UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

10 MAR 2014

REPLY TO THE ATTENTION OF:

Mr. Roger Eberhardt
Acting Deputy Director, Office of the Great Lakes
Michigan Department of Environmental Quality
525 West Allegan
P.O. Box 30473
Lansing, Michigan 48909-7773

Dear Roger:

Thank you for your February 12, 2014, request to remove the "Degradation of Aesthetics" and "Restrictions on Drinking Water Consumption or Taste and Odor" Beneficial Use Impairments (BUIs) from the White Lake Area of Concern (AOC) in Michigan. As you know, we share your desire to restore all of the Great Lakes AOCs and to formally delist them.

Based upon a review of your submittal and the supporting data, the U.S. Environmental Protection Agency hereby approves your two BUI removal requests for the White Lake AOC. In addition, EPA will notify the International Joint Commission of this significant positive environmental change at this AOC.

We congratulate you and your staff, as well as the many federal, state, and local partners who have worked so hard and been instrumental in achieving this important environmental improvement. Removal of these BUIs will benefit not only the people who live and work in the White Lake AOC, but all the residents of Michigan and the Great Lakes basin as well.

We look forward to the continuation of this important and productive relationship with your agency and the local coordinating committee as we work together to fully restore all of Michigan's AOCs. If you have any further questions, please contact me at (312) 353-4891, or your staff may contact John Perrecone, at (312) 353-1149.

Sincerely,

Chris Korleski, Director
Great Lakes National Program Office

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cc: Dan Wyant, Director, MDEQ
Jon W. Allan, MDEQ, Office of Great Lakes
Rick Hobrla, MDEQ, Office of Great Lakes
John Riley, MDEQ, Office of Great Lakes
Greg Mund, White Lake PAC
Stephen Locke, IJC
Wendy Carney, EPA, GLNPO
John Perrecone, EPA, GLNPO

STATE OF MICHIGAN
OFFICE OF THE GREAT LAKES
LANSING

RICK SNYDER
GOVERNOR

JON W. ALLAN
DIRECTOR

February 12, 2014

Mr. Chris Korleski, Director
Great Lakes National Program Office
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (G-17J)
Chicago, Illinois 60604-3507

Dear Mr. Korleski:

I am writing to request the United States Environmental Protection Agency (U.S. EPA), Great Lakes National Program Office's (GLNPO) concurrence with the removal of the Degradation of Aesthetics and Restrictions on Drinking Water Beneficial Use Impairments (BUIs) from the White Lake Area of Concern (AOC). The Michigan Department of Environmental Quality (MDEQ), Office of the Great Lakes has assessed the status of the BUIs in accordance with the state's *Guidance for Delisting Michigan's Great Lakes Areas of Concern*, and recommends that the BUIs be removed from the list of impairments in the White Lake AOC.

Enclosed, please find documentation to support these recommendations, including the BUI Removal Recommendation documents prepared by MDEQ staff. The White Lake Public Advisory Council (PAC) submitted letters supporting these recommendations, which are included with this package. The PAC's letter regarding Drinking Water requested a response from MDEQ to acknowledge remaining concerns. We are attaching that letter as well. The proposed BUI removals were public noticed via the Mich-RAP listserv, the MDEQ Calendar, the MDEQ AOC program Web site, and the PAC's e-mail list. No written comments were received in response to the public notice period, which ran from January 13, to February 11, 2014.

We value our continuing partnership in the AOC Program and look forward to working with the GLNPO in the removal of additional BUIs in the near future. If you need further information concerning this request, please contact Mr. John Riley at 517-284-5045, or you may contact me.

Sincerely,

Roger Eberhardt
Acting Deputy Director
517-284-5035

Enclosures
cc: Mr. Greg Mund, White Lake PAC
Mr. Dave Cowgill, U.S. EPA
Mr. Marc Tuchman, U.S. EPA
Mr. John Perrecone, U.S. EPA
Mr. Richard Hobrla, MDEQ
Mr. John Riley, MDEQ

Removal Recommendation
Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment
White Lake Area of Concern

Issue

The Michigan Department of Environmental Quality (MDEQ), Office of the Great Lakes, Areas of Concern (AOC) program recommends the removal of the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment (BUI) from the White Lake AOC. This recommendation is being made with the support of the MDEQ Office of Drinking Water and Municipal Assistance, MDEQ Remediation and Redevelopment Division, the Muskegon County Health Department and the United States Environmental Protection Agency (EPA), Water Division. The recommendation is made in accordance with the process and criteria set forth in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern* (Guidance) (MDEQ, 2008).

Background

White Lake is a 10.4 km^2 drowned river mouth lake located in western Michigan, Muskegon County. The lake was listed as an AOC in 1987 because of severe environmental impairments related to the historic discharge of municipal and industrial wastes. The Restrictions on Drinking Water Consumption BUI was added in 1995 because of concerns related to contaminated groundwater from a variety of chemical and other industrial manufacturing waste disposal practices in the area. However, it should be noted that while extensive groundwater contamination existed then, and to a lesser extent, is still present today in the White Lake area, the scope of the AOC program as defined by the Great Lakes Water Quality Agreement is limited to surface waters. The surface water of White Lake is not a source of public drinking water for any community.

The AOC program is non-regulatory and is intended to fill the gaps between existing regulatory programs at the state and federal levels to achieve restoration of impaired beneficial uses. Federal and state regulatory activities continue to work toward the cleanup of contaminated groundwater in the communities surrounding White Lake.

Public meetings have been held during recent years in the White Lake community, to share information among the Public Advisory Council (PAC), the state and federal agency partners and responsible parties to inform community members with regard to ongoing groundwater contaminant remedial activities at several locations in the White Lake area.

Monitoring data demonstrate that public drinking water supplies from groundwater for the cities of Whitehall and Montague have met the regulatory requirements for levels of toxic chemicals, disease-causing organisms, and radioactive substances for more than two years. Treatment needed to make public drinking water supplies in the area potable and palatable does not and has not exceeded standard methods during that time frame.

Statewide BUI Removal Criteria

The State's *Guidance* provides the following requirements for removal of this impairment (Attachment 1):

> *This BUI will be considered restored when monitoring data for 2 years indicates that public water supplies:*
>
> - *meet the current and most stringent human health standards, objectives, or guidelines (at the point of distribution into the water system) for levels of disease-causing organisms, hazardous or toxic chemicals, or radioactive substances; and*
> - *treatment needed to make raw water potable and palatable does not exceed standard methods in those supplies. In the event a public drinking water intake must be closed due to contamination of surface water, standard treatment methods are considered to have been exceeded.*

Local Criteria *Proposed*

In 2008, the White Lake PAC submitted the following as part of its request to the MDEQ for approval to become the applicable local criteria required for restoration of the Restrictions on Drinking Water BUI (Attachment 2):

> *Currently, all public drinking water supplies in the White Lake area utilize groundwater resources. Because of the importance of groundwater as the only potable water source currently available in the White Lake AOC, the history of severe groundwater contamination, and the presence of large areas of contaminated groundwater that are undergoing remediation and further delineation, the White Lake Public Advisory Council has voted to adopt a target for delisting the Restrictions on Drinking Water Consumption BUI that is more restrictive than the State of Michigan criteria and includes the protection of critical groundwater resources. The proposed delisting target is:*
>
> > *This BUI will be considered restored when monitoring data for 2 consecutive years indicates:*
> >
> > > *1. All public and private drinking water supplies contaminated due to Resource Conservation Recovery Act and Comprehensive Environmental Response Compensation and Liability Act sites meet the MDEQ criteria for potable water based on annual monitoring. Public water supplies include associated wellhead protection areas.*
> > > - *DuPont*
> > > - *Muskegon / Koch Chemical*
> > > - *Hooker / Occidental Chemical*
> > > - *Whitehall Well #3*
> > >
> > > *2. Sites outside of RCRA and CERCLA areas, with known groundwater contamination such as Part 201 sites, will be documented and remediation / monitoring efforts recorded. If site impacts groundwater and contamination exceeds MDEQ criteria for drinking water, an alternate supply source (public or private) of potable water must be available to the impacted landowners. In addition, contamination plumes must be delineated, migration pathways documented, and an approved MDEQ/EPA remediation plan established for*

> *each site. Effectiveness of each remediation plan will be confirmed by annual monitoring. The WLPAC identifies the following sites where contaminated groundwater may pose a threat to drinking water:*
>
> - *White Lake Landfill / Shellcast*
> - *Anderson Road Plume (Tech Cast)*
> - *Howmet*
> - *Silver Creek / Whitehall Wastewater*

In a letter dated May 28, 2009, the MDEQ responded to the White Lake PAC's request for approval of its proposed criteria in relevant part as follows (Attachment 3):

> *The White Lake PAC and the DEQ have worked diligently for the past year to negotiate local criteria for the Restrictions on Drinking Water Consumption or Taste and Odor BUI that balance community standards for environmental restoration with the DEQ's concerns regarding the overall scope of the AOC program. Unfortunately, we have been unable to agree on criteria that achieve that balance despite these efforts.*
>
> *Portions of the proposed local criteria for this BUI invoke other regulatory programs in a manner that is not necessarily consistent with their legal authority. While the DEQ does have programs in place to address contaminated groundwater, it is not an issue the AOC program was intended to address under Annex 2 of the 1987 Amendments to the Great Lakes Water Quality Agreement except in situations where it vents to surface waters. Annex 16 of the Agreement is devoted to contaminated groundwater.*
>
> *Historical records document a long-standing disagreement between the White Lake PAC and the agencies administering the AOC program over whether groundwater contamination that does not affect White Lake must be addressed as part of this BUI. There is considerable documentation of the White Lake PAC's interest in remediating contaminated groundwater that could serve as a source of drinking water. The DEQ recognizes that contaminated groundwater is of major concern to the community and is likely to remain a long-term problem in the area. However, clean drinking water is available and corrective actions to protect White Lake are in place.*
>
> *Therefore, the DEQ approves only that portion of the local criteria for this BUI taken from the statewide criteria.*

Despite the fact that the MDEQ did not approve the local criteria that were proposed, the White Lake PAC continues to advocate that specific areas of groundwater contamination must be adequately characterized, monitored and slated for remedial action. MDEQ and EPA both agree on the importance of cleaning up contaminated groundwater in these areas. Regulatory programs are in place to do just that. Unfortunately, the pace of those clean ups is slower than the parties would prefer. However, the AOC program at either the federal or state level does not have legal authorities to require additional remedial activities.

In an internal memo (Attachment 9) dated June 19, 2013, regarding the DuPont site in Montague, the Chief of the MDEQ's Office of Waste Management and Radiological Protection (OWMRP) stated that, "DuPont will be required to continue with the investigation and remedy evaluation and selection Process for the remaining ten (waste management) units identified above." Out of 18 waste management units on the DuPont property, no further corrective action is required for seven of them. As for the remaining ten units, the memo goes on to state, "The final remedy proposals will be subject to

public participation and review and approval by the OWMRP. Implementation of the final remedies will then occur."

Progress in the cleanup of the DuPont property will continue regardless of the status of the Restrictions on Drinking Water BUI, as the memo points out. "The corrective action obligations described herein are independent of any other state or federal requirements. Neither the removal of the Beneficial Use Impairment for White Lake nor the removal of the listing of White Lake as an Area of Concern under the program established pursuant to the Great Lakes Water Quality Agreement between the United States and Canada will have any bearing on DuPont's corrective action obligations. The OWMRP will work with DuPont and continue its oversight of activities at the facility to ensure that the corrective action process progresses forward."

The AOC program has supported the White Lake PAC and the Muskegon Conservation District in particular, in their efforts to document the current status, extent of contamination, required next steps, monitoring plans and any other relevant information pertaining to groundwater contamination sites around the White Lake community. Some of those sites have been documented as closed, others no longer pose a threat to the surface water of White Lake or private drinking water wells in the vicinity, but at least one site requires ongoing remedial activities to eliminate those threats. The Conservation District has drafted a document that describes the most up to date information available on each of these sites (Attachment 4). The AOC program supports continued investigation and remediation of these sites as appropriate, but maintains the position that this work is beyond what the AOC program is able to address with the legal authority, funding and other tools available to it.

Assessment Results

When assessing whether the White Lake community's public water supplies are meeting the established restoration criteria, we again look to the state's *Guidance for Delisting Michigan's Great Lakes Areas of Concern*:

> *The U.S. EPA establishes and enforces drinking water standards nationwide. The state adopts and enforces those standards under the Michigan Safe Drinking Water Act (Act 399, 1976 as amended). The MDEQ carries out the community public water supply program directly, and contracts with local health departments to issue construction permits, oversee the monitoring, and carry out enforcement for noncommunity public water systems.*
>
> *Under the Michigan Safe Drinking Water Act, public water suppliers in Michigan must submit regular reports of treated water quality to the MDEQ. The MDEQ will use these reports to evaluate whether this BUI has been restored.*

According to the MDEQ Office of Drinking Water and Municipal Assistance, Community Drinking Water program, neither the Whitehall nor Montague public water supply systems had any water quality violations in more than two years based on review of laboratory reports, chemical monitoring data, and annual water quality reports for 2011 and 2012. The water quality reports, also referred to as Consumer Confidence Reports, provide annual water quality monitoring results based on all state and federal water quality standards, and are sent to citizens served by the facilities. Results from their respective monitoring are included as Attachments 5 and 6, and annual water quality reports are included as Attachments 7 and 8.

Based on the review of all available chemical monitoring data, water quality reports, and communication with technical staff, both drinking water supplies meet all federal and state drinking water standards for water quality during the relevant time period. Each drinking water supply employs conventional treatment methods (i.e., filtration and disinfection) to treat source water. Treatment has not exceeded standard methods, nor have there been any incidences of municipal well closures during the last two years. Both Whitehall and Montague drinking water sources are groundwater from municipal well fields.

Portions of the White Lake area continue to utilize private drinking water wells. Private drinking water supplies are outside the scope of the AOC Program. Potential issues related to private drinking water sources are addressed by the MDEQ Office of Drinking Water and Municipal Assistance, the MDEQ Remediation and Redevelopment Division, the MDEQ Office of Waste Management and Radiological Protection and the Muskegon County Health Department.

Recommendation

Based upon review of the data and technical input of staff from the MDEQ Office of the Great Lakes, the MDEQ Office of Drinking Water and Municipal Assistance, the MDEQ Remediation and Redevelopment Division, the Muskegon County Health Department, and the EPA's Water Division, removal of the Restrictions on Drinking Water Consumption or Taste and Odor Problems BUI in the White Lake AOC is recommended. The White Lake PAC discussed this issue at length during a number of monthly meetings. Members voted on December 5th to support removal of the BUI. The PAC submitted a letter dated December 19, 2013 expressing support for this action. A public meeting was held at the White Lake Community Library on January 22, 2014 to discuss the issue and inform the community. This proposed action was public noticed for 30 days via the MDEQ Calendar and postings to the Mich-RAP listserv, the White Lake PAC email list and the White Lake PAC's newsletter. No written comments were received.

Attachments

1) Restrictions on Drinking Water Consumption BUI excerpt from the Guidance for Delisting Michigan's Great Lakes Areas of Concern.

2) Proposed White Lake Public Advisory Council local criteria for removal of the Restrictions on Drinking Water Consumption BUI.

3) May 28, 2009 MDEQ letter to Mr. Norm Ullman responding to the PAC's request for approval of proposed criteria, from William Creal, Water Bureau Chief.

4) Assessment of Drinking Water Consumption or Taste and Odor Problems in the White Lake Area of Concern, written by the Muskegon Conservation District (without attachments).

5) City of Whitehall drinking water monitoring laboratory reports.

6) City of Montague drinking water monitoring laboratory reports.

7) City of Whitehall 2011 and 2012 Annual Water Quality Reports.

8) City of Montague 2011 and 2012 Annual Water Quality Reports.

9) Office of Waste Management and Radiological Protection internal memo.

Prepared by: John Riley
Great Lakes Management Unit
Office of the Great Lakes
Michigan Department of Environmental Quality
February 2014

Restrictions on Drinking Water Consumption or Taste and Odor Problems

Significance in Michigan's Areas of Concern

Five of Michigan's AOCs are listed as impaired due to past restrictions on drinking water, including: White Lake, Saginaw River/Bay, Muskegon Lake, St. Clair River, and Detroit River.

For most AOCs, this BUI was designated due to the need for additional treatment of drinking water in order to meet human health standards and address taste or odor issues. In the St. Clair River, this BUI was originally designated due to closures of drinking water treatment plants to let plumes from chemical spills pass the intakes.

Michigan Restoration Criteria and Assessment

This BUI will be considered restored when monitoring data for 2 years indicates that public water supplies:

- meet the current and most stringent human health standards, objectives, or guidelines (at the point of distribution into the water system) for levels of disease-causing organisms, hazardous or toxic chemicals, or radioactive substances; and

- treatment needed to make raw water potable and palatable does not exceed standard methods in those supplies. In the event a public drinking water intake must be closed due to contamination of surface water, standard treatment methods are considered to have been exceeded.

Rationale

Practical Application in Michigan

For the purposes of restoring this impairment, standard treatment methods are those identified in the federal and Michigan Safe Drinking Water Acts. Standard treatment includes filtration, disinfection, coagulation/flocculation, sedimentation, iron removal (if necessary), well field management, new well location, and softening. Standards related to odor and taste are secondary Maximum Contaminant Levels, and are not adopted by Michigan law. Taste and odor concerns are typically tracked by citizen complaints and are investigated at the local level by county health departments.

1991 IJC General Delisting Guideline

For treated drinking water supplies: 1) when densities of disease-causing organisms or concentrations of hazardous or toxic chemicals or radioactive substances do not exceed human health objectives, standards or guidelines; 2) when taste and odor problems are absent; and 3) when treatment needed to make raw water suitable for drinking does not exceed the standard treatment used in comparable portions of the Great Lakes which are not degraded (i.e., settling, coagulation, disinfection).

The IJC general delisting guideline for the BUI is presented here for reference. The Practical Application in Michigan subsection above describes application of specific criteria for restoration based on existing Michigan programs and authorities

State of Michigan Programs/Authorities for Evaluating Restoration

The U.S. EPA establishes and enforces drinking water standards nationwide. The state adopts and enforces those standards under the Michigan Safe Drinking Water Act (Act 399, 1976 as amended). The MDEQ carries out the community public water supply program directly, and contracts with local health departments to issue construction permits, oversee the monitoring, and carry out enforcement for noncommunity public water systems.

Under the Michigan Safe Drinking Water Act, public water suppliers in Michigan must submit regular reports of treated water quality to the MDEQ. The MDEQ will use these reports to evaluate whether this BUI has been restored.

Some local AOC communities also have programs for monitoring water quality and related parameters which may be applicable to this BUI. If an AOC chooses to use local monitoring data for the assessment of BUI restoration, the data can be submitted to the MDEQ for review. If the MDEQ determines that the data appropriately addresses the restoration criteria and meets quality assurance/quality control requirements, they may be used to demonstrate restoration success.

[From: Guidance for Delisting Michigan's Great Lakes Areas of Concern, MI/DEQ/WB-06/001]

ATTACHMENT 2

Proposed White Lake Public Advisory Council local criteria for removal of the Restrictions on Drinking Water Consumption BUI

Target for Delisting the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment

Introduction

The White Lake Area of Concern has a history of serious groundwater problems associated with the improper disposal of hazardous chemicals at Resource Conservation Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) sites. Public surface water supplies of drinking water are not available and consequently, the integrity and protection of groundwater resources are important to insure the availability of potable water in the AOC.

Available Guidance

The Michigan Department of Environmental Quality has established the following restoration criteria for the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment:

> "This BUI will be considered restored when monitoring data for 2 years indicate:
> • public water supplies meet the current and most stringent human health standards, objectives, or guidelines (at the point of distribution into the water system) for levels of disease-causing organisms, hazardous or toxic chemicals, or radioactive substances; and
> • treatment needed to make raw water potable and palatable does not exceed standard treatment methods."

Delisting Target

Currently, all public drinking water supplies in the White Lake area utilize groundwater resources. Because of the importance of groundwater as the only potable water source currently available in the White Lake AOC, the history of severe groundwater contamination, and the presence of large areas of contaminated groundwater that are undergoing remediation and further delineation, the White Lake Public Advisory Council has voted to adopt a target for delisting the Restrictions on Drinking Water Consumption BUI that is more restrictive than the State of Michigan criteria and includes the protection of critical groundwater resources. The proposed delisting target is:

This BUI will be considered restored when monitoring data for 2 consecutive years indicates:

1. All public and private drinking water supplies contaminated due to Resource Conservation Recovery Act and Comprehensive Environmental Response Compensation and Liability Act sites meet the MDEQ criteria for potable water based on annual monitoring. Public water supplies include associated wellhead protection areas.
   - DuPont
   - Muskegon / Koch Chemical
   - Hooker / Occidental Chemical
   - Whitehall Well #3

2. Sites outside of RCRA and CERCLA areas, with known groundwater contamination such as Part 201 sites, will be documented and remediation / monitoring efforts recorded. If site impacts groundwater and contamination exceeds MDEQ criteria for drinking water, an alternate supply source (public or private) of potable water must be available to the impacted landowners. In addition, contamination plumes must be delineated, migration pathways documented, and an

approved MDEQ/EPA remediation plan established for each site. Effectiveness of each remediation plant will be confirmed by annual monitoring. The WLPAC identifies the following sites where contaminated groundwater may pose a threat to drinking water:

- White Lake Landfill / Shellcast
- Anderson Road Plume (Tech Cast)
- Howmet
- Silver Creek / Whitehall Wastewater

Functional Equivalence

The proposed targets for the White Lake AOC are functionally equivalent and exceed the MDEQ restoration criteria.

Programs for Monitoring and Assessing Restoration Success

Groundwater monitoring programs currently are active at the former DuPont, Muskegon / Koch Chemical, and Hooker / Occidental Chemical sites. The White Lake PAC will review the annual monitoring reports to determine when remediation at a particular site no longer presents a threat to drinking water supplies. Monitoring data with an EPA/MDEQ approved Quality Assurance Project Plans will be used to determine compliance with this BUI. At all other sites the PAC will document remediation / monitoring efforts, record delineated plumes and associated migration pathways, and confirm sites have an effective MDEQ/EPA remediation plan established that provides potable water to impacted landowners. A sub group of the PAC will review the monitoring data and submit annual reports. Funding for the data review and preparation of the annual report will be by submitting grant requests to the MDEQ, EPA, and/or local funding agencies.

After two successive years of monitoring data meet the above targets for the WLPAC will submit a report and request for formal delisting of the Restrictions on Drinking Water Consumption or Taste and Odor Problems BUI to the MDEQ. The report will include monitoring and quality assurance data demonstrating that the delisting targets were achieved.

ATTACHMENT 3

MDEQ letter responding to the PAC's request for approval of proposed criteria

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

May 28, 2009

Mr. Norm Ullman
White Lake Public Advisory Council
940 North Van Eyck Street
Muskegon, Michigan 49442

Dear Mr. Ullman:

This letter partially approves and otherwise addresses restoration criteria for beneficial use impairments (BUI) in the White Lake Area of Concern (AOC) submitted by the White Lake Public Advisory Council (PAC) to the Department of Environmental Quality (DEQ) on December 22, 2008. The White Lake PAC and the DEQ have been working diligently over the past year to balance the need to develop these criteria consistent with the overall scope of the AOC program and community interest in achieving a standard of environmental restoration that meets local needs. This letter approves local criteria that are functionally equivalent to the DEQ's criteria in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern* (Guidance); partially approves criteria developed for the Fish and Wildlife BUIs; and acknowledges, but does not approve, local criteria developed for the Restrictions on Drinking Water Consumption or Taste and Odor BUI.

Approval of Local Criteria Functionally Equivalent to the DEQ's Statewide Criteria

The Guidance acknowledges that a PAC may develop local criteria that the chief of the DEQ, Water Bureau (WB), can approve if the PAC demonstrates that the criteria are functionally equivalent to those outlined in the Guidance. To be functionally equivalent, the local criteria must meet or exceed the statewide criteria and not exceed the scope of the AOC program. Approval does not bind the state to any monitoring beyond that needed to assess BUI status against the criteria outlined in the Guidance or commit any state or federal program to specific remedial actions. The PAC is responsible for more frequent monitoring, monitoring of different parameters, and other assessment activities beyond those that are required for the statewide criteria. The PAC is also responsible for obtaining the resources necessary for additional assessment, although the DEQ may assist as resources allow, and reporting the results to the DEQ. The DEQ is not able to commit technical support or funding for projects to restore BUIs to levels that exceed the Guidance due to the extensive work that remains in Michigan's 14 AOCs.

The White Lake PAC has demonstrated that the local criteria for the Degradation of Benthos and the Eutrophication and Undesirable Algae BUIs are functionally equivalent to the DEQ's restoration criteria in the Guidance and are within the scope of the overall AOC program. Additionally, the local criteria submitted for the Restrictions on Fish Consumption and the Degradation of Aesthetics BUIs use the same approach as the statewide criteria, and the DEQ will use the additional material submitted for those two BUIs as reference and guidance for removal of the BUIs. The White Lake PAC has also accepted the statewide criteria for the Restrictions on Dredging BUI. Therefore, the DEQ approves these five criteria.

Local Criteria for the Loss of Fish and Wildlife Habitat and the Degradation of Fish and Wildlife Populations BUIs

The Guidance describes a process to develop local criteria for the Loss of Fish and Wildlife Habitat and the Degradation of Fish and Wildlife Populations BUIs. The local criteria submitted by the White Lake PAC for these BUIs include all components required by the Guidance. The local criteria demonstrate the significant progress made to address the fish and wildlife impairments and details work that must be completed for removal of these two BUIs.

The DEQ approves the local criteria for these two BUIs with the exception of criteria related to aquatic invasive species. We acknowledge that controlling aquatic invasive species is an important and worthwhile environmental goal. However, a fundamental principle of the AOC program is that a BUI can be removed despite impacts caused by sources originating from outside of the AOC watershed. The impact of aquatic invasive species is a Great Lakes-wide issue, with many lakes and wetlands in Michigan severely impacted. As such, control of aquatic invasive species is outside the scope of the AOC program and should not be part of the locally developed habitat or population restoration criteria. We do encourage the White Lake PAC to pursue efforts to control aquatic invasive species beyond the AOC program.

The DEQ's approval is based on ensuring inclusion of all components outlined in the Guidance and does not bind the state or federal programs to any new monitoring activities. Additionally, since the AOC program is nonregulatory and has no independent authority to require actions, locally developed criteria do not bind any local, state, or federal program to specific remedial actions or protection actions.

Local Criteria for the Restrictions on Drinking Water Consumption or Taste and Odor BUI

The White Lake PAC and the DEQ have worked diligently for the past year to negotiate local criteria for the Restrictions on Drinking Water Consumption or Taste and Odor BUI that balance community standards for environmental restoration with the DEQ's concerns regarding the overall scope of the AOC program. Unfortunately, we have been unable to agree on criteria that achieve that balance despite these efforts.

Portions of the proposed local criteria for this BUI invoke other regulatory programs in a manner that is not necessarily consistent with their legal authority. While the DEQ does have programs in place to address contaminated groundwater, it is not an issue the AOC program was intended to address under Annex 2 of the 1987 Amendments to the Great Lakes Water Quality Agreement except in situations where it vents to surface waters. Annex 16 of the Agreement is devoted to contaminated groundwater.

Historical records document a long-standing disagreement between the White Lake PAC and the agencies administering the AOC program over whether groundwater contamination that does not affect White Lake must be addressed as part of this BUI. There is considerable documentation of the White Lake PAC's interest in remediating contaminated groundwater that could serve as a source of drinking water. The DEQ recognizes that contaminated groundwater is of major concern to the community and is likely to remain a long-term problem in the area. However, clean drinking water is available and corrective actions to protect White Lake are in place.

Therefore, the DEQ approves only that portion of the local criteria for this BUI taken from the statewide criteria.

Despite this limited approval, the AOC program continues to support local priorities and goals to the extent possible and encourages the White Lake PAC to work with state and federal programs responsible for groundwater remediation to address contaminated groundwater issues of local concern.

Additionally, although the DEQ generally plans to move forward with removal of BUIs as they meet established criteria, we do not intend to remove the Drinking Water Consumption or Taste and Odor BUI without consultation with the White Lake PAC.

We appreciate the extra time and effort on the part of the White Lake PAC to develop local criteria and look forward to working with you to support remedial actions and restoration of BUIs in the White Lake AOC. Further, we recognize the interest of the PAC to remain effective in addressing environmental concerns in your community beyond those directly related to the AOC. Please consider how the DEQ can assist with this transition as we move forward with removing BUIs leading toward the final delisting of the White Lake AOC.

If you need further information or assistance, please contact Ms. Julie Sims, Aquatic Nuisance Control and Remedial Action Unit, Surface Water Assessment Section, WB, at 517-373-2732, or you may contact me.

Sincerely,

William Creal

William Creal, Chief
Water Bureau
517-335-4176

cc: Ms. Vicki Thomas, U.S. Environmental Protection Agency
Mr. John Perrecone, U.S. Environmental Protection Agency
Mr. Frank J. Ruswick, Jr., Senior Policy Advisor, DEQ
Mr. James K. Cleland, DEQ
Ms. Diana Klemans, DEQ
Mr. Richard Hobrla, DEQ
Ms. Julie Sims, DEQ

ATTACHMENT 4

Assessment of Drinking Water Consumption or Taste and Odor Problems in the White Lake Area of Concern, written by the Muskegon Conservation District (without attachments)

ASSESSMENT OF DRINKING WATER CONSUMPTION OR TASTE AND ODOR PROBLEMS IN THE WHITE LAKE AREA OF CONCERN

Issue

The Michigan Department of Environmental Quality (MDEQ), United States Environmental Protection Agency (USEPA) and the White Lake Public Advisory Council (WLPAC) recommend removing the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment (BUI) from the White Lake Area of Concern (AOC), based on the review of relevant documentation pursuant to the process and criteria set forth in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern* (MDEQ 2008) and in the WLPAC's more restrictive criteria.

Introduction/Background

White Lake (Muskegon County, Michigan) is a 2,571 acre drowned river mouth lake located in western Michigan. The International Joint Commission (IJC) listed the lake as an Area of Concern (AOC) in 1987 due to severe environmental impairments related to the historic discharge of municipal and industrial wastes. This history created serious groundwater problems associated with the improper disposal of hazardous chemicals at Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) sites. Public surface water supplies of drinking water were not available and consequently, the integrity and protection of groundwater resources are important to insure the availability of potable water in the AOC. The Beneficial Use Impairment (BUI), Drinking Water Consumption or Taste and Odor Problems, was listed due to the need for additional treatment of drinking water in order to meet human health standards and address taste or odor issues.

Removal Criteria

For the purposes of restoring this impairment, looking at the practical application in Michigan, standard treatment methods are those identified in the federal and Michigan Safe Drinking Water Acts. Standard treatment includes filtration, disinfection, coagulation/flocculation, sedimentation, iron removal (if necessary), well field management, new well location, and

softening. Standards related to odor and taste are secondary Maximum Contaminant Levels, and are not adopted by Michigan law. Taste and odor concerns are typically tracked by citizen complaints and are investigated at the local level by county health departments.

The 1991 IJC general delisting guideline for treated drinking water supplies occurs: 1) when densities of disease-causing organisms or concentrations of hazardous or toxic chemicals or radioactive substances do not exceed human health objectives, standards or guidelines; 2) when taste and odor problems are absent; and 3) when treatment needed to make raw water suitable for drinking does not exceed the standard treatment used in comparable portions of the Great Lakes which are not degraded (i.e., settling, coagulation, disinfection), then delisting of the impairment may occur.

In consideration of the improvements to drinking water issues in the area and the remediation/restoration of Tannery Bay and Hooker Chemical, the White Lake Public Advisory Council (WLPAC) voted in 2006 to establish a target for delisting the Restrictions on Drinking Water Consumption BUI (WLPAC 2006) that was more restrictive than the State of Michigan criteria. The target created by MDEQ is summarized below:

> The **Restrictions on Drinking Water Consumption BUI** will be considered restored by MDEQ when monitoring data for 2 (two) consecutive years indicates:
>
> 1) Public surface water supplies meet the current and most stringent human health standards, objectives, or guidelines (at the point of distribution into the water system) for levels of disease-causing organisms, hazardous or toxic chemicals, or radioactive substances; and
> 2) Treatment needed to make raw water potable and palatable does not exceed standard treatment methods

Due to the importance of groundwater as the only potable water source currently available in the White Lake AOC, the history of severe groundwater contamination, and the presence of large areas of contaminated groundwater that are undergoing remediation and further delineation, the WLPAC voted to adopt a target for delisting the Restrictions on Drinking Water Consumption BUI that was more restrictive than the State of Michigan criteria. The proposed target from WLPAC is summarized below and used for the consideration of the possible removal of this BUI even though the State did not approve the WLPACs criteria:

The **Restrictions on Drinking Water Consumption BUI** will be considered restored by WLPAC when the following three conditions are met:

1) State guidance criteria is met

2) Contamination plumes from the four sites* listed below must be delineated, migration pathways documented, an approved MDEQ/EPA remediation plan established for each site, and monitoring data for a five year period (commencing 2009) must indicate a downward trend in contaminant levels. In addition, all public and private drinking water supplies contaminated at these sites either meet the MDEQ criteria for potable water or an alternate supply source (public or private) of potable water is available to impacted users. Public water supplies include associated wellhead protection areas. The WLPAC identifies the following sites where contaminated groundwater may pose a threat to drinking water:

    - E.I. DuPont deNemours
    - Muskegon Chemical/Koch Chemical
    - Hooker Chemical/Occidental Chemical
    - White Lake Tannery/Genesco

3) Contamination plumes from the five sites** listed below will be documented and evaluated by the WLPAC to ensure that the current status demonstrates that sites are no longer impairing drinking water consumption. Information that will be used to determine status and impairment may include any or all of the following: delineation of groundwater contamination, delineation of migration pathways, approval of MDEQ/EPA remediation plan, and monitoring data indicate groundwater contamination has been or are being addressed. In addition, the WLPAC will confirm that all public and private drinking water supplies contaminated at the sites either meet the MDEQ criteria for potable water or an alternate water supply source (public or private) of potable water is available to impacted users. Public water supplies include associated wellhead protection areas. The WLPAC identifies the following sites where contaminated groundwater may pose a threat to drinking water:

    - Whitehall Municipal Well #3 site (Funnel Field)
    - White Lake Landfill/Shellcast Corp.

- Anderson Road Plume (Tech Cast Inc.)
- Alcoa Howmet
- Silver Creek/Whitehall Wastewater Facility

* *Sites with remediation plans that are modified during the 5-year period will be evaluated by the WLPAC to determine if the plans are sufficient to meet delisting criteria for the BUI.*

** *If it is revealed that additional groundwater contamination sites are identified as impacting drinking water the WLPAC will add them to the list, and use criteria as delineated in #3 above for delisting.*

Process

The review of the Drinking Water Consumption or Taste and Odor Problems BUI was undertaken by many individuals working toward a common purpose, which is to provide a useful tool for guidance in delisting Michigan's AOCs with the creation of certain criteria to establish if the BUI could be removed. Technical staff in departments such as the MDEQ and USEPA, and Statewide Public Advisory Council for Michigan's AOC program like the WLPAC, gave freely of their time and provided a critical public perspective on the 'Guidance for Delisting Michigan's Great Lakes Areas of Concern' document. The departments and the council's purpose was to determine whether restrictions on drinking water consumption, due to ground water contamination, currently exist in the 5 Michigan AOCs listed as having this BUI.

Analysis

The Howmet site (Attachments A_1 – A_2; Figures A_3) was approved for shutdown of the active remedial activities and the site was transferred to a monitoring phase by the MDEQ. Even though this site now meets the WLPAC criteria, continued monitoring is recommended on the site since two data sample points, one from within the Howmet property and one just outside the property, has not been meeting the MDEQ drinking water criteria. The people surrounding Mill Pond, just outside of the Howmet property, have private wells that have not been impacted. Monitoring wells 12, 14, 15, 16, 17, and 18 are used to check for contamination around these private wells. Monitoring well 12 had a decrease of tetrachloroethene (also known as perchloroethene, or PCE) (6.8 ug/L to ≤ 1 ug/L, with 5 ug/L being the MDEQ drinking water criteria (DWC)) from August 2009 to April 2010 and an increase of trichloroethylene (TCE) (≤ 1 ug/L to 4.2 ug/L, with 5 ug/L being the MDEQ DWC) between August 2009 and April 2010.

Monitoring well 15 had a decrease of cis-1,2-dichloroethene (cis-1,2-DCE) (5.4 ug/L to ≤ 1 ug/L, with 70 ug/L being the MDEQ DWC) from August 2009 to April 2010. Monitoring well 16 had an increase of chloroform (≤ 1 ug/L to 5.2 ug/L, with 80 ug/L being the MDEQ DWC) from August 2009 to April 2010. There were no detected volatile organic compounds (VOCs) for wells 14, 17, and 18. The following monitoring well, 37, is located within the Howmet Property. Monitoring well 37 has shown to have an increasing level of TCE (3.6 ug/L to 7.7 ug/L) and cis-1,2-DCE (9.8 ug/L to 76 ug/L), but PCE has had no change (6.2 ug/L) between August 2009 and April 2010. Monitoring well 38, which is just outside of the property, has shown to have an increasing level of cis-1,2-DCE (160 ug/L to 170 ug/L) and a decreasing level of vinyl chloride (4.9 ug/L to 3.8 ug/L, with 2 ug/L being the MDEQ DWC) between the years 2009 and 2010. Overall, these numbers indicate that the concentrations are either showing an overall decrease and/or below MDEQ DWC with the exception of wells 37 and 38, which well 38 may be affected by the White Lake Congregational Church's irrigation well, and the site has a monitoring plan in place. Private ground wells and other wells in the vicinity have not shown levels above MDEQ DWC, therefore indicating that the drinking water is no longer being impaired from the Howmet Property.

The Whitehall Leather / Tannery Bay site (Attachments B_1 – B_7; Figures B_8) is meeting the criteria set by the WLPAC, and MDEQ has approved a post-closure plan, including hydrogeological monitoring. The VOC constituents of concern were detected in several well locations, but had no exceedances to the mixing zone based groundwater surfacewater interface (GSI) criteria or final acute values (FAVs). VOCs at the site have remained steady or slightly decreased since the November 2010 sampling event and are significantly lower than concentrations of 10 to 15 years ago. All shallow wells near the sparge system were below Generic GSI criteria for chlorobenzene and dichlorobenzenes. With the removal of over 187,000 tons of contaminated materials, groundwater contamination has been drastically reduced. In regards to the Mercury levels at the site, it has shown to be steady and within the water quality standard variance, and it is not biologically available in the system according to the "Preliminary Investigation of the Extent and Effects of Sediment Contamination in White Lake Near the Whitehall Leather Tannery" document (December 1997).

Anderson Road / Tech Cast site (Attachments C_1 – C_5; Figure C_6) meets criteria of having sample data showing downward or stable trend, delineation of the groundwater plume, and showing compliance with the GSI criteria set by WLPAC, with exception to the ordinance. Each resident with a private well in the area was connected into the city water line. The site was also approved for partial closure by MDEQ because criteria from current Operational Memoranda, and information supplied by MDEQ ERD toxicologists, staff determined that ingestion of the contaminated groundwater was the only relevant exposure pathway at the site. Any

groundwater that is contaminated with perchloroethene (PCE) and trichloroethene (TCE) may have the potential to migrate to White Lake; however, maximum concentrations in groundwater have been below the mixing zone based GSI values. MDEQ requested the City of Montague to enact a groundwater use ordinance to restrict groundwater use from private wells for any purpose as a conservative measure and if the City does this, MDEQ will pursue closure of the site. As of right now the plume buffer map has been finalized, and the ordinance document has been completed and looked over by the MDEQ's Remediation and Redevelopment Division (RRD). They stated that the overall ordinance looks good but needs a few minor changes before a possible resolution to the current amendment for the restriction of groundwater use for any purpose can proceed. The RRD said that the next biggest hurdle would be the abandoning of the private wells that may exist in the restricted zone, which is usually done prior to passing of an ordinance so that the municipality is not left with a large enforcement issue to deal with. Mailers to owners of the properties within the restricted zone would need to occur in order to make a good faith effort in locating any private wells. After this, once the ordinance is passed, the site can be officially closed by MDEQ and be concluded as meeting WLPAC criteria.

White Lake Landfill and Shellcast sites (Attachments D_1 – D_7; Figures D_8 – D_{10}) are meeting criteria. White Lake Landfill provided permanent alternate water supply to residences whose wells were contaminated. White Lake Landfill was given approval for a post-closure plan and a post-closure hydrogeologic monitoring plan by the MDEQ. This approval is from the site being in compliance with GSI criteria and data results showing a downward or stable trend for all sites. Shellcast site had a Baseline Environmental Assessment (BEA) completed by Core Tech 2 when they started to use the site after Shellcast shutdown operations, which disclosed the presence of tetrachloroethene (PCE) in the groundwater. A Phase I Environmental Site Assessment was conducted on the Shellcast property that revealed no evidence of recognized environmental conditions with the exceptions of the identification of the site as a site of contamination, its historic use as an investment casting foundry with finishing operations, historic hazardous substance use and former underground storage tanks presented a recognized environmental condition, and the surrounding properties presented a recognized environmental condition as a result of the closed landfill that was reportedly contaminated, other prior solid waste business activities and a used car business and the fact that contamination at the landfill property may have co-mingled with that from the site. The Landfill well that is downgradient of Shellcast had sampling of 5 ug/l tetrachloroethene in 2012 and had 4.2 ug/l in 2013 (5.0 ug/l DWC), which is a good indicator that the Shellcast site is below the drinking water criteria.

Whitehall Wastewater Treatment Facility / Silver Creek site (Attachments E_1 – E_4; Figure E_5) is close to meeting the criteria set by WLPAC. Further spread of the contamination has been impeded by the installation of nine purge wells in the northeast plume. Filters have been added to the private wells to help reduce concentrations below MDEQ DWC. MDEQ requested

a comprehensive evaluation of the entire facility. If it is concluded that contaminants in the groundwater will not reach the residential drinking wells at concentrations greater than the DWC than MDEQ will approve reduced or discontinued monitoring of the site. WRD, RRD and the County are awaiting development of clean-up criteria for several pollutants associated with the site. As of now, no action plan has been sent to the MDEQ. The pollutants in question are said to have come from Koch Chemical originally and leaked through the clay lining of the County's wastewater lagoon into the groundwater, which then vented into Mill Pond and Silver Creek in the 1970s – 80s. The County is still operating their purge/interception well system under the 1980's consent agreement, which also required that the County install and maintain individual activated carbon treatment systems on each homeowner's well in the impacted area and perform regular monitoring of dozens of homes in the area for the pollutants of concern. MDEQ staff had been meeting monthly with the County as they moved toward requesting release from consent agreement and some degree of site closure. MDEQ is still awaiting the development of the closure criteria for the Koch Chemical pollutants by the state and the County is still in the closure study-planning phase.

Muskegon Chemical Company / KOCH (Attachments $F_1 - F_5$; Figures F_6) Tier I* data meets the WLPACs criteria since all COC (chemical of concern) concentrations are below compliance criteria for Tier I. The trend of COC concentrations that exceed Tier II** compliance criteria is decreasing, which meets the WLPAC criteria. This site is showing ongoing signs of natural attenuation with the decreasing COCs and the breakdown of COCs.

**Tier I groundwater cleanup goals specified in the RAP Amendment for Long-Term Groundwater Monitoring and Contingency Plan. This is achieved through groundwater extraction and treatment, air sparging, and natural attenuation.*

		Tier I Mixing Zone GSI		*Tier II Goal**
		Acute	*Chronic*	
Volatile Organics	***Units***			
Chlorobenzene	ug/L	850	750	100
1,2-Dichloroethane	ug/L	15,000	--	5
cis- 1,2-Dichloroethene	ug/L	--	--	70
trans- 1,2-Dichloroethene	ug/L	--	--	100
Tetrachloroethene	ug/L	710	--	5
Trichloroethene	ug/L	3,500	3,200	5
Vinyl Chloride	ug/L	--	--	2
Semivolatile Organics	***Units***			
Bis(2-chloroethoxy)ethane [TGDC]	ug/L	26,000	23,000	5
Bis(2-chloroethyl)Ether [Chlorex]	ug/L	18,000	770	2

** Part 201 drinking water criteria, MDEQ Operational Memorandum No. 1, January 23, 2006*

***Tier II groundwater cleanup goals are designed to be met through natural attenuation for the relatively low remaining concentrations of chemicals of concern that exceed Tier II criteria (see above).*

Occidental / Hooker (Attachments $G_1 - G_3$; Figure G_4) met the criteria with its alternative remedial strategy, along with the required corrective measures and voluntary actions, that effectively provide layers of protection that prevent exposure to human and ecological receptors, and generally contain the source areas of the Occidental property, minimizes their risk, and prevents any impacts on the White Lake environment. Occidental stated that if a technology is found to be potentially capable of treating the source areas and clean up groundwater, they will submit a work plan to EPA for approval that describes the necessary work to evaluate and implement that technology in the source areas, if feasible. Data also shows that the contaminant plume is stable and controlled by the current purge well system at White Lake. EPA data that was collected in 2001 from groundwater at private wells just west of the site, along Old Channel Trail, confirmed that the site contaminants are not affecting any private wells. Residences also have water service agreements with Occidental and water is supplied by the Montague Public Water System.

DuPont (Attachments $H_1 - H_3$; Figures $H_4 - H_5$) as of right now cannot have a determination finalized for meeting WLPAC criteria. Recent investigations are still under review for the following sites by MDEQ: waste neoprene landfill, basin sludge area, Pierson Creek landfill, bury pit landfill, NPDES impoundments and corrosive treatment tanks, Northeast landfill, North landfill, CaF_2 basin, lime pile, and Mirror Lake. The site still needs a complete RAP.

Whitehall Well #3 / Funnel Field Well (Attachments $I_1 - I_3$; Figures I_4) has been permanently abandoned and accepted by EPA with no further action needed due to the findings of the remedial investigation indicating low levels of contamination in the wells, with no contaminant exceeding MDEQ DWC, which shows that this site meets WLPAC criteria.

In accordance with the Guidance document and the criteria set, the WLPAC reviewed the most recent data samples, Remedial Action Plans (RAP), closure documents, and other supporting documentation for the White Lake AOC that was provided by MDEQ and USEPA (please see attachments). Even though this information almost shows that the Removal of the Drinking Water Consumption or Taste and Odor Problems BUI for White Lake can be considered, the WLPAC voted unanimously to support the approval of the removal of this BUI, acknowledging that three sites still need work. From the three sites, the WLPAC requested acknowledgment of the outstanding issues by MDEQ. Anderson Road / Tech Cast site will need to have mailers sent

out by the WLPAC to landowners of the properties within the restricted zone to locate any private wells that may need to be abandoned. Once completed, the ordinance can be finalized by the WLPAC and passed by the City of Montague, allowing MDEQ to officially close the site and meet WLPAC criteria. Whitehall Wastewater Treatment Facility / Silver Creek site will need finalization of a Remedial Action Plan by the county of Muskegon to address the control of the contaminants at the site and set monitoring programs and protocols, to meet WLPAC criteria. DuPont site will need to complete a Remedial Action Plan, along with the completion of a satisfactory investigation of all suspected source locations for soil and groundwater contamination before it can meet WLPAC criteria. In all, the WLPAC agrees that removal criteria have been met, while still acknowledging the outstanding issues summarized above and/or in the WLPAC approval letter (attachment 1). The WLPAC also understands that there are a number of sites in the White Lake area that will need continued attention, which would include monitoring and oversight by the state and federal agencies and the local community for many years to come.

Recommendation

Upon review of the data gathered and technical input, removal of the Drinking Water Consumption or Taste and Odor Problems BUI in the White Lake AOC is recommended. The WLPAC concurred with the assessment results and this recommendation at a meeting held on December 5, 2013.

Prepared by: Chad Hipshier, Project Manager
Muskegon Conservation District
White Lake Public Advisory Council
December 17, 2013

Attachment 5

City of Whitehall drinking water monitoring laboratory reports

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

October 4, 2011

Mr. Scott Huebler, Owner
405 East Colby Street
Whitehall, Michigan 49461

WSSN: **07100**

Dear Mr. Huebler:

LEAD and COPPER MONITORING
for compliance with USEPA lead and copper regulations

RESULTS RECEIVED
Samples: 10 required/10 collected, for the Monitoring Period of: October 1, 2008 – September 30, 2011

Results	Lead		Copper	
Action levels	15	ppb	1300	ppb
90th percentile	**3**	**ppb**	**260**	**ppb**
Average	1.9	ppb	161	ppb
Maximum	10	ppb	440	ppb
Minimum	0	ppb	0	ppb
Action Level Exceed	**0**	**# of Samples (Sites)**	**0**	**# of Samples (Sites)**

Your results are satisfactory. Remember, the 90th percentile results, and the number of samples (sites) exceeding an Action Level, are required to be reported on future Consumer Confidence Reports. Please remember to use the same sites that have been used in past monitoring periods.

NEXT MONITORING PERIOD

Samples Required: Ten (10)

Monitoring Period: October 1, 2011 – September 30, 2014
Note: Monitoring must be completed during June, July, August, or September of 2014.

Report Results by: October 10, 2014
Note: We recommend collecting and reporting sampling results as early as possible to provide adequate time within the monitoring period if problems arise or if further monitoring is required.

If you have questions, I can be reached at 616-356-0240; boltj@michigan.gov; or Department of

Environmental Quality, Resource Management Division, Grand Rapids District Office, 350 Ottawa Avenue NW, Unit 10, Grand Rapids, Michigan 49503-2341.

Sincerely,

Jeni Bolt

Jeni Bolt, Environmental Quality Analyst
Field Operations Division

JB:KPW

cc: Mr. Brian Armstrong, Operator In Charge

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD95649

Official Laboratory Report

RECEIVED
AUG 17 2011

Chem file - right

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	3262 BENSTON,WHITEHALL	Source:	TYPE I
Collected By:	DAVID SILK	Site Code:	DIST TP107
Township/Well#/Section:	WHITEHALL/7/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	08/15/2011 13:22
Sample Point:	TAP	Date Received:	08/16/2011 13:03
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	5	08/16/2011	4		SM 4500-Cl E	7647-14-5
Fluoride	Not detected	08/16/2011	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	101	08/16/2011	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	08/16/2011	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	Not Detected	08/16/2011	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	08/16/2011	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	Not detected	08/16/2011	5		SM 3500 NaB	7440-23-5
Sulfate	13	08/16/2011	10		SM 4500 SO4E	14808-79-8

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr. Julia Pieper
Systems Mgmt. Unit Mgr. George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

DEQ

Sample Number
LD95645

Official Laboratory Report

RECEIVED
AUG 17 2011

Chem file - right

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	405 S WARNER,WHITEHALL	Source:	TYPE I
Collected By:	DAVID SILK	Site Code:	DISTRIBUTION TP106
Township/Well#/Section:	/6/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	08/15/2011 10:30
Sample Point:	TAP	Date Received:	08/16/2011 13:03
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	12	08/16/2011	4		SM 4500-Cl E	7647-14-5
Fluoride	Not detected	08/16/2011	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	188	08/16/2011	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	08/16/2011	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	1.2	08/16/2011	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	08/16/2011	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	7	08/16/2011	5		SM 3500 NaB	7440-23-5
Sulfate	19	08/16/2011	10		SM 4500 SO4E	14808-79-8

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

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Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD95646

Official Laboratory Report

Chem file - right

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

RECEIVED
AUG 17 2011

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1013 S PEACH,WHITEHALL	Source:	TYPE I
Collected By:	DAVID SILK	Site Code:	DIST TP108
Township/Well#/Section:	/8/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	08/15/2011 11:04
Sample Point:	TAP	Date Received:	08/16/2011 13:03
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	11	08/16/2011	4		SM 4500-Cl E	7647-14-5
Fluoride	0.11	08/16/2011	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	157	08/16/2011	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	08/16/2011	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	0.8	08/16/2011	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	08/16/2011	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	8	08/16/2011	5		SM 3500 NaB	7440-23-5
Sulfate	15	08/16/2011	10		SM 4500 SO4E	14808-79-8

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

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Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD95647

Official Laboratory Report

Chem file - right

RECEIVED
AUG 17 2011

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1220 E LEWIS,WHITEHALL	Source:	TYPE I
Collected By:	DAVID SILK	Site Code:	DIST TP102
Township/Well#/Section:	/2/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	08/15/2011 10:47
Sample Point:	TAP	Date Received:	08/16/2011 13:03
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	8	08/16/2011	4		SM 4500-Cl E	7647-14-5
Fluoride	Not detected	08/16/2011	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	161	08/16/2011	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	08/16/2011	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	0.7	08/16/2011	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	08/16/2011	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	Not detected	08/16/2011	5		SM 3500 NaB	7440-23-5
Sulfate	15	08/16/2011	10		SM 4500 SO4E	14808-79-8

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

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Sample Number
LD95648

Official Laboratory Report

Clean file - right

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

RECEIVED
AUG 17 2011

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1005 S PEACH,WHITEHALL	Source:	TYPE I
Collected By:	DAVID SILK	Site Code:	DIST TP105
Township/Well#/Section:	J/5/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	08/15/2011 13:00
Sample Point:	TAP	Date Received:	08/16/2011 13:03
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	23	08/16/2011	4		SM 4500-Cl E	7647-14-5
Fluoride	Not detected	08/16/2011	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	189	08/16/2011	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	08/16/2011	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	2.3	08/16/2011	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	08/16/2011	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	11	08/16/2011	5		SM 3500 NaB	7440-23-5
Sulfate	15	08/16/2011	10		SM 4500 SO4E	14808-79-8

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Systems Mgmt. Unit Mgr: George Krisztian

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Lansing, MI 48909
TEL: (517) 335-8184
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Sample Number
LD95650

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Volatile Organic Compounds						
Vinyl chloride	Not Detected	08/18/2011	0.0004	0.002	EPA 524.2	75-01-4

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DB

Sample Number
LD95650

Official Laboratory Report

Chem file - right

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1013 S PEACH,WHITEHALL	Source:	TYPE I
Collected By:	DAVID SILK	Site Code:	DIST TP108
Township/Well#/Section:	/8/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	08/15/2011 11:10
Sample Point:	TAP	Date Received:	08/16/2011 13:04
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Volatile Organic Compounds						
1,1 Dichloroethane	Not Detected	08/18/2011	0.0005		EPA 524.2	75-34-3
1,1 Dichloroethylene	Not Detected	08/18/2011	0.0005	0.007	EPA 524.2	75-35-4
1,1 Dichloropropene	Not Detected	08/18/2011	0.0005		EPA 524.2	563-58-6
1,1,1 Trichloroethane	Not Detected	08/18/2011	0.0005	0.2	EPA 524.2	71-55-6
1,1,1,2 Tetrachloroethane	Not Detected	08/18/2011	0.0005		EPA 524.2	630-20-6
1,1,2 Trichloroethane	Not Detected	08/18/2011	0.0005	0.005	EPA 524.2	79-00-5
1,1,2,2 Tetrachloroethane	Not Detected	08/18/2011	0.0005		EPA 524.2	79-34-5
1,2 Dichlorobenzene	Not Detected	08/18/2011	0.0005	0.6	EPA 524.2	95-50-1
1,2 Dichloroethane	Not Detected	08/18/2011	0.0005	0.005	EPA 524.2	107-06-2
1,2 Dichloropropane	Not Detected	08/18/2011	0.0005	0.005	EPA 524.2	78-87-5
1,2,3 Trichlorobenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	87-61-6
1,2,3 Trichloropropane	Not Detected	08/18/2011	0.0005		EPA 524.2	96-18-4
1,2,4 Trichlorobenzene	Not Detected	08/18/2011	0.0005	0.07	EPA 524.2	120-82-1
1,2,4 Trimethylbenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	95-63-6
1,3 Dichlorobenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	541-73-1
1,3 Dichloropropane	Not Detected	08/18/2011	0.0005		EPA 524.2	142-28-9
1,3,5 Trimethylbenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	108-67-8
1,4 Dichlorobenzene	Not Detected	08/18/2011	0.0005	0.075	EPA 524.2	106-46-7
2,2 Dichloropropane	Not Detected	08/18/2011	0.0005		EPA 524.2	594-20-7
Benzene	Not Detected	08/18/2011	0.0005	0.005	EPA 524.2	71-43-2
Bromobenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	108-86-1
Bromochloromethane	Not Detected	08/18/2011	0.0005		EPA 524.2	74-97-5
Bromodichloromethane	Not Detected	08/18/2011	0.0005	0.080	EPA 524.2	75-27-4
Bromoform	Not Detected	08/18/2011	0.0005	0.080	EPA 524.2	75-25-2

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Laboratory Contacts
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Systems Mgmt. Unit Mgr: George Krisztian

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Sample Number
LD95650

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Volatile Organic Compounds						
Bromomethane	Not Detected	08/18/2011	0.001		EPA 524.2	74-83-9
Carbon tetrachloride	Not Detected	08/18/2011	0.0005	0.005	EPA 524.2	56-23-5
Chlorobenzene	Not Detected	08/18/2011	0.0005	0.1	EPA 524.2	108-90-7
Chlorodibromomethane	Not Detected	08/18/2011	0.0005	0.080	EPA 524.2	124-48-1
Chloroethane	Not Detected	08/18/2011	0.0005		EPA 524.2	75-00-3
Chloroform	Not Detected	08/18/2011	0.0005	0.080	EPA 524.2	67-66-3
Chloromethane	Not Detected	08/18/2011	0.0005		EPA 524.2	74-87-3
cis-1,2 Dichloroethylene	Not Detected	08/18/2011	0.0005	0.07	EPA 524.2	156-59-2
cis-1,3 Dichloropropene	Not Detected	08/18/2011	0.0005		EPA 524.2	10061-01-5
Dibromomethane	Not Detected	08/18/2011	0.0005		EPA 524.2	74-95-3
Dichlorodifluoromethane	Not Detected	08/18/2011	0.001		EPA 524.2	75-71-8
Dichloromethane	Not Detected	08/18/2011	0.0006	0.005	EPA 524.2	75-09-2
Ethylbenzene	Not Detected	08/18/2011	0.0005	0.7	EPA 524.2	100-41-4
Fluorotrichloromethane	Not Detected	08/18/2011	0.001		EPA 524.2	75-69-4
Hexachlorobutadiene	Not Detected	08/18/2011	0.0005		EPA 524.2	87-68-3
Isopropylbenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	98-82-8
m & p-Xylene	Not Detected	08/18/2011	0.0005	10	EPA 524.2	XYLMP-00-C
Methyl ethyl ketone	Not Detected	08/18/2011	0.005		EPA 524.2	78-93-3
Methyl isobutyl ketone	Not Detected	08/18/2011	0.005		EPA 524.2	108-10-1
Methyl-tert-butyl ether (MTBE)	Not Detected	08/18/2011	0.001		EPA 524.2	1634-04-4
Naphthalene	Not Detected	08/18/2011	0.0005		EPA 524.2	91-20-3
n-Butylbenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	104-51-8
Nitrobenzene	Not Detected	08/18/2011	0.01		EPA 524.2	98-95-3
n-Propylbenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	103-65-1
o-Chlorotoluene	Not Detected	08/18/2011	0.0005		EPA 524.2	95-49-8
o-Xylene	Not Detected	08/18/2011	0.0005	10	EPA 524.2	95-47-6
p-Chlorotoluene	Not Detected	08/18/2011	0.0005		EPA 524.2	106-43-4
p-Isopropyltoluene	Not Detected	08/18/2011	0.0005		EPA 524.2	99-87-6
sec-Butylbenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	135-98-8
Styrene	Not Detected	08/18/2011	0.0005	0.1	EPA 524.2	100-42-5
tert-Butylbenzene	Not Detected	08/18/2011	0.0005		EPA 524.2	98-06-6
Tetrachloroethylene	Not Detected	08/18/2011	0.0005	0.005	EPA 524.2	127-18-4
Tetrahydrofuran	Not Detected	08/18/2011	0.005		EPA 524.2	109-99-9
Toluene	Not Detected	08/18/2011	0.0005	1	EPA 524.2	108-88-3
Total Trihalomethanes	Not Detected	08/18/2011	NA	0.080	EPA 524.2	TTHM-00-C
Total Xylenes	Not Detected	08/18/2011	NA	10	EPA 524.2	1330-20-7
trans-1,2 Dichloroethylene	Not Detected	08/18/2011	0.0005	0.1	EPA 524.2	156-60-5
trans-1,3 Dichloropropene	Not Detected	08/18/2011	0.0005		EPA 524.2	10061-02-6
Trichloroethylene	Not Detected	08/18/2011	0.0005	0.005	EPA 524.2	79-01-6

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Laboratory Contacts
Drinking Water Unit Mgr. Julia Pieper
Systems Mgmt. Unit Mgr. George Krisztian

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USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD95654

Official Laboratory Report

Chem file - right

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1013 S PEACH,WHITEHALL	Source:	TYPE I
Collected By:	DAVID SILK	Site Code:	DIST TP108
Township/Well#/Section:	/8/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	08/15/2011 11:19
Sample Point:	TAP	Date Received:	08/16/2011 13:05
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Antimony	Not detected	08/26/2011	0.0006	0.006	EPA 200.8	7440-36-0
Arsenic	Not detected	08/26/2011	0.002	0.010	EPA 200.8	7440-38-2
Barium	0.04	08/26/2011	0.01	2	EPA 200.8	7440-39-3
Beryllium	Not detected	08/26/2011	0.0004	0.004	EPA 200.8	7440-41-7
Cadmium	Not detected	08/26/2011	0.0003	0.005	EPA 200.8	7440-43-9
Chromium	Not detected	08/26/2011	0.01	0.1	EPA 200.8	7440-47-3
Lead	Not detected	08/26/2011	0.001	0.015	EPA 200.8	7439-92-1
Mercury	Not detected	08/26/2011	0.0001	0.002	EPA 200.8	7439-97-6
Nickel	Not detected	08/26/2011	0.01	0.1	EPA 200.8	7440-02-0
Selenium	Not detected	08/26/2011	0.001	0.05	EPA 200.8	7782-49-2
Thallium	Not detected	08/26/2011	0.0002	0.002	EPA 200.8	7440-28-0

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MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

Michigan Department of Environmental Quality

Replicate Laboratory Report for Lansing Drinking Water Laboratory

Chem file - right

Owner/Location Information:

CITY OF WHITEHALL
1013 S PEACH
WHITEHALL MI 49461

Sample Number: LLD95652

Sample/Collection Information:

WSSN: 07100
County: Muskegon
Township:
Section:
Well #: 8
Collection Date: 8/15/2011 11:40:00 AM
Arrival Date: 8/16/2011 1:04:42 PM

Site Code: DIST TP108
Water Source: Public Community Water Supply
Sample Reason: Routine Monitoring
Sample Point: Treated Public Distribution System
Point Description: TAP
Collector: Public Water Supply Operator
Collected By: DAVID SILK

CasNo	Analyte	Result	Detect	Units	Method
93-76-5	2,4,5-T	ND	0.002	mg/L	EPA 515.4
93-72-1	2,4,5-TP (SILVEX)	ND	0.0003	mg/L	EPA 515.4
94-75-7	2,4-D	ND	0.002	mg/L	EPA 515.4
50594-66-6	ACIFLUORFEN	ND	0.004	mg/L	EPA 515.4
25057-89-0	BENTAZON	ND	0.002	mg/L	EPA 515.4
1918-00-9	DICAMBA	ND	0.002	mg/L	EPA 515.4
88-85-7	DINOSEB	ND	0.0003	mg/L	EPA 515.4
87-86-5	PENTACHLOROPHENOL	ND	0.00006	mg/L	EPA 515.4
1918-02-1	PICLORAM	ND	0.001	mg/L	EPA 515.4
1861-32-1	TOTAL DCPA, MONO & DI-ACID DEGRADATES	ND	0.001	mg/L	EPA 515.4

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Tue Aug 30 08:04:41 EDT 2011

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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TEL: (517) 335-8184
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Sample Number
LD95653

Official Laboratory Report

Chem file - rigel

Report To: CITY WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1013 SO PEACH ST,WHITEHALL	Source:	TYPE I
Collected By:	PAUL YOUNG JR	Site Code:	DISTR TP108
Township/Well#/Section:	/8/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	08/15/2011 11:25
Sample Point:	TAP	Date Received:	08/16/2011 13:04
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Pesticides Analysis by GC/MS						
4,4'-DDD	Not Detected	08/23/2011	0.001		EPA 525.2	72-54-8
4,4'-DDE	Not Detected	08/23/2011	0.001		EPA 525.2	72-55-9
4,4'-DDT	Not Detected	08/23/2011	0.001		EPA 525.2	50-29-3
Acetochlor	Not Detected	08/23/2011	0.001		EPA 525.2	34256-82-1
Alachlor	Not Detected	08/23/2011	0.0002	0.002	EPA 525.2	15972-60-8
Aldrin	Not Detected	08/23/2011	0.0004		EPA 525.2	309-00-2
alpha-Chlordane	Not Detected	08/23/2011	0.0002	0.002	EPA 525.2	5103-71-9
Atrazine	Not Detected	08/23/2011	0.0002	0.003	EPA 525.2	1912-24-9
Dieldrin	Not Detected	08/23/2011	0.0005		EPA 525.2	60-57-1
Endrin	Not Detected	08/23/2011	0.00005	0.002	EPA 525.2	72-20-8
Endrin aldehyde	Not Detected	08/23/2011	0.002		EPA 525.2	7421-93-4
gamma-Chlordane	Not Detected	08/23/2011	0.0002	0.002	EPA 525.2	5103-74-2
Heptachlor	Not Detected	08/23/2011	0.00008	0.0004	EPA 525.2	76-44-8
Heptachlor epoxide	Not Detected	08/23/2011	0.00004	0.0002	EPA 525.2	1024-57-3
Hexachlorobenzene	Not Detected	08/23/2011	0.0001	0.001	EPA 525.2	118-74-1
Hexachlorocyclohexane (alpha-BHC)	Not Detected	08/23/2011	0.001		EPA 525.2	319-84-6
Hexachlorocyclohexane (beta-BHC)	Not Detected	08/23/2011	0.001		EPA 525.2	319-85-7
Hexachlorocyclohexane (delta-BHC)	Not Detected	08/23/2011	0.001		EPA 525.2	319-86-8
Hexachlorocyclopentadiene	Not Detected	08/23/2011	0.0002	0.05	EPA 525.2	77-47-4
Lindane (gamma-BHC)	Not Detected	08/23/2011	0.00004	0.0002	EPA 525.2	58-89-9
Methoxychlor	Not Detected	08/23/2011	0.0001	0.04	EPA 525.2	72-43-5
Metolachlor	Not Detected	08/23/2011	0.001		EPA 525.2	51218-45-2
Metribuzin	Not Detected	08/23/2011	0.001		EPA 525.2	21087-64-9

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Sample Number
LD95653

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Pesticides Analysis by GC/MS						
Molinate	Not Detected	08/23/2011	0.002		EPA 525.2	2212-67-1
PCB (aroclor 1016)	Not Detected	08/23/2011	0.0001	0.0005	EPA 525.2	12674-11-2
PCB (aroclor 1221)	Not Detected	08/23/2011	0.0001	0.0005	EPA 525.2	11104-28-2
PCB (aroclor 1232)	Not Detected	08/23/2011	0.0001	0.0005	EPA 525.2	11141-16-5
PCB (aroclor 1242)	Not Detected	08/23/2011	0.0001	0.0005	EPA 525.2	53469-21-9
PCB (aroclor 1248)	Not Detected	08/23/2011	0.0001	0.0005	EPA 525.2	12672-29-6
PCB (aroclor 1254)	Not Detected	08/23/2011	0.0001	0.0005	EPA 525.2	11097-69-1
PCB (aroclor 1260)	Not Detected	08/23/2011	0.0001	0.0005	EPA 525.2	11096-82-5
Polybrominated biphenyls	Not Detected	08/23/2011	0.001		EPA 525.2	59536-65-1
Simazine	Not Detected	08/23/2011	0.0002	0.004	EPA 525.2	122-34-9
Toxaphene	Not Detected	08/23/2011	0.001	0.003	EPA 525.2	8001-35-2

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Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

CAS# Chemical Abstract Service Registry Number
MCL Maximum Contaminant Level
AL Action Level
RL Reporting Limit

mg/L milligrams / Liter (ppm)
ppm parts per million
MPN Most Probable Number
CFU Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Prieper
Systems Mgmt Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

C/3

Sample Number
LE00582

Official Laboratory Report

Chem file - right
Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1013 S PEACH,WHITEHALL	Source:	TYPE I
Collected By:	PAUL YOUNG JR	Site Code:	DIST TP108
Township/Well#/Section:	/8/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	09/13/2011 11:15
Sample Point:	TAP	Date Received:	09/14/2011 11:25
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Carbamates by HPLC						
3 Hydroxycarbofuran	Not Detected	09/22/2011	0.001		EPA 531.2	16655-82-6
Aldicarb	Not Detected	09/22/2011	0.0005		EPA 531.2	116-06-3
Aldicarb sulfone	Not Detected	09/22/2011	0.0005		EPA 531.2	1646-88-4
Aldicarb sulfoxide	Not Detected	09/22/2011	0.0005		EPA 531.2	1646-87-3
Carbaryl	Not Detected	09/22/2011	0.001		EPA 531.2	63-25-2
Carbofuran	Not Detected	09/22/2011	0.0005	0.04	EPA 531.2	1563-66-2
Methiocarb	Not Detected	09/22/2011	0.001		EPA 531.2	2032-65-7
Methomyl	Not Detected	09/22/2011	0.001		EPA 531.2	16752-77-5
Oxamyl	Not Detected	09/22/2011	0.001	0.2	EPA 531.2	23135-22-0
Propoxur	Not Detected	09/22/2011	0.001		EPA 531.2	114-26-1

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231 724-6208

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE38565

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1013 SO PEACH,WHITEHALL	Source:	TYPE I
Collected By:	P YOUNG JR	Site Code:	TP109/DISTRIBUTION
Township/Well#/Section:	/8/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/23/2012 10:10
Sample Point:	TAP	Date Received:	07/24/2012 12:25
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	13	07/24/2012	4		SM 4500-Cl E	7647-14-5
Fluoride	0.12	07/24/2012	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	162	07/24/2012	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	07/24/2012	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	0.8	07/24/2012	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/24/2012	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	10	07/24/2012	5		SM 3500 NaB	7440-23-5
Sulfate	14	07/24/2012	10		SM 4500 SO4E	14808-79-8

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209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

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RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

Chem file

WO

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE38566

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1220 E LEWIS,WHITEHALL	Source:	TYPE I
Collected By:	P YOUNG JR	Site Code:	TP102/DISTRIBUTION
Township/Well#/Section:	/2/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/23/2012 09:10
Sample Point:	TAP	Date Received:	07/24/2012 12:25
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	8	07/24/2012	4		SM 4500-Cl E	7647-14-5
Fluoride	Not detected	07/24/2012	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	150	07/24/2012	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	07/24/2012	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	0.7	07/24/2012	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/24/2012	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	6	07/24/2012	5		SM 3500 NaB	7440-23-5
Sulfate	11	07/24/2012	10		SM 4500 SO4E	14808-79-8

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Muskegon, MI 49442
231 724-6208

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AL : Action Level
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Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt Unit Mgr: George Krisztian

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P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE38564

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	1005 PEACH STR,WHITEHALL	Source:	TYPE I
Collected By:	D YOUNG JR	Site Code:	TP105/DISTRIBUTION
Township/Well#/Section:	/5/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/23/2012 09:25
Sample Point:	TAP	Date Received:	07/24/2012 12:25
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	26	07/24/2012	4		SM 4500-Cl E	7647-14-5
Fluoride	Not detected	07/24/2012	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	200	07/24/2012	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	07/24/2012	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	2.2	07/24/2012	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/24/2012	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	12	07/24/2012	5		SM 3500 NaB	7440-23-5
Sulfate	13	07/24/2012	10		SM 4500 SO4E	14808-79-8

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CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

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Lansing, MI 48909
TEL: (517) 335-8184
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Sample Number
LE38568

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	405 SO WARNER,WHITEHALL	Source:	TYPE I
Collected By:	P YOUNG JR	Site Code:	TP106/DISTRIBUTION
Township/Well#/Section:	/6/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	
Sample Point:	TAP	Date Received:	07/24/2012 12:25
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

collected 7/23/12 w/ sep

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	13	07/24/2012	4		SM 4500-Cl E	7647-14-5
Fluoride	Not detected	07/24/2012	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	186	07/24/2012	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	07/24/2012	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	1.3	07/24/2012	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/24/2012	0.05	1	SM 4500 NO3H	14797-65-0
Sample collection date was not given or incorrect date given. Results will be evaluated by regulating agency.						
Sodium (automated)	9	07/24/2012	5		SM 3500 NaB	7440-23-5
Sulfate	20	07/24/2012	10		SM 4500 SO4E	14808-79-8

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Muskegon, MI 49442
231 724-6208

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MPN : Most Probable Number
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Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE38567

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100
Collection Address:	3262 BENSTON RD,WHITEHALL	Source:	TYPE I
Collected By:	P YOUNG JR	Site Code:	TP107/DISTRIBUTION
Township/Well#/Section:	WHITEHALL/7/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/23/2012 10:30
Sample Point:	TAP	Date Received:	07/24/2012 12:25
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	5	07/24/2012	4		SM 4500-Cl E	7647-14-5
Fluoride	Not detected	07/24/2012	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	95	07/24/2012	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	07/24/2012	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	Not Detected	07/24/2012	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/24/2012	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	5	07/24/2012	5		SM 3500 NaB	7440-23-5
Sulfate	10	07/24/2012	10		SM 4500 SO4E	14808-79-8

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Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

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USEPA Region V Drinking Water Cert. No. MI00003
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Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97123

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	504 E COLBY ST,WHITEHALL	Source:	TYPE I	
Collected By:	LIN KARTES-DR PRESTON BROWN	Site Code:	PB-010-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/18/2011	08:00
Sample Point:	LAB FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.13	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.001	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

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Muskegon, MI 49442
231 724-6208

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MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
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Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97124

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	705 RIVERVIEW CT,WHITEHALL	Source:	TYPE I	
Collected By:	DOYLE ERICKSON	Site Code:	PB-009-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/21/2011	08:00
Sample Point:	KITCHEN FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.21	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.001	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

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Muskegon, MI 49442
231 724-6208

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AUG 29 2011

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Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

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Sample Number
LD97121

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	109 SUNSET DR,WHITEHALL	Source:	TYPE I	
Collected By:	ELIZABETH MAHONEY	Site Code:	PB-006-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/21/2011	07:53
Sample Point:	MAIN BATHROOM FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.13	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	Not detected	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

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Muskegon, MI 49442
231 724-6208

RECEIVED
AUG 29 2011

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AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97122

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	103 SUNSET DR,WHITEHALL	Source:	TYPE I	
Collected By:	MARK BETZ	Site Code:	PB-001-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/20/2011	07:22
Sample Point:	KITCHEN FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.08	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.002	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

RECEIVED
AUG 29 2011

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

Pb Cu file

Whitehall date collected: 8/22/2011
WSSN # 7100 samples taken: 10

10 samples required prior to 9/30/10

Samples	Pb		Cu	
1	0	ug/l	0	ug/l
2	0	ug/l	80	ug/l
3	0	ug/l	80	ug/l
4	1	ug/l	120	ug/l
5	1	ug/l	130	ug/l
6	1	ug/l	130	ug/l
7	1	ug/l	160	ug/l
8	2	ug/l	210	ug/l
9	3	ug/l	260	ug/l
10	10	ug/l	440	ug/l
Average	**1.9**	**ug/l**	**161.0**	**ug/l**

90th%ile of 10 samples
is sample # 9
(10 x .90 = 9.0)

Pb

Sample #9 =90th%tile

So, 90th%ile of Pb is 3

Cu

Sample #9 =90th%tile

So, 90th%ile of Cu is 260

AL for Pb is 15 ug/l or 0.015mg/l
# of Samples exceeding the Pb AL = Zero

AL for Cu is 1300 ug/l or 1.300 mg/l
# of Samples exceeding the Cu AL = Zero

	Pb	Cu
90th	**3**	**260**
Ave.	**1.9**	**161.0**
Max.	**10**	**440**
Min.	**0**	**0**

Consumer notice due 9/29/2011. of3

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97116

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	614 E MUSKEGON AVE,WHITEHALL	Source:	TYPE I	
Collected By:	GORDON SPRATLING	Site Code:	PB-007-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/22/2011	05:00
Sample Point:	KITCHEN FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.08	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	Not detected	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

RECEIVED
AUG 29 2011

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97117

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	445 GIBBS ST,WHITEHALL	Source:	TYPE I	
Collected By:	HEIDI BOLLES	Site Code:	PB-004-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/22/2011	09:30
Sample Point:	MAIN BATHROOM FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.44	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	Not detected	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

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Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

RECEIVED
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CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97118

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	824 E LINCOLN ST,WHITEHALL	Source:	TYPE I	
Collected By:	BETTY A ROTH	Site Code:	PB-003	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/21/2011	09:00
Sample Point:	KITCHEN FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.16	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.001	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

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Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

RECEIVED
AUG 29 2011

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97119

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	618 E MUSKEGON AVE,WHITEHALL	Source:	TYPE I	
Collected By:	LINDA WELSH	Site Code:	PB-002-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/21/2011	07:25
Sample Point:	KITCHEN FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.12	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.001	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

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CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr. Julia Pieper
Systems Mgmt. Unit Mgr. George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97120

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	120 TULGEYWOOD LN,WHITEHALL	Source:	TYPE I	
Collected By:	JANICE O DONNELL	Site Code:	PB-008-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/21/2011	07:15
Sample Point:	KITCHEN FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	Not detected	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.003	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

RECEIVED
AUG 29 2011

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD97125

Official Laboratory Report

Report To: CITY OF WHITEHALL
405 E COLBY
WHITEHALL MI 49461

System Name/Owner:	CITY OF WHITEHALL	WSSN/Pool ID:	7100	
Collection Address:	909 E LINCOLN,WHITEHALL	Source:	TYPE I	
Collected By:	ROBERT STEENSMA	Site Code:	PB-005-DIST	
Township/Well#/Section:	//	Collector:	Private Citizen	
County:	Muskegon	Date Collected:	08/22/2011	06:30
Sample Point:	MAIN BATHROOM FAUCET	Date Received:	08/24/2011	11:32
Water System:	Treated Public Distribution System	Purpose:	Routine Monitoring	

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	0.26	08/25/2011	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.010	08/25/2011	0.001	0.015	EPA 200.8	7439-92-1

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

RECEIVED
AUG 29 2011

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
RESOURCE MANAGEMENT DIVISION

LEAD AND COPPER REPORT AND CONSUMER NOTICE OF LEAD RESULT CERTIFICATE FOR COMMUNITY WATER SUPPLY

Issued under authority of 1976 PA 399 and Administrative Rules, as amended.
Failure to submit this information is a violation of the Act and may subject the water supply to enforcement penalties.

Administrative Rule R 325.10710d requires water supplies to report lead and copper monitoring information within 10 days after the end of the monitoring period. This form may be used to meet this requirement. Submit the information to the appropriate Department of Environmental Quality (DEQ) district office. For district office addresses, visit www.michigan.gov/deq and click on Contacts.

1. Water Supply Name: CITY OF WHITEHALL
2. County: MUSKEGON 3. WSSN: 7100
4. Population: 2,706 5. Monitoring Period: From: 6/01/11 To: 9/30/11
6. Minimum # of Samples Required: 10 7. # of Samples Taken: 10
8. Name of Certified Laboratory: MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

9. SAMPLE CRITERIA:

Yes	No	Explain No responses in Comments block.	
[X]	[ ]	a. Are the same sampling points used as in the previous monitoring period?	
[X]	[ ]	b. Are all samples from Tier 1 sites?	For more information see *Instructions* paragraph 11, subparagraph "Sample Category."
[X]	[ ]	c. Are all samples from Tier 1, 2, or 3 sites giving Tier 1 priority?	
[X]	[ ]	d. If no Tier 1, 2, or 3 sites are available, do all sites have plumbing materials commonly found at other locations in the system?	
[X]	[ ]	e. Is the minimum number of lead service line samples taken (when applicable)?	
Comments:			

10. NAME:

Name: BRIAN ARMSTRONG

Title: DIRECTOR OF PUBLIC WORKS Phone: 231-894-4157 Date: 09/19/2011

RECEIVED
SEP 23 2011
ENVIRONMENTAL RESOURCE MANAGEMENT DIVISION GRAND RAPIDS

(EQ 5400 (Rev. 4/2010)

Consumer Notice of Lead Result in Drinking Water

Water Supply Name: CITY OF WHITEHALL

County: MUSKEGON WSSN: 7100

Sample Location: 504 E COLBY Date Sampled: 8/18/11

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below.

Key to Table	Contaminant	AL	MCLG	Your Result
Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. 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. ppb: parts per billion or micrograms per liter.	Lead (ppb)	15	0	1
	Copper (ppb)	1300	1300	130

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

To reduce exposure to lead in drinking water:

- *Run your water to flush out lead.* Run the water until it becomes cold.
- *Use cold water for cooking and preparing baby formula.* Do not cook with or drink water from the hot water tap; lead dissolves more easily in hot water.
- *Do not boil water to remove lead.* Boiling water will not reduce lead levels.
- *Look for alternative sources or treatment of water.* If your lead result is above 15 ppb, you may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- *Identify if your plumbing fixtures contain lead.* New faucets, fittings, and valves, may contain up to 8 percent lead including those advertised or labeled as "lead-free" and may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions.

Although the primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil, the U.S. EPA estimates that 10 to 20 percent of human exposure to lead may come from drinking water.

For more information, contact us at: 894-4157.
For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's Web site at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

12. CONSUMER NOTICE OF LEAD RESULT CERTIFICATION: Each Community Water Supply (CWS) must deliver a consumer notice of lead result to occupants of each location sampled within 30 days of knowing the sample result under 40 CFR §141.85 of the Lead and Copper Rule Short Term Regulatory Revisions and Clarifications. A template of the notice is available on the next page.

Not later than 3 months following the end of the monitoring period, each CWS must mail a sample copy of the consumer notice of lead result to the DEQ along with a certification that the notice has been distributed under 40 CFR §141.91(f)(3). This sheet (page 3) may be used to meet the certification requirement. Submit this certification sheet along with a sample copy of a notice sent to consumers to the appropriate DEQ district office. For district office addresses, visit www.michigan.gov/deq and click on Contacts.

I certify that this public water supply has provided the consumer notice of lead result to persons served at each of the taps that was tested, either by mail or by another method approved by the DEQ, within 30 days of knowing the result. Attached is a sample of the notice I sent to consumers. It includes:

- The result of lead tap water monitoring for the tap that was tested.
- An explanation of the health effects of lead.
- Steps consumers can take to reduce exposure to lead in drinking water.
- Contact information for the public water supply.
- The maximum contaminant level goal and the action level for lead and the definitions for these two terms.

Water Supply Name: CITY OF WHITEHALL

County: MUSKEGON WSSN: 7100

Signature: Brian Armstrong

Printed Name: BRIAN ARMSTRONG

Title: DIRECTOR OF PUBLIC WORKS Phone: 231-894-4157 Date: 09/19/2011

11. TAP SAMPLING DATA: (Use additional sheets as needed)

Water Supply Name/County CITY OF WHITEHALL/MUSKEGON COUNTY WSSN 7100

RESULTS:

Sample Location	Sample Date	Sample Category[1]	Service Lines[2]	Bldg Plumb-ing[2]	Lead (ppb)	Copper (ppb)	Lab #
103 SUNSET	8/20/11	1	1	C	2	80	LD97122
109 SUNSET	8/21/11	1	1	C	N/D	130	LD97121
120 TULGEYWOOD	8/21/11	1	1	C	3	N/D	LD97120
618 MUSKEGON	8/21/11	1	1	C	1	120	LD97119
824 E LINCOLN	8/21/11	2	1	C	1	160	LD97118
445 GIBBS	8/22/11	2	1	C	N/D	440	LD97117
614 MUSKEGON	8/22/11	1	1	C	N/D	80	LD97116
909 E LINCOLN	8/22/11	1	1	C	10	260	LD97125
705 RIVERVIEW	8/21/11	1	1	C	1	210	LD97124
504 E COLBY	8/18/11	2	1	C	1	130	LD97123

[1] Sample Category: Enter a number 1 through 6 to designate the category of tap sample site. For more information see *Instructions* paragraph 11, subparagraph "Sample Category."

[2] Materials used for service line and building plumbing: Enter C = copper; G = galvanized; L = lead; or P = plastic.

TO BE DETERMINED BY DEQ

	90th percentile	Ave	Max	# > AL
Pb				
Cu				

Attachment 6

City of Montague drinking water monitoring laboratory reports

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD92139

Official Laboratory Report

Chem file - right

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	8658 WATER ST,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	TP102
Township/Well#/Section:	MONTAGUE/4/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/26/2011 13:30
Sample Point:	SAMPLE TAP	Date Received:	07/27/2011 11:03
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	134	07/27/2011	4		SM 4500-Cl E	7647-14-5
Fluoride	0.53	07/27/2011	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	213	07/27/2011	20		SM 2340 C	HARD-00-C
Iron (automated)	0.3	07/27/2011	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	Not Detected	07/27/2011	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/27/2011	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	77	07/27/2011	5		SM 3500 NaB	7440-23-5
Sulfate	34	07/27/2011	10		SM 4500 SO4E	14808-79-8

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Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr. Julia Pieper
Systems Mgmt. Unit Mgr. George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD92138

Chem file - right

Official Laboratory Report

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	4288 LASKY ST,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	SS100
Township/Well#/Section:	MONTAGUE/2/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/26/2011 13:25
Sample Point:	SAMPLE TAP	Date Received:	07/27/2011 11:03
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	81	07/27/2011	4		SM 4500-Cl E	7647-14-5
Fluoride	0.20	07/27/2011	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	144	07/27/2011	20		SM 2340 C	HARD-00-C
Iron (automated)	0.3	07/27/2011	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	Not Detected	07/27/2011	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/27/2011	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	39	07/27/2011	5		SM 3500 NaB	7440-23-5
Sulfate	14	07/27/2011	10		SM 4500 SO4E	14808-79-8

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Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37911

Official Laboratory Report

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	8658 WATER ST WELL #4,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	TP102
Township/Well#/Section:	MONTAGUE/4/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/18/2012 09:35
Sample Point:	SAMPLE TAP	Date Received:	07/19/2012 11:13
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Arsenic	Not detected	07/20/2012	0.002	0.010	EPA 200.8	7440-38-2

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AL : Action Level
RL : Reporting Limit

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ppm : parts per million
MPN : Most Probable Number
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Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

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P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LD92140

Official Laboratory Report

Chem file - right

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	9770 OCHS RD,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	TP104
Township/Well#/Section:	MONTAGUE/6/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/26/2011 13:40
Sample Point:	SAMPLE TAP	Date Received:	07/27/2011 11:03
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	Not detected	07/27/2011	4		SM 4500-Cl E	7647-14-5
Fluoride	0.16	07/27/2011	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	238	07/27/2011	20		SM 2340 C	HARD-00-C
Iron (automated)	1.1	07/27/2011	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	Not Detected	07/27/2011	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/27/2011	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	7	07/27/2011	5		SM 3500 NaB	7440-23-5
Sulfate	13	07/27/2011	10		SM 4500 SO4E	14808-79-8

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Muskegon, MI 49442
231 724-6208

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RL : Reporting Limit

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ppm : parts per million
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CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

Chem File

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Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37912

Official Laboratory Report

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	8770 OCHS RD WELL #6,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	TP104
Township/Well#/Section:	MONTAGUE/6/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/18/2012 09:15
Sample Point:	SAMPLE TAP	Date Received:	07/19/2012 11:13
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Carbamates by HPLC						
3 Hydroxycarbofuran	Not Detected	07/26/2012	0.001		EPA 531.2	16655-82-6
Aldicarb	Not Detected	07/26/2012	0.0005		EPA 531.2	116-06-3
Aldicarb sulfone	Not Detected	07/26/2012	0.0005		EPA 531.2	1646-88-4
Aldicarb sulfoxide	Not Detected	07/26/2012	0.0005		EPA 531.2	1646-87-3
Carbaryl	Not Detected	07/26/2012	0.001		EPA 531.2	63-25-2
Carbofuran	Not Detected	07/26/2012	0.0005	0.04	EPA 531.2	1563-66-2
Methiocarb	Not Detected	07/26/2012	0.001		EPA 531.2	2032-65-7
Methomyl	Not Detected	07/26/2012	0.001		EPA 531.2	16752-77-5
Oxamyl	Not Detected	07/26/2012	0.001	0.2	EPA 531.2	23135-22-0
Propoxur	Not Detected	07/26/2012	0.001		EPA 531.2	114-26-1

CXLP

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Muskegon, MI 49442
231 724-6208

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MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

Chem File

WD

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37910

Official Laboratory Report

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	4328 LASLEY ST WELL 1,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	SS100
Township/Well#/Section:	MONTAGUE/1/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/18/2012 09:08
Sample Point:	SAMPLE TAP	Date Received:	07/19/2012 11:13
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Arsenic	Not detected	07/20/2012	0.002	0.010	EPA 200.8	7440-38-2

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Muskegon, MI 49442
231 724-6208

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MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
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Systems Mgmt. Unit Mgr: George Krisztian

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USEPA Region V Drinking Water Cert. No. MI00003
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Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37941

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Volatile Organic Compounds						
1,3 Dichlorobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	541-73-1
1,3 Dichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	142-28-9
1,3,5 Trimethylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	108-67-8
1,4 Dichlorobenzene	Not Detected	07/27/2012	0.0005	0.075	EPA 524.2	106-46-7
2,2 Dichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	594-20-7
Benzene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	71-43-2
Bromobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	108-86-1
Bromochloromethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-97-5
Bromodichloromethane	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	75-27-4
Bromoform	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	75-25-2
Bromomethane	Not Detected	07/27/2012	0.001		EPA 524.2	74-83-9
Carbon tetrachloride	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	56-23-5
Chlorobenzene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	108-90-7
Chlorodibromomethane	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	124-48-1
Chloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	75-00-3
Chloroform	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	67-66-3
Chloromethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-87-3
cis-1,2 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.07	EPA 524.2	156-59-2
cis-1,3 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	10061-01-5
Dibromomethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-95-3
Dichlorodifluoromethane	Not Detected	07/27/2012	0.001		EPA 524.2	75-71-8
Dichloromethane	Not Detected	07/27/2012	0.0006	0.005	EPA 524.2	75-09-2
Ethylbenzene	Not Detected	07/27/2012	0.0005	0.7	EPA 524.2	100-41-4
Fluorotrichloromethane	Not Detected	07/27/2012	0.001		EPA 524.2	75-69-4
Hexachlorobutadiene	Not Detected	07/27/2012	0.0005		EPA 524.2	87-68-3
Isopropylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	98-82-8
m & p-Xylene	Not Detected	07/27/2012	0.0005	10	EPA 524.2	XYLMP-00-C
Methyl ethyl ketone	Not Detected	07/27/2012	0.005		EPA 524.2	78-93-3
Methyl isobutyl ketone	Not Detected	07/27/2012	0.005		EPA 524.2	108-10-1
Methyl-tert-butyl ether (MTBE)	Not Detected	07/27/2012	0.001		EPA 524.2	1634-04-4
Naphthalene	Not Detected	07/27/2012	0.0005		EPA 524.2	91-20-3
n-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	104-51-8
Nitrobenzene	Not Detected	07/27/2012	0.01		EPA 524.2	98-95-3
n-Propylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	103-65-1
o-Chlorotoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	95-49-8
o-Xylene	Not Detected	07/27/2012	0.0005	10	EPA 524.2	95-47-6
p-Chlorotoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	106-43-4
p-Isopropyltoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	99-87-6

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MPN : Most Probable Number
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Laboratory Contacts
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Systems Mgmt. Unit Mgr: George Krisztian

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Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37941

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Volatile Organic Compounds						
sec-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	135-98-8
Styrene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	100-42-5
tert-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	98-06-6
Tetrachloroethylene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	127-18-4
Tetrahydrofuran	Not Detected	07/27/2012	0.005		EPA 524.2	109-99-9
Toluene	Not Detected	07/27/2012	0.0005	1	EPA 524.2	108-88-3
Total Trihalomethanes	Not Detected	07/27/2012	NA	0.080	EPA 524.2	TTHM-00-C
Total Xylenes	Not Detected	07/27/2012	NA	10	EPA 524.2	1330-20-7
trans-1,2 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	156-60-5
trans-1,3 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	10061-02-6
Trichloroethylene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	79-01-6
Vinyl chloride	Not Detected	07/27/2012	0.0004	0.002	EPA 524.2	75-01-4

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Chem File

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Sample Number
LE37941

Official Laboratory Report

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	4328 LASLEY ST WELL #1,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	SS100
Township/Well#/Section:	MONTAGUE/1/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/18/2012 10:55
Sample Point:	SAMPLE TAP	Date Received:	07/19/2012 11:34
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	64	07/19/2012	4		SM 4500-Cl E	7647-14-5
Fluoride	0.25	07/23/2012	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	151	07/19/2012	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	07/19/2012	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	Not Detected	07/19/2012	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/19/2012	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	39	07/19/2012	5		SM 3500 NaB	7440-23-5
Sulfate	16	07/19/2012	10		SM 4500 SO4E	14808-79-8
Volatile Organic Compounds						
1,1 Dichloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	75-34-3
1,1 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.007	EPA 524.2	75-35-4
1,1 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	563-58-6
1,1,1 Trichloroethane	Not Detected	07/27/2012	0.0005	0.2	EPA 524.2	71-55-6
1,1,1,2 Tetrachloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	630-20-6
1,1,2 Trichloroethane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	79-00-5
1,1,2,2 Tetrachloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	79-34-5
1,2 Dichlorobenzene	Not Detected	07/27/2012	0.0005	0.6	EPA 524.2	95-50-1
1,2 Dichloroethane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	107-06-2
1,2 Dichloropropane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	78-87-5
1,2,3 Trichlorobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	87-61-6
1,2,3 Trichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	96-18-4
1,2,4 Trichlorobenzene	Not Detected	07/27/2012	0.0005	0.07	EPA 524.2	120-82-1
1,2,4 Trimethylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	95-63-6

PCV

VOC

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MPN : Most Probable Number
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Systems Mgmt. Unit Mgr: George Krisztian

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Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37940

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Volatile Organic Compounds						
sec-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	135-98-8
Styrene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	100-42-5
tert-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	98-06-6
Tetrachloroethylene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	127-18-4
Tetrahydrofuran	Not Detected	07/27/2012	0.005		EPA 524.2	109-99-9
Toluene	Not Detected	07/27/2012	0.0005	1	EPA 524.2	108-88-3
Total Trihalomethanes	Not Detected	07/27/2012	NA	0.080	EPA 524.2	TTHM-00-C
Total Xylenes	Not Detected	07/27/2012	NA	10	EPA 524.2	1330-20-7
trans-1,2 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	156-60-5
trans-1,3 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	10061-02-6
Trichloroethylene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	79-01-6
Vinyl chloride	Not Detected	07/27/2012	0.0004	0.002	EPA 524.2	75-01-4

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Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

CAS# : Chemical Abstract Service Registry Number
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CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

Chem File

WO

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37940

Official Laboratory Report

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	8658 WATER ST WELL #4,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	TP102
Township/Well#/Section:	MONTAGUE/4/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/18/2012 11:10
Sample Point:	SAMPLE TAP	Date Received:	07/19/2012 11:34
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	125	07/19/2012	4		SM 4500-Cl E	7647-14-5
Fluoride	0.57	07/23/2012	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	217	07/19/2012	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	07/19/2012	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	Not Detected	07/19/2012	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/19/2012	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	86	07/19/2012	5		SM 3500 NaB	7440-23-5
Sulfate	32	07/19/2012	10		SM 4500 SO4E	14808-79-8
Volatile Organic Compounds						
1,1 Dichloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	75-34-3
1,1 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.007	EPA 524.2	75-35-4
1,1 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	563-58-6
1,1,1 Trichloroethane	Not Detected	07/27/2012	0.0005	0.2	EPA 524.2	71-55-6
1,1,1,2 Tetrachloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	630-20-6
1,1,2 Trichloroethane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	79-00-5
1,1,2,2 Tetrachloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	79-34-5
1,2 Dichlorobenzene	Not Detected	07/27/2012	0.0005	0.6	EPA 524.2	95-50-1
1,2 Dichloroethane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	107-06-2
1,2 Dichloropropane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	78-87-5
1,2,3 Trichlorobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	87-61-6
1,2,3 Trichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	96-18-4
1,2,4 Trichlorobenzene	Not Detected	07/27/2012	0.0005	0.07	EPA 524.2	120-82-1
1,2,4 Trimethylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	95-63-6

PCV

VOC

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Sample Number
LE37940

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Volatile Organic Compounds						
1,3 Dichlorobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	541-73-1
1,3 Dichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	142-28-9
1,3,5 Trimethylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	108-67-8
1,4 Dichlorobenzene	Not Detected	07/27/2012	0.0005	0.075	EPA 524.2	106-46-7
2,2 Dichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	594-20-7
Benzene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	71-43-2
Bromobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	108-86-1
Bromochloromethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-97-5
Bromodichloromethane	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	75-27-4
Bromoform	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	75-25-2
Bromomethane	Not Detected	07/27/2012	0.001		EPA 524.2	74-83-9
Carbon tetrachloride	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	56-23-5
Chlorobenzene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	108-90-7
Chlorodibromomethane	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	124-48-1
Chloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	75-00-3
Chloroform	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	67-66-3
Chloromethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-87-3
cis-1,2 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.07	EPA 524.2	156-59-2
cis-1,3 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	10061-01-5
Dibromomethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-95-3
Dichlorodifluoromethane	Not Detected	07/27/2012	0.001		EPA 524.2	75-71-8
Dichloromethane	Not Detected	07/27/2012	0.0006	0.005	EPA 524.2	75-09-2
Ethylbenzene	Not Detected	07/27/2012	0.0005	0.7	EPA 524.2	100-41-4
Fluorotrichloromethane	Not Detected	07/27/2012	0.001		EPA 524.2	75-69-4
Hexachlorobutadiene	Not Detected	07/27/2012	0.0005		EPA 524.2	87-68-3
Isopropylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	98-82-8
m & p-Xylene	Not Detected	07/27/2012	0.0005	10	EPA 524.2	XYLMP-00-C
Methyl ethyl ketone	Not Detected	07/27/2012	0.005		EPA 524.2	78-93-3
Methyl isobutyl ketone	Not Detected	07/27/2012	0.005		EPA 524.2	108-10-1
Methyl-tert-butyl ether (MTBE)	Not Detected	07/27/2012	0.001		EPA 524.2	1634-04-4
Naphthalene	Not Detected	07/27/2012	0.0005		EPA 524.2	91-20-3
n-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	104-51-8
Nitrobenzene	Not Detected	07/27/2012	0.01		EPA 524.2	98-95-3
n-Propylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	103-65-1
o-Chlorotoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	95-49-8
o-Xylene	Not Detected	07/27/2012	0.0005	10	EPA 524.2	95-47-6
p-Chlorotoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	106-43-4
p-Isopropyltoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	99-87-6

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Sample Number
LE37886

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Volatile Organic Compounds						
Chloroform	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	67-66-3
Chloromethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-87-3
cis-1,2 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.07	EPA 524.2	156-59-2
cis-1,3 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	10061-01-5
Dibromomethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-95-3
Dichlorodifluoromethane	Not Detected	07/27/2012	0.001		EPA 524.2	75-71-8
Dichloromethane	Not Detected	07/27/2012	0.0006	0.005	EPA 524.2	75-09-2
Ethylbenzene	Not Detected	07/27/2012	0.0005	0.7	EPA 524.2	100-41-4
Fluorotrichloromethane	Not Detected	07/27/2012	0.001		EPA 524.2	75-69-4
Hexachlorobutadiene	Not Detected	07/27/2012	0.0005		EPA 524.2	87-68-3
Isopropylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	98-82-8
m & p-Xylene	Not Detected	07/27/2012	0.0005	10	EPA 524.2	XYLMP-00-C
Methyl ethyl ketone	Not Detected	07/27/2012	0.005		EPA 524.2	78-93-3
Methyl isobutyl ketone	Not Detected	07/27/2012	0.005		EPA 524.2	108-10-1
Methyl-tert-butyl ether (MTBE)	Not Detected	07/27/2012	0.001		EPA 524.2	1634-04-4
Naphthalene	Not Detected	07/27/2012	0.0005		EPA 524.2	91-20-3
n-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	104-51-8
Nitrobenzene	Not Detected	07/27/2012	0.01		EPA 524.2	98-95-3
n-Propylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	103-65-1
o-Chlorotoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	95-49-8
o-Xylene	Not Detected	07/27/2012	0.0005	10	EPA 524.2	95-47-6
p-Chlorotoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	106-43-4
p-Isopropyltoluene	Not Detected	07/27/2012	0.0005		EPA 524.2	99-87-6
sec-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	135-98-8
Styrene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	100-42-5
tert-Butylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	98-06-6
Tetrachloroethylene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	127-18-4
Tetrahydrofuran	Not Detected	07/27/2012	0.005		EPA 524.2	109-99-9
Toluene	Not Detected	07/27/2012	0.0005	1	EPA 524.2	108-88-3
Total Trihalomethanes	Not Detected	07/27/2012	NA	0.080	EPA 524.2	TTHM-00-C
Total Xylenes	Not Detected	07/27/2012	NA	10	EPA 524.2	1330-20-7
trans-1,2 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	156-60-5
trans-1,3 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	10061-02-6
Trichloroethylene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	79-01-6
Vinyl chloride	Not Detected	07/27/2012	0.0004	0.002	EPA 524.2	75-01-4

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Sample Number
LE37886

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #

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TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chlorinated Acid Herbicides						
2,4,5-T	Not Detected	07/20/2012	0.002		EPA 515.4	93-76-5
2,4,5-TP (silvex)	Not Detected	07/20/2012	0.0003	0.05	EPA 515.4	93-72-1
2,4-D	Not Detected	07/20/2012	0.002	0.07	EPA 515.4	94-75-7
Acifluorfen	Not Detected	07/20/2012	0.004		EPA 515.4	50594-66-6
Bentazon	Not Detected	07/20/2012	0.002		EPA 515.4	25057-89-0
Dicamba	Not Detected	07/20/2012	0.002		EPA 515.4	1918-00-9
Dinoseb	Not Detected	07/20/2012	0.0003	0.007	EPA 515.4	88-85-7
Pentachlorophenol	Not Detected	07/20/2012	0.00006	0.001	EPA 515.4	87-86-5
Picloram	Not Detected	07/20/2012	0.001	0.5	EPA 515.4	1918-02-1
Total DCPA degradates, mono- and di-acid	Not Detected	07/20/2012	0.001		EPA 515.4	1861-32-1
Pesticides Analysis by GC/MS						
4,4'-DDD	Not Detected	07/24/2012	0.001		EPA 525.2	72-54-8
4,4'-DDE	Not Detected	07/24/2012	0.001		EPA 525.2	72-55-9
4,4'-DDT	Not Detected	07/24/2012	0.0005		EPA 525.2	50-29-3
Acetochlor	Not Detected	07/24/2012	0.001		EPA 525.2	34256-82-1
Alachlor	Not Detected	07/24/2012	0.0002	0.002	EPA 525.2	15972-60-8
Aldrin	Not Detected	07/24/2012	0.0004		EPA 525.2	309-00-2
alpha-Chlordane	Not Detected	07/24/2012	0.0002	0.002	EPA 525.2	5103-71-9
Atrazine	Not Detected	07/24/2012	0.0002	0.003	EPA 525.2	1912-24-9
Dieldrin	Not Detected	07/24/2012	0.0005		EPA 525.2	60-57-1
Endrin	Not Detected	07/24/2012	0.0001	0.002	EPA 525.2	72-20-8
Endrin aldehyde	Not Detected	07/24/2012	0.001		EPA 525.2	7421-93-4
gamma-Chlordane	Not Detected	07/24/2012	0.0002	0.002	EPA 525.2	5103-74-2
Heptachlor	Not Detected	07/24/2012	0.0002	0.0004	EPA 525.2	76-44-8
Heptachlor epoxide	Not Detected	07/24/2012	0.0001	0.0002	EPA 525.2	1024-57-3
Hexachlorobenzene	Not Detected	07/24/2012	0.0001	0.001	EPA 525.2	118-74-1
Hexachlorocyclohexane (alpha-BHC)	Not Detected	07/24/2012	0.001		EPA 525.2	319-84-6
Hexachlorocyclohexane (beta-BHC)	Not Detected	07/24/2012	0.001		EPA 525.2	319-85-7
Hexachlorocyclohexane (delta-BHC)	Not Detected	07/24/2012	0.001		EPA 525.2	319-86-8
Hexachlorocyclopentadiene	Not Detected	07/24/2012	0.0005	0.05	EPA 525.2	77-47-4
Lindane (gamma-BHC)	Not Detected	07/24/2012	0.0001	0.0002	EPA 525.2	58-89-9
Methoxychlor	Not Detected	07/24/2012	0.0001	0.04	EPA 525.2	72-43-5
Metolachlor	Not Detected	07/24/2012	0.001		EPA 525.2	51218-45-2
Metribuzin	Not Detected	07/24/2012	0.001		EPA 525.2	21087-64-9
Molinate	Not Detected	07/24/2012	0.0005		EPA 525.2	2212-67-1
PCB (aroclor 1016)	Not Detected	07/24/2012	0.0001	0.0005	EPA 525.2	12674-11-2
PCB (aroclor 1221)	Not Detected	07/24/2012	0.0001	0.0005	EPA 525.2	11104-28-2

CXHB

CXPT

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TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Pesticides Analysis by GC/MS						
PCB (aroclor 1232)	Not Detected	07/24/2012	0.0001	0.0005	EPA 525.2	11141-16-5
PCB (aroclor 1242)	Not Detected	07/24/2012	0.0001	0.0005	EPA 525.2	53469-21-9
PCB (aroclor 1248)	Not Detected	07/24/2012	0.0001	0.0005	EPA 525.2	12672-29-6
PCB (aroclor 1254)	Not Detected	07/24/2012	0.0001	0.0005	EPA 525.2	11097-69-1
PCB (aroclor 1260)	Not Detected	07/24/2012	0.0001	0.0005	EPA 525.2	11096-82-5
Polybrominated biphenyls	Not Detected	07/24/2012	0.0001		EPA 525.2	59536-65-1
Simazine	Not Detected	07/24/2012	0.0002	0.004	EPA 525.2	122-34-9
Toxaphene	Not Detected	07/24/2012	0.001	0.003	EPA 525.2	8001-35-2
Volatile Organic Compounds						
1,1 Dichloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	75-34-3
1,1 Dichloroethylene	Not Detected	07/27/2012	0.0005	0.007	EPA 524.2	75-35-4
1,1 Dichloropropene	Not Detected	07/27/2012	0.0005		EPA 524.2	563-58-6
1,1,1 Trichloroethane	Not Detected	07/27/2012	0.0005	0.2	EPA 524.2	71-55-6
1,1,1,2 Tetrachloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	630-20-6
1,1,2 Trichloroethane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	79-00-5
1,1,2,2 Tetrachloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	79-34-5
1,2 Dichlorobenzene	Not Detected	07/27/2012	0.0005	0.6	EPA 524.2	95-50-1
1,2 Dichloroethane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	107-06-2
1,2 Dichloropropane	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	78-87-5
1,2,3 Trichlorobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	87-61-6
1,2,3 Trichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	96-18-4
1,2,4 Trichlorobenzene	Not Detected	07/27/2012	0.0005	0.07	EPA 524.2	120-82-1
1,2,4 Trimethylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	95-63-6
1,3 Dichlorobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	541-73-1
1,3 Dichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	142-28-9
1,3,5 Trimethylbenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	108-67-8
1,4 Dichlorobenzene	Not Detected	07/27/2012	0.0005	0.075	EPA 524.2	106-46-7
2,2 Dichloropropane	Not Detected	07/27/2012	0.0005		EPA 524.2	594-20-7
Benzene	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	71-43-2
Bromobenzene	Not Detected	07/27/2012	0.0005		EPA 524.2	108-86-1
Bromochloromethane	Not Detected	07/27/2012	0.0005		EPA 524.2	74-97-5
Bromodichloromethane	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	75-27-4
Bromoform	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	75-25-2
Bromomethane	Not Detected	07/27/2012	0.001		EPA 524.2	74-83-9
Carbon tetrachloride	Not Detected	07/27/2012	0.0005	0.005	EPA 524.2	56-23-5
Chlorobenzene	Not Detected	07/27/2012	0.0005	0.1	EPA 524.2	108-90-7
Chlorodibromomethane	Not Detected	07/27/2012	0.0005	0.080	EPA 524.2	124-48-1
Chloroethane	Not Detected	07/27/2012	0.0005		EPA 524.2	75-00-3

VOC

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

Chem File

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37942

Official Laboratory Report

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	9770 OCHS RD WELL #6,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	TP104
Township/Well#/Section:	MONTAGUE/6/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/18/2012 10:45
Sample Point:	SAMPLE TAP	Date Received:	07/19/2012 11:34
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Chloride	5	07/19/2012	4		SM 4500-Cl E	7647-14-5
Fluoride	0.17	07/23/2012	0.1	4.0	SM 4500 FC	16984-48-8
Hardness as CaCO3	248	07/19/2012	20		SM 2340 C	HARD-00-C
Iron (automated)	Not detected	07/19/2012	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	Not Detected	07/19/2012	0.4	10	SM 4500 NO3H	14797-55-8
Nitrite as N	Not detected	07/19/2012	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	5	07/19/2012	5		SM 3500 NaB	7440-23-5
Sulfate	17	07/19/2012	10		SM 4500 SO4E	14808-79-8

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Muskegon County Health Dept.
209 E. Apple, Suite C173
Muskegon, MI 49442
231 724-6208

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
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Systems Mgmt. Unit Mgr: George Krisztian

Chem File

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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY
USEPA Region V Drinking Water Cert. No. MI00003
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LE37886

Official Laboratory Report

Report To: CITY OF MONTAGUE
8778 FERRY ST
MONTAGUE MI 49437

System Name/Owner:	CITY OF MONTAGUE	WSSN/Pool ID:	4470
Collection Address:	9770 OCHS RD WELL #6,MONTAGUE	Source:	TYPE I
Collected By:	SCOTT	Site Code:	TP104
Township/Well#/Section:	MONTAGUE/6/	Collector:	Public Water Supply Operator
County:	Muskegon	Date Collected:	07/18/2012 09:25
Sample Point:	SAMPLE TAP	Date Received:	07/19/2012 10:34
Water System:	Public System Well	Purpose:	Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Antimony	Not detected	08/02/2012	0.0006	0.006	EPA 200.8	7440-36-0
Arsenic	Not detected	08/02/2012	0.002	0.010	EPA 200.8	7440-38-2
Barium	0.12	08/02/2012	0.01	2	EPA 200.8	7440-39-3
Beryllium	Not detected	08/02/2012	0.0004	0.004	EPA 200.8	7440-41-7
Cadmium	Not detected	08/02/2012	0.0003	0.005	EPA 200.8	7440-43-9
Chromium	Not detected	08/02/2012	0.01	0.1	EPA 200.8	7440-47-3
Lead	Not detected	08/02/2012	0.001	0.015	EPA 200.8	7439-92-1
Mercury	Not detected	08/02/2012	0.0001	0.002	EPA 200.8	7439-97-6
Nickel	Not detected	08/02/2012	0.01	0.1	EPA 200.8	7440-02-0
Selenium	Not detected	08/02/2012	0.001	0.05	EPA 200.8	7782-49-2
Thallium	Not detected	08/02/2012	0.0002	0.002	EPA 200.8	7440-28-0
Carbamates by HPLC						
3 Hydroxycarbofuran	Not Detected	07/20/2012	0.001		EPA 531.2	16655-82-6
Aldicarb	Not Detected	07/20/2012	0.0005		EPA 531.2	116-06-3
Aldicarb sulfone	Not Detected	07/20/2012	0.0005		EPA 531.2	1646-88-4
Aldicarb sulfoxide	Not Detected	07/20/2012	0.0005		EPA 531.2	1646-87-3
Carbaryl	Not Detected	07/20/2012	0.001		EPA 531.2	63-25-2
Carbofuran	Not Detected	07/20/2012	0.0005	0.04	EPA 531.2	1563-66-2
Methiocarb	Not Detected	07/20/2012	0.001		EPA 531.2	2032-65-7
Methomyl	Not Detected	07/20/2012	0.001		EPA 531.2	16752-77-5
Oxamyl	Not Detected	07/20/2012	0.001	0.2	EPA 531.2	23135-22-0
Propoxur	Not Detected	07/20/2012	0.001		EPA 531.2	114-26-1

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CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
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mg/L : milligrams / Liter (ppm)
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Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

ATI Environmental, Inc.
Midwest Laboratory
703 Landwehr Road • Northbrook, IL 60062-2310
ph. (847) 564-0700 • fax (847) 564-4517

Mr. Scott Beishuizen
City of Montague
8778 Ferry Street
Montague, MI 49437

LABORATORY REPORT NO.: 8200-2444-2
DATE: 09-14-2012
SAMPLES RECEIVED: 07-25-2012
WSSN: 4470

Below are the results of the analyses for radium-226 and radium-228 on one drinking water sample.

Sample Description	Well #4		
Lab Code	SPDW-30143		
Collection Date	07-24-12 @ 7:50		
Isotope	Concentration (pCi/L)	Date Analyzed	Method
Ra-226	0.2 ± 0.1	09-13-12	903.1
Ra-228	< 0.6	09-05-12	Ra-05
Ra, combined	**0.2**		

The error given is the probable counting error at 95% confidence level. Less than (<), value is based on a 3 sigma counting error for the background sample.

Sincerely,

Rimma Amromin
Project Coordinator

APPROVED BY 09/14/12
Bronia Grob, M. S.
Lab Manager

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

ATI Environmental, Inc.
Midwest Laboratory
700 Landwehr Road • Northbrook, IL 60062-2310
ph. (847) 564-0700 • fax (847) 564-4517

Mr. Scott Beishuizen
City of Montague
8778 Ferry Street
Montague, MI 49437

LABORATORY REPORT NO.: 8200-2444-1
DATE: 09-14-2012
SAMPLES RECEIVED: 07-25-2012
WSSN: 4470

Below are the results of the analyses for radium-226 and radium-228 on one drinking water sample.

Sample Description	Well #1
Lab Code	SPDW-30142
Collection Date	07-24-12 @ 7:35

Isotope	Concentration (pCi/L)	Date Analyzed	Method
Ra-226	0.2 ± 0.1	09-13-12	903.1
Ra-228	< 0.6	09-05-12	Ra-05
Ra, combined	**0.2**		

The error given is the probable counting error at 95% confidence level. Less than (<), value is based on a 3 sigma counting error for the background sample.

Sincerely,

Rimma Amromin
Project Coordinator

APPROVED BY 09/14/12
Bronia Grob, M. S.
Lab Manager

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Determine Radionuclides Frequency Based on Results

WSSN	Supply Name
4470	Montague Well 4

Guidance on Radionuclides Rule

Gross Alpha (GA)	
Detection Limit	3
MCL	15
Radium 226 and 228	
Detection Limit	1
MCL	5

Radium 226 Derived
A gross alpha result of <3 may be substituted for radium 226

If result is:	Consider result to be:	Freqency
<Detection Limit	0	9 years
>Detection Limit but <1/2 MCL	result	6 years
>1/2 MCL but <MCL	result	3 years
>MCL	result	Quarterly

If deriving 226 result from GA:	Consider result to be:	Frequency
If GA <DL, then 226 is half of that (1.5)	Derived to be 1.5	Combine
If GA >3, then 226 = GA	Derived to be the GA result	with 228

If using grandfathered data collected prior to 12/08/03, next due date calculated as follows:
Sampled prior to 2008: Next Due Date = (year sampled) + (4 year frequency) + (frequency years)
Sampled in or after 2008: Next Due Date = (year sampled) + (frequency years)
If not using grandfathered data collected prior to 12/08/03, then supplier must monitor quarterly for 1-year during 2004-2007.

Enter results of radionuclide sampling into the hi-lighted cells below

		Sample Date	Result	Consider result to be:	Rounded	Frequency	
GA	Enter Gross Alpha result	N/A	N/A	N/A	#VALUE!	#VALUE!	GA
226	If deriving 226, enter **"derived"** (lower case ltrs)						
or	Enter actual 226 result	07/24/12	0.2	0			
228	Enter 228 result	07/24/12	<0.6	<0.6			
Combined 226/228				0	0	9 years	226/228

derived

Determine Radionuclides Frequency Based on Results

WSSN	Supply Name
4470	Montague Well 1

Guidance on Radionuclides Rule

Gross Alpha (GA)		**If result is:**	**Consider result to be:**	**Freqency**
Detection Limit	3	<Detection Limit	0	9 years
MCL	15	>Detection Limit but <1/2 MCL	result	6 years
		>1/2 MCL but <MCL	result	3 years
Radium 226 and 228		>MCL	result	Quarterly
Detection Limit	1			
MCL	5			
Radium 226 Derived		**If deriving 226 result from GA:**	**Consider result to be:**	**Frequency**
A gross alpha result of <3 may be substituted for radium 226		If GA <DL, then 226 is half of that (1.5)	Derived to be 1.5	Combine with 228
		If GA >3, then 226 = GA	Derived to be the GA result	

If using grandfathered data collected prior to 12/08/03, next due date calculated as follows:
Sampled prior to 2008: Next Due Date = (year sampled) + (4 year frequency) + (frequency years)
Sampled in or after 2008: Next Due Date = (year sampled) + (frequency years)
If not using grandfathered data collected prior to 12/08/03, then supplier must monitor quarterly for 1-year during 2004-2007.

Enter results of radionuclide sampling into the hi-lighted cells below

		Sample Date	Result		Consider result to be:	Rounded	Frequency	
GA	Enter Gross Alpha result	N/A		N/A	N/A	#VALUE!	**#VALUE!**	GA
226	If deriving 226, enter **"derived"** (lower case ltrs)							
	or Enter actual 226 result	07/24/12		0.2	0			
228	Enter 228 result	07/24/12		<0.6	<0.6			
Combined 226/228					0	0	**9 years**	226/228

derived

Attachment 7

City of Whitehall 2011 and 2012 Annual Water Quality Reports

CITY OF WHITEHALL
ANNUAL WATER QUALITY REPORT – 2011

The following report on the quality of City of Whitehall drinking water has been prepared in compliance with amendments to the Federal Safe Drinking Water Act. It includes details of where your drinking water originates, what it contains, and how it compares to Environmental Protection Agency and State standards. The City of Whitehall is committed to providing you with the safest and most reliable water supply.

The water that you drink comes from five municipal wells, ranging from 150' – 300' deep. Four wells are located within the City limits east of Warner Street. The remaining well is located in Whitehall Township just east of the Whitehall city limits and north of Benston Road. Chlorine is added at each well as protection against microbial contaminants.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Whitehall's water supply is drawn from water bearing glacial deposits. As water travels through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. These include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants.
Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
Pesticide and herbicides, which may come from a variety of sources such as agriculture and farming.
Radioactive contaminants, which are naturally occurring.
Organic chemical contaminants, including synthetic and volatile organic chemicals.

The City of Whitehall has implemented a Wellhead Protection Program in an effort to protect the area of groundwater that serves as the source of the community's drinking water. The susceptibility of the public water supply system is determined in large part by the geological sensitivity of the aquifer from which the groundwater originates. Information from the Wellhead Protection Program has determined that the aquifer from which the City obtains groundwater is moderately sensitive to contamination. To view this information please contact us at the Dept. of Public Works 2055 S. Warner 894-4157.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-comprimised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection from *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in the water provided by public water systems. We treat our water according to EPA's regulations. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

All EPA required water-monitoring requirements for the 2010 calendar year were met. The State of Michigan allows us to monitor for certain contaminants less frequently than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data in the table below is representative of the water quality, but some are more than one year old.

Terms and abbreviations used in the table below:
***Action Level:** The concentration of a contaminant, which, if exceeded, triggers additional treatment, or other requirements, which a water system must follow:
***Maximum Contaminant Level (MCL):** the highest level of a contaminant that is allowed in drinking water. MCLs are set as close as feasible using the best available treatment technology.
***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.
***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.
***Maximum Residual Disinfectant Level Goal(MRDLG):** the level of a drinking water disinfectants below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectant to control microbial contaminants.
***nd:** not detected.
***ppm:** parts per million or milligrams per liter.
*ppb: parts per billion or micrograms per liter.
*pCi/l: picocurries per liter (a measure of radiation).

Detections for Required Monitoring

Inorganic Contaminants	MCL	MCLG	Whitehall Average	Range of Detection	Source of Contaminant
Fluoride (08-27-11)	4 ppm	4 ppm	0.12ppm	nd to .12	Erosion of natural deposits
Nitrate (08-27-11)	10 ppm	10 ppm	1.00 ppm	nd – 2.6	Runoff from fertilizer use
Radioactive Contaminants	**MCL**	**MCLG**	**Whitehall Maximum**		**Source of Contaminant**
Barium (07-29-11)	2ppm	2ppm	0.04ppm		Erosion of natural deposits
Regulated at the Customer Tap	**Action Level**	**Whitehall 90th percentile**	**# of Sites Above Action Level**		**Source of Contaminant**
Lead (08-29-11)	15 ppb	3 ppb	0		Household plumbing
Copper (08-29-11)	1300 ppb	260 ppb	0		Household plumbing
Unregulated Contaminants	**MCL**	**MCLG**	**Whitehall Average**	**Range of Detection**	**Source of Contaminant**
Sodium (07-29-10)	Not Regulated		7.0 ppm	nd-11	Erosion of natural deposits

Regulated in distribution system	MRDL	MRDLG	Highest Running Annual Average	Range	Major Sources in Drinking Water Water additive used to control microbes
Chlorine	4	4	0.6ppm	0.11 to 1.44	Water additive used to control microbes
	MCL	**MCLG**		**Violation**	Disinfection by products
Trihalomethanes (2010)	80ppb	n/a	10ppb	no	
Haloacetic Acids (2010)	60ppb	n/a	1ppb	no	

Lead: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Whitehall is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at *http://www.epa.gov/safewater/lead*

The City of Whitehall water system is operated by the City Department of Public Works and is under the purview of the Whitehall City Council. You are encouraged to attend City Council meetings held the second and fourth Tuesday of each month at 7:30 p.m. There is an open forum at each meeting where questions and concerns may be addressed.

For additional information with regard to this report or related water quality issues, please contact:

City of Whitehall
Department of Public Works
Brian G. Armstrong, Director
405 E. Colby Street
Whitehall, MI 49461

Phone (231) 894-4157

Fax (231) 894-6937

CITY OF WHITEHALL
ANNUAL WATER QUALITY REPORT – 2012

The following report on the quality of City of Whitehall drinking water has been prepared in compliance with amendments to the Federal Safe Drinking Water Act. It includes details of where your drinking water originates, what it contains, and how it compares to Environmental Protection Agency and State standards. The City of Whitehall is committed to providing you with the safest and most reliable water supply.

The water that you drink comes from five municipal wells, ranging from 150' – 300' deep. Four wells are located within the City limits east of Warner Street. The remaining well is located in Whitehall Township just east of the Whitehall city limits and north of Benston Road. Chlorine is added at each well as protection against microbial contaminants.

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In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in the water provided by public water systems. We treat our water according to EPA's regulations. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

All EPA required water-monitoring requirements for the 2010 calendar year were met. The State of Michigan allows us to monitor for certain contaminants less frequently than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data in the table below is representative of the water quality, but some are more than one year old.

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Detections for Required Monitoring

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Radioactive Contaminants	**MCL**	**MCLG**	**Whitehall Maximum**		**Source of Contaminant**
Barium (07-29-11)	2ppm	2ppm	0.04ppm		Erosion of natural deposits
Regulated at the Customer Tap	**Action Level**	**Whitehall 90th percentile**	**# of Sites Above Action Level**		**Source of Contaminant**
Lead (08-29-11)	15 ppb	3 ppb	0		Household plumbing
Copper (08-29-11)	1300 ppb	260 ppb	0		Household plumbing
Unregulated Contaminants	**MCL**	**MCLG**	**Whitehall Average**	**Range of Detection**	**Source of Contaminant**
Sodium (07-24-12)	Not Regulated		8.4 ppm	nd-11	Erosion of natural deposits

Regulated in distribution system	MRDL	MRDLG	Highest Running Annual Average	Range	Major Sources in Drinking Water Water additive used to control microbes
Chlorine	4	4	0.58ppm	0.11 to 1.44	Water additive used to control microbes
	MCL	**MCLG**		**Violation**	Disinfection by products
Trihalomethanes (2010)	80ppb	n/a	10ppb	no	
Haloacetic Acids (2010)	60ppb	n/a	1ppb	no	

Lead: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Whitehall is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at *http://www.epa.gov/safewater/lead.*

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City of Whitehall
Department of Public Works
Brian G. Armstrong, Director
405 E. Colby Street
Whitehall, MI 49461

Phone (231) 894-4157

Fax (231) 894-6937

Attachment 8

City of Montague 2011 and 2012 Annual Water Quality Reports

CITY OF MONTAGUE

ANNUAL WATER QUALITY REPORT FOR 2011

This report contains a summary of the quality of the water provided. It also details where our water comes from, what it contains, and how it compares to Environmental Protection Agency and State Standards. The City of Montague is committed to providing you with the safest and most reliable water supply; informed consumers are our best allies in maintaining safe drinking water.

Sources of drinking water; the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

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In order to ensure that tap water is safe to drink, The EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. We treat our water according to EPA's regulations. The Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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The following table lists all the drinking water contaminants that we detected during the 2011 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, data is from testing January 1-December 31, 2011. The State allows us to monitor for some contaminants less than once per year because the concentrations of those contaminants are not expected to vary significantly from year to year. All of the data is current and representative of the water quality even though some sample results are more than a year old.

Beginning in January 2006, drinking water supplies must comply with the new arsenic maximum contaminant level (MCL) of 0.010 milligrams per liter, or 10 parts per billion (ppb). In 2005 the arsenic MCL was 50 ppb.

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- **Action Level:** The concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements, which a water system must follow.
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Regulated in Distribution System	MRDL	MRDLG	Average or Running Annual Average	Range	Violation	Major Sources in Drinking Water
Chlorine (ppm)	4	4	0.33	0.00 - 1.40	No	Water additive used to control microbes
Total Halocetic Acids (ppb) August-2010	60	n/a	1.15	0 - 5	No	Disinfection by products
Total Trihalomethanes (ppb) August-2010	80	n/a	1.67	0 - 1.5	No	Disinfection by products

Inorganic Contaminants	MCL	MCLG			Violation	Major Sources in Drinking Water
Barium (ppm) 8/9/2010	2	2	0.06		No	Discharge of drilling wastes; metal refineries; erosion of natural deposits
Fluoride (ppm)	4	4	0.3	0.16 - 0.53	No	Erosion of natural deposits, Discharge from fertilizer and aluminum factories
Thallium (ppb) 2009	2		0.2		No	Leaching from ore processing sites: discharge from electronic, glass, and drug factories
Selenium (ppb) 2009	50	50	2		No	Discharge from petroleum and metal refineries; mines; erosion of natural deposits
Arsenic (ppb) 2009	10		2		No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes

Unregulated Contaminants	MCL	MCLG			Violation	Major Sources in Drinking Water
Sodium (ppm)	n/a	n/a	41	7 - 77	No	Erosion of natural deposits

Regulated at the Customers Tap	Action Level	Montague 90th Percentile	# or sites found above the Action Level	Violation	Major Sources in Drinking Water
Copper (ppb) 2009	1300	350	0	No	Corrosion of household Plumbing
Lead (ppb) 2009	15	4	1	No	Corrosion of household Plumbing

HEALTH EFFECTS FOR LEAD

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Montague is responsible for providing high quality drinking water, but can not control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 800-426-4791 or at http://www.epa.gov/safewater/lead

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In 2007 a new well was added to the system and after testing, a low level of tritium was detected. This well was again tested in 2008 with a low level tritium again detected. The City is complying with all testing regulations. The City of Montague has a Department of Environmental Quality approved well head protection program.

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Steve Hammond, Director of Public Works
8778 Ferry Street
Montague, MI 49437
Phone (231) 893-1155 Fax (231) 893-0815

CITY OF MONTAGUE

ANNUAL WATER QUALITY REPORT FOR 2012

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Fluoride (ppm)	4	4	0.33	0.17 - 0.57	No	Erosion of natural deposits, Discharge from fertilizer and aluminum factories
Thallium (ppb) 2012	2		0		No	Leaching from ore processing sites; discharge from electronic, glass, and drug factories
Selenium (ppb) 2012	50	50	0		No	Discharge from petroleum and metal refineries; mines; erosion of natural deposits
Arsenic (ppb) 2012	10		0		No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes

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Sodium (ppm)	n/a	n/a	43	5 - 86	No	Erosion of natural deposits

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Attachment 9

Office of Waste Management and Radiological Protection Internal Memo

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: Lynelle Marolf, Deputy Director, Office of the Great Lakes

FROM: De Montgomery, Chief, Hazardous Waste Section
Office of Waste Management and Radiological Protection

DATE: June 19, 2013

SUBJECT: Corrective Action Obligations; DuPont – Montague, Michigan, MID 000 809 640

The DuPont site is a former hazardous waste management facility and, as such, is subject to corrective action under Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and its administrative rules. Corrective action involves the assessment, investigation, evaluation, and implementation of remedies to address contamination from waste management units (WMUs) and areas of concern (AOCs), as used under the Part 111 program. The following WMUs/AOCs have been identified at Dupont.

1. Former polychlorinated byphenols spill area
2. Former hazardous waste storage area
3. Former flammable hazardous waste storage area
4 Former injection well
5. Air stripper condensate accumulation area
6. Hydrogen chloride storage tanks
7. East railcar un/loading area
8. West railcar un/loading area
9. Former waste neoprene landfill
10. Basin sludge area
11. National Pollutant Discharge Elimination System (NPDES) surface impoundments
12. Northeast landfill
13. North landfill
14. Bury pit landfill
15. Calcium fluoride basin
16. Pierson Creek landfill, including Pierson Creek
17. Lime pile
18. Mirror Lake

The environmental protection standards used under the corrective action program are the criteria established under Part 201, Environmental Remediation, of Act 451. DuPont has provided information regarding many of the WMUs/AOCs at the facility. Based on a review of the information, the Office of Waste Management and Radiological Protection (OWMRP) has made a preliminary determination that no further corrective action is warranted for the first seven WMUs/AOCs listed above. With respect to the West railcar un/loading area and the plume of groundwater contaminated with Freon 113, carbon tetrachloride, and tetrachloroethylene, the mixing zone and enhanced groundwater pump and treat system that is in place will remain in operation for the foreseeable future. DuPont will be required to continue

with the investigation and remedy evaluation and selection process for the remaining ten units identified above. The final remedy proposals will be subject to public participation and review and approval by the OWMRP. Implementation of the approved final remedies will then occur.

The corrective action obligations described herein are independent of any other state or federal requirements. Neither the removal of the Beneficial Use Impairment for White Lake nor the removal of the listing of White Lake as an Area of Concern under the program established pursuant to the Great Lakes Water Quality Agreement between the United States and Canada will have any bearing on Dupont's corrective action obligations.

The OWMRP will work with DuPont and continue its oversight of activities at the facility to ensure that the corrective action process progresses forward.

If you have any questions, please contact Ms. Ronda L. Blayer, Environmental Engineering Specialist, OWMRP, at 517-373-9548 or blayerr@michigan.gov or you may contact me at 517-373-7973 or montgomeryd1@michigan.gov.

cc: Jack Schinderle/Ronda Blayer, OWMRP
Corrective Action File

C/o Muskegon Conservation District
4735 Holton Road
Twin Lake, MI 49457

Via email

Mr. John Riley
Office of the Great Lakes
Michigan Department of Environmental Quality
525 West Allegan Street
P.O. Box 30273
Lansing, MI 48909

December 19, 2013

Dear Mr. Riley,

Groundwater in the White Lake area in northern Muskegon County, Michigan, has been contaminated from pollution at a number of former industrial sites, which attracted national attention to our small community in the 1970s/1980s and helped to place the lake on the list of Great Lakes Areas of Concern. Because of this, the White Lake Public Advisory Council (PAC), working with state and federal environmental authorities, determined that Drinking Water Consumption or Taste and Odor Problems was one of eight Beneficial Use Impairments (BUIs) thought to be causing significant changes to White Lake's ecology, water quality, and economic vitality. It is important to note that cleanups have been underway at the contaminated groundwater sites for many years now, and there are no longer active polluted discharges or leaks or spills to groundwater that we are currently aware of at this time.

State and federal environmental authorities have considered that public drinking water supplies have met state water quality standards since 2006. However, because the two cities, Montague and Whitehall, rely on groundwater for drinking water and many private residents rely on private wells, the PAC added additional criteria for removal of this Beneficial Use Impairment. The PAC stipulated confirmation that pollution at area contaminated sites is controlled, with cleanup plans and monitoring in place, to ensure there are no existing or imminent threats to public and private drinking water supplies.

In 2011, the Muskegon Conservation District (MCD), which supplies administrative and technical support to the PAC, was provided federal financial support to research and document that local criteria for the drinking water impairment have been met. Over the course of its research, MCD staff developed a briefing report and determined that all but the following area sites currently meet the local criteria:

1. Anderson Road/Tech Cast area
2. Former Whitehall wastewater facility
3. E.I. DuPont de Nemours

At its December 5, 2013 meeting, recognizing that our public drinking water supplies have met state and federal water quality criteria for participation in the Area of Concern program, the PAC voted unanimously to support approval of removal of the Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment, acknowledging the following work remains for the three sites:

Anderson Road/Tech Cast area
Enactment by the City of Montague of an ordinance disallowing the use of groundwater by private residences in the plume area.

Former Whitehall wastewater facility
Finalization of a Remedial Action Plan by the county of Muskegon to address control of contaminants at the site and institutionalize monitoring programs and protocols.

E.I. DuPont de Nemours
A completed investigation and Remedial Action Plan for the site. E.I. DuPont de Nemours has not yet completed its investigation of suspected sources of soil and groundwater contamination at the site and a completed Remedial Action Plan appears to be, at minimum, several years in the future. The PAC is reviewing available information to confirm that private drinking water wells in the vicinity of the Pierson Creek landfill on the site are not impacted nor threatened by contamination. We have also formally requested that the Michigan Department of Environmental Quality (MDEQ) continue its regulatory oversight of the site in a timely fashion. Finally, the PAC has informed the White Lake area's state elected officials about the status of the site and they have communicated their willingness to help ensure the site remains a state priority.

The PAC has reviewed the formal documentation prepared by the MDEQ regarding removal of the Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment and agrees that removal criteria have been met, while acknowledging the outstanding issues relating to local criteria summarized in this letter. We request acknowledgement of these outstanding issues by the MDEQ.

The PAC also understands there are a number of contaminated groundwater sites in the White Lake area that will need continued attention, including monitoring and oversight by state and federal agencies and the local community for many years to come.

With your acknowledgement of the outstanding open issues described, we support proceeding with the public notice process, a public meeting and other document preparation necessary to remove the Drinking Water Consumption or Taste and Odor Problems BUI.

Sincerely

Greg Mund, Chair
(231) 740-9309
grmund@aol.com