2023 Annual Water Quality Report

City of Moro, Oregon

We are please to present to you this year’s Annual Water Quality Report for the City of Moro. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable suppy of drinking water. We want you to understand the efforts we make to continually improve the water system and protect our water resources. We are committed to ensuring the quality of your water. Our water sources are :

* City Hall Well; City Hall Well Draws from the 3rd aquafier at 500’ and pumps 90 GPM
* Hart Well; Hart Well draws from the 2nd aquafier at 280’ and pumps 49 GPM
* Cemetery Well; Cemetery Well draws from the deep basalt (3rd) aquafier at 400 GPM

None of the Wells are treated with chlorine.

We are pleased to report that our drinking water is safe and meets federal and state requirements. This report shows our water quality and what it means. If you have any question about this report or concerning your water utility, please contact **the City of Moro 541-565-3535 or John English with Department of Public Works**. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any or our regularly scheduled meetings. They are held on the **first Tuesday of every month at 7:00P.M. at the Moro City Hall – 104 1st Street.** The City of Moro routinely monitors for constituents in your drinking water according to Federal and State laws. The table below shows the results of our monitoring for the period of January 1st, 2022 to December 31st, 2022. As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amount of some constituents. It’s important to remember that the presence of these constituents does not necessarily pose a health risk.

Paper copies of the 2023 Consumer Confidence Report are available at City Hall 104 1st Street, Moro, Oregon 97039.

**Definitions:** In the table below you will find many terms and abbreviation you might not be familiar with. To help you better understand these terms we’ve provided the following definitions:

* Non-Detects (ND) – laboratory analysis indicates that the constituent is not present.
* Parts per million (ppm) or milligrams per liter (mg/l) – one part per million corresponds to one minute in two years, or a single penny in $10,000.
* Parts per Billion (ppb) or Micrograms per liter – one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
* Action Level – The concentration of a contaminant, which, if exceeded, triggers treatment of other requirements, which a water system must follow.
* Treatment Technique (TT) – a treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
* Maximum Contaminant Level (MCL) – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs (see definition below) as feasible using the best available treatment technology.
* Maximum Contaminant Level Goals (MCLG) – The level of a contaminant in drinking water which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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| TEST RESULTS | | | | | | | | | | | | | | | | | | | | | | |
| Contaminant | | | | Violation  YIN | | | Level Detected | | | Unit Measurement | | | MCLG | | MCL | | | | Likely Source of Contamination | | | |
| Microbiological Contaminants | | | | | | | | | | | | | | | | | | | | | | |
| 1. Total Coliform Bacteria  12 routine samples  0 repeat samples | | | | N | | | Total ND | | |  | | | 0 | | presence of coliform bacteria in 5% of monthly samples | | | | Naturally present in the environment  \*Cemetery Well Construction  \*Disturbance of the ground  \*Re-samples all OK | | |
| 2. Fecal coliform and *E.coli*  12 routine samples  0 repeat samples | | | | N | | | E.coli ND | | |  | | | 0 | | A routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive | | | | Human and animal fecal waste | | |
| 3. Turbidity | | | |  | | |  | | |  | | | n/a | | TT | | | | Soil runoff | | |
| Radioactive Contaminants | | | | | | | | | | | | | | | | | | | | | |
| 4. Beta/photon emitters | | | | N | | | ND | | | mrem/yr | | | 0 | | 4 | | | | Decay of natural and man-made deposits | | |
| 5. Alpha emitters | | | | N | | | ND | | | pCi/1 | | | 0 | | 15 | | | | Erosion of natural deposits | | |
| 6. Combined radium | | | | N | | ND | | | pCi/1 | | | 0 | | | | 5 | | | | Erosion of natural deposits | |
| Inorganic Contaminants | | | | | | | | | | | | | | | | | | | | | |
| 7. Antimony | | | | N | | <LOQ | | ppb | | | 6 | | | 6 | | | | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder | | | |
| 8. Arsenic | | | | N | | .0017 .0012 .0015 | | ppb | | | n/a | | | 10 | | | | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes | | | |
| 9. Asbestos | | | | N | | ND | | M FL | | | 7 | | | 7 | | | | Decay of asbestos cement water mains; erosion of natural deposits | | | |
| 10. Barium | | | | N | | .0220 .0055 .0062 | | ppm | | | 2 | | | 2 | | | | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits | | | |
| 1 1. Beryllium | | | | N | | <LOQ | | ppb | | | 4 | | | 4 | | | | Discharge from metal refineries and coal- burning factories; discharge from electrical, aerospace, and defense industries | | | |
| 12. Cadmium | | | | N | | <LOQ | | ppb | | | 5 | | | 5 | | | | Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints | | | |
| 13. Chromium | | | | N | | .0018 .0021 .0017 | | ppb | | | 100 | | | 100 | | | | Discharge from steel and pulp mills; erosion of natural deposits | | | |
| 14. Copper | | | | N | | .0078 .0043 .0058 .0041 .0176 | | ppm | | | 1.3 | | | AL=l .3 | | | | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives | | | |
| 15. Cyanide | | | | N | | .027 <LOQ <LOQ | | ppb | | | 200 | | | 200 | | | | Discharge from steel/metal factories; discharge from plastic and fertilizer factories | | | |
| 16. Fluoride | | | | N | | .45 .40 .51 | | ppm | | | 4 | | | 4 | | | | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories | | | |
| 17. Lead | | | | N | | .0003 .0003 .0007 .005 .004 | | ppb | | | 0 | | | AL=l 5 | | | | Corrosion of household plumbing systems, erosion of natural deposits | | | |
| 18. Mercury (inorganic) | | | | N | | .002 <LOQ <LOQ | | ppb | | | 2 | | | 2 | | | | Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland | | | |
| 19. Nitrate (as Nitrogen) | | | | N | | 3.80 4.73 1.14 | | ppm | | | 10 | | | 10 | | | | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits | | | |
| 20. Nitrite (as Nitrogen) | | | | N | | <LOQ <LOQ  1.40 | | ppm | | | I | | | 1 0 | | | | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits | | | |
| 21. Selenium | | | | N | | <LOQ <LOQ <LOQ | | ppb | | | 50 | | | 50 | | | | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines | | | |
| 22. Thallium | | | | N | | <LOQ | | ppb | | | 0.5 | | | 2 | | | | Leaching from ore-processing sites; discharge from electronics, glass, and drug factories | | | |
| Synthetic Organic Contaminants including Pesticides and Herbicides | | | | | | | | | | | | | | | | | | | | | |
| 23. 2,4-D | | N | | | ND | | | ppb | | | 70 | | | 70 | | | | Runoff from herbicide used on row crops | | | |
| 24. 2,4,5-TP (Silvex) | | N | | | ND | | | ppb | | | 50 | | | 50 | | | | Residue of banned herbicide | | | |
| 25. Acrylamide | | N | | | ND | | |  | | | 0 | | | 1T | | | | Added to water during sewage/wastewater treatment | | | |
| 26. Alachlor | | N | | | ND | | | ppb | | | 0 | | | 2 | | | | Runoff from herbicide used on row crops | | | |
| 27. Atrazine | | N | | | ND | | | ppb | | | 3 | | | 3 | | | | Runoff from herbicide used on row crops | | | |
| 28. Benzo(a)pyrene (PAH) | | N | | | ND | | | nanograms/1 | | | 0 | | | 200 | | | | Leaching from linings of water storage tanks and distribution lines | | | |
| 29. Carbofuran | | N | | | ND | | | ppb | | | 40 | | | 40 | | | | Leaching of soil fumigant used on rice and alfalfa | | | |
| 30. Chlordane | | N | | | ND | | | ppb | | | 0 | | | 2 | | | | Residue of banned termiticide | | | |
| 31. Dalapon | | N | | | ND | | | ppb | | | 200 | | | 200 | | | | Runoff from herbicide used on rights of way | | | |
| 32. Di(2-ethylhexyl) adipate | | N | | | ND | | | ppb | | | 400 | | | 400 | | | | Discharge from chemical factories | | | |
| 33. Di(2-ethylhexyl) phthalate | | N | | | ND | | | ppb | | | 0 | | | 6 | | | | Discharge from rubber and chemical  factories | | | |
| 34. Dibromochloropropane | | N | | | ND | | | nanograms/1 | | | 0 | | | 200 | | | | Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards | | | |
| 35. Dinoseb | | N | | | ND | | | ppb | | | 7 | | | 7 | | | | Runoff from herbicide used on soybeans and vegetables | | | |
| 36. Diquat | | N | | | ND | | | ppb | | | 20 | | | 20 | | | | Runoff from herbicide use | | | |
| 37. Dioxin  (2,3,7,8-TCDD] | | N | | | ND | | | picograms/I | | | 0 | | | 30 | | | | Emissions from waste incineration and other combustion; discharge from chemical factories | | | |
| 38. Endothall | | N | | | ND | | | ppb | | | 100 | | | J OO | | | | Runoff from herbicide use | | | |
| 39. Endrin | | N | | | ND | | | ppb | | | 2 | | | 2 | | | | Residue of banned insecticide | | | |
| 40. Epichlorohydrin | | N | | | ND | | |  | | | 0 | | | TT | | | | Discharge from industrial chemical factories; an impurity of some water treatment chemicals | | | |
| 41. Ethylene dibromide | | N | | | ND | | | nanograms/1 | | | 0 | | | 50 | | | | Discharge from petroleum refineries | | | |
| 42. Glyphosate | | N | | | ND | | | ppb | | | 700 | | | 700 | | | | Runoff from herbicide use | | | |
| 43. Heptachlor | | N | | | ND | | | nanograms/1 | | | 0 | | | 400 | | | | Residue of banned tenniticide | | | |
| 44. Heptachlor epoxide | | N | | | ND | | | nanograms/1 | | | 0 | | | 200 | | | | Breakdown of heptachlor | | | |
| 45. Hexachlorobenzene | | N | | | ND | | | ppb | | | 0 | | | I | | | | Discharge from meta I refineries and agricultural chemical factories | | | |
| 46. Hexachlorocyclo- pentadiene | | N | | | ND | | | ppb | | | 50 | | | 50 | | | | Discharge from chemical factories | | | |
| 47. Lindane | | N | | | ND | | | nanograms/1 | | | 200 | | | 200 | | | | Runoff/leaching from insecticide used on cattle, lumber, gardens | | | |
| 48. Methoxychlor | | N | | | ND | | | ppb | | | 40 | | | 40 | | | | Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock | | | |
| 49. Oxamyl [Vydate] | | N | | | ND | | | ppb | | | 200 | | | 200 | | | | Runoff/leaching from insecticide used on apples, potatoes and tomatoes | | | |
| 50. PCBs [Polychlorinated biphenyls] | | N | | | ND | | | nanograms/1 | | | 0 | | | 500 | | | | Runoff from landfills; discharge of waste chemicals | | | |
| 51. Pentachlorophenol | | N | | | ND | | | ppb | | | 0 | | | I | | | | Discharge from wood preserving factories | | | |
| 52. Picloram | | N | | | ND | | | ppb | | | 500 | | | 500 | | | | Herbicide runoff | | | |
| 53. Simazine | | N | | | ND | | | ppb | | | 4 | | | 4 | | | | Herbicide runoff | | | |
| 54. Toxaphene | | N | | | ND | | | ppb | | | 0 | | | 3 | | | | Runoff/leaching from insecticide used on cotton and cattle | | | |
| **Volatile Organic Contaminants** | | | | | | | | | | | | | | | | | | | |
| 55. Benzene | | N | | ND | | | ppb | | | 0 | | | 5 | | | Discharge from factories; leaching from gas storage tanks and landfills | | | |
| 56. Carbon tetrachloride | | N | | ND | | | ppb | | | 0 | | | 5 | | | Discharge from chemical plants and other industrial activities | | | |
| 57. Chlorobenzene | | N | | ND | | | ppb | | | 100 | | | 100 | | | Discharge from chemical and agricultural chemical factories | | | |
| 58. o-Dichlorobenzene | | N | | ND | | | ppb | | | 600 | | | 600 | | | Discharge from industrial chemical factories | | | |
| 59. p-Dichlorobenzene | | N | | ND | | | ppb | | | 75 | | | 75 | | | Discharge from industrial chemical factories | | | |
| 60. 1,2 - Dichloroethane | | N | | ND | | | ppb | | | 0 | | | 5 | | | Discharge from industrial chemical factories | | | |
| 61. I ,I - Dichloroethylene | | N | | ND | | | ppb | | | 7 | | | 7 | | | Discharge from industrial chemical factories | | | |
| 62. cis-1,2-Dichloroethylene | | N | | ND | | | ppb | | | 70 | | | 70 | | | Discharge from industrial chemical factories | | | |
| 63. trans - 1,2 - Dichloroethylene | | N | | ND | | | ppb | | | 100 | | | 100 | | | Discharge from industrial chemical factories | | | |
| 64. Dichloromethane | | N | | ND | | | ppb | | | 0 | | | 5 | | | Discharge from pharmaceutical and chemical factories | | | |
| 65. 1,2-Dichloropropane | | N | | ND | | | ppb | | | 0 | | | 5 | | | Discharge from industrial chemical factories | | | |
| 66. Ethylbenzene | | N | | ND | | | ppb | | | 700 | | | 700 | | | Discharge from petroleum refineries | | | |
| 67. Styrene | | N | | ND | | | ppb | | | 100 | | | 100 | | | Discharge from rubber and plastic factories; leaching from landfills | | | |
| 68. Tetrachloroethylene | | N | | ND | | | ppb | | | 0 | | | 5 | | | Leaching from PVC pipes; discharge from factories and dry cleaners | | | |
| 69. 1,2,4 -Trichlorobenzene | | N | | ND | | | ppb | | | 70 | | | 70 | | | Discharge from textile-finishing factories | | | |
| 70. I , I , I - Trichloroethane | | N | | ND | | | ppb | | | 200 | | | 200 | | | Discharge from metal degreasing sites and other factories | | | |
| 71. 1,1,2 -Trichloroethane | | N | | ND | | | ppb | | | 3 | | | 5 | | | Discharge from industrial chemical factories | | | |
| 72. Trichloroethylene | | N | | ND | | | ppb | | | 0 | | | 5 | | | Discharge from metal degreasing sites and other factories | | | |
| 73. TTH M  [Total trihalomethanes] | | N | | ND | | | ppb | | | 0 | | | 100 | | | By-product of drinking water chlorination | | | |
| 74. Toluene | | N | | ND | | | ppm | | | I | | | I | | | Discharge from petroleum factories | | | |
| 75. Vinyl Chloride | | N | | ND | | | ppb | | | 0 | | | 2 | | | Leaching from PVC piping; discharge from plastics factories | | | |
| 76. Xylenes | | N | | ND | | | ppm | | | 10 | | | 10 | | | Discharge from petroleum factories; discharge from chemical factories | | | |

Microbiological Contaminants:

1.) Total Coliform- Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

2.) Fecal coliform/ E.Coli- Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can 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.

8.) Arsenic- Erosion of natural deposits; runoff from orchards, glass and electronic production wastes.

10.) Barium- Discharge of drilling wastes; discharge from metal refineries erosion of natural deposits

14.) Copper- Copper is an essential nutrient, but some people who drink water-containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water-containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

16.) Fluoride. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

17.) Lead, Infants and children who drink water-containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

19.) Nitrate- Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

20.) Nitrite- Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Nitrate and Nitrite in drinking water at levels above 10 ppm present a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate and Nitrite levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (1-800-426- 4791)

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