	Z	Evaluation
Heterotrophic Plate Count, MPN 2555 / MIC-002 - Lot 013929 /Analyst: dkh/ Analysis Date: 3/3/09	<b>128 MPN</b>	85.50	29.5 to 193		<b>Acceptable</b>



**Microbiology**

Analyte  
**Total coliforms 1, 3, 4**  
2500

**Series-K**

SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED  
(1995) - 20211001  
Analyst: -Unknown-

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 2	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 3	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 5	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 6	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 7	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 8	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 10	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09

**Presence/Absence Evaluation**

**Series-K**

Total coliforms  
2500

Method TechnologyCode	False Positives	False Negatives	Acceptance
SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED (1995)	0	0	<b>Acceptable</b>

MPN	Result	Units	Acceptance Limits	Assigned Value	Evaluation	Analyst	Analysis Date
MPN - Sample 1	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 2	419.6	MPN/100mL	100 to 1100	300	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 3	39.4	MPN/100mL	12.1 to 110	30.0	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 4	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 5	471.8	MPN/100mL	100 to 1100	300	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 6	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 7	24.4	MPN/100mL	19.3 to 70	30.0	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 8	383.6	MPN/100mL	100 to 1100	300	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 9	29	MPN/100mL	14.5 to 43.2	30.0	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 10	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09

**MPN Evaluation**

**Series-K**

Total coliforms  
2500

Method TechnologyCode	False Positives	False Negatives	Acceptance
SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED (1995)	0	0	<b>Acceptable</b>



Analyte  
**Escherichia coli** 1, 4  
2525

**Series-K**

SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED  
(1995) - 20211001  
Analyst: -Unknown-

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 2	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 3	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 5	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 6	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 7	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 8	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 10	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09

**Presence/Absence Evaluation**  
**Series-K**

Method TechnologyCode	False Positives	False Negatives	Acceptance
Escherichia coli 2525 SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED (1995)	0	0	<b>Acceptable</b>

MPN	Result	Units	Acceptance Limits	Assigned Value	Evaluation	Analyst	Analysis Date
MPN - Sample 1	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 2	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 3	39.4	MPN/100mL	9.50 to 110	30.0	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 4	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 5	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 6	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 7	24.4	MPN/100mL	16.0 to 100	30.0	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 8	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 9	29	MPN/100mL	12.8 to 42.6	30.0	<b>Acceptable</b>	rlo	2/10/09
MPN - Sample 10	<2	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	rlo	2/10/09

**MPN Evaluation**  
**Series-K**

Method TechnologyCode	False Positives	False Negatives	Acceptance
Escherichia coli 2525 SM/APHA 9223 B (Colilert® Quanti-Tray®) 19th ED (1995)	0	0	<b>Acceptable</b>



End of WSMIC09-1\_Set\_1



Dataset

## WSMIC09-1\_Set\_2

### Accreditors

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**Accrediting Labcode WY00002**

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UNITED STATES

**Accrediting Labcode WY00002**

Nebraska Health and Human Services System  
Department of Regulation & Licensure

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Lincoln NE 68502  
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Nevada Division of Env. Protection

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901 S. Stewart Street  
Ste. 4001  
Carson City NV 89701-5249  
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USEPA Region VIII

**217** Jim Gindelberger  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**606** Sandra Spence  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**Accrediting Labcode WY00002**

Wyoming DEQ  
Water Quality Division

**206** Edward Mock  
122 W. 25th Street  
Cheyenne WY 82002  
UNITED STATES



### Microbiology

Analyte

**Total coliforms** 1, 3, 4

2500

#### Series-K

SM/APHA 9221 D 19th ED (1995) - 20192409

Analyst: -Unknown-

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 2	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 3	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 5	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 6	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 7	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 8	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 10	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09

#### Presence/Absence Evaluation

Series-K	Method TechnologyCode	False Positives	False Negatives	Acceptance
Total coliforms 2500	SM/APHA 9221 D 19th ED (1995)	0	0	<b>Acceptable</b>



Analyte

**Escherichia coli** 1, 4

2525

**Series-K**

SM/APHA 9223 B 18th ED (1992) - 20037609

Technology Code: COLILERT

Analyst: -Unknown-

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 2	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 3	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 5	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 6	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 7	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 8	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 10	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09

**Presence/Absence Evaluation**

**Series-K**

Method TechnologyCode	False Positives	False Negatives	Acceptance
Escherichia coli 2525 SM/APHA 9223 B 18th ED (1992) COLILERT	0	0	<b>Acceptable</b>



Analyte

**Fecal coliforms** 1, 3, 4

2530

**Series-K**

SM/APHA 9221 D 19th ED (1995) - 20192409

Analyst: -Unknown-

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 2	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 3	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 5	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 6	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 7	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 8	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	rlo	2/10/09
Presence/Absence - Sample 10	Absent	Absent	<b>Acceptable</b>	rlo	2/10/09

**Presence/Absence Evaluation**

Series-K	Method TechnologyCode	False Positives	False Negatives	Acceptance
Fecal coliforms 2530	SM/APHA 9221 D 19th ED (1995)	0	0	<b>Acceptable</b>



End of WSMIC09-1\_Set\_2



# Sample Information

## WS-Standard Plate Count

MIC-002 / Lot {EncryptedLotCode}

	Units	Assigned Value	Study Mean	Study Std. Dev.	Gravimetric Value
Heterotrophic Plate Count, MPN 2555 Microbiology	MPN	85.50	71.00	25.70	90.0

### Definitions:

**Assigned Value:** Value attributed to a particular quantity and accepted, sometimes by convention, as having an uncertainty appropriate for a give purpose. See ISO Guide 43 for additional information.

**Accept. Window:** The range of values that constitute acceptable performance for a laboratory participation in this PT study.

**Z:** A Z-Score tells how a single data point compares to normal data. A Z-Score says not only whether a point was above or below average, but how unusual the measurement is. Generally, a method result with a Z-Score less than |2| is considered to be in control, a Z-Score between |2| and |3| is considered 'Questionable', but still within control and a Z greater than |3| is considered not acceptable and the method is out of control.

**Study Mean:** Statistical study mean calculated using a robust statistical model (RTC employs the 'Biweight Program'). Robust statistical techniques to minimize the influence that extreme results can have on estimates of the mean and standard deviation NOTE - These techniques assign less weight to extreme results, rather than eliminate them from a data set.

**Study Std. Dev.:** Standard deviation calculated from study data using robust statisticals (Biweight).

**Gravimetric Value:** The prepared to value, determined by gravimetric means. The uncertainty associated to this value is standard uncertainty and based on RTC's gravimetric tolerances.

Program analyte accrediting footnotes

1 NELAC


3 Other

5 NELAC Experimental

2 EPA

4 A2LA

# PERFORMANCE EVALUATION

First Choice for Quality | 

Quarterly Study

## WSMIC09-3

15-Jul-2009 through 28-Aug-2009

### RT1014

RTC Labcode

### WY00002

US EPA Labcode

Energy Laboratories  
Steven Carlston  
PO BOX 3258  
Casper WY 82602-3258

Thank you for participating in study WSMIC09-3. Additional information about this study may be found online at [www.rt-corp.com](http://www.rt-corp.com). If you have any questions or comments about this study please contact me.

This report shall not be reproduced except in full, without written approval of the laboratory. RTC is accredited by A2LA to perform PT programs for the scope of accreditation under A2LA certificate 2122.01. A laboratory may not claim endorsement by A2LA or any other federal agency.

**This report may contain data that are not covered by the A2LA accreditation.**

Sincerely,



Christopher Rucinski  
Quality Director

2931 Soldier Springs Road  
Laramie, WY 82070  
(307) 742-5452  
[www.rt-corp.com](http://www.rt-corp.com)







Dataset

## **WSMIC09-3\_Set\_1**

### **Accreditors**

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

**Accrediting Labcode WY00002**

Colorado Dept. of Public Health & Environment

**451** Ben Chouaf  
Certification Officer  
8100 Lowry Boulevard  
Denver CO 80230-6928  
UNITED STATES

**Accrediting Labcode WY00002**

Florida Dept. of Health

**229** Stephen Arms  
PO Box 210  
1217 Pearl Street  
Jacksonville FL 32231  
UNITED STATES

**Accrediting Labcode WY00002**

Idaho Bureau of Laboratories

**383** Sandra Radwin  
Micro Program  
2220 Old Penitentiary Road  
Boise ID 83712  
UNITED STATES

**Accrediting Labcode WY00002**

Montana Dept. of Public Health & Human Services

Environmental Laboratory Services

**235** Judy Halm  
PO Box 4369  
Helena MT 59604-4369  
UNITED STATES

**Accrediting Labcode WY00002**

Nebraska Health and Human Services System

Department of Regulation & Licensure

**504** Sandra Irons  
State Certification Officer  
3701 S. 14th Street  
Lincoln NE 68502  
UNITED STATES

**Accrediting Labcode WY00002**

Nevada Division of Env. Protection

**118** Donald Lafara  
901 S. Stewart Street  
Ste. 4001  
Carson City NV 89701-5249  
UNITED STATES



**Accrediting Labcode E87641**  
New Mexico Environmental Department

**411** Barbara Cooney  
Rennels Bldg N 2050, 1190 St Francis Drive  
PO Box 26110  
Santa Fe NM 87502  
UNITED STATES

**Accrediting Labcode WY200001**  
Oregon State Public Health Laboratory

**122** Irene Ronning  
3150 NW 229th Ave.  
Ste. 100  
Hillsboro OR 97124-6536  
UNITED STATES

**Accrediting Labcode WY00002**  
South Dakota DENR

**364** Mike Smith  
Health Lab  
Joe Foss Building - Chemistry  
523 E. Capital  
Pierre SD 57501-3181  
UNITED STATES

**Accrediting Labcode T104704181-05-TX**  
Texas CEQ

**384** Frank Jamison  
Quality Assurance/Laboratory Accreditation  
PO Box 13087 (MC-176)  
Austin TX 78711-3087  
UNITED STATES

**Accrediting Labcode WY00002**  
USEPA Region VIII

**217** Jim Gindelberger  
1595 Wynkoop Street  
Denver CO 80202-1129  
UNITED STATES

**Accrediting Labcode WY00002**  
Utah Bureau of Laboratory Improvement

**215** Kristin Brown  
PO Box 142109  
Salt Lake City UT 84114-2109  
UNITED STATES

**Accrediting Labcode WY00002**  
Wyoming DEQ  
Water Quality Division



Accrediting Labcode **WY00002**

Wyoming DEQ

Water Quality Division

**206** Edward Mock  
122 W. 25th Street  
Cheyenne WY 82002  
UNITED STATES

### Microbiology

Analysis SM/APHA 9215 B (PCA) 20th ED (1998) Method Number 20181208

	Result Units	Proficiency Value	Accept.	Z	Evaluation
Heterotrophic Plate Count, MPN 4 2555 / MIC-002 - Lot 014326 /Analyst: dkh/ Analysis Date: 7/27/09	21 MPN	115.00	72.6 to 171		<b>Not Acceptable</b>



### Microbiology

Analyte

**Total coliforms** 1, 3, 4

2500

**Series ID: 5**

SM/APHA 9221 D 19th ED (1995) - 20192409

Analyst: -

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 2	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 3	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 5	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 6	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 7	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 8	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 10	Present	Present	<b>Acceptable</b>	dkh	7/27/09

#### Presence/Absence Evaluation

5	Method TechnologyCode	False Positives	False Negatives	Acceptance
Total coliforms 2500	SM/APHA 9221 D 19th ED (1995)	0	0	<b>Acceptable</b>



Analyte

**Escherichia coli** 1, 4

2525

**Series ID: 5**

SM/APHA 9221 D 19th ED (1995) - 20192409

Analyst: -

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 2	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 3	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 5	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 6	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 7	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 8	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 10	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09

**Presence/Absence Evaluation**

5	Method TechnologyCode	False Positives	False Negatives	Acceptance
Escherichia coli 2525	SM/APHA 9221 D 19th ED (1995)	0	0	<b>Acceptable</b>



Analyte

**Fecal coliforms** 1, 3, 4

2530

**Series ID: 5**

SM/APHA 9221 D 19th ED (1995) - 20192409

Analyst: -

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 2	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 3	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 5	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 6	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 7	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 8	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 10	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09

**Presence/Absence Evaluation**

5	Method TechnologyCode	False Positives	False Negatives	Acceptance
Fecal coliforms 2530	SM/APHA 9221 D 19th ED (1995)	0	0	<b>Acceptable</b>



End of WSMIC09-3\_Set\_1



Dataset

**WSMIC09-3\_Set\_2****Accreditors**

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

**Accrediting Labcode WY00002**

Colorado Dept. of Public Health &amp; Environment

**451** Ben Chouaf  
Certification Officer  
8100 Lowry Boulevard  
Denver CO 80230-6928  
UNITED STATES

**Accrediting Labcode WY00002**

Florida Dept. of Health

**229** Stephen Arms  
PO Box 210  
1217 Pearl Street  
Jacksonville FL 32231  
UNITED STATES

**Accrediting Labcode WY00002**

Idaho Bureau of Laboratories

**383** Sandra Radwin  
Micro Program  
2220 Old Penitentiary Road  
Boise ID 83712  
UNITED STATES

**Accrediting Labcode WY00002**

Montana Dept. of Public Health &amp; Human Services

Environmental Laboratory Services

**235** Judy Halm  
PO Box 4369  
Helena MT 59604-4369  
UNITED STATES

**Accrediting Labcode WY00002**

Nebraska Health and Human Services System

Department of Regulation &amp; Licensure

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State Certification Officer  
3701 S. 14th Street  
Lincoln NE 68502  
UNITED STATES

**Accrediting Labcode WY00002**

Nevada Division of Env. Protection

**118** Donald Lafara  
901 S. Stewart Street  
Ste. 4001  
Carson City NV 89701-5249  
UNITED STATES



**Accrediting Labcode E87641**  
New Mexico Environmental Department

**411** Barbara Cooney  
Rennels Bldg N 2050, 1190 St Francis Drive  
PO Box 26110  
Santa Fe NM 87502  
UNITED STATES

**Accrediting Labcode WY200001**  
Oregon State Public Health Laboratory

**122** Irene Ronning  
3150 NW 229th Ave.  
Ste. 100  
Hillsboro OR 97124-6536  
UNITED STATES

**Accrediting Labcode WY00002**  
South Dakota DENR

**364** Mike Smith  
Health Lab  
Joe Foss Building - Chemistry  
523 E. Capital  
Pierre SD 57501-3181  
UNITED STATES

**Accrediting Labcode T104704181-05-TX**  
Texas CEQ

**384** Frank Jamison  
Quality Assurance/Laboratory Accreditation  
PO Box 13087 (MC-176)  
Austin TX 78711-3087  
UNITED STATES

**Accrediting Labcode WY00002**  
USEPA Region VIII

**217** Jim Gindelberger  
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UNITED STATES

**Accrediting Labcode WY00002**  
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**215** Kristin Brown  
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Salt Lake City UT 84114-2109  
UNITED STATES

**Accrediting Labcode WY00002**  
Wyoming DEQ  
Water Quality Division



**Accrediting Labcode WY00002**

Wyoming DEQ

Water Quality Division

**206** Edward Mock  
122 W. 25th Street  
Cheyenne WY 82002  
UNITED STATES



Microbiology

Analyte

Total coliforms 1, 3, 4

2500

Series ID: 5

SM/APHA 9223 B (Colilert® Quanti-Tray®) 20th ED (1998) - 20211205

Analyst: -

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	Acceptable	dkh	7/27/09
Presence/Absence - Sample 2	Present	Present	Acceptable	dkh	7/27/09
Presence/Absence - Sample 3	Absent	Absent	Acceptable	dkh	7/27/09
Presence/Absence - Sample 4	Absent	Absent	Acceptable	dkh	7/27/09
Presence/Absence - Sample 5	Present	Present	Acceptable	dkh	7/27/09
Presence/Absence - Sample 6	Present	Present	Acceptable	dkh	7/27/09
Presence/Absence - Sample 7	Absent	Absent	Acceptable	dkh	7/27/09
Presence/Absence - Sample 8	Present	Present	Acceptable	dkh	7/27/09
Presence/Absence - Sample 9	Present	Present	Acceptable	dkh	7/27/09
Presence/Absence - Sample 10	Present	Present	Acceptable	dkh	7/27/09

Presence/Absence Evaluation

5	Method TechnologyCode	False Positives	False Negatives	Acceptance
Total coliforms 2500	SM/APHA 9223 B (Colilert® Quanti-Tray®) 20th ED (1998)	0	0	Acceptable

MPN	Result	Units	Acceptance Limits	Assigned Value	Evaluation	Analyst	Analysis Date
MPN - Sample 1	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable	dkh	7/27/09
MPN - Sample 2	976	MPN/100mL	500 to 1400	500	Acceptable	dkh	7/27/09
MPN - Sample 3	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable	dkh	7/27/09
MPN - Sample 4	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable	dkh	7/27/09
MPN - Sample 5	87	MPN/100mL	41.4 to 180	100	Acceptable	dkh	7/27/09
MPN - Sample 6	222	MPN/100mL	102 to 346	200	Acceptable	dkh	7/27/09
MPN - Sample 7	<1	MPN/100mL	0.0 to 0.0	0.00	Acceptable	dkh	7/27/09
MPN - Sample 8	12.6	MPN/100mL	2.71 to 29.5	20.0	Acceptable	dkh	7/27/09
MPN - Sample 9	266	MPN/100mL	179 to 427	300	Acceptable	dkh	7/27/09
MPN - Sample 10	1373	MPN/100mL	269 to 2010	500	Acceptable	dkh	7/27/09

MPN Evaluation

5	Method TechnologyCode	False Positives	False Negatives	Acceptance
Total coliforms 2500	SM/APHA 9223 B (Colilert® Quanti-Tray®) 20th ED (1998)	0	0	Acceptable



Analyte

**Escherichia coli** 1, 4

2525

**Series ID: 5**

SM/APHA 9223 B (Colilert® Quanti-Tray®) 20th ED  
(1998) - 20211205

Analyst: -

Presence/Absence	Result	Assigned Value	Evaluation	Analyst	Analysis Date
Presence/Absence - Sample 1	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 2	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 3	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 4	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 5	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 6	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 7	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 8	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 9	Present	Present	<b>Acceptable</b>	dkh	7/27/09
Presence/Absence - Sample 10	Absent	Absent	<b>Acceptable</b>	dkh	7/27/09

**Presence/Absence Evaluation**

5	Method TechnologyCode	False Positives	False Negatives	Acceptance
Escherichia coli 2525	SM/APHA 9223 B (Colilert® Quanti-Tray®) 20th ED (1998)	0	0	<b>Acceptable</b>

MPN	Result	Units	Acceptance Limits	Assigned Value	Evaluation	Analyst	Analysis Date
MPN - Sample 1	<1	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 2	<1	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 3	<1	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 4	<1	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 5	<1	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 6	222	MPN/100mL	107 to 315	200	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 7	<1	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 8	12.6	MPN/100mL	2.71 to 29.5	20.0	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 9	266	MPN/100mL	172 to 438	300	<b>Acceptable</b>	dkh	7/27/09
MPN - Sample 10	<1	MPN/100mL	0.0 to 0.0	0.00	<b>Acceptable</b>	dkh	7/27/09

**MPN Evaluation**

5	Method TechnologyCode	False Positives	False Negatives	Acceptance
Escherichia coli 2525	SM/APHA 9223 B (Colilert® Quanti-Tray®) 20th ED (1998)	0	0	<b>Acceptable</b>



End of WSMIC09-3\_Set\_2



# Sample Information

## Standard Plate Count - WS

MIC-002 / Lot 014326

	Units	Assigned Value	Study Mean	Study Std. Dev.
Heterotrophic Plate Count, MPN 2555 Microbiology	MPN	125	112.00	22.90

### Definitions:

**Assigned Value:** Value attributed to a particular quantity and accepted, sometimes by convention, as having an uncertainty appropriate for a give purpose. See ISO Guide 43 for additional information.

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**Z:** A Z-Score tells how a single data point compares to normal data. A Z-Score says not only whether a point was above or below average, but how unusual the measurement is. Generally, a method result with a Z-Score less than |2| is considered to be in control, a Z-Score between |2| and |3| is considered 'Questionable', but still within control and a Z greater than |3| is considered not acceptable and the method is out of control.

**Study Mean:** Statistical study mean calculated using a robust statistical model (RTC employs the 'Biweight Program'). Robust statistical techniques to minimize the influence that extreme results can have on estimates of the mean and standard deviation NOTE - These techniques assign less weight to extreme results, rather than eliminate them from a data set.

**Study Std. Dev.:** Standard deviation calculated from study data using robust statisticals (Biweight).

**Gravimetric Value:** The prepared to value, determined by gravimetric means. The uncertainty associated to this value is standard uncertainty and based on RTC's gravimetric tolerances.

Program analyte accrediting footnotes

1 NELAC

3 Other

5 NELAC Experimental

2 EPA

4 A2LA