



Groundwater and Environmental Professionals Since 1891

NV110 Gas Well Location

Moody Project #: 17-070-56

Certified Letter #: [REDACTED]

December 2, 2021

[REDACTED]  
Parcel ID: [REDACTED]

Dear Property Owner:

Moody and Associates, Inc. (Moody), under contract to CNX Resources Corporation (CNX), is conducting a gas well pre-drilling water supply information inventory. This is being done in accordance with the Pennsylvania Department of Environmental Protection (PA DEP) permitting regulations. Moody is requesting consent and permission to enter in, upon and travel over your property. The site visit will be conducted for the sole purpose of: (1) obtaining information regarding water supplies on your properties, (2) obtaining a water quality sample and recording the depth, water levels, and flows for wells, springs, and ponds.

This inventory is being done at NO COST to you. CNX will provide copies of the analysis of your supplies as required. The studies will be performed as courteously and as quickly as possible. Please contact a field technician listed below within the next **ten (10)** days to set up a mutually acceptable time for us to perform the inventory:

- [REDACTED]

Please be advised that refusal of access or refusal to respond to this request, may cause you a loss of certain legal advantages as understood by section 3218 of 58 Pa.C.S. §§ 3201-3274 (relating to Development) ("2012 Oil and Gas Act") which provides certain protections to public or private water supplies and Section 3212 of 58 Pa.C.S relating to objections to well permit applications. If you do not own the property, we would appreciate either you call us or forward this information request to the owner, if known. If you have any questions concerning your water supply rights, you are advised to call the PA DEP at (412) 442-4000.

We appreciate your cooperation and assistance in obtaining this information.

Sincerely,  
Moody and Associates, Inc.



Groundwater and Environmental Professionals Since 1891

Certified Letter #: [REDACTED]

January 18, 2022

[REDACTED]

Re: Water Testing Analysis & Results  
NV110 Gas Well Location  
Parcel ID: [REDACTED]

Dear Property Owner:

Moody and Associates, Inc. has conducted a water supply inventory and water sample collection on your property. This survey was conducted on behalf of CNX Resources Corporation.

Information obtained during the site interview is included on the "Water Supply Site Visit Form". Water quality results are provided in the laboratory analytical report attached. For additional information on water quality parameters, please contact the Pennsylvania Department of Environmental Protection (PADEP) at 412-442-4000.

For evaluation of your analytical results, please see the attached copy of the United States Environmental Protection Agency (USEPA) drinking water fact sheet which lists Maximum Contaminant Limits (MCLs), potential health effects and sources of contaminants in groundwater. The water samples were not analyzed for all of the parameters on the USEPA list. The USEPA has not established an MCL for all parameters for which the water was analyzed.

Neither the PADEP nor the USEPA regulates private residential water supplies, and it is the owner's responsibility to provide safe drinking water for your household and guests.

Sincerely,

Moody and Associates, Inc.

cc: S.W. – CNX Resources Corporation  
File 17-070-56



Moody and Associates, Inc.

Groundwater and Environmental Professionals Since 1891

Project #(s) 17-070  
-56

OIL/GAS WELL - WATER SUPPLY SITE VISIT FORM

☒ PREDRILL SURVEY ☐ POST-DRILL SURVEY

Page 1 of 3

GENERAL INFORMATION

Operator Name: CNX

Gas Well ID(s): NV110

Location of Gas Well:

Municipality: E Finley Twp.

Quadrangle (7½ min):

County: Washington

Date Inventoried: 12/21/21

Inventoried by: A Cole

Person Interviewed: [Redacted]

☐ Owner ☐ Resident ☒ Other (list below)

Length of time living at/owning residence? [Redacted] yrs.

Property Owner Mailing Address:

Physical Address, Resident, or Other:

Name: [Redacted]

Name: [Redacted]

Address: [Redacted]

Address: [Redacted]

Address: [Redacted]

Address: [Redacted]

Phone #: [Redacted]

Phone #: [Redacted]

Municipality: E Finley Twp. County: Washington Tax Parcel ID #: [Redacted]

PROPERTY INFORMATION

☒ Private Water Supply ☐ No Water Supply ☐ Public Water Supply (name)

How many water sources on this property? <sup>MC</sup> 2 (Please complete separate section for each supply)

# of Wells <sup>MC</sup> 2 # of Springs 0 # of Other (list) 0

Do these sources supply any other property? ☐ Yes ☒ No

If yes, list owner(s):

Are you aware of any old or active oil/gas wells on your property? ☐ Yes ☐ No ☒ Unknown

If yes, Coordinates: N / Lat E / Long Operator:

Weather conditions during site inventory:

Temperature (°C): 3.33 Precipitation: 0.0 in Wind: 10 mph SSE

Barometric Pressure (in. Hg): 29.71 Cloud Cover: Overcast

CERTIFIED ANALYTICAL LABORATORY:

Microbac

PLAN SKETCH

\*Not to Scale\*

1  
N



I hereby acknowledge that I have supplied the correct information to the best of my knowledge.

Signed: [Redacted]

Printed: [Redacted]

Date: 12/21/21

WELL OWNER'S LAST NAME

SUPPLY ID: W1

Is the source located on this property? ☒ Yes ☐ No If no, please explain:

How many people use the water source? 5+

Coordinates:

N / Lat

E / Long

☐ deg/min/sec (NAD83)☒ decimal deg (NAD83)☐ State Plane (NAD83)

Est. Elevation (ft-msl):

Photos? ☒ Yes ☐ No

Use:

Treatment: ☒ NoneNoted Quality: (prior to treatment) ☒ None☒ Domestic☐ Husbandry☐ Irrigation☐ Industrial/Commercial☐ Public, non-community☐ Abandoned☐ None☐ softening☐ chlorination☐ iron removal☐ sediment filter☐ charcoal filter☐ uv light☐ pH adjust☐ other

Taste

☐ Odor☐ Staining☐ Cloudiness☐ Ever go dry☐ Sheen☐ Other☐ \*R ☐ \*O☐ R ☐ O☐ R ☐ O☐ R ☐ O☐ R ☐ O☐ R ☐ O

\*Reported (R) by owner / Observed (O) by Interviewer

## WELL DATA

Type: ☒ Drilled ☐ Dug ☐

Date Installed: ~1970S

Well Driller: Wright

Well Depth (ft): unknown

☐ Reported ☐ Measured

SWL (ft-BTOC): unknown

☐ Reported ☐ MeasuredIs Driller's log available? ☐ Yes ☐ No ☒ Unknown

Pressure Tank Estimated Size: ~15 gal.

Well Cap: ☒ Intact ☐ Loose/Damaged ☐ Buried ☐ Missing☐ Evidence of insects, spiders, animals in well cap☐ Cracked or damaged well casing☐ Missing/damaged pitless adaptor☐ Water source open to surface water☐ Storage tank/cistern Size: gal.☐ Actual ☐ Estimated ☐ Unknown☐ Coyote or other system regulator

Pitless setting: unk. (ft-BTOC)

Surface

Type: ☒ Steel ☐ PVC ☐ Stone ☐ Terra cotta

Casing:

Diameter: 8.5 in. Depth: unk. ft.

Exposed? ☐ No ☒ Yes, Stickup: ~0.2 ft.

Pump:

☒ submersible ☐ jet ☐ hand ☐ none☐ gas piston ☐ windmill ☐ other

Intake setting: unk. (ft-BTOC)

Setup:

☐ Inside structure ☒ Outside structureVented to exterior? ☒ No ☐ Yes

## SAMPLING INFORMATION

Sample Time: 10:51

## Field Parameter Analysis:

Sampling Point Location:

☒ Inside faucet☐ Pipe overflow☐ Before treatment☐ Outside faucet☐ Dipped/Grab sample☐ After treatment☐ Pressure tank☐ Pump house☒ No Treatment☐ Bailed☐ Other:pH 7.42 SU O<sub>2</sub> 20.7 %

Temp 14.38 °C CO 0 ppm

DO 9.87 mg/L H<sub>2</sub>S 0 ppm

ORP 205 mV Turb. 0.2 NTU

Cond. 0.645 mS/cm

Methane:

TDS 0.413 g/L

LEL: 0 %

Was the water source purged before sampling? ☒ Yes ☐ No

vol (gal): ~20 time (min): ~12

Barometric Pressure 28.71 inHg

Vol.: 0 %

## SURROUNDING AREA INFORMATION

## DISTANCES:

From residence

Direction: E

☒ Ground sloping toward water source

From NW10

well pad:

Direction:

☐ Water source downgradient of septic system

From

ft.

Direction:

☐ Signs of failing septic, soggy ground, foul odor (circle all that apply)☐ Close proximity to garden, orchard, greenhouse Approximate distance ft.☐ Close proximity to junkyard, dump area, landfill Approximate distance ft.☐ Close proximity to fuel storage tanks, equipment storage areas, garage Approximate distance ft.☐ Located in field with livestock, barn, barnyard, other outbuilding Approximate distance ft.

OWNER'S LAST NAME

NOTES / PHOTOS: (Attach any other relevant documentation provided by the property owner.)

Sample ID:

PR-W1

Total depth and static water level could not be taken at the time of the site visit due to the well cap being bolted and unable to be opened.

## EQUIPMENT USED:

Gas Meter:

Make/Model

Boscom

S/N or Moody Unit #

1

GPS:

Make/Model

RI

S/N or Moody Unit #

14

Water Qual Meter:

Make/Model

Hanna

S/N or Moody Unit #

4



NV110



*Groundwater and Environmental Professionals – Since 1891*



Microbac Laboratories Inc., - Marietta, OH

**CERTIFICATE OF ANALYSIS**

**M1L1437**

**Project Description**

**PA Pre-Drill**

**For:**

[REDACTED]

**Moody and Associates**

**1720 Washington RD STE 100**

**Washington, PA 15301**

[REDACTED]

**Project Manager**

[REDACTED]

**Monday, January 3, 2022**

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories Inc., - Marietta, OH. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

158 Starlite Drive | Marietta, OH 45750 | 800.373.4071 p | [www.microbac.com](http://www.microbac.com)





Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M1L1437

Moody and Associates

██████████  
1720 Washington RD STE 100  
Washington, PA 15301

Project / PO Number: N/A  
Received: 12/22/2021  
Reported: 01/03/2022

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
████████████████████	M1L1437-01	Aqueous	Grab		12/21/21 10:51	12/22/21 07:36
████████████████████						
████████████████████	M1L1437-02	Aqueous	Grab		12/21/21 10:51	12/22/21 07:36
████████████████████						
Trip Blank	M1L1437-03	Aqueous	Grab		12/21/21 10:51	12/22/21 07:36





Microbac Laboratories Inc., - Marietta, OH

## CERTIFICATE OF ANALYSIS

M1L1437

### Analytical Testing Parameters

Client Sample ID:	NV110	PR_W1	Collected By:	Customer
Sample Matrix:	Aqueous		Collection Date:	12/21/2021 10:51
Lab Sample ID:	M1L1437-01			

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
<b>m-ColiBlue24 MPN</b>								
Escherichia Coliform	<1.00	1.00	cfu/100mL	1	Y	12/22/21 0939	12/23/21 0910	APH
<b>SM 9222 B-2006</b>								
Total Coliform	<1.00	1.00	cfu/100mL	1	Y	12/22/21 0939	12/23/21 0910	APH
<b>SM 9222 D-2006</b>								
Fecal Coliform	<1.00	1.00	cfu/100mL	1	Y	12/22/21 0939	12/23/21 0910	APH
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
<b>Calculation</b>								
Nitrate as N	0.688	0.0500	mg/L	1		12/23/21 0923	12/23/21 1229	ADG
<b>EPA 120.1</b>								
Conductivity at 25°C	606	50.0	umhos/cm	1		12/22/21 1542	12/22/21 1653	APH
<b>EPA 1664A</b>								
Oil & Grease	<5.0	5.0	mg/L	1		12/27/21 0850	12/27/21 1343	TTB
<b>EPA 180.1, Rv. 2 (1993)</b>								
Turbidity	<0.1	0.1	NTU	1		12/22/21 1111	12/22/21 1112	ADG
<b>EPA 353.2, Rv. 2 (1993)</b>								
Nitrate-Nitrite as N	0.700	0.0500	mg/L	1		12/23/21 0923	12/23/21 1229	APH
<b>EPA 354.1</b>								
Nitrite as N	0.0125	0.0100	mg/L	1	Y		12/23/21 0700	ADG
<b>SM 2320 B-2011</b>								
Alkalinity, Total	255	20.0	mg CaCO3/L	1		12/22/21 1542	12/22/21 1653	APH
<b>SM 2340 C-2011</b>								
Hardness - Total as CaCO3	135	5.00	mg/L	1		12/30/21 1011	12/30/21 1016	EPT
<b>SM 2540 C-2011</b>								
Total Dissolved Solids - TDS	382	20.0	mg/L	1		12/23/21 1325	12/23/21 1615	KAD
<b>SM 2540 D-2011</b>								
Total Suspended Solids - TSS	<5.00	5.00	mg/L	1		12/27/21 0817	12/27/21 1640	ADG
<b>SM 4500-Cl E-2011</b>								
Chloride	20.6	2.00	mg/L	1		12/23/21 1200	12/23/21 1535	APH
<b>SM 4500-H+ B-2011</b>								
pH	7.3		S.U.	1	H4	12/22/21 1542	12/22/21 1653	APH
<b>SM 4500-SO4<sup>-</sup> E-2011</b>								
Sulfate as SO4	28.8	5.00	mg/L	1		12/28/21 1028	12/28/21 1211	ADG
<b>SM 5540 C-2011</b>								
Surfactants as MBAS	<0.200	0.200	mg/L LAS	1		12/23/21 0835	12/23/21 1019	TTB
Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
<b>EPA 3015A/EPA 6010B</b>								
Arsenic	<0.0200	0.0200	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Barium	0.168	0.0100	mg/L	1		12/22/21 1127	12/27/21 1524	KHL

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

## CERTIFICATE OF ANALYSIS

M1L1437

Client Sample ID: NV110\_ [REDACTED] FR\_W1  
Sample Matrix: Aqueous  
Lab Sample ID: M1L1437-01

Collected By: Customer  
Collection Date: 12/21/2021 10:51

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Calcium	48.0	0.500	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Chromium	<0.00500	0.00500	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Iron	<0.200	0.200	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Lead	<0.0200	0.0200	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Magnesium	13.3	0.500	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Manganese	<0.0150	0.0150	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Potassium	<2.00	2.00	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Selenium	<0.0350	0.0350	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Sodium	65.7	0.500	mg/L	1		12/22/21 1127	12/27/21 1524	KHL
Strontium	0.692	0.0500	mg/L	1		12/22/21 1127	12/27/21 1524	KHL

### Volatile Organic Compounds by GCMS

	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
<b>EPA 5021/EPA RSK-175</b>								
Methane	<5.00	5.00	ug/L	1		12/27/21 1619	12/27/21 1904	JDS
Ethane	<5.00	5.00	ug/L	1		12/27/21 1619	12/27/21 1904	JDS
Propane	<5.00	5.00	ug/L	1		12/27/21 1619	12/27/21 1904	JDS
<b>EPA 5030C/EPA 8260B</b>								
Benzene	<1.00	1.00	ug/L	1			12/30/21 1703	JDS
Ethylbenzene	<1.00	1.00	ug/L	1			12/30/21 1703	JDS
Toluene	<1.00	1.00	ug/L	1			12/30/21 1703	JDS
Xylenes	<1.00	1.00	ug/L	1			12/30/21 1703	JDS
Surrogate: 4-Bromofluorobenzene	106	Limit: 86-115	% Rec	1			12/30/21 1703	JDS
Surrogate: Dibromofluoromethane	108	Limit: 86-118	% Rec	1			12/30/21 1703	JDS
Surrogate 1,2 Dichloroethane d4	111	Limit: 80-120	% Rec	1			12/30/21 1703	JDS
Surrogate Toluene d8	101	Limit: 88-110	% Rec	1			12/30/21 1703	JDS



Microbac Laboratories Inc., - Marietta, OH

## CERTIFICATE OF ANALYSIS

M1L1437

Client Sample ID: NV110-  
Sample Matrix: Aqueous  
Lab Sample ID: M1L1437-02

Collected By: Customer  
Collection Date: 12/21/2021 10:51

Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3015A/EPA 6010B								
Arsenic	<0.0200	0.0200	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Barium	0.170	0.0100	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Calcium	48.2	0.500	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Chromium	<0.00500	0.00500	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Iron	<0.200	0.200	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Lead	<0.0200	0.0200	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Magnesium	13.3	0.500	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Manganese	<0.0150	0.0150	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Potassium	<2.00	2.00	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Selenium	<0.0350	0.0350	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Sodium	65.6	0.500	mg/L	1		12/27/21 0809	12/27/21 1414	KHL
Strontium	0.697	0.0500	mg/L	1		12/27/21 0809	12/27/21 1414	KHL

Client Sample ID: Trip Blank  
Sample Matrix: Aqueous  
Lab Sample ID: M1L1437-03

Collected By: Customer  
Collection Date: 12/21/2021 10:51

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030C/EPA 8260B								
Benzene	1.00	1.00	ug/L	1			12/29/21 1912	JDS
Ethylbenzene	<1.00	1.00	ug/L	1			12/29/21 1912	JDS
Toluene	<1.00	1.00	ug/L	1			12/29/21 1912	JDS
Xylenes	<1.00	1.00	ug/L	1			12/29/21 1912	JDS
Surrogate: 4-Bromofluorobenzene	105	Limit: 86-115	% Rec	1			12/29/21 1912	JDS
Surrogate: Dibromofluoromethane	99.0	Limit: 86-118	% Rec	1			12/29/21 1912	JDS
Surrogate: 1,2-Dichloroethane-d4	99.6	Limit: 80-120	% Rec	1			12/29/21 1912	JDS
Surrogate: Toluene-d8	95.2	Limit: 88-110	% Rec	1			12/29/21 1912	JDS



Microbac Laboratories Inc., - Marietta, OH

## CERTIFICATE OF ANALYSIS

M1L1437

### Definitions

AC:	reanalysis performed due to ethane CCV failing high in previous run.
C:	Confirmatory analysis was performed.
cfu/100mL:	Colony Forming Units per 100 Milliliters
D1:	Dilution was performed due to matrix interference.
D3:	Dilution was performed due to high target analyte concentration.
E2:	Estimated result due to target analyte exceeding calibration range.
H:	Sample was analyzed past holding time.
H2:	Initial analysis was within holding time. Reanalysis was past holding time.
H4:	The test was performed outside of the EPA recommended holding time of 15 minutes.
MDL:	Minimum Detection Limit
mg CaCO <sub>3</sub> /L	Milligrams Calcium Carbonate per Liter
mg/L:	Milligrams per Liter
mg/L LAS:	Milligrams per Liter Linear Alkylate Sulfonate
NTU:	Nephelometric Turbidity Units
Q8:	CCV recovery is below acceptance limits. The reported value is estimated.
RL:	Reporting Limit
S.U.:	Standard Units
U:	The analyte was analyzed for but was not detected above the reported quantitation limit. The quantitation limit has been adjusted for any dilution or concentration of the sample.
ug/L:	Micrograms per Liter
umhos/cm:	Umhos per Centimeter
Y:	This analyte is not on the laboratory's current scope of accreditation.

### Cooler Receipt Log

Cooler ID: Default Cooler Temp: 0.0°C

### Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes		

### Project Requested Certification(s)

Microbac Laboratories Inc., - Marietta, OH  
68-01670

PA Department of Environmental Protection

### Report Comments

*Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.*

*The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.*

### Reviewed and Approved By:

Project Manager

Reported: 01/03/2022 09:57

Microbac Laboratories, Inc.

### **SAMPLE REQUEST & CHAIN OF CUSTODY**

Sample Identification	Composite		Date	Grab Time	Matrix	# of Containers	Container Type <small>Preservative</small>	Analysis Requested
	Date on/off	Time on/off						
			12/21/2021	10:51	AQ	2	Plastic 500 ml No Preservative	pH (rap), SG, Alkalinity, Chloride, Sulfate, TDS, TSS, Turbidity, MBAS, Nitrate as N
					AQ	2	Plastic 250 ml pH < 2, HNO <sub>3</sub>	Ba, Ca, Fe, Mg, Mn, K, Na, Sr, Pb, Hardness, Cr, As, Se
					AQ	3	20 ml Glass Vial HCL	Methanol, Ethanol, Propane
					AQ	3	40 ml Glass Vial HCL	BTEX
					AQ	1	Plastic 250 ml H <sub>2</sub> SO <sub>4</sub>	NO <sub>3</sub> NO <sub>2</sub>
					AQ	1	Amber Glass Lier HCl	Oil & Grease (OG HEM)
VOC Trip Blank					AQ	3	Serie Plastic 100ml Na Thio Sulfate	Total Coliform, E-Coli, Fecal Coliform
					AQ	2	40 ml Glass Vial HCl	BTEX

**Comments:**

**Project Notes:**

CNX: NV110 PRE DRILL  
Job # 17-070-56 State: PA

Company Name: Moody & Associates, Inc.  
Address: 1720 Washington Road  
Suite 100  
Washington, PA 15301

Contact Person:  
Phone Number: (724) 746-5208  
Fax Number: (724) 746-5603

Temp: 0 °C (32°F)

Requisition By: (Signature)  
Date/TIME: 12/21/21 10:51  
Received By: (Signature)  
Date/TIME: 12/21/21 10:51

Relinquished By: (Signature)  
Date/TIME: 12/21/21 10:51  
PRESERVATION Y / N CONTAINER Y / N TEMP 54°C Y / N / NA

M 1 L 1 4 3 7

CNX COC 3,2014







# National Primary Drinking Water Regulations

Contaminant	MCL or TT* (mg/L) <sup>1</sup>	Potential health effects from long-term <sup>3</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
<b>OC</b> Atrazine	TT*	Nervous system or blood problems; increased risk of cancer	Added to water during sewage/wastewater treatment	zero
<b>OC</b> Atrachlor	0.001	Eye, liver, kidney or spleen problems; anemia; increased risk of cancer	Runoff from herbicide used on row crops	zero
<b>R</b> Alpha/photon emitters	11 picocuries per liter (pCi/L)	Increased risk of cancer	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation	zero
<b>IOC</b> Antimony	0.006	Increase in blood cholesterol; decrease in blood sugar	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	0.006
<b>IOC</b> Arsenic	0.010	Skin damage or problems with circulatory systems, and may have increased risk of getting cancer	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes	0
<b>IOC</b> Asbestos (fibers >10 micrometers)	7 million fibers per liter (MFL)	Increased risk of developing benign intestinal polyps	Decay of asbestos cement in water mains; erosion of natural deposits	7 MFL
<b>OC</b> Atrazine	0.001	Cardiovascular system or reproductive problems	Runoff from herbicide used on row crops	0.001
<b>IOC</b> Barium	2	Increase in blood pressure	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	2
<b>OC</b> Benzene	0.007	Anemia; decrease in blood platelets; increased risk of cancer	Discharge from factories; leaching from gas storage tanks and landfills	zero
<b>OC</b> Benzo(a)pyrene (PAHs)	0.0007	Reproductive difficulties; increased risk of cancer	Leaching from linings of water storage tanks and distribution lines	zero
<b>IOC</b> Beryllium	0.004	Intestinal lesions	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	0.004
<b>R</b> Beta photon emitters	4 million becquerels per liter	Increased risk of cancer	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation	zero
<b>DBP</b> Bromate	0.010	Increased risk of cancer	Byproduct of drinking water disinfection	zero
<b>IOC</b> Cadmium	0.005	Kidney damage	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	0.003
<b>OC</b> Carbon tetrachloride	0.01	Problems with blood, nervous system, or reproductive system	Leaching of soil fumigant used on rice and alfalfa	0.01
<b>OC</b> Carbon tetrachloride	0.002	Liver problems; increased risk of cancer	Discharge from chemical plants and other industrial activities	zero
<b>D</b> Chloramines (as Cl <sub>2</sub> )	MCLG=4.0	Eye/nose irritation; stomach discomfort; anemia	Water additive used to control microbes	MCLG=4 <sup>1</sup>
<b>OC</b> Chlordane	0.002	Liver or nervous system problems; increased risk of cancer	Residue of banned termiticide	zero
<b>D</b> Chlorine (as Cl <sub>2</sub> )	MCLG=4.0	Eye/nose irritation; stomach discomfort	Water additive used to control microbes	MCLG=4 <sup>1</sup>
<b>D</b> Chlorine dioxide (as ClO <sub>2</sub> )	MCLG=0.8	Anemia; infants, young children, and fetuses of pregnant women; nervous system effects	Water additive used to control microbes	MCLG=0.8 <sup>1</sup>
<b>DBP</b> Chlorite	0.8	Anemia; infants, young children, and fetuses of pregnant women; nervous system effects	Byproduct of drinking water disinfection	0.8
<b>OC</b> Chlorobenzene	0.1	Liver or kidney problems	Discharge from chemical and agricultural chemical factories	0.1
<b>IOC</b> Chromium (total)	0.1	Allergic dermatitis	Discharge from steel and pulp mills; erosion of natural deposits	0.1
<b>IOC</b> Copper	TT* Action level = 1.3	Short-term exposure: Gastrointestinal distress. Long-term exposure: Liver or kidney damage. People with Wilson's Disease should consult their personal doctor if the amount of copper in their water exceeds the action level	Corrosion of household plumbing systems; erosion of natural deposits	1.3
<b>M</b> Cryptosporidium	TT*	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	zero

LEGEND

**D** Disinfectant

**DBP** Disinfection Byproduct

**IOC** Inorganic Chemical

**M** Microorganism

**OC** Organic Chemical

**R** Radionuclides



Contaminant	MCL or TT (mg/L) <sup>1</sup>	Potential health effects from long-term <sup>2</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
<b>IOC</b> Cyanide (as free cyanide)	0.1	Nerve damage or thyroid problems	Discharge from steel/metal factories; discharge from plastic and fertilizer factories	0.1
<b>OC</b> 2,4-D	0.07	Kidney, liver, or adrenal gland problems	Runoff from herbicide used on row crops	0.07
<b>OC</b> Dalapon	0.2	Minor kidney changes	Runoff from herbicide used on rights of way	0.2
<b>OC</b> 1,2-Dibromo-3-chloropropane (DBCP)	0.0005	Reproductive difficulties; increased risk of cancer	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapple, and orchards	zero
<b>OC</b> o-Dichlorobenzene	0.6	Liver, kidney, or circulatory system problems	Discharge from industrial chemical factories	0.6
<b>OC</b> p-Dichlorobenzene	0.075	Anemia; liver, kidney or spleen damage; changes in blood	Discharge from industrial chemical factories	0.075
<b>OC</b> 1,2-Dichloroethane	0.005	Increased risk of cancer	Discharge from industrial chemical factories	zero
<b>OC</b> 1,1-Dichloroethylene	0.007	Liver problems	Discharge from industrial chemical factories	0.007
<b>OC</b> cis-1,2-Dichloroethylene	0.07	Liver problems	Discharge from industrial chemical factories	0.07
<b>OC</b> trans-1,2-Dichloroethylene	0.1	Liver problems	Discharge from industrial chemical factories	0.1
<b>OC</b> Dichloromethane	0.005	Liver problems; increased risk of cancer	Discharge from drug and chemical factories	zero
<b>OC</b> 1,2-Dichloropropane	0.005	Increased risk of cancer	Discharge from industrial chemical factories	zero
<b>OC</b> Di(2-ethylhexyl) adipate	0.4	Weight loss, liver problems, or possible reproductive difficulties	Discharge from chemical factories	0.4
<b>OC</b> Di(2-ethylhexyl) phthalate	0.004	Reproductive difficulties; liver problems; increased risk of cancer	Discharge from rubber and chemical factories	zero
<b>OC</b> Diquat	0.007	Reproductive difficulties	Runoff from herbicide used on soybeans and vegetables	0.007
<b>OC</b> Dioxin (2,3,7,8-TCDD)	0.0000004	Reproductive difficulties; increased risk of cancer	Emissions from waste incineration and other combustion; discharge from chemical factories	zero
<b>OC</b> Diquat	0.02	Cancers	Runoff from herbicide use	0.02
<b>OC</b> Endosulf	0.1	Stomach and intestinal problems	Runoff from herbicide use	0.1
<b>OC</b> Endrin	0.005	Liver problems	Residue of banned insecticide	0.005
<b>OC</b> Epichlorohydrin	TT <sup>3</sup>	Increased cancer risk; stomach problems	Discharge from industrial chemical factories; an impurity of some water treatment chemicals	zero
<b>OC</b> Ethylbenzene	0.7	Liver or kidney problems	Discharge from petroleum refineries	0.7
<b>OC</b> Ethylene dibromide	0.00001	Problems with liver, stomach, reproductive system, or kidneys; increased risk of cancer	Discharge from petroleum refineries	zero
<b>M</b> Fecal coliform and <i>E. coli</i>	MCL <sup>2</sup>	Fecal coliforms and <i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes may cause short term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.	Human and animal fecal waste	zero <sup>4</sup>
<b>IOC</b> Fluoride	0.2	Bone disease (pain and tenderness of the bones); children may get mottled teeth	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	4.0
<b>M</b> <i>Giardia lamblia</i>	TT <sup>3</sup>	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	zero
<b>OC</b> Glyphosate	0.7	Kidney problems; reproductive difficulties	Runoff from herbicide use	0.7
<b>DBP</b> Haloacetic acids (HAA5)	0.06	Increased risk of cancer	Byproduct of drinking water disinfection	n/a <sup>5</sup>
<b>OC</b> Heptachlor	0.0004	Liver damage; increased risk of cancer	Residue of banned termiticide	zero
<b>OC</b> Heptachlor epoxide	0.0002	Liver damage; increased risk of cancer	Breakdown of heptachlor	zero
<b>M</b> Heterotrophic plate count (HPC)	TT <sup>3</sup>	HPC has no health effects; it is an analytic method used to measure the variety of bacteria that are common in water. The lower the concentration of bacteria in drinking water, the better maintained the water system is.	HPC measures a range of bacteria that are naturally present in the environment	n/a

LEGEND

<b>D</b> Disinfectant	<b>IOC</b> Inorganic Chemical	<b>OC</b> Organic Chemical
<b>DBP</b> Disinfection Byproduct	<b>M</b> Microorganism	<b>R</b> Radionuclides



Contaminant	MCL or TT (mg/L) <sup>1</sup>	Potential health effects from long-term <sup>3</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
<b>OC</b> Hexachlorobenzene	0.005	Liver or kidney problems; reproductive difficulties; increased risk of cancer	Discharge from metal refineries and agricultural chemical factories	2010
<b>OC</b> Hexachlorocyclopentadiene	0.01	Kidney or stomach problems	Discharge from chemical factories	0.01
<b>IOC</b> Lead	0.05 Action Level=0.015	Infants and children: Delays in physical or mental development; children could show slight deficits in attention span and learning abilities; Adults: Kidney problems; high blood pressure	Corrosion of household plumbing systems; erosion of natural deposits	2010
<b>M</b> Legionella	0.001	Legionnaire's Disease, a type of pneumonia	Found naturally in water; multiplies in heating systems	2010
<b>OC</b> Lindane	0.0001	Liver or kidney problems	Runoff/leaching from insecticide used on cattle, lumber, gardens	0.0002
<b>IOC</b> Mercury (inorganic)	0.002	Kidney damage	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands	0.002
<b>OC</b> Methoxychlor	0.04	Reproductive difficulties	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock	0.04
<b>IOC</b> Nitrate (measured as Nitrogen)	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	10
<b>IOC</b> Nitrite (measured as Nitrogen)	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	1
<b>OC</b> Oxydemeton (Vydate)	0.1	Slight nervous system effects	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes	0.2
<b>OC</b> Pentachlorophenol	0.001	Liver or kidney problems; increased cancer risk	Discharge from wood-preserving factories	2010
<b>OC</b> Picloram	0.1	Liver problems	Herbicide runoff	0.5
<b>OC</b> Polychlorinated biphenyls (PCBs)	0.0005	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals	2010
<b>R</b> Radium 226 and Radium 228 (combined)	5 pCi/L	Increased risk of cancer	Erosion of natural deposits	2010
<b>IOC</b> Selenium	0.05	Hair or fingernail loss; numbness in fingers or toes; circulatory problems	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	0.05
<b>OC</b> Simazine	0.004	Problems with blood	Herbicide runoff	0.004
<b>OC</b> Styrene	0.1	Liver, kidney, or circulatory system problems	Discharge from rubber and plastic factories; leaching from landfills	0.1
<b>OC</b> Tetrachloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from factories and dry cleaners	zero
<b>IOC</b> Thallium	0.001	Hair loss; changes in blood; kidney, intestine, or liver problems	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	0.0005
<b>OC</b> Toluene	1	Nervous system, kidney, or liver problems	Discharge from petroleum factories	1
<b>M</b> Total Coliforms	500 per 100 mL	Coliforms are bacteria that indicate that other, potentially harmful bacteria may be present. See fecal coliforms and <i>E. coli</i>	Naturally present in the environment	2010
<b>DBP</b> Total Trihalomethanes (TTHMs)	0.100	Liver, kidney or central nervous system problems; increased risk of cancer	Byproduct of drinking water disinfection	n/a <sup>4</sup>
<b>OC</b> Toxaphene	0.005	Kidney, liver, or thyroid problems; increased risk of cancer	Runoff/leaching from insecticide used on cotton and cattle	2010
<b>OC</b> 2,4,5-TP (Silvex)	0.05	Liver problems	Residue of banned herbicide	0.05
<b>OC</b> 1,2,4-Trichlorobenzene	0.05	Changes in adrenal glands	Discharge from textile finishing factories	0.05
<b>OC</b> 1,1,1-Trichloroethane	0.1	Liver, nervous system, or circulatory problems	Discharge from metal degreasing sites and other factories	0.2
<b>OC</b> 1,1,2-Trichloroethane	0.005	Liver, kidney, or immune system problems	Discharge from industrial chemical factories	0.003
<b>OC</b> Trichloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from metal degreasing sites and other factories	2010

LEGEND

<b>OC</b> Disinfectant	<b>IOC</b> Inorganic Chemical	<b>OC</b> Organic Chemical
<b>DBP</b> Disinfection Byproduct	<b>M</b> Microorganism	<b>R</b> Radionuclides

Contaminant	MCL or T1 (mg/L) <sup>1</sup>	Potential health effects from long-term <sup>2</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
<b>M</b> Turbidity	1 NTU	Turbidity is a measure of the cloudiness of water. It is used to indicate water quality and filtration effectiveness (e.g., whether disease-causing organisms are present). Higher turbidity levels are often associated with higher levels of disease-causing microorganisms such as viruses, parasites and some bacteria. These organisms can cause short term symptoms such as nausea, cramps, diarrhea, and associated headaches.	Soil runoff	0.1
<b>R</b> Uranium	30 µg/L	Increased risk of cancer, kidney toxicity	Erosion of natural deposits	zero
<b>OC</b> Vinyl chloride	0.005	Increased risk of cancer	Leaching from PVC pipes; discharge from plastic factories	zero
<b>M</b> Viruses (enteric)	TT <sup>3</sup>	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	zero
<b>OC</b> Xylenes (total)	10	Nervous system damage	Discharge from petroleum factories; discharge from chemical factories	10

#### LEGEND

<b>D</b> Disinfectant	<b>IC</b> Inorganic Chemical	<b>OC</b> Organic Chemical
<b>DBP</b> Disinfection Byproduct	<b>M</b> Microorganism	<b>R</b> Radionuclides



## NOTES

### 1 Definitions

- **Maximum Contaminant Level Goal (MCLG)**—The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.
  - **Maximum Contaminant Level (MCL)**—The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.
  - **Maximum Residual Disinfectant Level Goal (MRDLG)**—The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
  - **Maximum Residual Disinfectant Level (MRDL)**—The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
  - **Treatment Technique (TT)**—A required process intended to reduce the level of a contaminant in drinking water.
- 2 Units are in milligrams per liter (mg/L) unless otherwise noted. Milligrams per liter are equivalent to parts per million (ppm).
- 3 Health effects are from long-term exposure unless specified as short-term exposure.
- 4 Each water system must certify annually, in writing, to the state (using third-party or manufacturers certification) that when it uses acrylamide and/or epichlorohydrin to treat water, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: Acrylamide = 0.05 percent dosed at 1 mg/L (or equivalent); Epichlorohydrin = 0.01 percent dosed at 20 mg/L (or equivalent).
- 5 Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10 percent of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.
- 6 A routine sample that is fecal coliform-positive or *E. coli*-positive triggers repeat samples—if any repeat sample is total coliform-positive, the system has an acute MCL violation. A routine sample that is total coliform-positive and fecal coliform-negative or *E. coli*-negative triggers repeat samples—if any repeat sample is fecal coliform-positive or *E. coli*-positive, the system has an acute MCL violation. See also Total Coliforms.
- 7 EPA's surface water treatment rules require systems using surface water or ground water under the direct influence of surface water to (1) disinfect their water, and (2) filter their water or meet criteria for avoiding filtration so that the following contaminants are controlled at the following levels:
- *Cryptosporidium*: 99 percent removal for systems that filter. Unfiltered systems are required to include *Cryptosporidium* in their existing watershed control provisions.
  - *Giardia lamblia*: 99.9 percent removal/inactivation
  - Viruses: 99.99 percent removal/inactivation
  - *Legionella*: No limit, but EPA believes that if *Giardia* and viruses are removed/inactivated according to the treatment techniques in the surface water treatment rule, *Legionella* will also be controlled.
  - Turbidity: For systems that use conventional or direct filtration, at no time can turbidity (cloudiness of water) go higher than 1 nephelometric turbidity unit (NTU), and samples for turbidity must be less than or equal to 0.3 NTU in at least 95 percent of the samples in any month. Systems that use filtration other than conventional or direct filtration must follow state limits, which must include turbidity at no time exceeding 5 NTU.
  - HPC: No more than 500 bacterial colonies per milliliter
  - Long Term 1 Enhanced Surface Water Treatment: Surface water systems or ground water systems under the direct influence of surface water serving fewer than 10,000 people must comply with the applicable Long Term 1 Enhanced Surface Water Treatment Rule provisions (e.g. turbidity standards, individual filter monitoring, *Cryptosporidium* removal requirements, updated watershed control requirements for unfiltered systems).
  - Long Term 2 Enhanced Surface Water Treatment: This rule applies to all surface water systems or ground water systems under the direct influence of surface water. The rule targets additional *Cryptosporidium* treatment requirements for higher risk systems and includes provisions to reduce risks from uncovered finished water storage facilities and to ensure that the systems maintain microbial protection as they take steps to reduce the formation of disinfection byproducts. (Monitoring start dates are staggered by system size. The largest systems (serving at least 100,000 people) will begin monitoring in October 2006 and the smallest systems (serving fewer than 10,000 people) will not begin monitoring until October 2008. After completing monitoring and determining their treatment bin, systems generally have three years to comply with any additional treatment requirements.)
  - Filter Backwash Recycling: The Filter Backwash Recycling Rule requires systems that recycle to return specific recycle flows through all processes of the system's existing conventional or direct filtration system or at an alternate location approved by the state.
- 8 No more than 5.0 percent samples total coliform-positive in a month. (For water systems that collect fewer than 40 routine samples per month, no more than one sample can be total coliform-positive per month.) Every sample that has total coliform must be analyzed for either fecal coliforms or *E. coli*. If two consecutive TC-positive samples, and one is also positive for *E. coli* or fecal coliforms, system has an acute MCL violation.
- 9 Although there is no collective MCLG for this contaminant group, there are individual MCLGs for some of the individual contaminants:
- Haloacetic acids: dichloroacetic acid (zero); trichloroacetic acid (0.3 mg/L)
  - Trihalomethanes: bromodichloromethane (zero); bromoform (zero); dibromochloromethane (0.06 mg/L)

## National Secondary Drinking Water Regulation

National Secondary Drinking Water Regulations are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, some states may choose to adopt them as enforceable standards.

Contaminant	Secondary Maximum Contaminant Level
Aluminum	0.05 to 0.2 mg/L
Chloride	250 mg/L
Color	15 (color units)
Copper	1.0 mg/L
Corrosivity	noncorrosive
Fluoride	2.0 mg/L
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Nitrate	3 threshold value number
pH	6.5-8.5
Silver	0.10 mg/L
Sulfate	250 mg/L
Total Dissolved Solids	500 mg/L
Zinc	5 mg/L

### For More Information

EPA's Safe Drinking Water Web site:  
<http://www.epa.gov/safewater/>

EPA's Safe Drinking Water Hotline:  
(800) 426-4791

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