On the Horizon 2014
Monitoring Updates & Revised TCR Implementation

Nevada Rural Water Conference
March 20, 2014

Presented by:
Bureau of Safe Drinking Water
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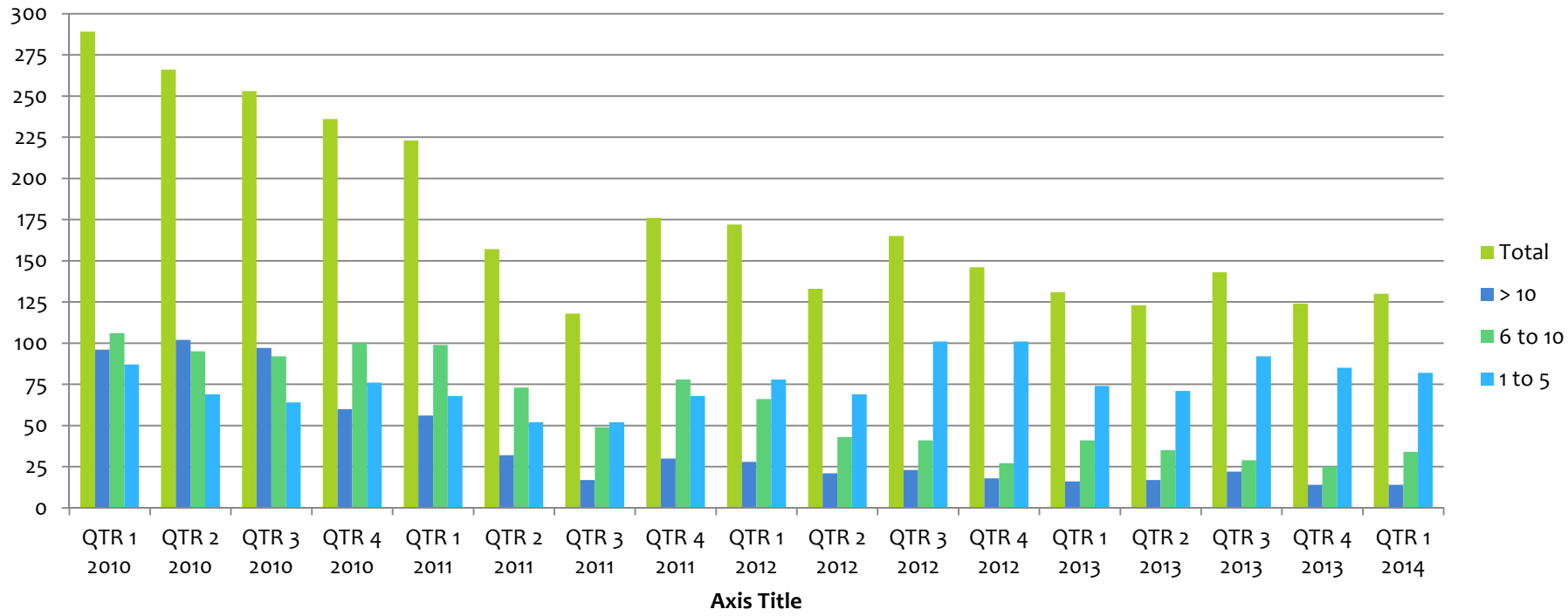
NV PWS Compliance Trend 2010 to Present



Monitoring to Ensure Compliance

Resources to Ensure Compliance

* Monitoring Assessment Plan
  * Formerly known as Attachment A
* Monitoring Reminders
* Reporting
* Drinking Water Watch
* Monitoring Regulations
  * STATE: NAC 445A.450 thru 445A.5426
  * FEDERAL: 40 CFR Part 141
* Facility Managers

Attachment A										
PWS #: **Src ID: WELL OR SPRING**	*Monitoring Required - Nine (9) Year Monitoring Cycle*									
Contaminant	**Waiver**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Arsenic			MR			MR			MR	
Dioxin			MR			MR			MR	
IOC's Phase II			MR			MR			MR	
IOC's Phase V			MR			MR			MR	
Nitrate			MR	MR	MR	MR	MR	MR	MR	MR
Nitrite			MR			MR			MR	
Nitrate and Nitrate (Total)			MR			MR			MR	
Radionuclides Gross Alpha/ Radium 226/Radium 228/Uranium			MR 4 Qtrs							
Secondary drinking water standards			MR			MR			MR	
SOC's Phase II			MR 4 Qtrs			MR			MR	
SOC's Phase V			MR 4 Qtrs			MR			MR	
SODIUM			MR			MR			MR	

Monitoring Assessment Plans

* Monitoring Assessment Plan, otherwise referred to as a MAP
* 9-Year Monitoring Schedule

Nevada Division of Environmental Protection
Monitoring Assessment Plan

PWS: NV0000038 NAME: ELY MUNICIPAL WATER DEPARTMENT

Total Coliform Bacteria Monitoring: Starting 3/1/2011 7 Per MN

Facility: DS01 DISTRIBUTION SYSTEM

GrpName	Cnt	Freq	2012	2013	2014	2015	2016	2017	2018	2019	2020	
ASBESTOS	1	9Y					MR					SAMPLE IN AREA WITH AC PIPE
DISINFECTION BYPRODUCTS	2	3Y		MR			MR			MR		COLLECT 2 SAMPLES AT APPROVED SITES BETWEEN JULY 1ST & SEPTEMBER 30TH
LEAD AND COPPER	20	3Y		MR			MR			MR		COLLECT 20 SAMPLES AT APPROVED SITES BETWEEN JUNE 1ST & SEPTEMBER 30TH

Facility: W02 NORTH ST WELL

GrpName	Cnt	Freq	2012	2013	2014	2015	2016	2017	2018	2019	2020
ARSENIC	1	3Y	MR			MR			MR		
IOC CYANIDE	1	3Y	MR			MR			MR		
IOC FLUORIDE	1	3Y	MR			MR			MR		
IOCS PHASE 2	1	3Y	MR			MR			MR		
IOCS PHASE 5	1	3Y	MR			MR			MR		
NITRATE	1	YR	MR	MR	MR	MR	MR	MR	MR	MR	MR
NITRITE	1	3Y	MR			MR			MR		
RADS GROSS ALPHA	1	6Y						MR			
RADS RADIUM 226 & 228	1	9Y									MR
RADS URANIUM	1	6Y						MR			
SECONDARY IOCS	1	3Y	MR			MR			MR		
SOCS PHASE 2 & 5	1	6Y				MR					
SODIUM	1	3Y	MR			MR			MR		
VOCS PHASE 2 & 5	1	3Y				MR			MR		

MR = Monitoring Required
RW = Renew Waiver

Monitoring Assessment Plan

PWS: NV0000038 NAME: ELY MUNICIPAL WATER DEPARTMENT

Total Coliform Bacteria Monitoring: Starting 3/1/2011 7 Per MN

Facility: DS01 DISTRIBUTION SYSTEM

GrpName	Cnt	Freq	2012	2013	2014	2015	2016	2017	2018	2019	2020	
ASBESTOS	1	9Y					MR					SAMPLE IN AREA WITH AC PIPE
DISINFECTION BYPRODUCTS	2	3Y		MR			MR			MR		COLLECT 2 SAMPLES AT APPROVED SITES BETWEEN JULY 1ST & SEPTEMBER 30TH
LEAD AND COPPER	20	3Y		MR			MR			MR		COLLECT 20 SAMPLES AT APPROVED SITES BETWEEN JUNE 1ST & SEPTEMBER 30TH

Facility: W02 NORTH ST WELL

GrpName	Cnt	Freq	2012	2013	2014	2015	2016	2017	2018	2019	2020
ARSENIC	1	3Y	MR			MR			MR		
IOC CYANIDE	1	3Y	MR			MR			MR		
IOC FLUORIDE	1	3Y	MR			MR			MR		
IOCS PHASE 2	1	3Y	MR			MR			MR		
IOCS PHASE 5	1	3Y	MR			MR			MR		
NITRATE	1	YR	MR	MR	MR	MR	MR	MR	MR	MR	MR

Monitoring Reminders

- Mailed 2 times a year
  - February/March
  - November/December
- Read the cover letter
- Beware of unique Monitoring Schedules
  - SOCs
  - DBPs

RE: **2014 PUBLIC WATER SYSTEM MONITORING REMINDER:** [redacted]
[redacted]
NV000[redacted] - COMMUNITY - [redacted] COUNTY

Dear [redacted],

This monitoring report has been prepared for the [redacted] public water system as a **reminder** of your **monitoring requirements for calendar year 2014**. This report is based on monitoring requirements for the aforementioned water system. The columns for "Date of latest result(s)" and "Need Result?" are based on data received and entered into the Bureau of Safe Drinking Water (BSDW) database.

The monitoring for SOCS Phase 2 and 5 group and Disinfection Byproducts (DBP2 Stage 2) is not fully depicted on the "Monitoring Required" report. In order to clarify monitoring for these compounds, refer to the following tables for more specific requirements.

Synthetic Organic Compounds as follows:

Facility ID	Facility Name	Seasonal Collection Period
W03	Well 3	Collect sample 1/1-6/30 and 7/1-12/31
W06	Well 6	Collect sample 1/1-6/30 and 7/1-12/31

Disinfection Byproducts as follows:

Facility Name	Number of Samples	Frequency	Seasonal Collection Period
Distribution	2	Quarterly	Collect sample in March, June, September, and December

Monitoring must be completed prior to December 31, 2014 or within the "Monitoring Period" and "Seasonal Collection Period" indicated.

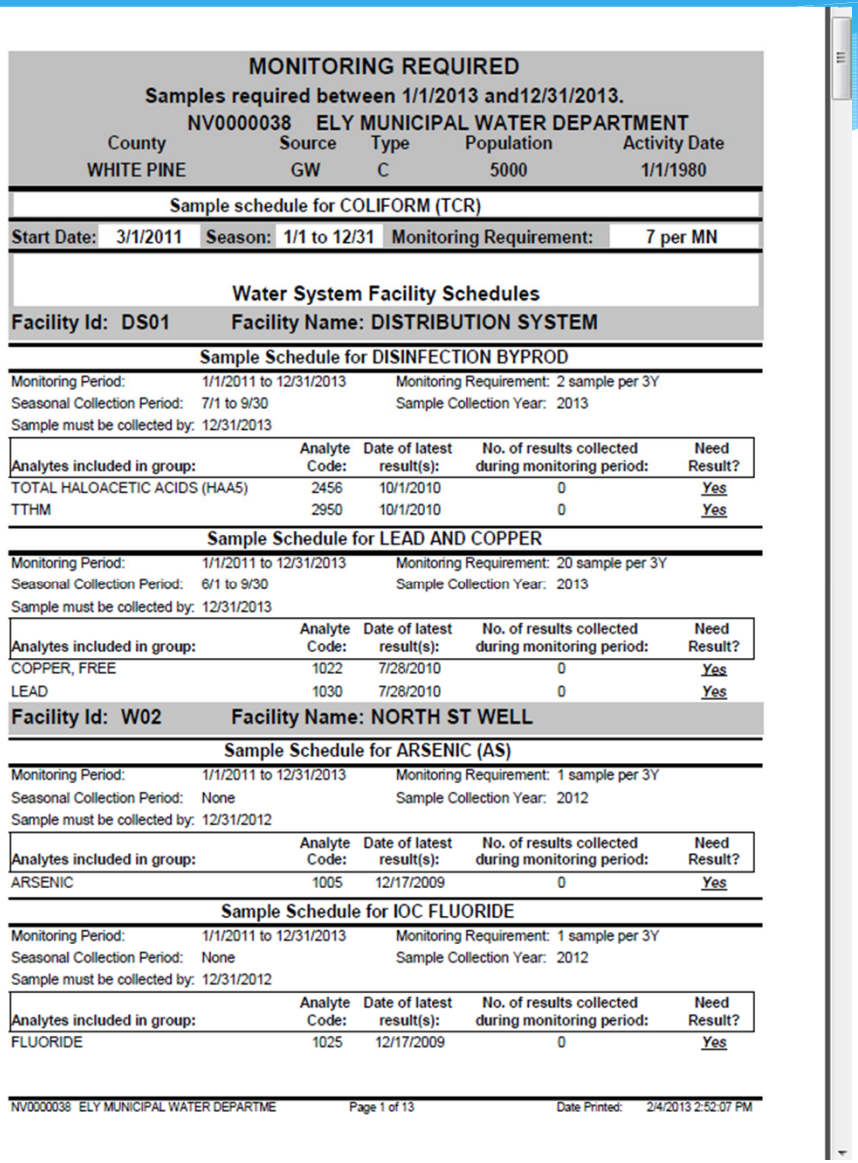
In addition to performing the required monitoring, the **water system** is responsible for reporting the monitoring results, or ensuring its submittal by contract laboratories, to this office for review and documentation. The results must be submitted within 10 days following the month in which they are received by the water system or within 10 days following the end of the "Monitoring Period" or "Seasonal Collection Period", whichever is shortest.

Please contact our office if:

1. Water sources are not represented in this schedule.
2. Monitoring has been improperly assigned or omitted.

Monitoring Reminders

* Specific detailed monitoring for the compliance year
* Monitoring Reminders are generated and mailed in the spring and fall



MONITORING REQUIRED

Samples required between 1/1/2013 and12/31/2013.

NV0000038 ELY MUNICIPAL WATER DEPARTMENT

County	Source	Type	Population	Activity Date
WHITE PINE	GW	C	5000	1/1/1980

Sample schedule for COLIFORM (TCR)

Start Date: 3/1/2011 Season: 1/1 to 12/31 Monitoring Requirement: 7 per MN

Water System Facility Schedules

Facility Id: DS01 Facility Name: DISTRIBUTION SYSTEM

Sample Schedule for DISINFECTION BYPROD

Monitoring Period: 1/1/2011 to 12/31/2013 Monitoring Requirement: 2 sample per 3Y
Seasonal Collection Period: 7/1 to 9/30 Sample Collection Year: 2013
Sample must be collected by: 12/31/2013

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
TOTAL HALOACETIC ACIDS (HAA5)	2456	10/1/2010	0	Yes
TTHM	2950	10/1/2010	0	Yes

Sample Schedule for LEAD AND COPPER

Monitoring Period: 1/1/2011 to 12/31/2013 Monitoring Requirement: 20 sample per 3Y
Seasonal Collection Period: 6/1 to 9/30 Sample Collection Year: 2013
Sample must be collected by: 12/31/2013

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
COPPER, FREE	1022	7/28/2010	0	Yes
LEAD	1030	7/28/2010	0	Yes

Facility Id: W02 Facility Name: NORTH ST WELL

Sample Schedule for ARSENIC (AS)

Monitoring Period: 1/1/2011 to 12/31/2013 Monitoring Requirement: 1 sample per 3Y
Seasonal Collection Period: None Sample Collection Year: 2012
Sample must be collected by: 12/31/2012

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
ARSENIC	1005	12/17/2009	0	Yes

Sample Schedule for IOC FLUORIDE

Monitoring Period: 1/1/2011 to 12/31/2013 Monitoring Requirement: 1 sample per 3Y
Seasonal Collection Period: None Sample Collection Year: 2012
Sample must be collected by: 12/31/2012

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
FLUORIDE	1025	12/17/2009	0	Yes

Monitoring Reminders

* When scheduled monitoring is still due/or we have not received or entered the data

* When the sample schedule has been satisfied

MONITORING REQUIRED

Samples required between 1/1/2013 and12/31/2013.

NV0000038 ELY MUNICIPAL WATER DEPARTMENT

County	Source	Type	Population	Activity Date
WHITE PINE	GW	C	5000	1/1/1980

Sample schedule for COLIFORM (TCR)

Start Date:	3/1/2011	Season:	1/1 to 12/31	Monitoring Requirement:	7 per MN

Water System Facility Schedules

Facility Id: DS01 Facility Name: DISTRIBUTION SYSTEM

Sample Schedule for DISINFECTION BYPROD

Monitoring Period:	1/1/2011 to 12/31/2013	Monitoring Requirement:	2 sample per 3Y
Seasonal Collection Period:	7/1 to 9/30	Sample Collection Year:	2013
Sample must be collected by:	12/31/2013		

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
TOTAL HALOACETIC ACIDS (HAA5)	2456	10/1/2010	0	Yes
TTHM	2950	10/1/2010	0	Yes

Sample Schedule for ARSENIC (AS)

Monitoring Period:	1/1/2011 to 12/31/2013	Monitoring Requirement:	1 sample per 3Y
Seasonal Collection Period:	None	Sample Collection Year:	2012
Sample must be collected by:	12/31/2012		

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
ARSENIC	1005	10/10/2012	1	

Monitoring Reminders

* When the sample collection year has passed and monitoring is still due.

Sample Schedule for SOCS PHASE 2 & 5

Monitoring Period: 1/1/2011 to 12/31/2019 Monitoring Requirement: 1 sample per 9Y

Seasonal Collection Period: None Sample Collection Year: 2013

Sample must be collected by: 12/31/2013

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
1,2-DIBROMO-3-CHLOROPROPANE	2931	6/14/2004	0	Yes
2,4,5-TP	2110	6/14/2004	0	Yes
2,4-D	2105	6/14/2004	0	Yes
ATRAZINE	2050	6/14/2004	0	Yes
BENZO(A)PYRENE	2306	6/14/2004	0	Yes

Monitoring Reminders

* Seasonal Collection Periods
  * Sources
  * Distribution System

Facility Id: TP02 **Facility Name: LAKE TAHOE SURFACE WATER PLANT**

Sample Schedule for TOLUENE

Monitoring Period: 1/1/2014 to 12/31/2014 Monitoring Requirement: 1 sample per YR
Seasonal Collection Period: 10/1 to 12/31 Sample Collection Year: 2014
Sample must be collected by: 12/31/2014

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
TOLUENE	2991	10/17/2013	0	Yes

Water System Facility Schedules

Facility Id: DS01 **Facility Name: DISTRIBUTION SYSTEM**

Sample Schedule for DBPR STAGE 2

Monitoring Period: 1/1/2014 to 12/31/2014 Monitoring Requirement: 1 sample per YR
Seasonal Collection Period: 8/1 to 8/31 Sample Collection Year: 2014
Sample must be collected by: 12/31/2014

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
TOTAL HALOACETIC ACIDS (HAA5)	2456	7/17/2012	0	Yes
TTHM	2950	7/17/2012	0	Yes

Sample Schedule for LEAD AND COPPER

Monitoring Period: 1/1/2014 to 12/31/2016 Monitoring Requirement: 10 sample per 3Y
Seasonal Collection Period: 6/1 to 9/30 Sample Collection Year: 2014
Sample must be collected by: 12/31/2014

Analytes included in group:	Analyte Code:	Date of latest result(s):	No. of results collected during monitoring period:	Need Result?
COPPER, FREE	1022	9/5/2008	0	Yes
LEAD	1030	8/9/2011	0	Yes

Reporting Analytical Results

* The PWS must report monitoring results within the first 10 days following the month in which the results were received or within 10 days following the end of the compliance period, whichever is shortest
* State Lab vs. Private Certified Lab
* 600 Active PWS's, not including systems in process of becoming PWS's.
* Send via mail, fax, email OR ensure your laboratory submits the data. Avoid duplicate submittals.

Reporting Results- COC's

* Include PWS Name **and** Number
* Help out our data entry staff!
* Unique sample locations
* Unique sample times

Drinking Water Watch

* You can refer to Drinking Water Watch at any time to see what is in our database.

  https://ndwis.ndep.nv.gov/DWW/

* You can also refer your water users to this site if they are curious about their water quality.

Version 3.01

Public Water Supply Systems Search Parameters

Water System No.	
Water System Name	
Principal County Served	All
Water System Type	All
Primary Source Water Type	All
Point of Contact Type	None

Sample Search Parameters

Sample Class	Click to select a value...
Sample Collection Date Range (The Sample Search always produces results for the last 2 years, unless you provide a specific date range.)	1/31/2011 **To** 1/31/2013

Search For Water Systems | Search For Samples | Review Consumer Confidence Data | Clear | Glossary

Click Here for the County Map of Nevada

Links

Water System Facilities

Sample Schedules

Coliform/Microbial Sample Results

Coliform Sample Summary Results

Lead And Copper Sample Summary Results

Chem/Rad Samples/Results

Chem/Rad Samples/Results by Analyte

Violations/Enforcement Actions

Site Visits

Milestones

Return Links

Water Systems

Water System Search

County Map

Glossary

Drinking Water Branch

Water System Details

Water System No. :	NV0000038	**Federal Type :**	C
Water System Name :	ELY MUNICIPAL WATER DEPARTMENT	**State Type :**	C
Principal County Served :	WHITE PINE	**Primary Source :**	GW
Status :	A	**Activity Date :**	01-01-1980

Annual Operating Periods & Population Served

Start Month	Start Day	End Month	End Day	Population Type	Population Served
1	1	12	31	R	5000

Service Connections

Type	Count	Meter Type	Meter Size Measur
CB	2500	ME	1

Sources of Water

Name	Type Code	Status
10TH & M ST WELL	WL	A
17TH & M ST WELL	WL	A
GOLF COURSE WELL PWCOE 09-05	WL	A
NORTH ST WELL	WL	A
TERRACE WELL PWCOE 09-02	WL	A
WELL RW 7P	WL	A
WELL RW-6P	WL	A
EMERGENCY INTERTIE FR ROBINSON MINE 0855	CC	I
MURRY SPRING	SP	I

Service Areas

Code	Name
R	RESIDENTIAL AREA

Water Purchases

Seller Water System No.	Water System Name	Seller Facility Type	Seller State Asgn ID No.	Buyer Facility Type	Buyer State Asgn ID
NV0000855	ROBINSON NEVADA MINING COMPANY	WL	W03	CC	CC01

Example: Chemical, Radiological Sample Results

Return Links

- Water System Detail
- Water Systems
- Water System Search
- County Map

Glossary

Drinking Water Branch

Chem/Rad Samples

Water System No. :	NV0000038	**Federal Type :**	C
Water System Name :	ELY MUNICIPAL WATER DEPARTMENT	**State Type :**	C
Principal County Served :	WHITE PINE	**Primary Source :**	GW
Status :	A	**Activity Date :**	01-01-1980

This list displays sample/results of all non-microbial analytes (TSAANLYT.TYPE_CODE <> MOR) for the last 2 years by default. If you need to search for a specific date range, use the following date fields (you can also pick a date from the pop-up calendar next to the field) and click on Search.

Sample Collection Date From **To** SEARCH

Lab Sample No.	Type	Collection Date & Time	Sampling Point	Sample Location	Laboratory
1210269-001	RT	10-10-2012 11:10:00	06	GOLF COURSE WELL	WESTERN ENVIRONMENTAL TESTING LABS SPARK
1210270-001	RT	10-10-2012 10:00:00	08	WELL RW 7P	WESTERN ENVIRONMENTAL TESTING LABS SPARK
1210271-001	RT	10-10-2012 10:15:00	07	RW-6P	WESTERN ENVIRONMENTAL TESTING LABS SPARK
1210272-001	RT	10-10-2012 12:40:00	05	TERRACE WELL	ASSOCIATED LABORATORIES
1210273-001	RT	10-10-2012 10:45:00	04	null	WESTERN ENVIRONMENTAL TESTING LABS SPARK
312004-001	RT	10-10-2012 12:40:00	05	TERRACE WELL	ASSOCIATED LABORATORIES
312005-001	RT	10-10-2012 10:00:00	08	WELL RW 7P	ASSOCIATED LABORATORIES
312007-001	RT	10-10-2012 11:10:00	06	GOLF COURSE WELL	ASSOCIATED LABORATORIES
1201054-007	RT	01-04-2012 11:00:00	03	10TH & M	WESTERN ENVIRONMENTAL TESTING LABS SPARK
A2A0642-01	RT	01-04-2012 10:25:00	05	TERRACE WELL	BSK ANALYTICAL LABS
A2A0642-02	RT	01-04-2012 10:00:00	06	GOLF COURSE WELL	BSK ANALYTICAL LABS

Example: Sample ID – 1210269-001

Return Links

- Chem/Rad Samples
- Water System Detail
- Water Systems
- Water System Search
- County Map

Glossary

Drinking Water Branch

Chem/Rad Sample Results

Water System No. :	NV0000038	**Federal Type :**	C
Water System Name :	ELY MUNICIPAL WATER DEPARTMENT	**State Type :**	C
Principal County Served :	WHITE PINE	**Primary Source :**	GW
Status :	A	**Activity Date :**	01-01-1980
Lab Sample No. :	1210269-001	**Collection Date :**	10-10-2012

This list displays sample/results of all non-microbial analytes (TSAANLYT.TYPE_CODE <> MOR) associated to the selected sample. Results for Microbial Analytes are not included.

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
1002	ALUMINUM	200.7	Y	MRL	.045 MG/L		01-01-2011	12-31-2013
1005	ARSENIC	200.8	Y	MRL	.005 MG/L		01-01-2011	12-31-2013
1010	BARIUM	200.7	N	MRL	0 MG/L	0.082 NM	01-01-2011	12-31-2013
1015	CADMIUM	200.7	Y	MRL	.001 MG/L		01-01-2011	12-31-2013
1017	CHLORIDE	300.0	N	MRL	0 MG/L	7.9 MG/L	01-01-2011	12-31-2013
1020	CHROMIUM	200.7	Y	MRL	.005 MG/L		01-01-2011	12-31-2013
1022	COPPER, FREE	200.7	Y	MRL	.05 MG/L		01-01-2011	12-31-2013
1024	CYANIDE	4500CN-C	Y	MRL	.01 MG/L		01-01-2011	12-31-2013
1025	FLUORIDE	300.0	N	MRL	0 MG/L	0.23 MG/L	01-01-2011	12-31-2013
1028	IRON	200.7	N	MRL	0 MG/L	0.14 MG/L	01-01-2011	12-31-2013
1031	MAGNESIUM	200.7	N	MRL	0 MG/L	12 MG/L	01-01-2011	12-31-2013
1032	MANGANESE	200.7	Y	MRL	.005 MG/L		01-01-2011	12-31-2013
1035	MERCURY	200.8	Y	MRL	.0001 MG/L		01-01-2011	12-31-2013
1036	NICKEL	200.8	Y	MRL	.01 MG/L		01-01-2011	12-31-2013
1038	NITRATE-NITRITE	CALC	N	MRL	0 MG/L	1.3 MG/L		
1040	NITRATE	300.0	N	MRL	0 MG/L	1.3 MG/L	01-01-2012	12-31-2012
1041	NITRITE	300.0	Y	MRL	.025 MG/L		01-01-2011	12-31-2013
1045	SELENIUM	200.8	Y	MRL	.005 MG/L		01-01-2011	12-31-2013
1050	SILVER	200.7	Y	MRL	.005 MG/L		01-01-2011	12-31-2013
1052	SODIUM	200.7	N	MRL	0 MG/L	14 MG/L	01-01-2011	12-31-2013
1055	SULFATE	300.0	N	MRL	0 MG/L	23 MG/L	01-01-2011	12-31-2013
1074	ANTIMONY, TOTAL	200.8	Y	MRL	.0025 MG/L		01-01-2011	12-31-2013
1075	BERYLLIUM, TOTAL	200.7	Y	MRL	.001 MG/L		01-01-2011	12-31-2013
1085	THALLIUM, TOTAL	200.8	Y	MRL	.001 MG/L		01-01-2011	12-31-2013
1089	MBAS - FOAMING AGENTS (SURFACTANTS)	5540C	Y	MRL	.05 MG/L		01-01-2011	12-31-2013
1095	ZINC	200.7	Y	MRL	.01 MG/L		01-01-2011	12-31-2013
1905	COLOR	2120B	N	MRL	0 MG/L	5 CU	01-01-2011	12-31-2013
1920	ODOR	2150 B	N	MRL	0 MG/L	0 TON	01-01-2011	12-31-2013
1925	PH	4500H-B	N	MRL	0 MG/L	8.60 PH	01-01-2011	12-31-2013
1930	TDS	2540 C	N	MRL	0 MG/L	180 MG/L	01-01-2011	12-31-2013

Moving forward…

* Stage 2 Disinfection Byproducts Rule
* Long Term 2 Enhanced Surface Water Treatment Rule
* Revised Total Coliform Rule

Subpart V STAGE 2 DISINFECTION BYPRODUCTS REQUIREMENTS

OVERVIEW

Reginald C. Lang III, P.E.
Bureau of Safe Drinking Water
Nevada Division of Environmental Protection
901 S. Stewart St., Ste 4001
Carson City NV 89701
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- Who must comply, why
- Definitions, new terms, acronyms
- Monitoring Locations
- Compliance

Who Must Comply with the Requirements of the Stage 2 DBPR?

You are subject to these requirements if your system is a community water system or a nontransient noncommunity water system that uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light. (consecutive)

WHY?

* The Environmental Protection Agency (EPA) promulgated the Stage 2 Disinfectants and Disinfection ByProducts Rule (DBPR) in January 2006. The Stage 2 DBPR provides for increased protection against the potential risks for cancer and reproductive and developmental health effects associated with disinfection byproducts (DBP). The Stage 2 DBPR establishes maximum contaminant level goals for chloroform, monochloroacetic acid and trichloroacetic acid; maximum contaminant levels (MCLs), based on a locational running annual average (LRAA)[1], for total trihalomethanes (TTHM) and haloacetic acids (HAA5); monitoring, reporting, and public notification requirements based on the TTHM and HAA5 MCLs; and and revisions to the reduced monitoring requirements for bromate.

Definitions

* Dual sample set
* Locational running annual average (LRAA)
* Operational Evaluation Level (OEL)

Dual sample set

* *Dual sample set* is a set of two samples collected at the same time and same location, with one sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purposes of determining compliance with the TTHM and HAA5 MCLs under subpart V of this part.

Haloacetic acids (five) (HAA5)

* *Haloacetic acids (five) (HAA5)* mean the sum of the concentrations in milligrams per liter of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition.

Locational running annual average (LRAA)

* *Locational running annual average* (LRAA) is the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

Operational Evaluation Level (OEL)

* *Operational Evaluation Level* (OEL) The OELs are determined with an algorithm, based on Stage 2 monitoring results. The OELs initiate a comprehensive review of system operations and act as an early warning for a possible Stage 2 DBPR violation in the following quarter.

Total trihalomethanes (TTHM)

* *Total trihalomethanes* (TTHM) means the sum of the concentration in milligrams per liter of the trihalomethane compounds (trichloromethane [chloroform], dibromochloromethane, bromodichloromethane and tribromomethane [bromoform]), rounded to two significant figures.

Stage 2 DBPR
Routine Monitoring Locations

Source Water Type	Population Size Category	Monitoring Frequency[1]	Distribution System Monitoring Locations per Monitoring Period[2]
Subpart H (Surface Water or Ground Water Under Direct Influence)	< 500	Per year	1 may be split
	500-3,300	Per quarter	1 may be split
	3,301-9,999		2
	10,000-49,999		4
	50,000-249,999		8
	250,000-999,999		12
	1,000,000-4,999,999		16
	≥5,000,000		20

Stage 2 DBPR
Routine Monitoring Locations

Source Water Type	Population Size Category	Monitoring Frequency [1]	Distribution System Monitoring Locations per Monitoring Period[2]
Ground Water	< 500	Per year	1 may be split
	500-9,999		2
	10,000-99,999	Per quarter	4
	100,000-499,999		6
	≥500,000		8

[1]All systems must monitor during month of highest DBP concentrations.

[2]Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500-3,300. Ground water systems serving 500-9,999 on annual monitoring must take dual sample sets at each monitoring location. All other systems on annual monitoring and subpart H systems serving 500-3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For systems serving fewer than 500 people, only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month.

Stage 2 DBPR
Reduced Monitoring Locations

Source Water Type	Population Size Category	Monitoring Frequency[1]	Distribution System Monitoring Locations per Monitoring Period
Subpart H (Surface Water or Ground Water Under Direct Influence)	< 500		May not be reduced
	500-3,300	Per Year	1 may be split
	3,301-9,999		2
	10,000-49,999	Per Quarter	2
	50,000-249,999		4
	250,000-999,999		6
	1,000,000-4,999,999		8
	≥5,000,000		10

Stage 2 DBPR
Reduced Monitoring Locations

Source Water Type	Population Size Category	Monitoring Frequency[1]	Distribution System Monitoring Locations per Monitoring Period
Ground Water	< 500	Every 3rd Year	1 may be split
	500-9,999	Per year	1 may be split
	10,000-99,999	Per quarter	4
	100,000-499,999		6
	≥500,000		8

[1]Systems on quarterly monitoring must take dual sample sets every 90 days

Conditions requiring increased monitoring.

Conditions requiring increased monitoring.

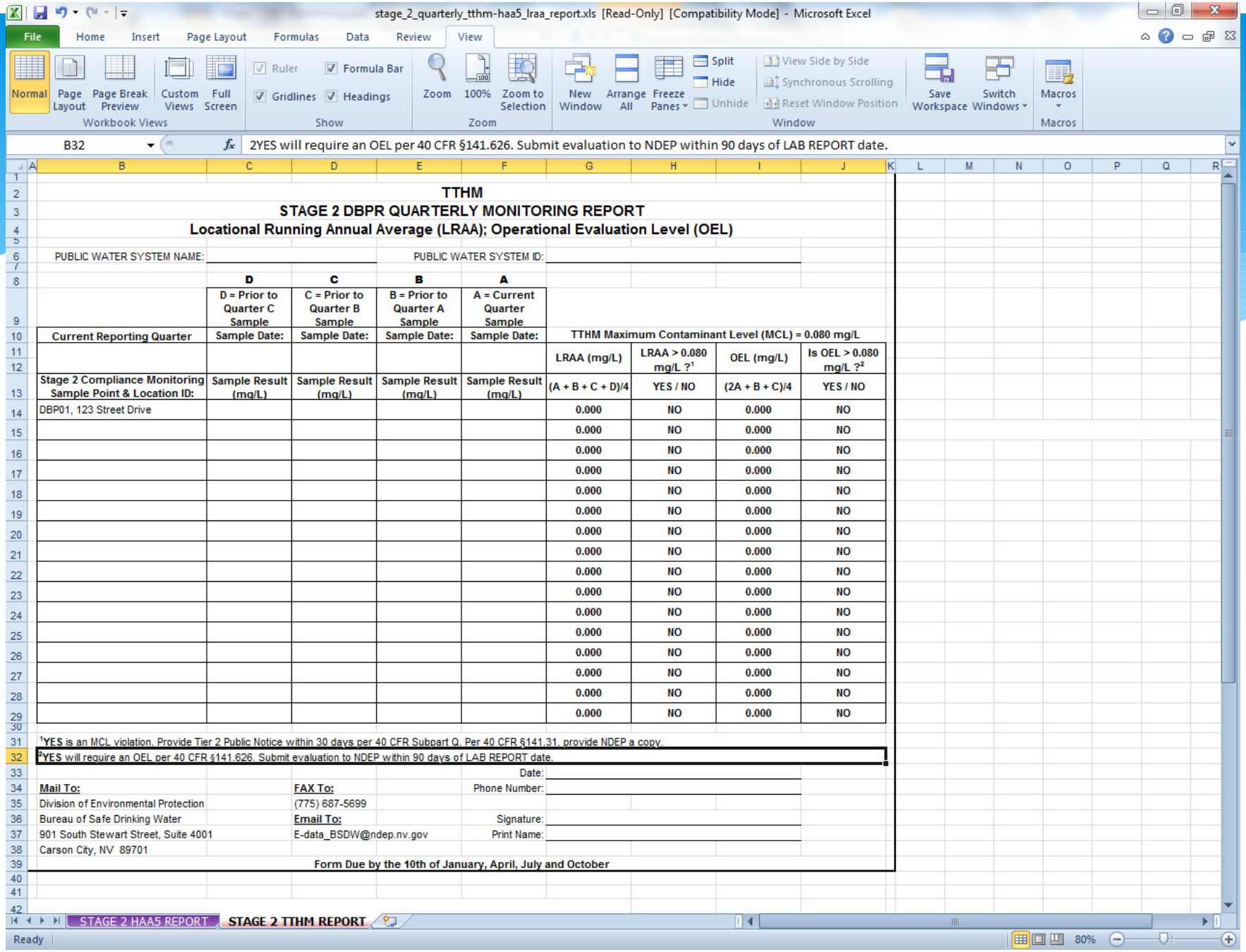
(a) If you are required to monitor at a particular location annually or less frequently than annually under §141.621 or §141.623, you must increase monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if a TTHM sample is >0.080 mg/L or a HAA5 sample is >0.060 mg/L at any location.

(b) You are in violation of the MCL when the LRAA exceeds the subpart V MCLs in §141.64(b)(2), calculated based on four consecutive quarters of monitoring (or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters). You are in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if you fail to monitor.

(c) You may return to routine monitoring once you have conducted increased monitoring for at least four consecutive quarters and the LRAA for every monitoring location is ≤0.060 mg/L for TTHM and ≤0.045 mg/L for HAA5.

Stage 2 DBPR
Forms

* http://ndep.nv.gov/bsdw/oversight.htm#byproduct
  * Quarterly
  * Yearly



TTHM
STAGE 2 DBPR QUARTERLY MONITORING REPORT
Locational Running Annual Average (LRAA); Operational Evaluation Level (OEL)

PUBLIC WATER SYSTEM NAME: _____ PUBLIC WATER SYSTEM ID: _____

	D	C	B	A				
	D = Prior to Quarter C Sample	C = Prior to Quarter B Sample	B = Prior to Quarter A Sample	A = Current Quarter Sample				
Current Reporting Quarter	Sample Date:	Sample Date:	Sample Date:	Sample Date:	TTHM Maximum Contaminant Level (MCL) = 0.080 mg/L			
					LRAA (mg/L)	LRAA > 0.080 mg/L ?[1]	OEL (mg/L)	Is OEL > 0.080 mg/L ?[2]
Stage 2 Compliance Monitoring Sample Point & Location ID:	Sample Result (mg/L)	Sample Result (mg/L)	Sample Result (mg/L)	Sample Result (mg/L)	(A + B + C + D)/4	YES / NO	(2A + B + C)/4	YES / NO
DBP01, 123 Street Drive					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO
					0.000	NO	0.000	NO

[1]YES is an MCL violation. Provide Tier 2 Public Notice within 30 days per 40 CFR Subpart Q. Per 40 CFR §141.31, provide NDEP a copy.

[2]YES will require an OEL per 40 CFR §141.626. Submit evaluation to NDEP within 90 days of LAB REPORT date.

Date: _____

Mail To:
Division of Environmental Protection
Bureau of Safe Drinking Water
901 South Stewart Street, Suite 4001
Carson City, NV 89701

FAX To:
(775) 687-5699

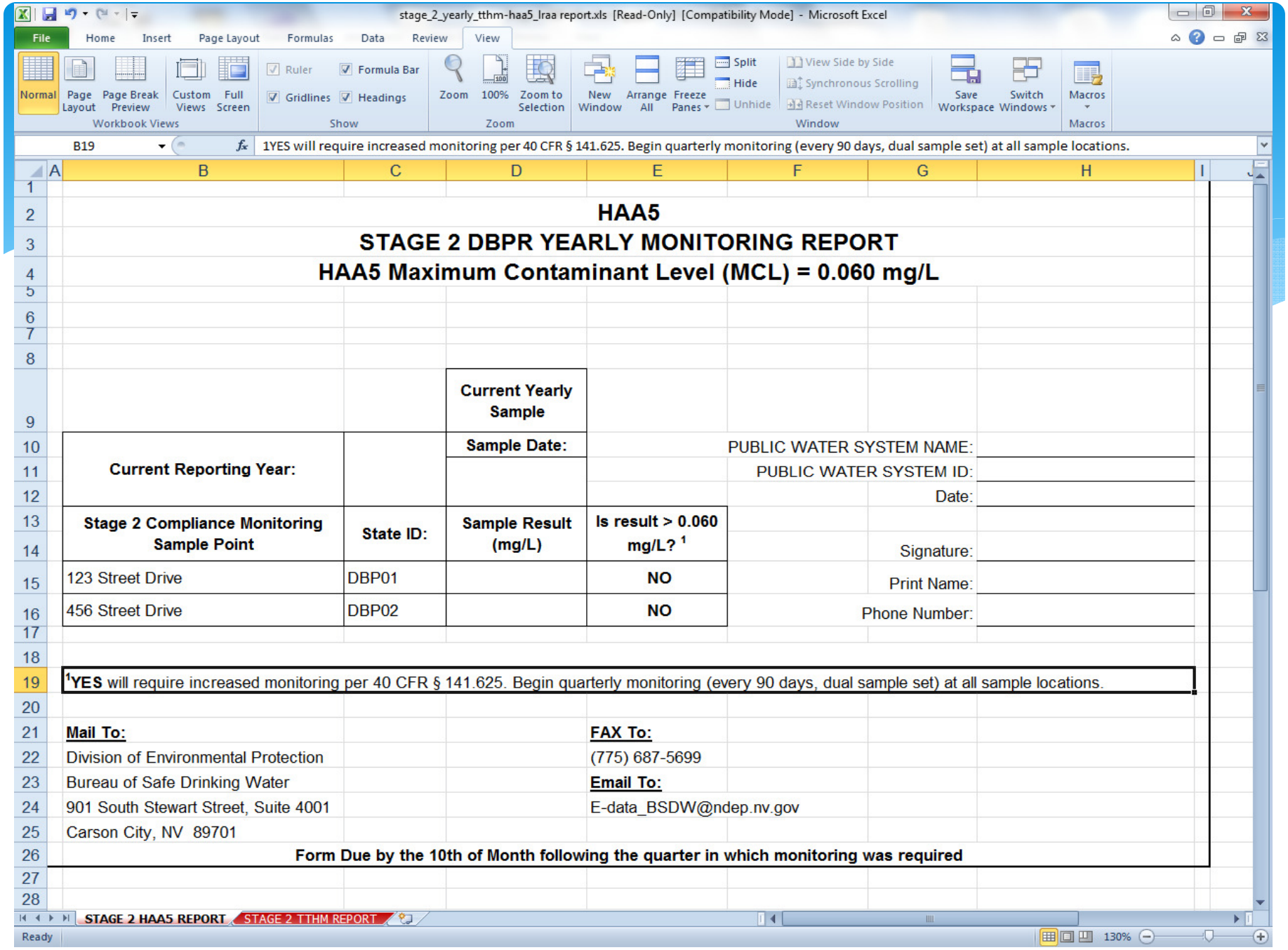
Email To:
E-data_BSDW@ndep.nv.gov

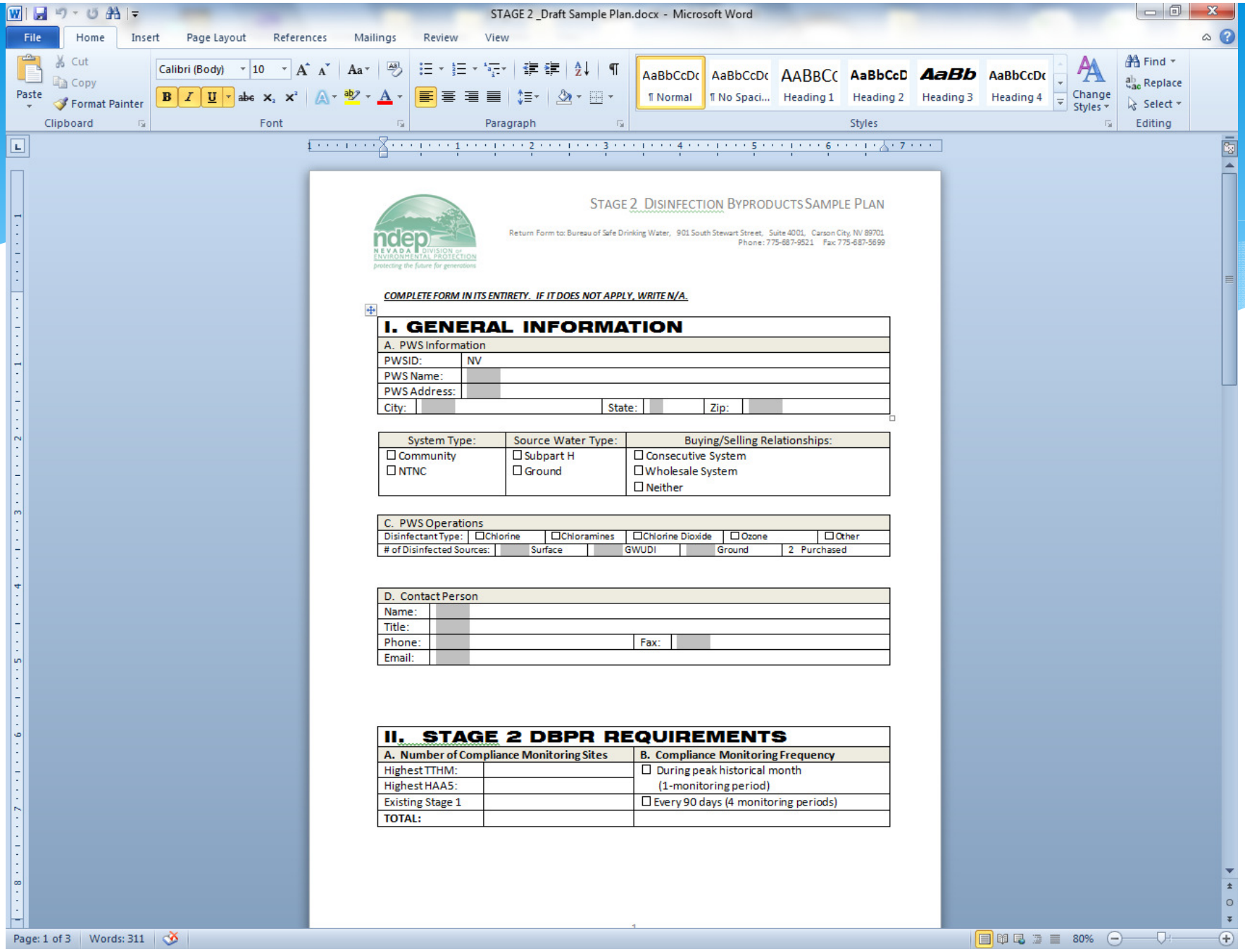
Phone Number: _____

Signature: _____

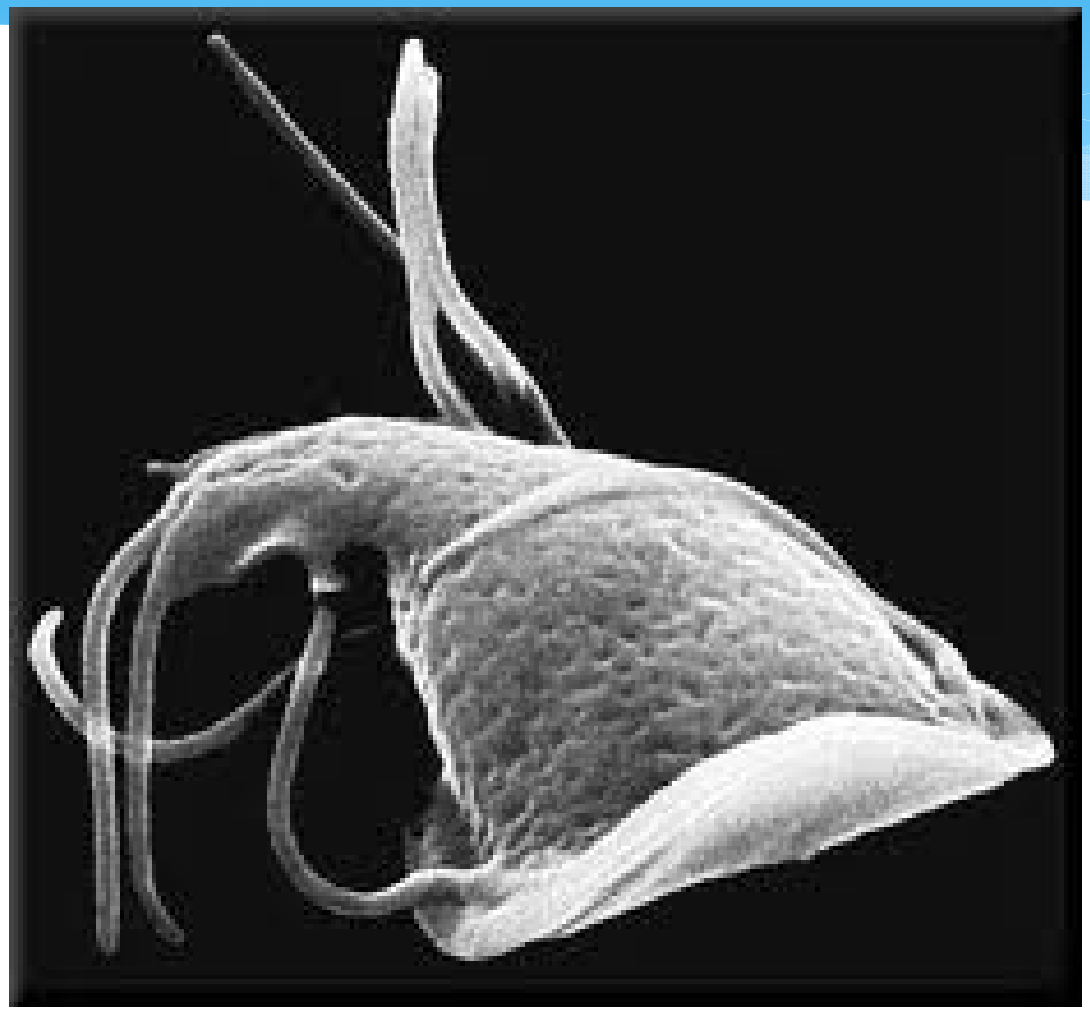
Print Name: _____

Form Due by the 10th of January, April, July and October


stage_2_yearly_tthm-haa5_lraa report.xls [Read-Only] [Compatibility Mode] - Microsoft Excel
File
Home
Insert
Page Layout
Formulas
Data
Review
View
Normal
Page Layout
Page Break Preview
Custom Views
Full Screen
Workbook Views
Ruler
Formula Bar
Gridlines
Headings
Show
Zoom
100%
Zoom to Selection
Zoom
New Window
Arrange All
Freeze Panes
Split
Hide
Unhide
View Side by Side
Synchronous Scrolling
Reset Window Position
Window
Save Workspace
Switch Windows
Macros
Macros
B19
1YES will require increased monitoring per 40 CFR § 141.625. Begin quarterly monitoring (every 90 days, dual sample set) at all sample locations.
HAA5
STAGE 2 DBPR YEARLY MONITORING REPORT
HAA5 Maximum Contaminant Level (MCL) = 0.060 mg/L
Current Yearly Sample
Sample Date:
Current Reporting Year:
PUBLIC WATER SYSTEM NAME:
PUBLIC WATER SYSTEM ID:
Date:
Signature:
Print Name:
Phone Number:
Stage 2 Compliance Monitoring Sample Point
State ID:
Sample Result (mg/L)
Is result > 0.060 mg/L? 1
123 Street Drive
DBP01
NO
456 Street Drive
DBP02
NO
1YES will require increased monitoring per 40 CFR § 141.625. Begin quarterly monitoring (every 90 days, dual sample set) at all sample locations.
Mail To:
Division of Environmental Protection
Bureau of Safe Drinking Water
901 South Stewart Street, Suite 4001
Carson City, NV 89701
FAX To:
(775) 687-5699
Email To:
E-data_BSDW@ndep.nv.gov
Form Due by the 10th of Month following the quarter in which monitoring was required
STAGE 2 HAA5 REPORT
STAGE 2 TTHM REPORT
Ready
130%


STAGE 2 _Draft Sample Plan.docx - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Paste
Cut
Copy
Format Painter
Clipboard
Calibri (Body)
10
Font
Paragraph
AaBbCcDc ¶ Normal
AaBbCcDc ¶ No Spaci...
AABBCC Heading 1
AaBbCcD Heading 2
AaBb Heading 3
AaBbCcDc Heading 4
Change Styles
Find
Replace
Select
Editing
STAGE 2 DISINFECTION BYPRODUCTS SAMPLE PLAN
Return Form to: Bureau of Safe Drinking Water, 901 South Stewart Street, Suite 4001, Carson City, NV 89701
Phone: 775-687-9521 Fax 775-687-5699
COMPLETE FORM IN ITS ENTIRETY. IF IT DOES NOT APPLY, WRITE N/A.
I. GENERAL INFORMATION
A. PWS Information
PWSID: NV
PWS Name:
PWS Address:
City: State: Zip:
System Type:
☐ Community
☐ NTNC
Source Water Type:
☐ Subpart H
☐ Ground
Buying/Selling Relationships:
☐ Consecutive System
☐ Wholesale System
☐ Neither
C. PWS Operations
Disinfectant Type: ☐Chlorine ☐Chloramines ☐Chlorine Dioxide ☐Ozone ☐Other
# of Disinfected Sources: Surface GWUDI Ground 2 Purchased
D. Contact Person
Name:
Title:
Phone: Fax:
Email:
II. STAGE 2 DBPR REQUIREMENTS
A. Number of Compliance Monitoring Sites
Highest TTHM:
Highest HAA5:
Existing Stage 1
TOTAL:
B. Compliance Monitoring Frequency
☐ During peak historical month (1-monitoring period)
☐ Every 90 days (4 monitoring periods)
Page: 1 of 3
Words: 311
80%

Subpart W—ENHANCED TREATMENT FOR CRYPTOSPORIDIUM (LT2)



Source Water Monitoring Second Round

Systems that serve . . .	Must begin the first round of source water monitoring no later than the month beginning . . .	And must begin the second round of source water monitoring no later than the month beginning . . .
(1) At least 100,000 people	(i) October 1, 2006	(ii) April 1, 2015.
(2) From 50,000 to 99,999 people	(i) April 1, 2007	(ii) October 1, 2015.
(3) From 10,000 to 49,999 people	(i) April 1, 2008	(ii) October 1, 2016.
(4) Fewer than 10,000 and monitor for *E. coli*[a]	(i) October 1, 2008	(ii) October 1, 2017.
(5) Fewer than 10,000 and monitor for *Cryptosporidium*[b]	(i) April 1, 2010	(ii) April 1, 2019.

Second Round: Monitoring

* Same as the initial round:
  * Parameters
  * Frequency
  * Duration
* Begin 6 years after:
  * Bin classification (filtered systems)
  * Determining mean *Crypto* level (unfiltered systems)
* Bin reclassification may occur based on second-round results

?

THE TOTAL COLIFORM RULE Present and Future

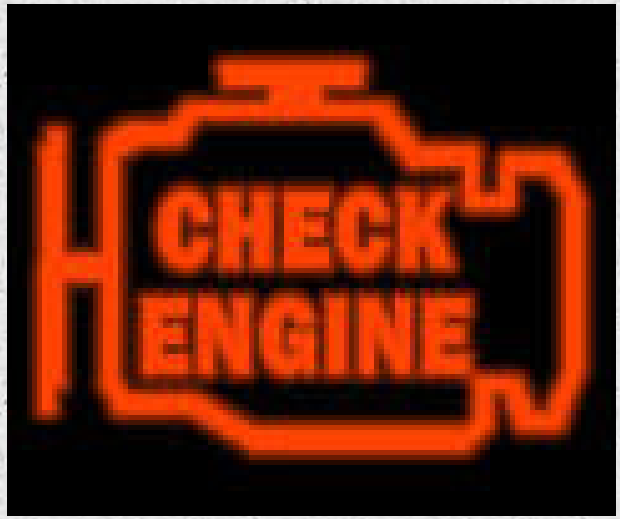
Changes Coming with the Revised Total Coliform Rule and what you can do NOW to get Ready

TCR Purpose and Scope

- Goal: To improve public health protection by reducing fecal pathogens to minimal levels through control of total coliform bacteria, including fecal coliforms and *E. coli*.
- Scope:
  - A Cornerstone Drinking Water Regulation
  - Applies to All Public Water Systems
  - Addresses Acute Health Effects

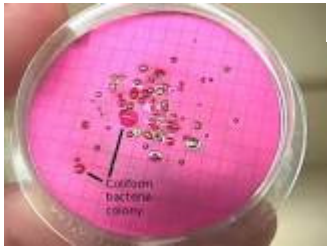
TCR – Federal Requirements as of July 2004

Have you ever seen one of these??



What are coliforms?

Coliforms are a broad class of bacteria found in our environment, including the feces of man and other warm-blooded animals. The presence of coliform bacteria in drinking water may indicate a possible presence of harmful, disease-causing organisms.



Why use coliforms to indicate water quality?

Drinking water must be free of disease-causing organisms called pathogens. Pathogens can be viruses, protozoa or bacteria. Waterborne pathogens cause diseases such as hepatitis, giardiasis, and dysentery. To actually test water for specific harmful viruses, protozoa and bacteria is very time consuming and expensive. In addition, not all water laboratories are equipped and approved to do the testing required. Therefore, testing water for specific organisms is limited to investigating specific waterborne disease outbreaks. Coliform bacteria are used as water quality indicators for two main reasons:

- Coliforms may be associated with the sources of pathogens contaminating water.
- The analysis of drinking water for coliforms is relatively simple, economical and efficient.


KTXA

TCR Basics: Outline

- Overview of TCR
- Monitoring Requirements
  - Monitoring Frequencies
  - Routine and Repeat Sampling
- Violations
  - Monthly and Acute Violations
  - Public Notice (PN), Reporting and Consumer Confidence Reports (CCRs)

TCR – Federal Requirements as of July 2004

Routine and Repeat Sampling: A Summary

based on population, source, system type, etc

In General…

- Take Routine Samples
- If Any Routines are Total Coliform-Positive
  - Lab Tests for Fecal Coliforms or *E. Coli*
  - System Must Take Repeat Samples
- If Any Repeats are Total Coliform-Positive
  - Lab Tests for Fecal Coliforms or *E. Coli*
  - Compliance Determined Based on Results

Distribution Monitoring

Site Sampling Plans
TCR

* Many PWS's do not have TCR Sample Plans
* BSDW and NVRWA are making a joint effort to change this
* 40 CFR 141.21(a): Routine Monitoring: Public water systems must collect total coliform samples at sites which are representative of water throughout the distribution system according to a written sample plan. These plans are subject to State review and revision.

Site Sampling Plans
TCR- Contents

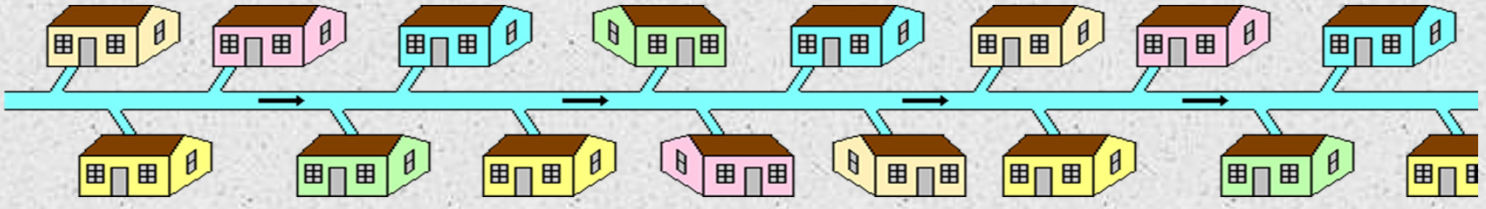
* 1. Narrative: Explains your coliform sampling requirements and protocol
  * A. Number of samples required and frequency based on population, pressure zones, etc.
  * B. Routine sample sites
  * C. Rotation schedule, if applicable
    * All Surface water and Ground Water Systems serving 4,900+ persons
    * Must rotate throughout the month
  * C. Protocol to follow in the event of a TC+
  * D. Repeat sample sites

Site Sampling Plans
TCR- Contents

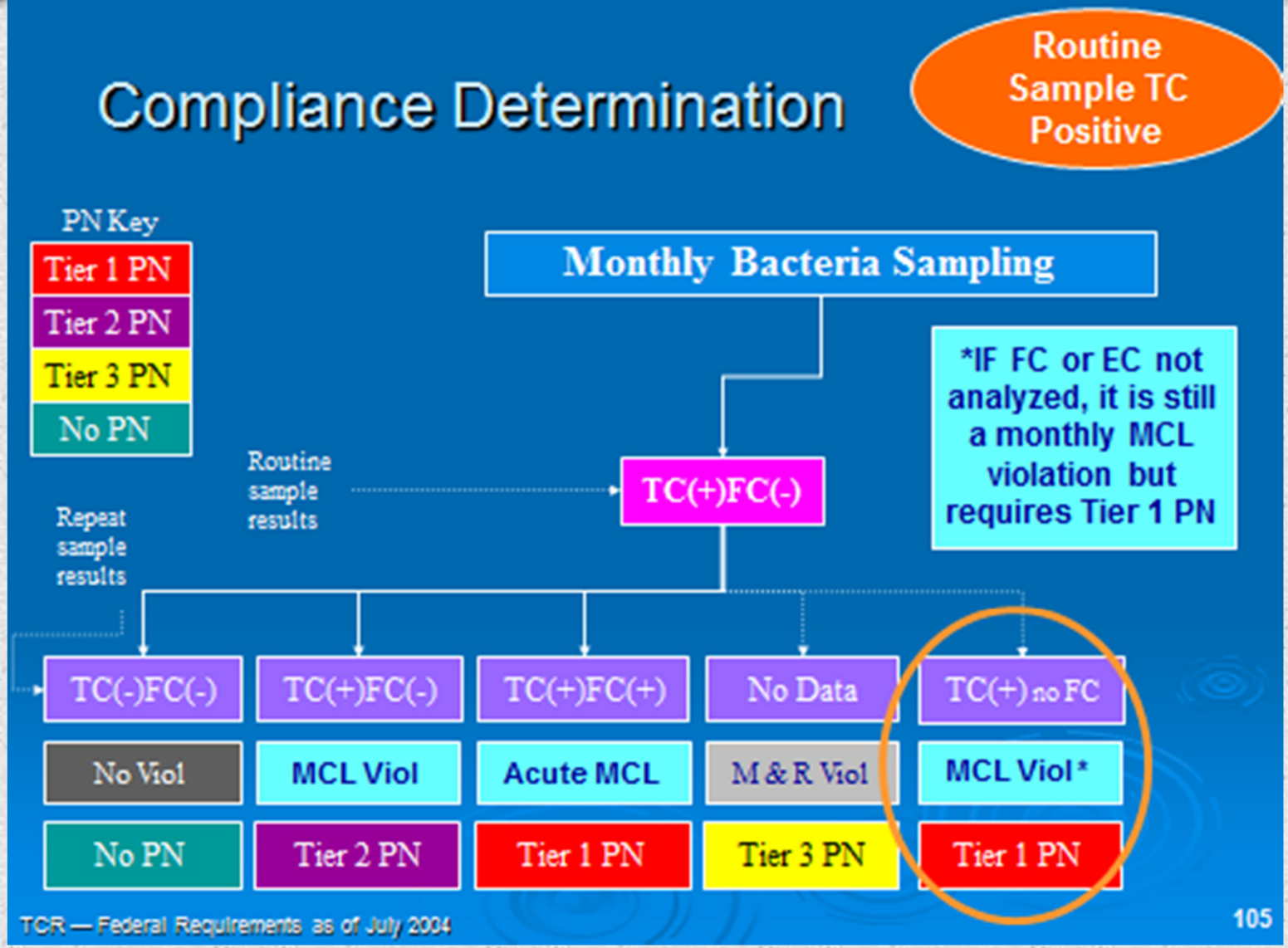
* 2. System schematic showing:
  * A. Location of all sources
  * B. Location of storage facilities
  * C. Location of treatment facilities, if applicable
  * C. Location of routine sampling locations
  * D. Location of repeat sampling locations

Site Sampling Plans TCR

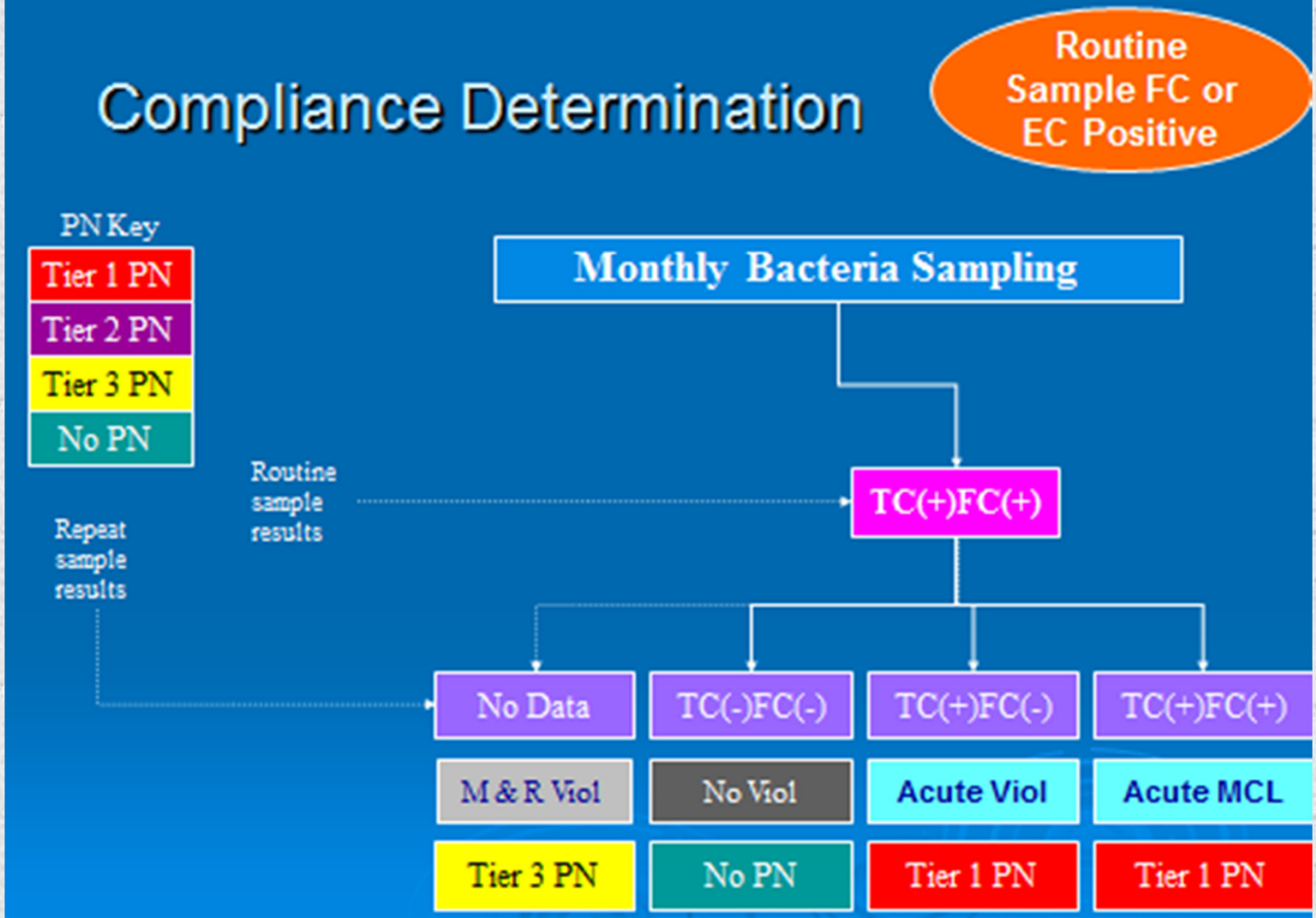
- Many PWS's do not have TCR Sample Plans
- BSDW and NVRWA are making a joint effort to change this
- 40 CFR 141.21(a): Routine Monitoring: Public water systems must collect total coliform samples at sites which are representative of water throughout the distribution system according to a written sample plan. These plans are subject to State review and revision.



Compliance Determination



Compliance Determination



The Revised Total Coliform Rule (RTCR)

Comparisons to TCR, New Requirements

Revised Total Coliform Rule (RTCR)

* Has been signed by EPA and is now final. It is available online at: [illegible]
* Compliance date is April 1, 2016 & still applies to all PWS's
* Replaces existing non-acute MCL with a treatment technique requirement – AKA "find and fix"
* Reduces some Public Notice Requirements
* Still requires Sampling Plans and gives more weight to them by allowing for more flexibility when selecting repeat locations.
* Requires Assessments in the event of numerous TC+ samples
* Addresses Seasonal Systems
* Changes TR5 to TR3
* More details to come at the NVRWA conference in March

TCR vs RTCR

TCR

- Collect 4 repeats if routinely collect ≤1 per month
- Collect 3 repeats if routinely collect > 1 per month
- Must collect Repeats w/in 5 connections upstream & downstream
- Seasonal systems collect based on size and type of system

RTCR

- Collect 3 repeats for each TC+
- Can still collect w/in 5 upstream & downstream or propose otherwise in sample plan
- Seasonal systems collect samples monthly, then based on population

TCR vs RTCR

TCR

- Non-Acute MCL if PWS has more than 1 TC+ (or 5%) in one month
  - Requires Tier 2 PN once Non-Acute MCL reached
- Requires systems collecting <5 Routine/month to collect TR5 in month after a TC+
- No seasonal system procedures

RTCR

- Treatment Technique requirement (find and fix) if more than 1 TC+ (or 5%) in one month

  Requires Level 1 Assessment once Treatment Technique triggered
- Requires TR3 in month after TC+ for systems on quarterly monitoring only. All others return to Routine monitoring.
- Requires state approved seasonal system procedures

RTCR Review

- Continues to require sample plans
- Adds Level 1 and Level 2 Assessments
- Requires state agency to conduct a special monitoring evaluation at all ground water systems serving ≤ 1,000.
- Two types of Violations: E. coli MCL and Treatment Technique

RTCR: Assessments

Level 1

- Replaces Non-Acute MCL
- May be performed by PWS
- Must be completed w/in 30 days

- Triggers:
  - > 1 TC+/month if routinely collect < 40 samples per month
  - > 5% TC+/month if routinely collect ≥ 40 samples per month
  - PWS fails to collect all Repeats

Level 2

- Must be performed by state or state approved entity
- Must be completed w/in 30 days

- Triggers:
  - E coli MCL violation
  - 2nd Level 1 Assessment in rolling 12 month period

E. coli MCL Violation

- ***E. coli*** **MCL Violation Occurs with the Following Sample Result Combination**

Routine	Repeat
TC+	TC+ (but no *E. coli* analysis)
TC+	EC+
EC+	TC+
EC+	Any missing sample
EC+	EC+

Treatment Technique Violation

- **A PWS will receive a Treatment Technique violation when any of the following occur:**

- ► Failure to conduct a Level 1 or Level 2 Assessment within 30 days of a trigger.
- ► Failure to correct all sanitary defects from a Level 1 or Level 2 Assessment within 30 days of a trigger or in accordance with the state-approved timeframe.
- ► Failure of a seasonal system to complete state-approved start-up procedures prior to serving water to the public.

Level 1 Assessments

Conducting Level 1 Assessments

- ► Performed by the PWS owner or operator each time a Level 1 Assessment is triggered.
- ► Upon trigger of a Level 1 Assessment, the Level 1 Assessment form must be submitted within 30 days to the state.

Level 1 Assessment Triggers

Level 1 Assessment is triggered if any one of the following occurs:

- ► A PWS collecting fewer than 40 samples per month has 2 or more TC+ routine/ repeat samples in the same month.
- ► A PWS collecting at least 40 samples per month has greater than 5.0 percent of the routine/repeat samples in the same month that are TC+.
- ► A PWS fails to take every required repeat sample after any single TC+ sample.

Seasonal System Provisions

- **The RTCR defines seasonal systems and specifies additional requirements for these types of PWSs:**

- ► A seasonal system is defined as a non-community water system that is not operated as a PWS on a year-round basis and starts up and shuts down at the beginning and end of each operating season.

Start-up Procedures for Seasonal Systems

- **At the beginning of each operating period, before serving water to the public, seasonal water systems must:**

- ► Conduct state-approved start-up procedures.
- ► Certify completion of state-approved start-up procedures.
- ► An exemption from conducting state-approved start-up procedures may be available for seasonal systems that maintain pressure throughout the distribution system during non-operating periods.

Start-up Procedures for Seasonal Systems

- **Examples of state-approved start-up procedures, which need to be completed prior to serving water to the public, may include one or more of the following:**
- ► Disinfection.
- ► Distribution system flushing.
- ► Sampling for total coliform and *E. coli*.
- ► Site visit by state.
- ► Verification that any current or historical sanitary defects have been corrected.

Routine Monitoring for Seasonal Systems

- ► The baseline monitoring frequency for seasonal systems is monthly.
- ► A reduced monitoring frequency may be available for seasonal systems that use ground water only and serve fewer than 1,000 persons.

THE TOTAL COLIFORM RULE
Present and Future

- Bert Bellows, P.E.
- Bureau of Safe Drinking Water
- Nevada Division of Environmental Protection
- 901 S. Stewart Street
- Carson city, NV. 89701
- Email: bbellows@ndep.nv.gov
- Phone: 775.687.9525