MAUL FOSTER ALONGI
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March 22, 2021
Project No. 9081.01.22

Thomas L. Mackie, LG, LHG, LEG
Washington State Department of Ecology
Central Regional Office
1250 West Alder Street
Union Gap, Washington 98903

Re: 2020 Annual Progress Report
McFarland Cascade Pole and Lumber Company Site, Tacoma, Washington
Facility Site ID: 1222; Cleanup Site ID: 3643

Dear Mr. Mackie:

In accordance with Pierce County Superior Court Consent Decree No. 16-2-08380-9 (CD), operation and maintenance (O&M) and monitoring of the remedies selected in the Final Cleanup Action Plan (CAP) for the Cascade Pole and Lumber site (the Site) were conducted at the Site in 2020 (Ecology, 2016). The CD, which became effective on June 7, 2016, requires annual progress reporting to document operations and maintenance (O&M) and monitoring activities at the Site. The CAP is provided as Exhibit B to the CD.

Maul Foster & Alongi, Inc. (MFA) prepared this report on behalf of McFarland Cascade Holdings, Inc. (MCHI) and Prologis, Inc. (Prologis) to fulfill the annual progress reporting requirements for the Site. O&M and monitoring activities required at the Site are defined in the Groundwater Compliance Monitoring Plan (CMP) (MFA, 2016a) and the Site Management Plan (SMP) (MFA, 2016b), which are included in the CAP as Appendices A and B, respectively. Specific reporting requirements are outlined in Section 7 of the CMP.

This progress report includes O&M and monitoring activities completed at the Site for the entire 2020 calendar year. This is the fifth annual progress report since the CD became effective.

BACKGROUND

The Site includes property, owned by Prologis, at 1640 E Marc Street in Tacoma, Washington (the Property), as well as a portion of an adjoining property owned by the Port of Tacoma. The Property and Site boundaries are shown in the attached figure. MCHI leases the Property from Prologis and operates a treated-wood products manufacturing and processing facility on a portion of the Property. The final remedy for the Site includes O&M of a protective cap covering residual soil contamination in the Restricted Area (see the figure), soil management to be undertaken should soil be excavated or disturbed below the cap, O&M of a horizontal

groundwater recovery system, groundwater compliance monitoring, and institutional controls (see the CAP, CMP, and SMP for details).

Groundwater monitoring at the Site is being conducted in accordance with the protection stage of monitoring, as defined in the CMP. During the protection stage, the horizontal groundwater recovery system is in operation, and monitoring is required to evaluate performance and effectiveness. The CMP states that during the protection stage, monitoring will be conducted semiannually for two years and then reduced to an annual frequency. The last semiannual protection monitoring event was conducted in February 2017. MFA notified Ecology of the reduction from semiannual to annual monitoring at the Site (MFA, 2017a). As confirmed by the Ecology site manager, the sampling reduction was consistent with the requirements outlined in the CMP (Ecology, 2017). Therefore, protection monitoring is now conducted on an annual basis during January or February, in accordance with the CMP. An annual monitoring event was conducted in February 2020, as described in Attachment A.

SUMMARY OF ON-SITE ACTIVITIES

The following activities were conducted on the Site between January 1, 2020, and December 31, 2020:

- An annual groundwater compliance monitoring event was conducted in February 2020 (the groundwater monitoring report is provided as Attachment A).
- Routine operation and monthly inspections of the horizontal groundwater recovery system were conducted throughout the year (monthly inspection forms are provided as Attachment B).
- Annual inspection and maintenance of the protective cap (the 2020 annual cap inspection report is provided as Attachment C).
- The 2020 sampling data were uploaded to Ecology's Environmental Information Management database.

An initial inspection of the protective cap was conducted on August 20, 2020. Several areas were noted for monitoring and repair. Following completion of the repairs, a second inspection was conducted on November 24, 2020 (see Attachment C). At that time, no additional repairs were identified, with the exception of the temporary repair completed by Puget Sound Energy (PSE) associated with their assessment of a natural gas leak on the Site. Once PSE completes the natural gas line repair on the Site, MFA staff will evaluate the quality of final cap repairs to ensure they are consistent with the site management plan (MFA, 2016b). Following final cap repair inspection, MFA will prepare an "After Action" report for submittal to Ecology summarizing the work conducted by PSE.

The horizontal groundwater recovery system operated normally in 2020, with the exception of the totalizer meter (inspection logs and a summary table of inspection and performance data are provided as Attachment B). As noted in the 2019 annual progress report, a new totalizer was installed in July 2019 due to operation issues with the previous totalizer meter (MFA, 2020). Upon review of the horizontal well recovery records, an issue with the totalizer operation was identified following recordings of very low recovery volumes in fall 2020, when the groundwater table typically rises and groundwater discharges more frequently to the horizontal recovery well. Stella-Jones personnel thoroughly inspected the horizontal recovery well and determined that the system was operating correctly but that the totalizer was inconsistently recording the volume of water discharged. Therefore, a new totalizer meter will be installed to ensure that the cumulative groundwater recovery volumes are being tracked appropriately. Stella-Jones staff will monitor the operation of the horizontal recovery well and totalizer meter closely in 2021 to ensure functionality and determine if additional improvements are needed.

Groundwater compliance monitoring was conducted in accordance with the sampling requirements for the protection monitoring stage (see the CMP). Remediation levels were not exceeded in the sentry wells during the reporting period, and no contingent actions were triggered. Remediation levels were exceeded in source area wells; therefore, protection monitoring and operation of the groundwater horizontal recovery system will continue.

NEXT STEPS

An annual protection groundwater monitoring event was conducted in February 2021. A groundwater monitoring report for that event will be included in the 2021 annual progress report.

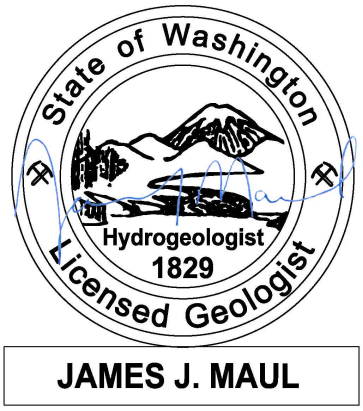
O&M and monthly monitoring of the horizontal groundwater recovery system will continue in 2021.

The next annual protective cap inspection is scheduled for the fall of 2021.

If you have any questions regarding this submittal, please feel free to contact either of us.

Sincerely,

Maul Foster & Alongi, Inc.



James J. Maul, LHG
Principal Hydrogeologist

Carolyn R. Wise, LG
Project Geologist

Attachments: Limitations
References
Figure
A—Annual Groundwater Monitoring Report
B—Monthly Horizontal Well Inspection Forms
C—Annual Protective Cap Inspection Report

cc: Alex Clark, McFarland Cascade Holdings, Inc.
Brett Richer, Prologis, Inc.

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

Ecology. 2016. Final cleanup action plan, Cascade Pole and Lumber Company, Tacoma, Washington. Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program, Southwest Regional Office, Lacey, Washington. January 12.

Ecology. 2017. Letter (re: groundwater monitoring frequency reduction, McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, facility site ID: 1222; cleanup site ID: 3643, Pierce County Superior Court Consent Decree No. 16-2-08380-9) to H. Good, Maul Foster & Alongi, Inc., Bellingham, Washington, from T. Mackie, Washington State Department of Ecology, Union Gap, Washington. May 31.

MFA. 2016a. Groundwater compliance monitoring plan—McFarland Cascade Pole and Lumber Company, Tacoma facility. Prepared for McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. January 12.

MFA. 2016b. Site management plan—McFarland Cascade Pole and Lumber Company, Tacoma facility. Prepared for McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. January 12.

MFA. 2017a. Letter (re: groundwater monitoring frequency reduction—McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, facility site ID: 1222, cleanup site ID: 3643) to T.L. Mackie, Washington State Department of Ecology, from H. Good and J. Clary, Maul Foster & Alongi, Inc., Bellingham, Washington. May 3.

FIGURE

Figure
Site Features

McFarland Cascade Pole
and Lumber Company
Tacoma, Washington

Legend

- Shallow Monitoring Well
- Deep Monitoring Well
- Railroad
- Site Boundary
- Property Boundary
- Protective Cap and Soil Restricted Area

Notes:
AST = aboveground storage tank.
CA-C = copper azole - type C.
PCP = pentachlorophenol.
SWTS = stormwater treatment system.

0 100 200
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; site layout and features obtained from AECOM Environment, RETEC, MKA and USPCI; county parcel boundaries (July 2014) obtained from Pierce County.

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Path: X:\0999.01 Cascade Pole\01_MTCA Closure\02_CMP\Projects\Fig_Site Features.mxd
Print Date: 3/16/2017
Approved By: hgood
Produced By: cwise
Project: 9081.01.12

ATTACHMENT A

ANNUAL GROUNDWATER MONITORING REPORT

MAUL FOSTER ALONGI
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April 6, 2020
Project No. 9081.01.19

Alex Clark
Senior Environmental Manager
Stella-Jones Corporation
PO Box 1496
Tacoma, Washington 98401

Re: 2020 Annual Groundwater Monitoring Event
McFarland Cascade Pole and Lumber Company Site, Tacoma, Washington
Facility Site ID: 1222; Cleanup Site ID: 3643

Dear Ms. Clark:

On February 3 through 5, 2020, Maul Foster & Alongi, Inc. (MFA) conducted a groundwater monitoring event at the Cascade Pole and Lumber Company site located at 1640 East Marc Street in Tacoma, Washington (the Site). The monitoring event was conducted on behalf of McFarland Cascade Holdings, Inc. (MCHI) and Tyee Management Company, LLC (Tyee) to fulfill the annual compliance monitoring requirement under the final cleanup action plan (CAP) (Washington State Department of Ecology [Ecology], 2016), which is included as an exhibit in the consent decree dated June 7, 2016 (Pierce County Superior Court No. 16-2-08380-9). Sampling was conducted consistent with the groundwater compliance monitoring plan (CMP) (MFA, 2016a), which is included in the CAP as an appendix, and in accordance with compliance monitoring requirements put forth in the Washington State Model Toxics Control Act (Washington Administrative Code 173-340-410). Monitoring activities and sampling results are summarized below.

BACKGROUND

The Site includes property owned by Tyee (the Property) and a portion of the adjoining property owned by the Port of Tacoma (the Port). The Property and Site boundaries are shown on Figure 1. MCHI leases the Property from Tyee and operates a treated-wood-products manufacturing and processing facility on a portion of the Property. Actions completed under a 1989 agreed order include hydraulic containment and recovery via a horizontal groundwater recovery well and compliance groundwater monitoring as part of the final remedy for the Site (Ecology, 2016). Groundwater from the horizontal recovery well is used in the wood-treating process.

The groundwater monitoring program includes three stages of monitoring: protection, performance, and confirmational (MFA, 2016a). All three stages require groundwater monitoring to evaluate whether indicator hazardous substance (IHS) concentrations comply

with cleanup levels (CULs) at the conditional point of compliance (CPOC), which is located at the Site boundary (see Figure 1).

To demonstrate that CULs are being met at the CPOC, sentry wells are monitored for compliance with remediation levels (RELs). Sentry wells are located between the source area and the CPOC (see Figure 1). RELs are concentrations derived from attenuation modeling that, if reached in a sentry well, indicate the potential for exceeding a CUL at the CPOC. REL exceedances in a sentry well triggers additional assessment consistent with the CMP (MFA, 2016a). Criteria for evaluating compliance with RELs and CULs, requirements for progressing to the next stage of monitoring, and steps for addressing REL exceedances are included in the CMP.

The current stage is annual protection monitoring. During this stage, the horizontal recovery system is in operation and monitoring is required to evaluate its performance and protectiveness. After two years of semiannual groundwater monitoring without sentry well exceedances, the last semiannual protection monitoring event was conducted in February 2018. MFA notified Ecology of the reduction from semiannual to annual monitoring at the Site (MFA, 2017b).

As confirmed by the Ecology site manager, the sampling reduction was consistent with the requirements outlined in the CMP (Ecology, 2017). Therefore, protection monitoring is now conducted on an annual basis at the Site during January or February, in accordance with the CMP, and includes sampling of compliance monitoring network wells, including source area wells, sentry wells, and the horizontal recovery well; and measurement of water levels in all Site wells (see Figure 1). IHS concentrations in all compliance monitoring network wells are compared to RELs. It is required that the protection stage continue until it has been demonstrated, in accordance with the procedures outlined in the CMP, that RELs are being met in all compliance monitoring network wells.

Prior to the February 2018 event, protection monitoring events included analyzing groundwater samples for the following Site IHSs: dissolved arsenic, dissolved copper, total hexavalent chromium, benzene, ethylbenzene, xylenes, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and pentachlorophenol. Data from four semiannual monitoring events conducted between February 2015 and October 2016 indicated that dissolved arsenic and dissolved copper were the only IHSs exceeding their respective CULs (MFA, 2016c). Therefore, Ecology approved a request to remove total hexavalent chromium, benzene, ethylbenzene, xylenes, cPAHs, and pentachlorophenol from the groundwater compliance monitoring program (see Attachment A of MFA, 2017a). The February 2017, 2018, 2019, and 2020 monitoring events included analyses for dissolved arsenic and dissolved copper only; future monitoring events will also focus on only these two IHSs.

Groundwater is present in both shallow and deep water-bearing zones (WBZs) beneath the Site. Compliance monitoring network wells are screened in each WBZ, as shown in the attached tables and figures.

One monitoring well associated with the Union Pacific Railroad's Former Milwaukee Railyard site (UPRR Site), UPRR-MW-29, is included within the Site boundaries and is located on the Port's property (see Figure 1). The Port completed cleanup actions and conducts ongoing groundwater monitoring to address petroleum-related contamination on the UPRR Site under Prospective Purchaser Consent Decree No. 95-2-02280-0. UPRR-MW-29 is monitored to evaluate concentration trends and hydraulic gradients as part of the protection and performance stages of monitoring for the Site but is not included in the compliance monitoring network. Therefore, IHS concentrations detected in this well are not compared to RELs. UPRR-MW-29 will be included in the final confirmational monitoring network (MFA, 2016a).

The February 2020 event is the eighth protection monitoring event since protection monitoring began in February 2015. The previous monitoring event was conducted in February 2019 (MFA, 2019b).

FIELD AND ANALYTICAL PROCEDURES

MFA measured static water levels in all existing Site wells and collected groundwater samples from all wells included in the compliance monitoring network and from UPRR-MW-29. A field duplicate sample was collected from source area well MW-3.

Water quality parameters were measured before sample collection and were recorded on field sampling data sheets (FSDSs) (see Attachment A). Groundwater samples were collected using low-flow sampling techniques.

Samples were submitted to Analytical Resources, Inc., of Tukwila, Washington, under standard chain-of-custody procedures. Samples were analyzed for dissolved arsenic and dissolved copper by U.S. Environmental Protection Agency Method 200.8. Samples were field filtered.

GROUNDWATER FLOW

Water levels were measured in all Site wells on February 4, 2020. Depth-to-water measurements and groundwater elevations are summarized in Table 1. Groundwater elevations across the Site were about 0.38 foot higher on average than water levels measured in February 2019 (see Table 1 and MFA, 2019b).

Estimated groundwater potentiometric surface contours for the shallow and deep WBZs (shown in Figure 2) indicate that groundwater in the shallow WBZ was generally flowing northwest, west, or southwest, toward the Puyallup River. This is consistent with the shallow-WBZ groundwater flow direction observed during previous monitoring events (MFA, 2016b,c,

2017a, 2019a,b). The general groundwater flow direction in the deep WBZ is west-southwest. This is consistent with the deep-WBZ groundwater flow direction observed during previous monitoring events, except for October 2016, in which the groundwater flow direction was west-northwest (MFA, 2016b,c, 2017a, 2019a,b).

The horizontal recovery well (HW-01) was installed in 1997 beneath the transfer table pit and adjacent areas for hydraulic containment of groundwater in the wood-treating area of the plant. HW-01 recovers groundwater from the shallow aquifer and influences shallow groundwater flow at the Site. Operation of HW-01 captures groundwater in the area of the wood-treating operation, as indicated by the groundwater potentiometric surface contours and associated groundwater flow lines shown on Figure 2. Given this influence by the horizontal recovery well, shallow groundwater flow varies across the Site from northwest to southwest; however, sentry wells MW-4, MW-19, and MW-20 remain downgradient of the treating area, outside the capture zone created by HW-01.

REDEVELOPMENT OF SENTRY WELLS

During previous groundwater monitoring events, turbidity in sentry wells MW-4, MW-19, and MW-20 was elevated (MFA, 2016b,c, 2017a). In the past, extensive purging was required to reduce turbidity. Given that the sentry wells were last sampled in February 2019, the accumulation of fine-grained material in the wells was anticipated. Therefore, the wells were redeveloped prior to sampling.

Sentry wells MW-4, MW-19, and MW-20 were redeveloped on February 3, 2020. Redevelopment consisted of surging and bailing the wells with a disposable bailer, followed by purging with a peristaltic pump and disposable tubing (see the well redevelopment forms, Attachment B). Before collection of the samples, the redeveloped sentry wells were allowed to recharge and stabilize for at least 24 hours. MFA collected samples from the sentry wells on February 4 and 5, 2020, after the water quality parameters had stabilized and turbidity had decreased to below 10 nephelometric turbidity units (see the FSDSs in Attachment A).

LABORATORY RESULTS

Analytical results are summarized in Table 2. The laboratory analytical report is included as Attachment C. A data validation memorandum, which summarizes data evaluation procedures, usability of data, and deviations from field and/or laboratory methods, is included as Attachment D. Analytical data and the laboratory's internal quality assurance and quality control data were reviewed to assess whether data quality objectives had been met. The data were validated and are considered acceptable for their intended use, with the appropriate data qualifiers assigned (see Attachment D).

Dissolved arsenic and dissolved copper were detected in groundwater samples collected during the February 2020 monitoring event (see Table 2); analytical results from both the shallow and deep WBZs are shown in Figure 3.

COMPARISON TO CLEANUP LEVELS AND REMEDIATION LEVELS

IHS (i.e., arsenic and copper) concentrations were compared to the CULs and RELs included in the CMP (MFA, 2016a) (see Table 2).

Dissolved arsenic REL exceedances were detected in the source area shallow WBZ (MW-3 and MW-8). CULs were exceeded in all shallow WBZ wells, with the exception of MW-20. Dissolved arsenic was detected in the deep WBZ (MW-7, MW-14, and MW-18), but no CUL or REL exceedances were detected in these wells.

Dissolved copper exceeded its CUL, but not its REL, in the shallow WBZ at HW-01. Dissolved copper was detected in the shallow WBZ at sentry well MW-19 and source area well MW-3 and in the deep WBZ in sentry wells MW-7 and MW-18, but not above its CUL or RELs.

IHS concentrations detected in samples from the sentry wells were all below RELs.

The dissolved arsenic and dissolved copper concentrations detected in the sample collected from the Port property monitoring well (UPRR-MW-29), which is in the shallow WBZ, exceeded CULs, consistent with previous monitoring events. However, UPRR-MW-29 is not included in the compliance monitoring network, and groundwater results from this well are not compared to RELs.

SUMMARY OF FINDINGS

Below is a summary of findings from the February 2020 compliance monitoring event:

- RELs were not exceeded in any sentry wells.
- In the shallow and deep WBZs, the groundwater flow direction remained consistent with previous monitoring events.
- In the shallow WBZ sentry wells (MW-4 and MW-19), dissolved arsenic concentrations exceeded CULs but were below RELs.
- In the shallow WBZ, the dissolved copper concentration exceeded the CUL at the horizontal recovery well.
- In the shallow WBZ source area wells, dissolved arsenic concentrations exceeded the CUL and RELs (MW-3 and MW-8).

- In the deep WBZ source area and sentry wells, dissolved arsenic and dissolved copper concentrations were below their respective CULs and RELs.
- The dissolved copper and dissolved arsenic concentrations detected in the Port property monitoring well (UPRR-MW-29) exceeded CULs. Groundwater results from this well were not compared to RELs.

CONCLUSIONS

RELs were not exceeded in shallow or deep WBZ sentry wells during this or previous compliance monitoring events, which indicates that IHS concentrations are in compliance with CULs at the CPOC. Therefore, no contingent actions, as defined in the CMP (MFA, 2016a), are triggered.

Dissolved arsenic and dissolved copper concentrations detected in the source area exceeded RELs; therefore, operation of the horizontal recovery system and protection monitoring will continue.

The next annual groundwater monitoring event is scheduled for February 2021.

If you have any questions regarding this letter, please contact us.

Sincerely,

Maul Foster & Alongi, Inc.

04-06-2020

James J. Maul, LHG
Principal Hydrogeologist

Carolyn R. Wise, LG
Project Geologist

Attachments: Limitations
References
Tables
Figures
A—Field Sampling Data Sheets
B—Well Redevelopment Logs
C—Laboratory Analytical Report
D—Data Validation Memorandum

cc: Les Lonning, Tyee

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

Ecology. 2016. Final cleanup action plan, Cascade Pole and Lumber Company, Tacoma, Washington. Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program, Southwest Regional Office, Lacey, Washington. January 12.

Ecology. 2017. Letter (re: groundwater monitoring frequency reduction, McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, facility site ID: 1222; cleanup site ID: 3643, Pierce County Superior Court Consent Decree No. 16-2-08380-9) to H. Good, Maul Foster & Alongi, Inc., from T. Mackie, Washington State Department of Ecology, Union Gap, Washington. May 31.

MFA. 2016a. Groundwater compliance monitoring plan—McFarland Cascade Pole and Lumber Company, Tacoma facility. Prepared for McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. January 12.

MFA. 2016b. Letter (re: spring 2016 semiannual groundwater monitoring event—McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, Facility Site ID: 1222, Cleanup Site ID: 3643) to G. Caron, Washington State Department of Ecology, from H. Good and J. Clary, Maul Foster & Alongi, Inc. Prepared for McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. March 25.

MFA. 2016c. Letter (re: fall 2016 semiannual groundwater monitoring event—McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, Facility Site ID: 1222, Cleanup Site ID: 3643) to G. Caron, Washington State Department of Ecology, from H. Good and J. Clary, Maul Foster & Alongi, Inc. Prepared for McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. December 29.

MFA. 2017a. Letter (re: spring 2017 semiannual groundwater monitoring event—McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, Facility Site ID: 1222, Cleanup Site ID: 3643) to T. Smith, McFarland Cascade Holdings, Inc., from H. R. Good and J. L. Clary, Maul Foster & Alongi, Inc. Prepared for McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. March 27.

MFA. 2017b. Letter (re: groundwater monitoring frequency reduction—McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, facility site ID: 1222, cleanup site ID: 3643) to T. L. Mackie, Washington State Department of Ecology, from H. G. Good and J. L. Clary, Maul Foster & Alongi, Inc., Bellingham, Washington. May 3.

MFA. 2019a. Letter (re: 2018 annual groundwater monitoring event—McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, facility site ID: 1222, cleanup site ID: 3643) to T. L. Mackie, Washington State Department of Ecology, from C. R. Wise and J. J. Maul, Maul Foster & Alongi, Inc., Bellingham, Washington. February 1.

MFA. 2019b. Letter (re: 2019 annual groundwater monitoring event—McFarland Cascade Pole and Lumber Company site, Tacoma, Washington, facility site ID: 1222, cleanup site ID: 3643) to T. L. Mackie, Washington State Department of Ecology, from C. R. Wise and J. J. Maul, Maul Foster & Alongi, Inc., Bellingham, Washington. August 26.

TABLES

Table 1
Water Level Measurements
McFarland Cascade Pole and Lumber Company
McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC
Tacoma, Washington

Well ID	MP Elevation (feet NGVD29)	Date	Time	DTW (feet)	DTB (feet)	Groundwater Elevation (feet)
Shallow Water-Bearing Zone Wells						
MW-1	11.68	02/04/2020	1:30 PM	4.58	13.43	7.10
MW-2	11.93	02/04/2020	10:45 AM	4.32	9.33	7.61
MW-3	12.69	02/04/2020	9:22 AM	5.96	10.53	6.73
MW-4	11.55	02/04/2020	4:32 PM	6.83	13.07	4.72
MW-5	12.71	02/04/2020	11:05 AM	7.19	11.89	5.52
MW-6	12.70	02/04/2020	12:55 PM	5.56	11.66	7.14
MW-8	14.02	02/04/2020	11:28 AM	7.49	12.29	6.53
MW-9	10.96	02/04/2020	10:54 AM	5.03	10.29	5.93
MW-10	12.15	02/04/2020	12:56 PM	6.26	9.91	5.89
MW-11	11.70	02/04/2020	8:40 AM	4.94	8.58	6.76
MW-12	12.32	02/04/2020	8:35 AM	4.92	10.08	7.40
MW-13	12.31	02/04/2020	9:00 AM	4.86	10.83	7.45
MW-15	11.90	02/04/2020	11:10 AM	6.92	10.79	4.98
MW-16	10.77	02/04/2020	10:59 AM	4.98	8.84	5.79
MW-17	13.56	02/04/2020	8:30 AM	7.60	10.67	5.96
MW-19	14.15	02/04/2020	3:50 PM	9.41	13.72	4.74
MW-20	14.99	02/04/2020	4:39 PM	8.42	14.12	6.57
UPRR-MW-29	11.80	02/04/2020	6:40 PM	3.64	15.48	8.16
Deep Water-Bearing Zone Wells						
MW-7	12.00	02/04/2020	11:25 AM	7.58	24.89	4.42
MW-14	12.30	02/04/2020	8:25 AM	7.81	24.73	4.49
MW-18	12.23	02/04/2020	11:35 AM	8.03	26.89	4.20

NOTES:

DTW and DTB are measured from top of well casing.

DTB = depth to bottom.

DTW = depth to water.

MP = measuring point (i.e., top of well casing).

NGVD29 = National Geodetic Vertical Datum of 1929.

Table 2
Groundwater Analytical Results (ug/L)
McFarland Cascade Pole and Lumber Company
McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC
Tacoma, Washington

			IHS:	Dissolved Arsenic	Dissolved Copper
			CUL:	5	2.4
Location	Location Type	Collection Date	Sample Type		
Shallow Water-Bearing Zone					
HW-01	Horizontal Recovery Well		*HW-01 RELs:*	*46*	*22*
		02/27/2015	N	**56.9**	2.2
		10/29/2015	N	**118**	**3**
		02/24/2016	N	**64.4**	1.3
		10/05/2016	N	**138**	**2.87**
		02/02/2017	N	**45.6**	0.921
		02/06/2018	N	**49.5**	0.5 U
		02/26/2019	N	**37.6**	**287**
		02/26/2019	FD	**38**	**290**
		02/04/2020	N	**36**	**3.14**
MW-3	Source Area Well		*MW-3 RELs:*	*45*	*21*
		02/27/2015	N	**694 J**	0.7
		02/27/2015	FD	**773 J**	0.6
		10/29/2015	N	**497**	0.5 U
		02/24/2016	N	**566**	0.6
		02/24/2016	FD	**567**	0.8
		10/05/2016	N	**3,410**	**3.75**
		10/05/2016	FD	**3,320**	**4.52**
		02/02/2017	N	**315**	0.5 U
		02/02/2017	FD	**343**	0.5 U
		02/06/2018	N	**706**	0.947
		02/06/2018	FD	**814**	1.29
		02/06/2019	N	**491**	1.0 U
		02/06/2019	FD	**507**	1.0 U
		02/04/2020	FD	**391**	1.03
		02/04/2020	N	**325**	1.05
MW-4	Sentry Well		*MW-4 RELs:*	*32*	*15*
		02/27/2015	N	**16.8**	0.6
		10/28/2015	N	**27.8**	0.5 U
		02/24/2016	N	**15**	0.5 U
		10/04/2016	N	**31.8**	0.5 U
		02/01/2017	N	**21.5**	0.5 U
		02/07/2018	N	**22.2**	0.5 U
		02/06/2019	N	**20.3**	0.5 U
		02/05/2020	N	**15.4**	0.5 U

Table 2
Groundwater Analytical Results (ug/L)
McFarland Cascade Pole and Lumber Company
McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC
Tacoma, Washington

			IHS:	Dissolved Arsenic	Dissolved Copper
			CUL:	5	2.4
Location	Location Type	Collection Date	Sample Type		
MW-8	Source Area Well		*MW-8 RELs:*	*46*	*22*
		02/26/2015	N	**273**	1.1
		10/29/2015	N	**566**	0.8
		10/29/2015	FD	**604**	1.4
		02/24/2016	N	**236**	0.5 U
		10/06/2016	N	**594**	0.5 U
		02/02/2017	N	**160**	0.797
		02/06/2018	N	**139**	0.595
		02/05/2019	N	**188**	0.5 U
		02/04/2020	N	**112**	0.5 U
MW-19	Sentry Well		*MW-19 RELs:*	*35*	*17*
		02/27/2015	N	**14**	0.7
		10/30/2015	N	**36.9***	0.5
		11/24/2015	N	**18.2**	--
		11/24/2015	FD	**18.0**	--
		02/23/2016	N	**9.3**	0.8
		10/06/2016	N	**21.8**	0.576
		02/01/2017	N	**12.0**	0.5 U
		02/07/2018	N	**13.0**	0.5 U
		02/06/2019	N	**14.9**	0.558
		02/04/2020	N	**14.2**	0.5 U
MW-20	Sentry Well		*MW-20 RELs:*	*29*	*14*
		02/27/2015	N	2.1	0.6
		10/28/2015	N	0.9	0.5 U
		02/23/2016	N	0.6	0.5 U
		10/05/2016	N	0.966	0.5 U
		02/01/2017	N	0.672	0.5 U
		02/07/2018	N	0.645	0.5 U
		02/06/2019	N	0.493	0.5 U
		02/05/2020	N	0.338	0.5 U
UPRR-MW-29	Other Monitoring Well		*MW-29 RELs:*	*NA*	*NA*
		02/26/2015	N	**31.9**	**4**
		10/30/2015	N	**55.9**	1.9
		02/23/2016	N	**20.2**	**4.9**
		10/06/2016	N	**112**	0.5 U
		02/02/2017	N	**13.1**	**3.45**
		02/06/2018	N	**18**	**4.61**
		02/05/2019	N	**23.9**	**3.91**
		02/05/2020	N	**18.5**	**3.29**

Table 2
Groundwater Analytical Results (ug/L)
McFarland Cascade Pole and Lumber Company
McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC
Tacoma, Washington

			IHS:	Dissolved Arsenic	Dissolved Copper
			CUL:	5	2.4
Location	Location Type	Collection Date	Sample Type		
Deep Water-Bearing Zone					
MW-7	Sentry Well		*MW-7 RELs:*	*43*	*20*
		02/26/2015	N	0.9	0.8
		10/29/2015	N	1.4	0.7
		02/24/2016	N	0.7	0.5 U
		10/06/2016	N	0.668	0.5 U
		02/02/2017	N	0.709	0.5 U
		02/06/2018	N	0.704	0.5 U
		02/05/2019	N	0.88	0.546
		02/04/2020	N	0.774	0.851
MW-14	Source Area Well		*MW-14 RELs:*	*47*	*22*
		02/27/2015	N	**10.5**	**6**
		10/29/2015	N	2.8	0.6
		02/24/2016	N	4.5	**3.2**
		10/05/2016	N	2.86	0.5 U
		02/02/2017	N	3.04	0.551
		02/06/2018	N	2.47	0.5 U
		02/06/2019	N	2.05	0.5 U
		02/04/2020	N	3.35	0.5 U
MW-18	Sentry Well		*MW-18 RELs:*	*42*	*20*
		02/27/2015	N	0.6	1.1
		10/28/2015	N	0.4	0.5 U
		02/24/2016	N	0.2	0.6
		10/05/2016	N	0.283	0.5 U
		02/02/2017	N	0.287	1.04
		02/06/2018	N	0.2 U	0.5 U
		02/05/2019	N	0.2 U	0.5 U
		02/04/2020	N	0.224	0.681

Table 2
Groundwater Analytical Results (ug/L)
McFarland Cascade Pole and Lumber Company
McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC
Tacoma, Washington

NOTES:

Bold and highlighted values indicate an REL exceedance. Method reporting limits for non-detect results were not compared to RELs.

Bold values indicate a CUL exceedance. Method reporting limits for non-detect results were not compared to CULs.

-- = not analyzed.

CUL = cleanup level.

FD = field duplicate.

IHS = indicator hazardous substance.

J = Result is an estimated value.

N = normal.

NA = not available/not applicable.

REL = remediation level.

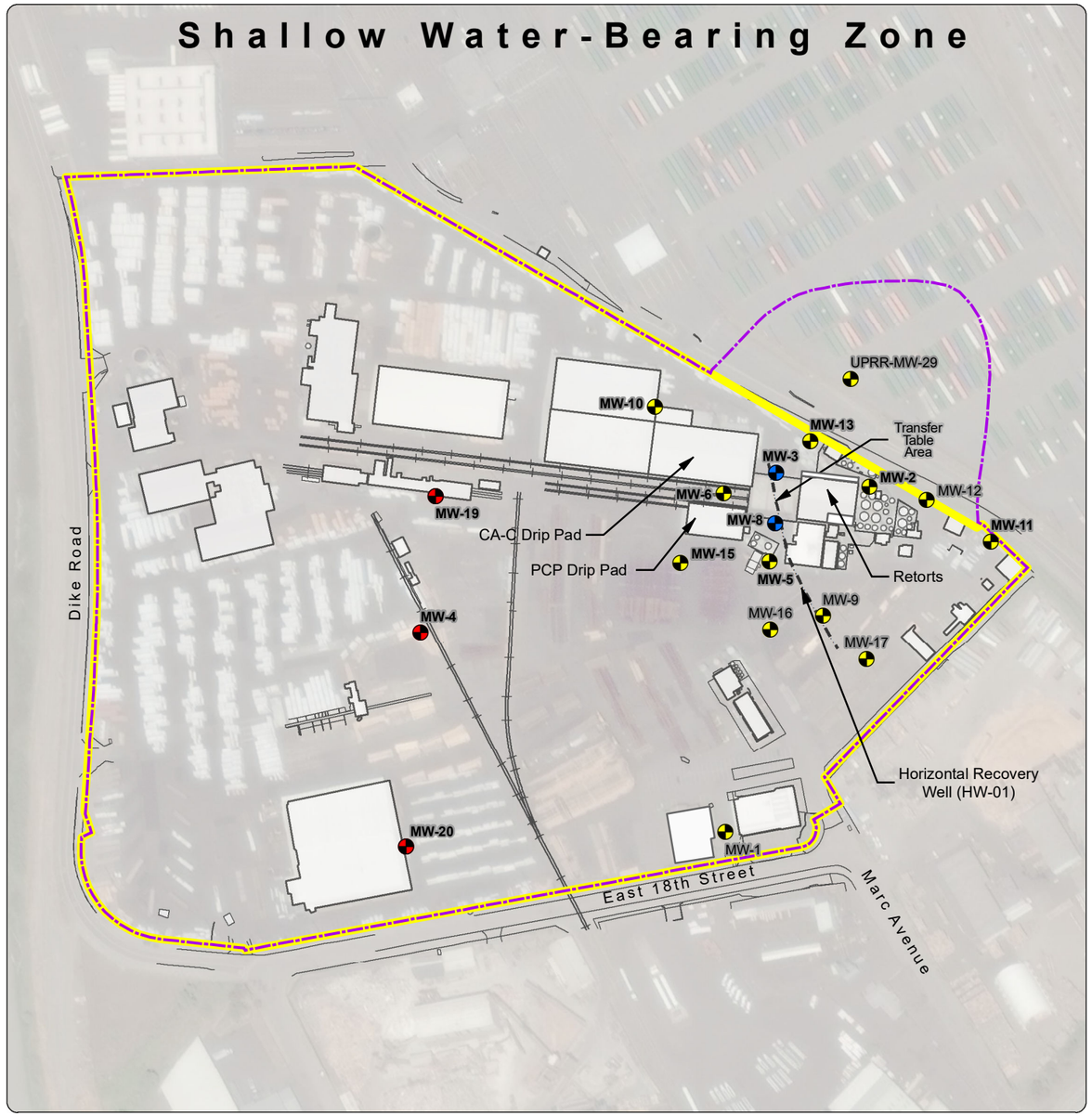
U = Analyte not detected at or above method reporting limit.

ug/L = micrograms per liter.

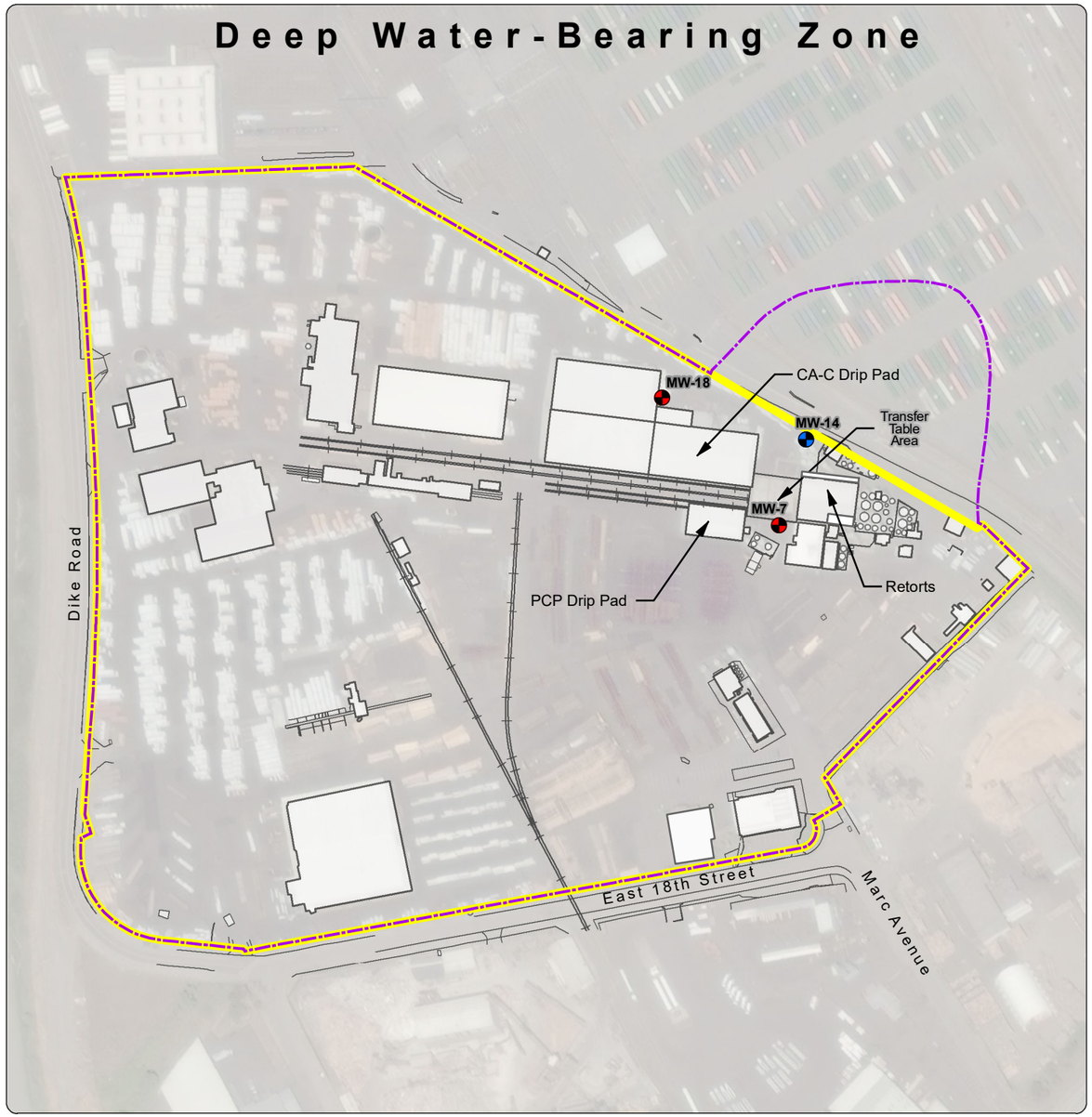
*Detection was determined not to be representative of aquifer conditions because of elevated turbidity in the sample. Following redevelopment of the well, an additional sample was collected from the location on November 24, 2015.

FIGURES

Shallow Water-Bearing Zone



Deep Water-Bearing Zone



Source: Aerial photograph obtained from Esri ArcGIS Online; site layout and features obtained from AECOM Environment, RETEC, MKA and USPCI.

NOTES:
Water levels in the horizontal recovery well (HW-01) will not be monitored.
The Port of Tacoma property well, UPRR-MW-29, is not a sentry well and is not included in the compliance monitoring network. It will be monitored during the "Protection," "Performance," and "Confirmational" stages of monitoring to evaluate indicator hazardous substance concentration and hydraulic gradient trends, but will not be evaluated for compliance with RELs or CULs. However, this well is included in the final closure monitoring network and will be monitored for compliance with CULs during the "Final Closure" stage of monitoring.
CA-C = copper azole - type C.
CUL = cleanup level.
PCP = pentachlorophenol.
REL = remediation level.

Legend

Compliance Monitoring Network Includes:
- Sentry Well
- Source Area Well

Water Level Monitoring Network Includes:
- Sentry Well
- Source Area Well
- Other Monitoring Well

- Rail Line
- Site Boundary
- Property Boundary

Figure 1
Groundwater Monitoring Network

McFarland Cascade Pole and Lumber Company
Tacoma, Washington

0 135 270
Feet

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Shallow Water-Bearing Zone

Deep Water-Bearing Zone

Source: Aerial photograph obtained from Esri ArcGIS Online; site layout and features obtained from AECOM Environment, RETEC, MKA and USPCI.

NOTES:
CA-C = copper azole - type C.
NGVD29 = National Geodetic Vertical Datum of 1929.
PCP = pentachlorophenol.

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- Site Boundary
- Property Boundary
- Rail Line
- Horizontal Recovery Well

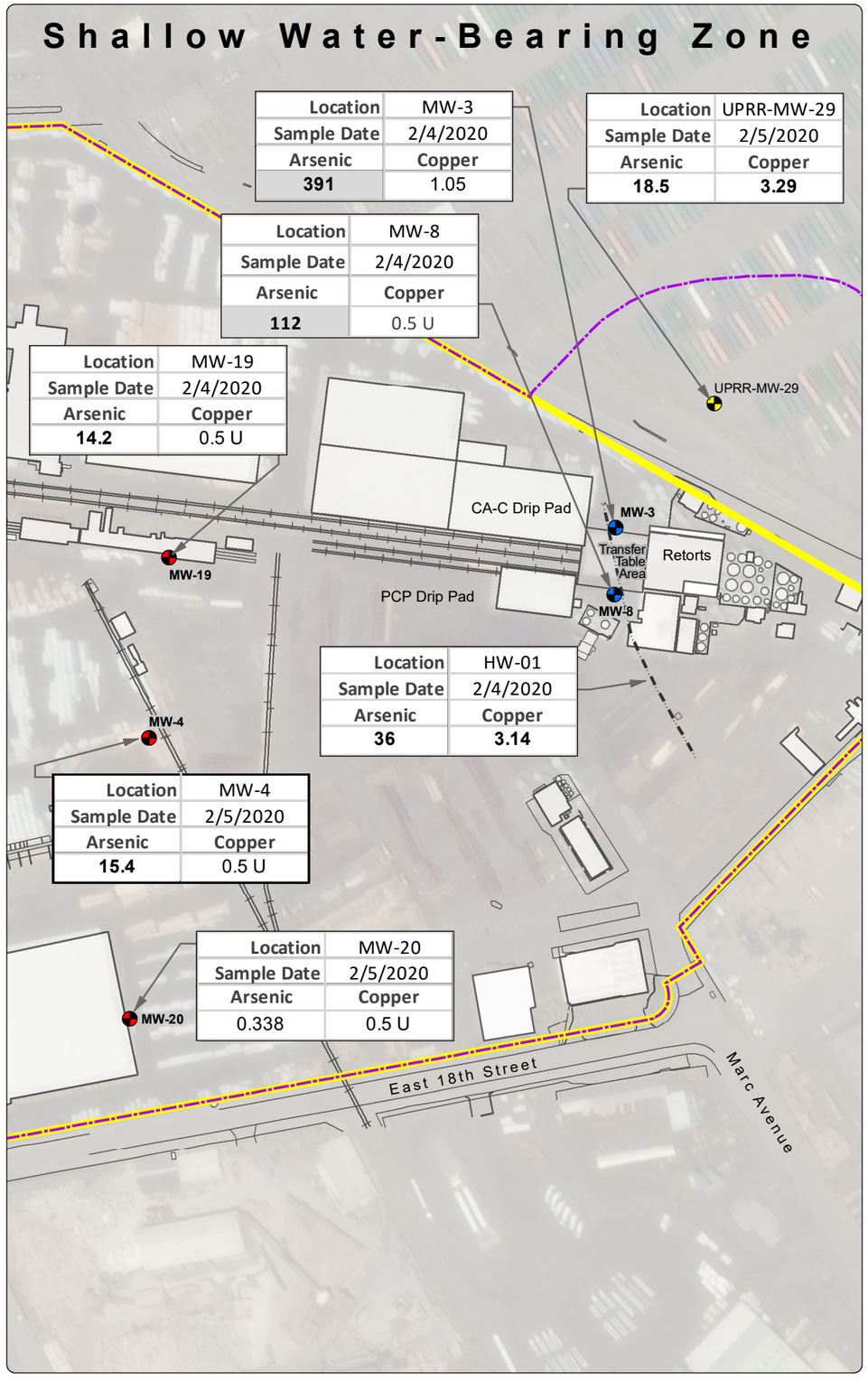
Legend

- Water Level Monitoring Network Well (with Groundwater Elevation in Feet, NGVD29)
- Shallow Groundwater Elevation Contour (0.5 ft.)
- Deep Groundwater Elevation Contour (0.05 ft.)
- Groundwater Flow Direction (approximate)

Figure 2
Groundwater Elevation Contours
February 2020

McFarland Cascade Pole and Lumber Company
Tacoma, Washington

0 100 200
Feet



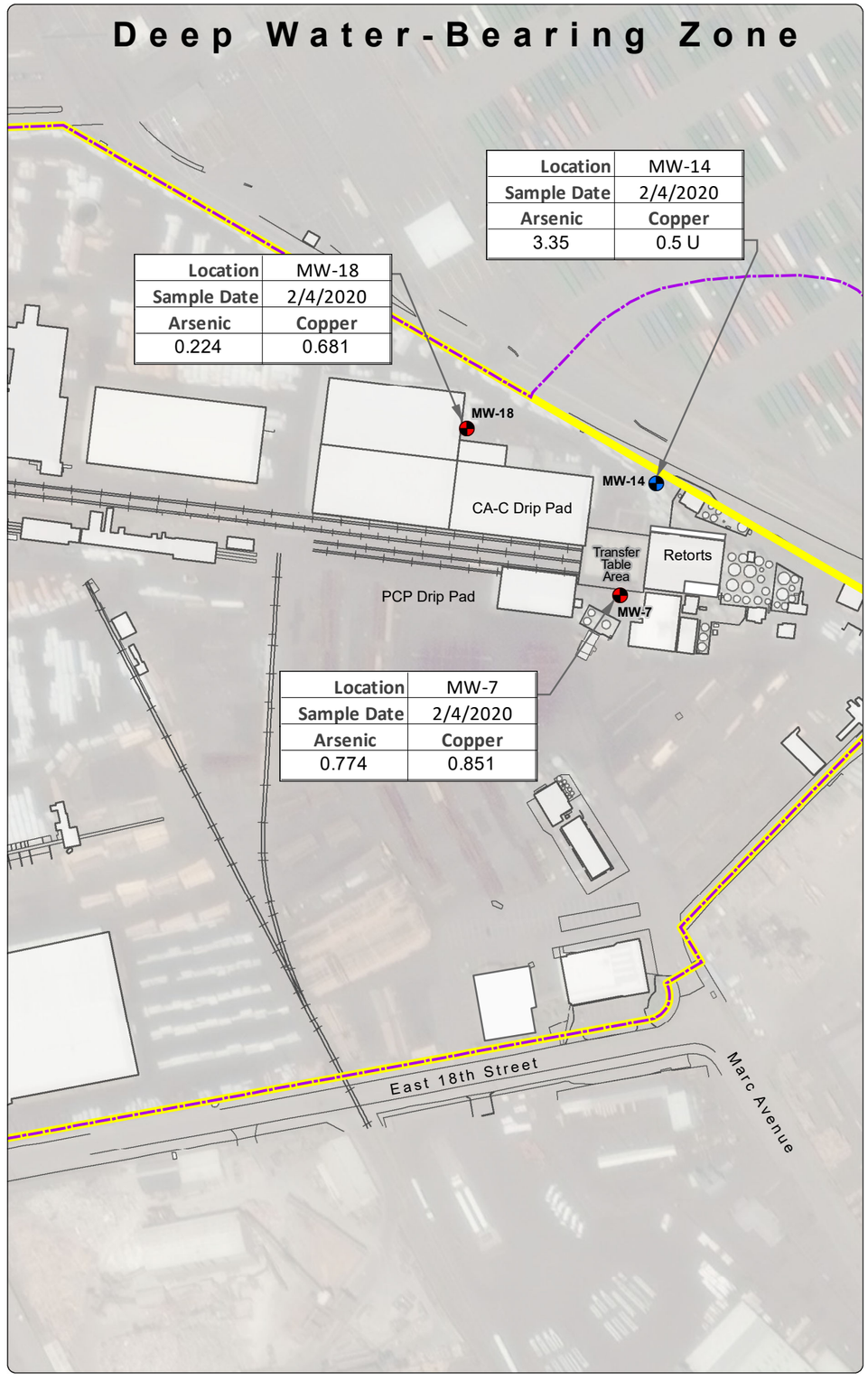


Figure 3
Dissolved Copper and Arsenic in Groundwater
February 2020

McFarland Cascade Pole and Lumber Company
Tacoma, Washington

Legend

- Rail Line
- Site Boundary
- Property Boundary

Compliance Monitoring Network Includes:

- Sentry Well
- Source Area Well

Not Included in Compliance Monitoring Network:

- Other Monitoring Well

Notes:
All values are shown in ug/L.
Bold values indicate a CUL exceedance.
Bold and highlighted cell values indicate an REL exceedance.
Arsenic CUL = 5 ug/L.
Copper CUL = 2.4 ug/L.
The greater of the parent or duplicate concentration is shown.
CA-C = copper-azole - type C.
CUL = cleanup level.
PCP = pentachlorophenol.
REL = remediation level. Remediation levels are identified in Table 2.
U = analyte not detected at or above method reporting limit.
ug/L = micrograms per liter.

0 100 200
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; site layout and features obtained from AECOM Environment, RETEC, MKA and USPCI.

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ATTACHMENT A

FIELD SAMPLING DATA SHEETS

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	HW-01		
Project #	9081.01.19	**Sampler**	A. Bixby		
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/4/2020		
Sampling Event	February 2020	**Sample Name**	HW01-020420		
Sub Area		**Sample Depth**			
FSDS QA:	S. Maloney 2/19/2020	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Clear with particulates; yellowish brown tint; no odor.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(7) Other (specify)	Groundwater	11:20:00 AM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments Grab sample from horizontal recovery well. Field filtered.

Maul Foster & Alongi, Inc.

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Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	MW-3		
Project #	9081.01.19	**Sampler**	A. Bixby		
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/4/2020		
Sampling Event	February 2020	**Sample Name**	MW3-GW-020420		
Sub Area		**Sample Depth**	7.5		
FSDS QA:	S. Maloney 2/19/2020	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/4/2020	9:22	10.53		5.96		4.57	0.74

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	10:45:00 AM	1	0.2	6.53	11.8	975	0.24	78.6	8.86
	10:50:00 AM	1.1	0.2	6.53	11.3	978	0.24	76.9	8.23
	10:55:00 AM	1.2	0.2	6.56	11.2	979	0.2	71.6	5.74
Final Field Parameters	10:58:00 AM	1.2	0.2	6.56	11.2	979	0.19	71.1	5.62

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; colorless; slight sulfur-like odor; no sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	11:00:00 AM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments

Began purge at 10:20. Field filtered.

Field duplicate MWDUP-GW-020420 collected here.

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Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	MW-4
Project #	9081.01.19	**Sampler**	A. Bixby
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/5/2020
Sampling Event	February 2020	**Sample Name**	MW4-GW-020520
Sub Area		**Sample Depth**	10
FSDS QA:	S. Maloney 2/19/2020	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/4/2020	16:32	13.07		6.83		6.24	1.02

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	10:50:00 AM	2.6	0.2	6.06	11.7	901	0.32	123.4	28.1
	10:55:00 AM	2.8	0.2	6.09	11.7	910	0.3	118.5	23
	11:00:00 AM	3	0.2	6.12	11.7	908	0.32	113.6	23.2
	11:05:00 AM	3.2	0.2	6.15	11.7	902	0.34	110.3	22.6
	11:10:00 AM	3.5	0.2	6.15	11.7	904	0.3	108.5	17.8
	11:15:00 AM	3.7	0.2	6.16	11.7	908	0.29	105.3	17.1
Final Field Parameters	11:20:00 AM	3.9	0.2	6.17	11.7	908	0.27	104.3	13.9

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Cloudy; orange tint; no odor; no sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	11:35:00 AM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments Began purge at 8:25. Field filtered.

Maul Foster & Alongi, Inc.

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Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	MW-7		
Project #	9081.01.19	**Sampler**	A. Bixby		
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/4/2020		
Sampling Event	February 2020	**Sample Name**	MW7-GW-020420		
Sub Area		**Sample Depth**	20		
FSDS QA:	S. Maloney 2/19/2020	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/4/2020	11:25	24.89		7.58		17.31	2.82

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	2:15:00 PM	2.5	0.2	7.12	10.9	2190	0.23	8	9.47
	2:20:00 PM	2.7	0.2	7.14	11.3	2186	0.19	-18.2	9.43
	2:25:00 PM	2.9	0.2	7.15	11.8	2184	0.15	-20.4	7.37
Final Field Parameters	2:30:00 PM	3.2	0.2	7.15	11.4	2190	0.16	-21.8	7.26

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; gray tint; no odor; sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	2:40:00 PM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments

Began purge at 13:20. Field filtered.

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Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	MW-8
Project #	9081.01.19	**Sampler**	A. Bixby
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/4/2020
Sampling Event	February 2020	**Sample Name**	MW8-GW-020420
Sub Area		**Sample Depth**	10
FSDS QA:	S. Maloney 2/19/2020	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/4/2020	11:28	12.29		7.49		4.8	0.78

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	3:15:00 PM	0.8	0.2	6.06	9.2	474.3	0.32	32.3	12.1
	3:20:00 PM	1	0.2	6.06	9.4	471.2	0.39	33	8.09
	3:25:00 PM	1.2	0.3	6.05	9.4	472	0.31	34.8	8.86
Final Field Parameters	3:28:00 PM	1.4	0.3	6.05	9.5	471.8	0.36	35	8.73

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; no odor; no sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	3:30:00 PM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments

Began purge at 14:50. Field filtered.

Maul Foster & Alongi, Inc.

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Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	UPRR-MW-29
Project #	9081.01.19	**Sampler**	A. Bixby
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/5/2020
Sampling Event	February 2020	**Sample Name**	UPRRMW29-GW-020520
Sub Area		**Sample Depth**	10
FSDS QA:	S. Maloney 2/19/2020	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/5/2020	13:40	15.48	3.68	3.64	0.01	11.84	1.93

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	2:35:00 PM	1.6	0.3	6.64	10.3	120.8	0.32	72.4	12.5
	2:40:00 PM	1.8	0.3	6.61	10.3	121.1	0.29	72.1	11.4
	2:45:00 PM	2	0.3	6.6	10.3	122.2	0.3	71.9	9.72
Final Field Parameters	2:48:00 PM	2.2	0.3	6.6	10.4	120.9	0.29	71.9	9.47

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear with large black particulates; colorless; slight petroleum-hydrocarbon-like odor; sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	3:00:00 PM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments

Began purge at 13:45. Field filtered.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	MW-14		
Project #	9081.01.19	**Sampler**	A. Bixby		
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/4/2020		
Sampling Event	February 2020	**Sample Name**	MW14-GW-020420		
Sub Area		**Sample Depth**	20		
FSDS QA:	S. Maloney 2/19/2020	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/4/2020	8:25	24.73		7.81		16.92	2.76

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	9:40:00 AM	2.6	0.2	6.87	10.8	1894	0.14	44	13.1
	9:45:00 AM	2.8	0.2	6.88	10.7	1901	0.14	37.9	13.3
	9:50:00 AM	2.9	0.2	6.9	10.5	1902	0.12	34.8	13.4
Final Field Parameters	9:53:00 AM	3	0.2	6.9	10.3	1899	0.12	34.4	13.2

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Cloudy, then clear; grayish-brown tint; no odor; sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	10:00:00 AM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments

Began purge at 8:30. Field filtered.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	MW-18
Project #	9081.01.19	**Sampler**	A. Bixby
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/4/2020
Sampling Event	February 2020	**Sample Name**	MW18-GW-020420
Sub Area		**Sample Depth**	20
FSDS QA:	S. Maloney 2/19/2020	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/4/2020	11:35	26.89		8.03		18.86	3.07

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	12:35:00 PM	2.5	0.2	7.1	11.5	1808	0.24	101	19.5
	12:40:00 PM	2.7	0.2	7.13	11.5	1807	0.19	97.8	19.1
	12:45:00 PM	2.9	0.2	7.16	11.5	1807	0.17	92.8	19.3
Final Field Parameters	12:48:00 PM	3.1	0.2	7.17	11.7	1807	0.15	91	16.5

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear with orangish-yellow particulates; yellow tint; no odor; no sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	12:55:00 PM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments

Began purge at 11:45. Field filtered.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	MW-19
Project #	9081.01.19	**Sampler**	A. Bixby
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/4/2020
Sampling Event	February 2020	**Sample Name**	MW19-GW-020420
Sub Area		**Sample Depth**	12
FSDS QA:	S. Maloney 2/19/2020	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/4/2020	15:50	13.72		9.41		4.31	0.7

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	5:40:00 PM	2.2	0.1	5.79	10.5	840	0.4	126.2	11.8
	5:45:00 PM	2.2	0.1	5.81	10.3	843	0.38	123.8	10.2
Final Field Parameters	5:50:00 PM	2.3	0.1	5.84	10.3	842	0.34	119.9	9.55

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; yellowish-brown tint; sulfur-like odor; no sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	6:00:00 PM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments

Began purge at 15:55. Field filtered.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	McFarland Cascade Holdings, Inc.	**Sample Location**	MW-20
Project #	9081.01.19	**Sampler**	A. Bixby
Project Name	Cascade Pole Compliance Monitoring	**Sampling Date**	2/5/2020
Sampling Event	February 2020	**Sample Name**	MW20-GW-020520
Sub Area		**Sample Depth**	12
FSDS QA:	S. Maloney 2/19/2020	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
2/5/2020	11:45	14.12		8.4		5.72	0.93

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	12:35:00 PM	1	0.2	6.48	11	784	0.45	126	14.9
	12:40:00 PM	1.2	0.2	6.47	11	762	0.48	126.6	14.9
	12:45:00 PM	1.4	0.2	6.47	11	762	0.51	125.2	14.8
	12:50:00 PM	1.5	0.2	6.5	11	762	0.52	120.2	12.7
	12:55:00 PM	1.7	0.2	6.51	10.8	759	0.5	117.9	7.43
	1:00:00 PM	1.9	0.2	6.52	10.8	763	0.53	116.1	7.33
Final Field Parameters	1:05:00 PM	2.1	0.2	6.52	10.8	764	0.54	113.2	7.32

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; slight yellow tint; no odor; slight sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	1:10:00 PM	VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly	1	Yes
			Total Bottles	1	

General Sampling Comments

Began purge at 11:50. Field filtered.

ATTACHMENT B

WELL REDEVELOPMENT LOGS

MAUL FOSTER ALONGI

Well Development Form

Project No.:	9081.01.19	Date:	2/3/2020		
Site Location:	1640 East Marc Street, Tacoma, WA	Well:	MW-4		
Name:	Cascade Pole Compliance Monitoring	Initial DTB:	13.07	Final DTB:	13.00
Development Method:	Surge and purge	Initial DTW:	6.89	Final DTW:	6.85
Total Water Removed:	7.5 gallons	Pore Volume:	1.0 gallon		
Water Contained:	5-gallon buckets	Casing Diameter:	2 inches		

Time	Cum. Vol Removed	Turbidity (NTU)	pH	Conductivity (uS/cm)	Temp (°C)	DO (mg/L)	ORP	Comments
15:12	0	--	--	--	--	--	--	Surge with bailer.
15:20	0	--	--	--	--	--	--	Begin purging with bailer.
15:30	5.0	--	--	--	--	--	--	Stop purging with bailer.
15:34	5.0	--	--	--	--	--	--	Begin purging with peristaltic pump.
16:02	6.0	88.8	--	--	--	--	--	
16:05	6.2	52.1	--	--	--	--	--	
16:12	6.5	60.7	--	--	--	--	--	
16:15	6.7	66.1	--	--	--	--	--	Pull up tubing in well slightly.
16:20	7.0	33.8	--	--	--	--	--	
16:25	7.3	60.8	--	--	--	--	--	Water level drawing down. Purge sediment from well bottom.
16:30	7.5	62.3	--	--	--	--	--	Well goes dry. Complete well redevelopment.

Notes:

The YSI water quality meter was not functioning properly at time of well redevelopment; therefore, water quality parameters could not be measured and recorded.

Cum. = cumulative.

DO = dissolved oxygen.

DTB = depth to bottom.

DTW = depth to water.

mg/L = milligrams per liter.

NTU = nephelometric turbidity unit.

ORP = oxygen reduction potential.

uS/cm = microsiemens per centimeter.

MAUL FOSTER ALONGI

Well Development Form

Project No.:	9081.01.19	Date:	2/3/2020		
Site Location:	1640 East Marc Street, Tacoma, WA	Well:	MW-19		
Name:	Cascade Pole Compliance Monitoring	Initial DTB:	13.75	Final DTB:	13.76
Development Method:	Surge and purge	Initial DTW:	9.46	Final DTW:	10.02
Total Water Removed:	7.5 gallons	Pore Volume:	0.7 gallon		
Water Contained:	5-gallon buckets	Casing Diameter:	2 inches		

Time	Cum. Vol Removed	Turbidity (NTU)	pH	Conductivity (uS/cm)	Temp (°C)	DO (mg/L)	ORP	Comments
13:00	0	--	--	--	--	--	--	Surge with bailer.
13:07	0	--	--	--	--	--	--	Begin purging with bailer.
13:12	2.0	--	--	--	--	--	--	Water level 12.10'. Pause purging to allow recharge.
13:20	2.0	--	--	--	--	--	--	Water level at 10.00'. Resume purging with bailer.
13:26	4.0	--	--	--	--	--	--	Water level at 12.15'. Pause purging to allow recharge.
13:40	4.0	--	--	--	--	--	--	Water level 9.87'. Resume purging with bailer.
13:42	5.0	--	--	--	--	--	--	Stop purging with bailer.
13:50	5.0	--	--	--	--	--	--	Begin purging with peristaltic pump.
14:12	6.0	24.6	--	--	--	--	--	
14:30	6.5	20.4	--	--	--	--	--	
14:50	--	--	--	--	--	--	--	
14:55	7.5	20.3	--	--	--	--	--	Complete well redevelopment.

Notes:

The YSI water quality meter was not functioning properly at time of well redevelopment; therefore, water quality parameters could not be measured and recorded.

Cum. = cumulative.

DO = dissolved oxygen.

DTB = depth to bottom.

DTW = depth to water.

mg/L = milligrams per liter.

NTU = nephelometric turbidity unit.

ORP = oxygen reduction potential.

uS/cm = microsiemens per centimeter.

MAUL FOSTER ALONGI

Well Development Form

Project No.:	9081.01.19	Date:	2/3/2020		
Site Location:	1640 East Marc Street, Tacoma, WA	Well:	MW-20		
Name:	Cascade Pole Compliance Monitoring	Initial DTB:	14.12	Final DTB:	14.12
Development Method:	Surge and purge	Initial DTW:	8.46	Final DTW:	8.87
Total Water Removed:	8.9 gallons	Pore Volume:	0.9 gallon		
Water Contained:	5-gallon buckets	Casing Diameter:	2 inches		

Time	Cum. Vol Removed	Turbidity (NTU)	pH	Conductivity (uS/cm)	Temp (°C)	DO (mg/L)	ORP	Comments
16:45	0	--	--	--	--	--	--	Surge with bailer.
16:55	0	--	--	--	--	--	--	Begin purging with bailer.
17:04	7.0	--	--	--	--	--	--	Stop purging with bailer.
17:08	7.0	--	--	--	--	--	--	Begin purging with peristaltic pump.
17:30	8.5	19.7	--	--	--	--	--	
17:35	8.7	16.0	--	--	--	--	--	
17:40	8.9	14.5	--	--	--	--	--	Complete well redevelopment.

Notes:

The YSI water quality meter was not functioning properly at time of well redevelopment; therefore, water quality parameters could not be measured and recorded.

Cum. = cumulative.

DO = dissolved oxygen.

DTB = depth to bottom.

DTW = depth to water.

mg/L = milligrams per liter.

NTU = nephelometric turbidity unit.

ORP = oxygen reduction potential.

uS/cm = microsiemens per centimeter.

ATTACHMENT C

ANALYTICAL LABORATORY REPORT

Analytical Resources, Incorporated
Analytical Chemists and Consultants

18 February 2020

Carolyn Wise
Maul, Foster & Alongi, Inc.
2001 NW 19th Avenue, Suite 200
Portland, WA 97209

RE: Cascade Pole 9081

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20B0072	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20B0072	Turn-around Requested:
ARI Client Company: Maul Foster & Alongi	Phone: (360)594-6255
Client Contact: Carolyn Wise	
Client Project Name: Cascade Pole	
Client Project #: 9081.01.19	Samplers: Amanda Bixby

Page: 1 of 2

Date: 2/5/20 Ice Present? Yes

No. of Coolers: 1 Cooler Temps: 0.9°C

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Diss. As by EPA 200.8*	Diss. Cu by EPA 200.8*							Notes/Comments
MW14-GW-020420	2/4/20	1000	W	1	X	X							*All samples were field-filtered.
MW3-GW-020420		1100			X	X							
MWDUP-GW-020420		1100			X	X							
HW01-020420		1120			X	X							
MW18-GW-020420		1255			X	X							
MW7-GW-020420		1410			X	X							
MW8-GW-020420		1530			X	X							
MW19-GW-020420	↓	1800	↓	↓	X	X							
MW4-GW-020520	2/5/20	1135			X	X							
MW20-GW-020520	↓	1310	↓	↓	X	X							

Comments/Special Instructions
Direct bill to:
Alex Clark
McFarland Cascade Pole
PO Box 1496
Tacoma, WA 98401-1496

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	Amanda Bixby			
Printed Name:	Amanda Bixby	Jacob Haller		
Company:	MFA	ARI		
Date & Time:	2/5/20 1538	02/05/2020 1538		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20B0072	Turn-around Requested:
ARI Client Company: Maul Foster & Alongi	Phone: (360) 594-6255
Client Contact: Carolyn Wise	
Client Project Name: Cascade Pole	
Client Project #: 9081.01.19	Samplers: Amanda Bixby

Page: 2 of 2	
Date: 2/5/20	Ice Present? Yes
No. of Coolers: 1	Cooler Temps: 0.9°C

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Diss. As by* EPA 200.8	Diss. Cu by* EPA 200.8*							Notes/Comments
UPRRMW29-GW-020520	2/5/20	1500	W	1	X	X							*All samples were field filtered.

Comments/Special Instructions: Direct bill to: Alex Clark, McFarland Cascade Pole, PO Box 1496, Tacoma, WA 98401-1496	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Amanda Bixby	Printed Name: Jacob Walter	Printed Name:	Printed Name:
	Company: MFA	Company: ARI	Company:	Company:
	Date & Time: 2/5/20 / 1538	Date & Time: 02/05/2020 1538	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW14-GW-020420	20B0072-01	Water	04-Feb-2020 10:00	05-Feb-2020 15:38
MW3-GW-020420	20B0072-02	Water	04-Feb-2020 11:00	05-Feb-2020 15:38
MWDup-GW-020420	20B0072-03	Water	04-Feb-2020 11:00	05-Feb-2020 15:38
HW01-020420	20B0072-04	Water	04-Feb-2020 11:20	05-Feb-2020 15:38
MW18-GW-020420	20B0072-05	Water	04-Feb-2020 12:55	05-Feb-2020 15:38
MW7-GW-020420	20B0072-06	Water	04-Feb-2020 14:40	05-Feb-2020 15:38
MW8-GW-020420	20B0072-07	Water	04-Feb-2020 15:30	05-Feb-2020 15:38
MW19-GW-020420	20B0072-08	Water	04-Feb-2020 18:00	05-Feb-2020 15:38
MW4-GW-020520	20B0072-09	Water	05-Feb-2020 11:35	05-Feb-2020 15:38
MW20-GW-020520	20B0072-10	Water	05-Feb-2020 13:10	05-Feb-2020 15:38
UPRRMW29-GW-020520	20B0072-11	Water	05-Feb-2020 15:10	05-Feb-2020 15:38

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received February 5,2020 under ARI work order 20B0072. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Dissolved Metals - EPA Method 200.8

The samples were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank was clean at the reporting limits.

The LCS percent recoveries were within control limits.

A matrix spike and duplicate were prepared in conjunction with sample MW 14-GW-020420. The matrix spike percent recoveries and duplicate RPD were within QC limits.

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WORK ORDER

20B0072

Client: Maul, Foster & Alongi, Inc.	**Project Manager: Amanda Volgardsen**
Project: Cascade Pole 9081	**Project Number: 9081.01.19**

Preservation Confirmation

Container ID	Container Type	pH	
20B0072-01 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	Pass (P)
20B0072-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-03 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-04 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-05 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-06 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-07 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-08 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-09 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-10 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20B0072-11 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P

JSm
Preservation Confirmed By

02/05/2020
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Mail, Foster & Alongi Project Name: Cascade Pole

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20B0072 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? (YES) NO

Were custody papers included with the cooler? ..... (YES) NO

Were custody papers properly filled out (ink, signed, etc.) ..... (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1538 0.9°C ____ ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO 5206

Cooler Accepted by: JSm Date: 02/05/2020 Time: 1538

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? ..... YES (NO)

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? ..... NA (YES) NO

How were bottles sealed in plastic bags? ..... Individually (Grouped) Not

Did all bottles arrive in good condition (unbroken)? ..... (YES) NO

Were all bottle labels complete and legible? ..... (YES) NO

Did the number of containers listed on COC match with the number of containers received? ..... (YES) NO

Did all bottle labels and tags agree with custody papers? ..... (YES) NO

Were all bottles used correct for the requested analyses? ..... (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... NA (YES) NO

Were all VOC vials free of air bubbles? ..... (NA) YES NO

Was sufficient amount of sample sent in each bottle? ..... (YES) NO

Date VOC Trip Blank was made at ARI..... (NA) _____

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JSm Date: 02/05/2020 Time: 1615 Labels checked by: JSm

*** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MW14-GW-020420

20B0072-01 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/04/2020 10:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 19:31

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-01 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**3.35**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	ND	ug/L	U

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MW3-GW-020420

20B0072-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/04/2020 11:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/17/2020 20:22

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-02 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	5	1.00	**325**	ug/L	D
Copper, Dissolved	7440-50-8	1	0.500	**1.05**	ug/L	

Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MWDup-GW-020420

20B0072-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/04/2020 11:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/17/2020 20:27

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-03 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	5	1.00	**391**	ug/L	D
Copper, Dissolved	7440-50-8	1	0.500	**1.03**	ug/L	

Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

HW01-020420

20B0072-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/04/2020 11:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 21:45

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-04 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**36.0**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	**3.14**	ug/L	

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MW18-GW-020420

20B0072-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/04/2020 12:55

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 21:50

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-05 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**0.224**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	**0.681**	ug/L	

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MW7-GW-020420

20B0072-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/04/2020 14:40

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 21:54

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-06 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**0.774**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	**0.851**	ug/L	

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MW8-GW-020420

20B0072-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/04/2020 15:30
Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 21:58

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-07 A 01
Preparation Batch: BIB0323 — Sample Size: 25 mL
Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**112**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	ND	ug/L	U

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MW19-GW-020420

20B0072-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/04/2020 18:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 22:02

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-08 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**14.2**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	ND	ug/L	U

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MW4-GW-020520

20B0072-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/05/2020 11:35

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 22:07

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-09 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**15.4**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	ND	ug/L	U

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

MW20-GW-020520

20B0072-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/05/2020 13:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 22:12

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-10 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**0.338**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	ND	ug/L	U

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

UPRRMW29-GW-020520

20B0072-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 02/05/2020 15:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/14/2020 22:19

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20B0072-11 A 01

Preparation Batch: BIB0323 — Sample Size: 25 mL

Prepared: 02/13/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	**18.5**	ug/L	
Copper, Dissolved	7440-50-8	1	0.500	**3.29**	ug/L	

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIB0323 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIB0323-BLK1)					Prepared: 13-Feb-2020 Analyzed: 14-Feb-2020 17:58						
Arsenic, Dissolved	75a	ND	0.200	ug/L							U
Copper, Dissolved	63	ND	0.500	ug/L							U
Copper, Dissolved	65	ND	0.500	ug/L							U
LCS (BIB0323-BS1)					Prepared: 13-Feb-2020 Analyzed: 14-Feb-2020 18:02						
Arsenic, Dissolved	75a	24.8	0.200	ug/L	25.0		99.2	80-120			
Copper, Dissolved	63	25.6	0.500	ug/L	25.0		102	80-120			
Copper, Dissolved	65	25.9	0.500	ug/L	25.0		104	80-120			
Duplicate (BIB0323-DUP1)		**Source: 20B0072-01**			Prepared: 13-Feb-2020 Analyzed: 14-Feb-2020 19:36						
Arsenic, Dissolved	75a	3.28	0.200	ug/L		3.35			2.17	20	
Copper, Dissolved	63	ND	0.500	ug/L		ND					U
Matrix Spike (BIB0323-MS1)		**Source: 20B0072-01**			Prepared: 13-Feb-2020 Analyzed: 14-Feb-2020 19:42						
Arsenic, Dissolved	75a	28.7	0.200	ug/L	25.0	3.35	101	75-125			
Copper, Dissolved	63	25.2	0.500	ug/L	25.0	ND	99.2	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2020
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019

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Maul, Foster & Alongi, Inc.	Project: Cascade Pole 9081	
2001 NW 19th Avenue, Suite 200	Project Number: 9081.01.19	**Reported:**
Portland WA, 97209	Project Manager: Carolyn Wise	18-Feb-2020 15:24

Notes and Definitions

B	This analyte was detected in the method blank.
D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

ATTACHMENT D

DATA VALIDATION MEMORANDUM

DATA QUALITY ASSURANCE/ QUALITY CONTROL REVIEW

PROJECT NO. 9081.01.19 | FEBRUARY 19, 2020 | MCFARLAND CASCADE HOLDINGS, INC.

Maul Foster & Alongi, Inc. (MFA) conducted an independent review of the quality of analytical results for groundwater samples collected at the Cascade Pole and Lumber Company site located at 1640 E Marc Street in Tacoma, Washington. The samples were collected on February 4 and 5, 2020.

Analytical Resources, Inc. (ARI) performed the analyses. ARI report number 20B0072 was reviewed. The analysis performed and samples analyzed are listed below.

Analysis	Reference
Dissolved Arsenic and Copper	USEPA 200.8

USEPA = U.S. Environmental Protection Agency.

Samples Analyzed	
Report 20B0072	
MW14-GW-020420	MW8-GW-020420
MW3-GW-020420	MW19-GW-200420
MWDUP-GW-020420	MW4-GW-020520
HW01-020420	MW20-GW-020520
MW18-GW-020420	UPRRMW29-GW-020520
MW7-GW-020420	--

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of U.S. Environmental Protection Agency (USEPA) procedures (USEPA, 2017) and appropriate laboratory and method-specific guidelines (ARI, 2018; USEPA, 1986).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the method blanks were associated with all samples prepared in the analytical batch. All laboratory method blank results were non-detect.

Trip Blanks

Trip blanks were not required for this sampling event.

Equipment Rinsate Blanks

Equipment rinsate blanks were not required for this sampling event, as all samples were collected using dedicated, single-use equipment.

MATRIX SPIKE RESULTS

Matrix spike (MS) results are used to evaluate laboratory precision and accuracy. All MS samples were extracted and analyzed at the required frequency. All recoveries were within acceptance limits for percent recovery.

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. All laboratory duplicate relative percent differences (RPDs) were within acceptance limits.

LABORATORY CONTROL SAMPLE RESULTS

A laboratory control sample (LCS) is spiked with target analytes to provide information on laboratory precision and accuracy. The LCS samples were extracted and analyzed at the required frequency. All LCS results were within acceptance limits for percent recovery.

FIELD DUPLICATE RESULTS

Field duplicate samples measure both field and laboratory precision. One field duplicate was submitted for analysis (MW3-GW-020420/MWDUP-GW-020420). MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the method reporting limit (MRL), or 50 percent RPD for results that are greater than five times the MRL. Non-detect data are not used in the evaluation of field duplicate results.

All analytes were within the acceptance criteria.

REPORTING LIMITS

ARI used routine reporting limits for non-detect results, except for samples requiring dilutions because of high analyte concentrations and/or matrix interferences.

DATA PACKAGE

The data packages were reviewed for transcription errors, omissions, and anomalies. None were found.

REFERENCES

ARI. 2018. Quality assurance plan. Rev. 016.1. Analytical Resources, Incorporated, Tukwila, Washington. November.

USEPA. 1986. Test methods for evaluating solid waste, physical/chemical methods. EPA publication SW-846. 3d ed. U.S. Environmental Protection Agency. Final updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), V (2015), VI phase I (2017), VI phase II (2018), and VI phase III (2019).

USEPA. 2017. USEPA contract laboratory program, national functional guidelines for inorganic Superfund methods data review. EPA 540-R-2017-001. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. January.

ATTACHMENT B

MONTHLY HORIZONTAL WELL INSPECTION FORMS

Table
Horizontal Recovery Well Inspections—2020
McFarland Cascade Pole and Lumber Company
McFarland Cascade Holdings, Inc., and Tyee Management Company, LLC
Tacoma, Washington

Date	Time	Discharge Pump Operating?	Water Level in Tank (feet)	Alarm Light On?	Pipes Leaking?	Discharge Totalizer Reading (gallons)	Inspector	Total (gallons)
01/06/20	7:30	Y	0.33	N	N	14,800	CC	5,755,610
02/03/20	7:00	Y	0.25	N	N	86,700	CC	5,827,510
03/02/20	7:15	Y	0.00	N	N	86,700	CC	5,827,510
04/01/20	11:30	Y	0.00	N	N	86,800	CC	5,827,610
05/01/20	6:00	Y	0.00	N	N	86,700	CC	5,827,510
06/01/20	5:45	Y	0.33	N	N	86,600	CC	5,827,410
07/01/20	7:45	N	0.00	N	N	86,700	CC	5,827,510
08/03/20	7:00	Y	0.33	N	N	84,700	CC	5,825,510
09/01/20	7:00	Y	0.33	N	N	86,700	CC	5,827,510
10/01/20	7:30	Y	0.17	N	N	86,700	CC	5,827,510
11/02/20	7:30	Y	0.17	N	N	86,800	CC	5,827,610
12/01/20	7:30	Y	0.00	N	N	91,700	CC	5,832,510

NOTES:

The totalizer meter malfunctioned and did not accurately record treatment volumes in 2020, The meter will be replaced in 2021.

CC = Chris Chase of MCHI.

MCHI = McFarland Cascade Holdings, Inc.

N = no.

Y = yes.

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 1-6-20 Time: 0730

Checked By: CMES Weather: dark & raining

1) Discharge pump operating? YES X NO _____

2) Water level in tank 4' ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 148 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: Feb 3 2020 Time: 0700

Checked By: Chris Weather: Cold, drizzle

1) Discharge pump operating? YES X NO _____

2) Water level in tank 3" ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 867 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

3-3-2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 3-2-20 Time: 0715

Checked By: Chris Chase Weather: Cool & overcast

1) Discharge pump operating? YES X NO _____

2) Water level in tank 6 ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 867 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

4-2-2020

JUN 0 9 2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 4-1-20 Time: 11:30

Checked By: Chris Crane Weather: Over cast

1) Discharge pump operating? YES ✓ NO _____

2) Water level in tank ~~Ø~~ ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 868 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 1 may 2020 Time: 0600

Checked By: Chris Chase Weather: Clear

1) Discharge pump operating? YES X NO _____

2) Water level in tank 6 ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 867 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

5-4-2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 1 June 2020 Time: 0545

Checked By: Chris Chase Weather: over cast

1) Discharge pump operating? YES X NO _____

2) Water level in tank 4" ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 866 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

7-2-2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 1 July 20 Time: 0745

Checked By: Chris Weather: over cast

1) Discharge pump operating? YES _____ NO X

2) Water level in tank Ø ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 867 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

7-5-2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 9-3-20 Time: 0700

Checked By: Chris Weather: OVER CAST

1) Discharge pump operating? YES X NO _____

2) Water level in tank 4" ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 847 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

9-4-2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 9-1-20 Time: 0700

Checked By: Chris Chase Weather: Overcast, drizzle

1) Discharge pump operating? YES X NO _____

2) Water level in tank 4" ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 867 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

10/5/2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 10-1-20 Time: 0730

Checked By: Chris Chase Weather: Over Cast, Foggy

1) Discharge pump operating? YES X NO _____

2) Water level in tank 2" ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 867 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

11-4-2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 11-2-20 Time: 0730

Checked By: Chris Chase Weather: _____

1) Discharge pump operating? YES X NO _____

2) Water level in tank 2" ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 868 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

12-3-2020

Groundwater Recovery System Check Form
Cascade Pole and Lumber Company
Tacoma, Washington

Date: 12-1-20 Time: 0730

Checked By: Chas Weather: Raining + cool

1) Discharge pump operating? YES X NO _____

2) Water level in tank Ø ft

3) Alarm light on? YES _____ NO X

4) Pipes leaking? YES _____ NO X

5) Discharge TOTALIZER reading 917 gallons

6) Describe any activities performed:

_____

_____

_____

EMERGENCY SHUTDOWN PROCEDURES

Turn off WELL PUMP (air supply)
Turn off TRANSFER PUMP (at electrical panel)

System Administration and Responsible Individual:
Ted Smith (253) 597-3319

INSPECTION FREQUENCY

Inspections are to be conducted on a monthly basis.

RECORDING PROCEDURES

File this form in the permanent records for the Property to be provided to future Property owners or to Ecology by request and also include in the groundwater monitoring reports to be prepared in accordance with the schedule described in the Groundwater Compliance Monitoring Plan.

ECOLOGY NOTIFICATION OF SHUTDOWN

If the horizontal recovery well is non-operational for 30 days or more during periods when operation of the horizontal recovery well is a required component of the groundwater treatment (i.e., during the protection stage of monitoring; see the groundwater compliance monitoring plan [MFA, 2015a]), Ecology must be notified within 30 days after the 30th consecutive day on which the well is not operated (i.e., within 60 days of the first day of the 30-consecutive-day shutdown).

1-5-2021

MONTHLY CLIMATOLOGICAL SUMMARY for JAN. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	51.1	54.1	12:10a	46.5	11:50p	13.9	0.0	0.03	15.9	55.0	8:20p	SSW
2	45.0	49.8	10:50p	41.2	6:20p	20.0	0.0	0.18	4.3	42.0	10:50p	SSE
3	51.8	62.5	6:10p	45.2	12:00m	13.2	0.0	0.35	4.8	54.0	8:00p	SSE
4	43.8	45.5	3:50p	41.3	7:10a	21.2	0.0	0.27	9.8	46.0	2:20a	SSW
5	44.5	48.2	1:50p	42.1	12:00m	20.5	0.0	0.16	9.1	59.0	11:00a	SSW
6	48.1	51.9	6:10p	41.4	1:10a	16.9	0.0	1.32	8.1	50.0	10:20p	SSW
7	51.5	56.3	1:10p	46.0	12:00m	13.5	0.0	0.32	8.2	47.0	11:50p	SSW
8	42.0	46.0	12:10a	35.2	12:00m	23.0	0.0	0.09	11.7	63.0	3:30a	SSW
9	35.8	39.1	4:50p	32.0	5:50a	29.2	0.0	0.10	0.2	15.0	5:30a	SE
10	41.8	46.0	1:00p	34.9	2:20a	23.2	0.0	0.46	7.4	54.0	11:30p	SE
11	44.1	46.6	12:00p	39.7	11:40p	20.9	0.0	0.10	10.2	57.0	3:30p	SSW
12	40.3	44.7	1:10p	35.6	11:40p	24.7	0.0	0.31	14.2	70.0	4:40p	SSW
13	34.7	38.9	3:50p	31.5	12:00m	30.3	0.0	0.01	1.5	28.0	5:50a	SSW
14	33.6	37.2	3:00p	29.8	3:00a	31.4	0.0	0.07	7.1	54.0	12:20p	SSW
15	39.5	46.2	10:20p	33.3	9:00a	25.5	0.0	0.00	11.0	62.0	8:10p	SSE
16	41.5	46.4	3:10p	36.0	11:20p	23.5	0.0	0.06	2.4	36.0	12:20a	SE
17	38.2	43.8	9:00p	33.8	8:20a	26.8	0.0	0.03	0.4	13.0	2:30p	SE
18	45.5	52.9	2:10p	39.0	1:20a	19.5	0.0	0.20	1.8	33.0	2:20p	S
19	45.2	49.4	2:50p	42.3	11:50p	19.8	0.0	0.08	0.2	14.0	3:10p	NNW
20	45.5	49.1	3:40p	42.0	3:50a	19.5	0.0	0.00	0.2	13.0	10:40a	SE
21	46.8	50.7	11:10a	43.3	12:20a	18.2	0.0	0.28	10.4	61.0	1:20p	SSE
22	46.7	50.3	12:00m	44.7	5:40a	18.3	0.0	0.38	2.4	41.0	1:40a	S
23	54.1	57.1	3:50a	50.1	12:10a	10.9	0.0	0.75	4.9	33.0	2:50a	SE
24	51.0	54.3	12:20p	48.3	11:50p	14.0	0.0	0.42	3.5	40.0	11:00a	SSW
25	48.3	52.7	2:50p	45.9	7:50a	16.7	0.0	0.23	0.3	15.0	3:30p	NNW
26	50.1	55.2	2:30p	46.6	12:50a	14.9	0.0	0.21	5.1	38.0	1:10p	SSW
27	46.5	50.3	11:40a	44.0	5:50a	18.5	0.0	0.73	0.6	19.0	3:00a	SE
28	49.5	53.5	2:30p	47.2	6:40a	15.5	0.0	0.42	0.9	25.0	1:50a	SE
29	49.0	52.1	4:40p	45.7	8:00a	16.0	0.0	0.22	1.6	41.0	1:40p	SSW
30	45.9	50.8	12:00m	41.1	9:30a	19.1	0.0	0.35	0.8	19.0	7:00p	SE
31	56.3	60.3	9:00p	50.8	12:10a	8.7	0.0	0.44	11.0	82.0	9:40p	SSW
	45.4	62.5	3	29.8	14	607.3	0.0	8.57	5.5	82.0	31	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 3
Min <= 0.0: 0
Max Rain: 1.32 ON 01/06/20
Days of Rain: 28 (>.01 in) 20 (>.1 in) 1 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for FEB. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	48.2	57.3	12:10a	37.6	11:30p	16.8	0.0	0.91	11.8	61.0	12:20a	SSW
2	39.0	46.4	2:50p	32.9	7:40a	26.0	0.0	0.00	1.2	19.0	3:50p	SE
3	37.3	41.8	4:30p	34.2	11:00p	27.7	0.0	0.22	0.7	17.0	12:10p	SE
4	36.7	43.6	12:00m	32.1	3:30a	28.3	0.0	0.06	1.7	17.0	12:20p	SE
5	48.4	51.7	4:30p	43.1	12:10a	16.6	0.0	0.13	8.9	50.0	7:30a	SSW
6	51.2	53.1	7:40p	49.6	7:40a	13.9	0.0	0.48	6.1	41.0	4:40p	SSW
7	49.8	53.7	12:10p	44.0	6:50p	15.2	0.0	0.30	11.7	66.0	4:30p	SSW
8	45.6	49.6	2:30p	42.9	12:00m	19.4	0.0	0.01	5.6	55.0	3:20a	SSW
9	41.8	47.0	2:00p	35.7	7:40a	23.2	0.0	0.00	0.4	14.0	1:40p	NW
10	40.4	47.2	1:50p	34.9	8:00a	24.6	0.0	0.00	1.4	23.0	2:30p	SE
11	43.9	49.6	5:00p	35.8	4:50a	21.1	0.0	0.02	2.8	26.0	11:00a	SSW
12	46.1	48.8	12:50p	41.7	11:40p	18.9	0.0	0.01	0.2	15.0	2:20p	NNW
13	42.4	47.1	3:30p	37.3	4:00a	22.6	0.0	0.03	5.3	46.0	5:00p	SSW
14	44.6	50.3	2:00p	41.0	6:10a	20.4	0.0	0.11	8.0	48.0	3:50a	SSW
15	44.8	48.7	2:10p	42.1	2:00a	20.2	0.0	0.02	4.7	46.0	6:10p	SSW
16	43.3	48.8	1:00p	38.4	7:40a	21.7	0.0	0.02	3.5	43.0	2:40p	SSW
17	42.0	48.3	3:00p	35.7	7:40a	23.0	0.0	0.00	0.3	13.0	1:10p	WNW
18	39.4	46.4	3:50p	30.5	7:00a	25.6	0.0	0.00	2.3	30.0	3:20p	NNW
19	41.5	53.6	4:10p	30.7	8:00a	23.5	0.0	0.00	1.0	15.0	11:10a	NNW
20	42.8	54.5	3:10p	32.6	6:00a	22.2	0.0	0.00	1.6	17.0	12:50p	WNW
21	44.6	56.8	4:00p	32.2	7:20a	20.4	0.0	0.00	1.2	15.0	5:20p	SE
22	45.0	49.0	11:00a	40.6	2:50a	20.0	0.0	0.00	1.6	24.0	11:40a	SE
23	44.6	50.0	5:50a	40.9	7:10a	20.4	0.0	0.53	12.9	68.0	7:00a	SSW
24	44.2	50.8	3:00p	40.8	7:10a	20.8	0.0	0.00	4.2	59.0	12:10a	SSW
25	44.2	50.8	2:40p	35.2	6:30a	20.8	0.0	0.01	0.6	13.0	9:50a	SE
26	47.1	53.7	5:20p	42.9	12:00m	17.9	0.0	0.06	0.7	11.0	1:30p	SE
27	47.5	58.6	5:10p	38.2	6:50a	17.5	0.0	0.00	0.9	17.0	3:20p	NW
28	43.6	52.9	2:10p	37.9	5:40a	21.4	0.0	0.13	5.8	52.0	10:30p	SSW
29	44.1	49.3	2:40p	38.3	12:00m	20.9	0.0	0.05	5.8	46.0	3:10a	SSW
	43.9	58.6	27	30.5	18	611.0	0.0	3.10	3.9	68.0	23	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 2
Min <= 0.0: 0
Max Rain: 0.91 ON 02/01/20
Days of Rain: 15 (>.01 in) 8 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for MAR. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	41.2	48.5	1:40p	33.4	7:50a	23.8	0.0	0.00	1.2	25.0	6:10p	SSW
2	46.0	49.5	5:20p	40.9	1:30a	19.0	0.0	0.00	10.3	59.0	6:20p	SSW
3	49.4	55.7	1:00p	46.9	6:10p	15.6	0.0	0.09	6.6	44.0	10:00p	SSW
4	47.3	53.1	3:50p	43.3	7:30a	17.7	0.0	0.00	4.3	54.0	2:50a	SSW
5	47.3	57.1	1:40p	37.6	6:20a	17.7	0.0	0.11	5.2	47.0	1:10p	SSW
6	41.9	45.0	12:10a	40.0	5:50a	23.1	0.0	0.40	0.2	18.0	1:50a	NNW
7	41.5	45.7	3:00p	38.2	11:10p	23.5	0.0	0.04	1.2	27.0	3:10p	SSW
8	40.8	48.1	4:00p	35.0	7:00a	23.2	0.0	0.00	1.2	23.0	3:50p	WNW
9	41.6	50.3	5:50p	32.3	7:40a	23.4	0.0	0.00	1.0	17.0	12:10p	WNW
10	44.4	53.9	5:40p	34.3	6:00a	20.6	0.0	0.00	3.3	36.0	7:20p	W
11	47.0	52.0	5:00p	43.3	10:10a	18.0	0.0	0.04	3.0	32.0	4:20a	SSW
12	44.8	51.3	5:00p	38.2	8:30a	20.2	0.0	0.00	1.5	19.0	2:00p	WNW
13	38.6	42.9	12:10a	35.2	9:30a	26.4	0.0	0.37	6.6	45.0	7:50p	N
14	38.9	42.7	3:00p	37.0	12:00m	26.1	0.0	0.00	19.8	60.0	4:30a	N
15	39.6	45.1	4:50p	34.6	7:00a	25.4	0.0	0.00	22.3	58.0	2:40p	N
16	46.1	53.0	2:50p	40.3	7:40a	18.9	0.0	0.00	6.9	45.0	1:30a	NNW
17	43.4	52.9	5:20p	32.5	8:00a	21.6	0.0	0.00	1.4	19.0	3:30p	WNW
18	45.9	56.2	6:50p	34.3	7:50a	19.1	0.0	0.00	1.8	20.0	1:10p	SE
19	47.9	60.2	6:50p	36.6	7:20a	17.1	0.0	0.00	1.6	15.0	11:30a	SE
20	49.8	61.3	5:30p	39.5	7:20a	15.2	0.0	0.00	2.8	19.0	1:10p	WNW
21	46.9	54.6	6:30p	41.5	8:10a	18.1	0.0	0.00	2.1	20.0	2:10p	SSW
22	47.0	60.5	2:20p	36.8	7:20a	18.0	0.0	0.00	4.0	32.0	7:10p	W
23	45.0	49.8	3:00p	42.5	12:00m	20.0	0.0	0.26	4.4	45.0	1:30p	SSW
24	44.2	50.3	2:40p	40.5	10:30p	20.8	0.0	0.22	1.8	28.0	4:00p	SE
25	43.6	50.2	5:10p	38.9	4:50a	21.4	0.0	0.43	1.0	24.0	2:20p	WNW
26	44.7	49.5	5:10p	39.7	7:20a	20.3	0.0	0.01	4.1	31.0	9:00a	SSW
27	47.0	51.3	6:00p	43.4	6:20a	18.0	0.0	0.03	3.4	33.0	11:50a	S
28	50.5	55.5	5:10p	46.4	7:20a	14.5	0.0	0.09	8.3	46.0	4:20p	S
29	50.5	56.3	5:20p	46.5	6:40a	14.5	0.0	0.53	4.7	38.0	1:40p	SSW
30	45.6	51.3	12:50a	42.1	12:00m	19.4	0.0	0.64	7.3	47.0	1:50p	SSW
31	43.4	50.0	1:30p	38.8	7:40a	21.6	0.0	0.01	4.0	48.0	3:00p	SSW
	44.9	61.3	20	32.3	9	622.2	0.0	3.27	4.8	60.0	14	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 0
Min <= 0.0: 0
Max Rain: 0.64 ON 03/30/20
Days of Rain: 13 (>.01 in) 8 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for APR. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	44.4	51.5	4:00p	39.2	1:20a	20.6	0.0	0.00	1.8	24.0	4:50p	NNW
2	44.8	50.4	5:30p	40.5	3:40a	20.2	0.0	0.00	3.4	38.0	2:10p	SSW
3	42.8	49.5	4:30p	39.0	6:30a	22.2	0.0	0.00	6.4	43.0	11:10a	SSW
4	45.0	53.5	4:50p	36.9	7:10a	20.0	0.0	0.00	4.5	34.0	9:40p	NW
5	48.8	55.6	4:20p	45.2	6:40a	16.2	0.0	0.00	3.4	31.0	12:40p	N
6	50.9	61.5	6:30p	39.7	7:30a	14.1	0.0	0.00	1.2	26.0	8:20p	WNW
7	48.4	56.1	5:50p	40.5	7:10a	16.6	0.0	0.00	1.1	20.0	2:30p	SE
8	50.8	60.5	3:40p	38.9	7:30a	14.2	0.0	0.00	3.3	33.0	4:40p	WNW
9	54.9	66.3	4:00p	42.2	6:50a	10.2	0.1	0.00	1.9	27.0	5:40p	WNW
10	53.8	65.5	5:00p	44.1	7:20a	11.2	0.0	0.00	3.2	29.0	6:00p	W
11	51.6	59.2	5:00p	46.7	8:20a	13.4	0.0	0.00	6.5	43.0	7:30p	SSW
12	49.7	59.2	4:00p	36.8	6:20a	15.3	0.0	0.00	6.1	44.0	3:30p	N
13	51.7	63.5	4:30p	37.2	5:50a	13.3	0.0	0.00	1.8	23.0	5:30p	WNW
14	54.4	65.2	5:00p	44.7	7:10a	10.6	0.0	0.00	3.2	33.0	3:10p	W
15	56.1	64.6	5:30p	50.0	4:10a	8.9	0.0	0.00	5.4	45.0	6:10p	SSW
16	57.0	69.0	4:50p	43.8	6:50a	8.6	0.6	0.00	1.8	23.0	6:30p	WNW
17	56.8	70.1	3:30p	41.9	6:40a	8.9	0.7	0.00	1.6	20.0	5:40p	WNW
18	53.7	60.2	5:30p	49.5	7:50a	11.3	0.0	0.11	1.6	24.0	10:50p	SSW
19	55.7	64.9	6:30p	50.0	4:20a	9.3	0.0	0.00	1.9	17.0	2:30p	WNW
20	56.0	66.9	7:00p	45.8	6:20a	9.1	0.1	0.00	2.0	21.0	2:30p	NNW
21	53.3	59.3	5:50p	48.2	7:40a	11.7	0.0	0.00	4.4	26.0	12:10a	SSW
22	52.4	56.6	6:50p	49.0	10:00a	12.6	0.0	0.40	2.5	34.0	9:30p	SSW
23	54.1	63.6	5:00p	48.9	5:50a	10.9	0.0	0.04	4.6	34.0	6:10p	SSW
24	54.8	60.3	1:30p	48.4	6:40a	10.2	0.0	0.00	1.2	17.0	12:40p	SE
25	56.1	63.5	3:30p	50.9	9:00a	8.9	0.0	0.29	5.7	46.0	1:30p	W
26	55.2	62.9	7:20p	47.2	4:40a	9.8	0.0	0.16	2.4	30.0	8:50p	SE
27	56.6	63.8	5:50p	52.0	12:20a	8.4	0.0	0.07	6.6	48.0	2:10p	SSW
28	53.9	63.0	4:00p	45.8	5:30a	11.1	0.0	0.00	1.3	26.0	5:50p	NNW
29	58.5	72.8	2:30p	51.1	6:30a	7.5	1.0	0.02	4.2	39.0	6:20p	SSW
30	54.0	58.4	4:20p	49.4	12:00m	11.0	0.0	0.05	4.4	36.0	1:20p	SSW
	52.5	72.8	29	36.8	12	376.3	2.5	1.14	3.3	48.0	27	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 0
Min <= 0.0: 0
Max Rain: 0.40 ON 04/22/20
Days of Rain: 8 (>.01 in) 4 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for MAY. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	54.8	65.2	4:30p	41.2	6:20a	10.2	0.0	0.00	1.6	23.0	6:20p	SE
2	53.9	59.2	1:30p	47.6	12:00m	11.1	0.0	0.36	3.1	52.0	2:20p	SSW
3	50.2	57.3	3:10p	44.1	5:00a	14.8	0.0	0.10	3.9	35.0	5:30a	SSW
4	52.4	63.5	4:30p	41.0	6:40a	12.6	0.0	0.00	1.5	26.0	5:50p	WNW
5	58.6	70.5	5:20p	49.5	5:30a	7.3	0.9	0.00	3.5	34.0	8:10p	WNW
6	55.8	63.1	5:00p	48.7	6:30a	9.2	0.0	0.00	7.3	53.0	1:10p	SSW
7	55.8	65.3	4:10p	44.2	6:00a	9.2	0.0	0.00	5.7	56.0	7:20p	NNW
8	64.8	76.5	5:10p	48.6	6:20a	4.1	3.8	0.00	3.4	46.0	12:30a	NNE
9	68.3	82.2	4:40p	52.0	6:30a	2.5	5.8	0.00	2.6	33.0	6:50p	WNW
10	70.4	83.2	4:10p	57.9	5:20a	1.5	6.9	0.00	3.5	35.0	4:20p	WNW
11	62.3	74.2	1:10p	56.2	11:50p	3.6	1.0	0.01	2.9	40.0	2:50p	SSW
12	56.7	65.4	2:30p	52.3	5:20a	8.4	0.0	0.06	2.7	46.0	4:20p	SSW
13	57.2	66.5	4:00p	52.4	6:40a	7.9	0.0	0.10	3.3	38.0	6:10p	SSW
14	57.9	67.8	5:30p	51.0	6:30a	7.2	0.2	0.08	2.8	31.0	7:10p	SSW
15	59.9	68.8	4:30p	52.4	5:20a	5.5	0.4	0.00	1.9	19.0	12:30p	NNW
16	57.5	62.2	4:00p	54.2	6:20a	7.5	0.0	0.35	0.8	17.0	3:10p	SE
17	59.9	68.1	5:40p	54.6	5:40a	5.4	0.3	0.10	2.1	24.0	6:50p	SE
18	59.3	67.9	7:00p	51.9	6:20a	6.1	0.3	0.00	3.1	31.0	10:30p	N
19	57.6	64.9	5:00p	52.8	7:10a	7.4	0.0	0.00	1.6	30.0	10:00p	SSW
20	55.9	62.9	5:20p	51.0	6:00a	9.1	0.0	0.02	4.1	37.0	5:50p	SSW
21	53.7	61.4	3:20p	48.1	6:30a	11.3	0.0	0.16	7.7	47.0	4:20p	SSW
22	54.8	63.2	3:20p	47.2	1:40a	10.2	0.0	0.00	5.4	40.0	4:10p	SSW
23	56.6	65.2	4:40p	50.3	5:30a	8.4	0.0	0.00	2.3	18.0	5:50p	WNW
24	60.8	70.0	5:20p	52.8	6:00a	5.2	1.0	0.00	2.1	21.0	4:30p	WNW
25	60.3	63.8	3:20p	56.3	7:50a	4.7	0.0	0.10	2.3	26.0	1:10p	SSW
26	58.9	66.5	5:20p	53.4	6:30a	6.1	0.1	0.00	1.3	19.0	6:00p	WNW
27	62.6	74.2	5:10p	50.1	6:30a	4.6	2.2	0.00	3.6	30.0	6:50p	WNW
28	68.4	80.1	5:00p	58.1	6:10a	1.6	5.0	0.00	2.2	26.0	4:50p	WNW
29	66.7	76.8	3:10p	59.9	6:30a	1.3	3.0	0.00	3.6	25.0	6:00p	WNW
30	55.5	60.7	12:10a	51.9	10:50p	9.5	0.0	0.72	2.7	35.0	6:00p	WNW
31	56.4	65.1	5:30p	50.7	2:40a	8.6	0.0	0.08	4.6	36.0	3:20p	SSW
	58.8	83.2	10	41.0	4	222.1	30.9	2.24	3.2	56.0	7	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 0
Min <= 0.0: 0
Max Rain: 0.72 ON 05/30/20
Days of Rain: 12 (>.01 in) 4 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for JUN. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	59.0	68.9	5:40p	48.3	6:20a	6.7	0.6	0.00	2.6	19.0	10:40a	WNW
2	58.6	68.3	1:40p	51.2	5:40a	6.6	0.2	0.00	2.6	29.0	4:10p	W
3	58.7	67.3	4:30p	52.6	5:30a	6.5	0.1	0.00	3.5	22.0	5:30p	WNW
4	60.7	69.0	4:00p	54.6	5:20a	4.9	0.6	0.00	3.5	35.0	9:40p	WNW
5	59.2	68.6	6:10p	53.3	6:00a	6.1	0.3	0.00	3.0	30.0	8:20p	NNW
6	56.3	63.6	12:50p	52.6	2:40a	8.7	0.0	0.04	4.3	46.0	1:10p	SSW
7	56.2	63.3	7:00p	50.8	5:40a	8.8	0.0	0.01	3.7	41.0	9:30p	SSW
8	57.7	65.7	5:30p	51.7	6:10a	7.3	0.0	0.01	5.8	41.0	1:50p	SSW
9	57.5	65.3	4:30p	52.1	7:20a	7.5	0.0	0.49	1.2	37.0	3:50p	SE
10	62.6	71.1	5:20p	55.7	6:30a	3.6	1.1	0.02	1.9	36.0	2:50p	WNW
11	63.8	72.3	6:20p	58.4	9:50a	2.7	1.5	0.11	0.5	16.0	4:20a	W
12	58.3	63.1	12:10a	54.8	3:30p	6.7	0.0	0.19	1.1	20.0	9:00p	SSW
13	56.5	62.0	2:30p	53.2	5:20a	8.5	0.0	0.03	3.9	34.0	11:30a	SSW
14	58.1	65.9	4:10p	49.7	4:10a	7.0	0.0	0.00	3.5	26.0	8:10a	SSW
15	57.4	65.3	4:10p	53.4	8:30a	7.6	0.0	0.47	3.7	43.0	4:30p	SSW
16	58.6	66.8	6:20p	52.3	5:20a	6.5	0.1	0.06	3.2	27.0	4:10p	NW
17	62.0	72.8	6:10p	51.8	5:10a	4.6	1.7	0.00	3.0	21.0	4:10p	WNW
18	64.4	76.1	4:50p	54.8	5:40a	3.5	2.9	0.00	4.4	27.0	4:20p	WNW
19	68.1	79.9	3:40p	56.4	5:20a	2.0	5.1	0.00	2.6	19.0	1:30p	WNW
20	66.0	73.7	3:50p	61.3	8:50a	0.7	1.7	0.03	4.8	34.0	2:50p	SSW
21	64.0	71.7	5:20p	57.8	12:00m	2.3	1.3	0.00	5.5	34.0	4:10p	W
22	65.5	78.3	5:40p	54.2	4:50a	3.4	3.9	0.00	4.3	28.0	6:40p	WNW
23	69.3	83.0	4:00p	59.3	5:10a	1.0	5.3	0.00	3.6	32.0	6:00p	WNW
24	69.2	78.5	4:30p	62.4	7:00a	0.3	4.5	0.00	4.0	37.0	10:40a	W
25	67.5	79.3	5:00p	58.0	6:50a	2.2	4.7	0.00	4.3	33.0	6:30p	WNW
26	68.9	82.5	4:10p	59.7	5:50a	0.9	4.8	0.00	3.4	29.0	4:00p	NW
27	61.2	65.0	2:50p	56.7	12:00m	3.8	0.0	0.00	6.2	33.0	6:00p	SSW
28	60.7	70.5	6:50p	53.3	5:20a	5.3	1.0	0.14	2.1	30.0	1:30a	NNW
29	62.8	73.0	3:40p	55.1	6:30a	3.6	1.4	0.00	6.0	34.0	6:40p	SSW
30	60.8	67.0	5:40p	56.8	4:00a	4.3	0.1	0.00	8.4	43.0	4:00p	SSW
	61.7	83.0	23	48.3	1	143.6	42.9	1.60	3.7	46.0	6	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 0
Min <= 0.0: 0
Max Rain: 0.49 ON 06/09/20
Days of Rain: 10 (>.01 in) 5 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for JUL. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	59.3	66.7	3:00p	54.8	6:10a	5.7	0.0	0.00	8.8	41.0	11:10a	SSW
2	60.2	68.1	4:40p	55.3	2:10a	4.9	0.2	0.00	6.5	40.0	1:20a	SSW
3	61.7	66.8	1:50p	57.2	7:30a	3.4	0.1	0.00	3.1	34.0	12:30p	W
4	62.2	71.8	5:30p	55.2	5:20a	4.1	1.4	0.00	2.6	21.0	5:50p	NW
5	64.9	74.8	5:50p	56.9	6:10a	2.8	2.7	0.00	3.3	28.0	9:00p	WNW
6	63.8	71.4	3:40p	58.0	5:50a	2.6	1.3	0.00	5.4	35.0	5:20p	W
7	61.5	69.4	4:20p	56.6	7:10a	4.1	0.6	0.01	6.8	39.0	12:00p	SSW
8	64.4	72.6	5:30p	57.6	5:50a	2.7	2.1	0.20	2.1	19.0	12:30p	NW
9	64.1	73.1	5:30p	59.4	8:40a	2.6	1.7	0.03	2.4	29.0	5:40p	SSE
10	64.2	72.9	7:10p	55.9	4:30a	3.0	2.2	0.00	3.4	27.0	3:00p	WNW
11	63.0	68.7	2:30p	56.3	6:30a	2.6	0.6	0.00	5.5	34.0	3:30p	W
12	64.4	70.7	5:40p	60.3	7:50a	1.8	1.1	0.00	5.0	27.0	4:10p	NW
13	64.9	74.2	4:50p	57.2	5:30a	2.7	2.5	0.00	5.4	31.0	3:00p	NNW
14	67.3	78.7	6:00p	54.5	6:30a	2.4	4.7	0.00	4.6	36.0	4:00p	NW
15	69.8	81.7	5:50p	59.5	5:20a	1.0	5.9	0.00	3.7	24.0	3:40p	WNW
16	68.2	79.3	6:10p	59.9	8:40a	1.1	4.3	0.00	3.7	31.0	8:40p	W
17	64.9	71.7	5:20p	59.8	8:20a	1.5	1.3	0.01	2.9	23.0	7:20a	WNW
18	67.7	77.4	4:40p	58.2	6:00a	1.8	4.5	0.00	4.2	34.0	5:20p	WNW
19	70.8	81.2	4:40p	60.8	6:20a	0.7	6.5	0.00	3.9	31.0	6:10p	WNW
20	73.3	85.4	6:00p	61.8	6:00a	0.4	8.6	0.00	2.9	31.0	1:40p	WNW
21	71.2	81.2	5:50p	63.1	7:30a	0.1	6.3	0.00	3.2	27.0	2:20p	W
22	65.2	72.4	5:20p	60.3	8:00a	1.3	1.5	0.00	2.2	23.0	5:10p	W
23	62.8	67.9	4:00p	58.2	5:30a	2.6	0.4	0.00	2.6	23.0	3:50p	W
24	62.3	71.0	5:00p	56.6	4:00a	3.7	1.0	0.00	2.5	29.0	6:50p	NW
25	66.0	75.4	4:40p	57.6	6:10a	2.1	3.1	0.00	4.9	33.0	4:50p	NW
26	71.2	83.0	5:50p	59.7	6:20a	1.0	7.2	0.00	3.9	28.0	2:40p	NW
27	75.4	89.2	4:30p	62.8	5:40a	0.1	10.6	0.00	2.4	20.0	3:00p	WNW
28	69.1	82.4	5:40p	59.5	6:50a	1.1	5.2	0.00	3.5	27.0	11:10a	WNW
29	69.8	82.3	5:00p	59.6	6:10a	1.2	6.0	0.00	2.4	18.0	2:40p	WNW
30	73.3	87.0	4:30p	61.3	6:20a	0.4	8.8	0.00	2.7	24.0	2:00p	WNW
31	72.2	83.6	3:30p	63.4	6:20a	0.1	7.3	0.00	4.4	34.0	10:10p	W
	66.4	89.2	27	54.5	14	65.6	109.7	0.25	3.9	41.0	1	WNW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 0
Min <= 0.0: 0
Max Rain: 0.20 ON 07/08/20
Days of Rain: 2 (>.01 in) 1 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for AUG. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	66.6	76.5	6:30p	60.4	6:40a	1.5	3.1	0.00	1.7	20.0	4:40a	WNW
2	70.5	82.1	3:30p	60.2	7:10a	0.7	6.2	0.00	3.8	30.0	4:50p	W
3	70.4	80.6	5:20p	62.8	4:40a	0.2	5.6	0.00	3.0	28.0	1:00a	NW
4	70.6	81.0	5:20p	61.3	6:40a	0.7	6.2	0.00	3.3	37.0	2:50p	NW
5	69.5	82.4	4:40p	61.3	6:20a	0.7	5.2	0.00	3.7	32.0	9:20p	W
6	64.7	73.0	2:20p	60.2	7:40a	1.4	1.1	0.03	5.9	44.0	1:20p	SSW
7	65.4	75.8	5:00p	58.9	2:00a	2.3	2.7	0.00	2.9	29.0	2:50a	SSW
8	63.5	69.7	5:00p	60.3	4:20a	2.1	0.6	0.00	1.7	23.0	3:10p	NW
9	65.6	74.6	4:30p	55.6	6:30a	2.6	3.2	0.00	3.5	31.0	3:40p	NNW
10	68.3	80.1	4:50p	57.4	6:50a	1.4	4.8	0.00	3.5	23.0	6:40p	WNW
11	65.0	76.2	3:00p	56.1	7:30a	2.5	2.5	0.00	4.9	34.0	3:10p	W
12	62.4	71.0	5:50p	55.6	4:20a	3.8	1.2	0.00	3.1	21.0	4:20p	NNW
13	63.8	74.0	4:50p	54.1	7:20a	3.5	2.4	0.00	2.5	20.0	8:40p	WNW
14	66.8	78.1	5:10p	55.5	5:50a	2.5	4.3	0.00	3.7	32.0	4:50p	WNW
15	72.0	82.7	5:20p	60.4	7:00a	0.6	7.5	0.00	4.1	32.0	5:30p	NNW
16	78.6	98.1	5:20p	63.2	7:00a	0.1	13.7	0.00	1.0	34.0	7:00p	W
17	75.7	87.4	6:10p	64.3	7:10a	0.0	10.8	0.00	2.6	23.0	8:30p	NNW
18	70.2	79.6	4:10p	63.4	6:10a	0.1	5.3	0.00	2.7	25.0	8:50p	NW
19	69.9	82.2	5:40p	60.8	6:30a	0.9	5.8	0.00	1.7	28.0	9:30p	NNW
20	70.0	79.5	5:20p	63.6	7:00a	0.0	5.1	0.10	1.9	21.0	6:00a	NW
21	67.8	71.9	10:50a	61.5	12:00m	0.2	3.0	0.12	4.3	43.0	2:00p	SSW
22	65.3	73.6	5:20p	59.7	9:40a	1.8	2.1	0.05	2.5	33.0	7:40p	WNW
23	64.9	75.2	4:30p	54.3	6:20a	2.7	2.7	0.00	3.5	29.0	1:30p	NNW
24	65.5	74.7	4:10p	56.4	7:00a	2.2	2.7	0.00	2.3	21.0	1:20p	WNW
25	65.7	76.4	4:30p	54.6	6:50a	2.6	3.3	0.00	2.6	24.0	2:10p	WNW
26	65.8	74.7	4:30p	56.4	6:30a	2.1	3.0	0.00	2.8	34.0	3:30p	NNW
27	66.9	78.3	6:10p	56.0	7:00a	2.2	4.1	0.00	2.4	20.0	1:20p	WNW
28	66.4	77.4	5:20p	57.6	6:40a	1.8	3.2	0.00	2.4	19.0	3:40p	WNW
29	64.2	73.0	5:40p	59.1	6:30a	2.0	1.2	0.00	2.8	23.0	9:10p	NW
30	62.8	74.6	4:30p	52.6	7:10a	4.1	1.9	0.00	3.6	27.0	4:40p	W
31	61.6	69.2	5:40p	55.3	5:30a	4.1	0.7	0.01	3.7	25.0	2:10a	WNW
	67.3	98.1	16	52.6	30	53.4	125.2	0.31	3.0	44.0	6	WNW

Max >= 90.0: 1
Max <= 32.0: 0
Min <= 32.0: 0
Min <= 0.0: 0
Max Rain: 0.12 ON 08/21/20
Days of Rain: 4 (>.01 in) 1 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for SEP. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	66.9	79.4	4:40p	56.2	6:00a	2.6	4.5	0.00	2.3	22.0	5:20p	WNW
2	68.0	77.5	3:00p	59.5	6:40a	1.1	4.1	0.00	3.1	29.0	4:40p	NNW
3	68.3	79.2	4:40p	58.5	7:00a	1.5	4.8	0.00	3.6	31.0	4:10p	WNW
4	68.4	81.9	3:40p	58.3	6:40a	1.3	4.7	0.00	2.0	25.0	6:30p	WNW
5	65.5	74.0	4:50p	60.4	5:40a	1.5	2.0	0.00	1.6	22.0	1:40a	E
6	66.9	77.5	6:20p	58.0	6:50a	2.1	4.0	0.00	2.5	24.0	4:50p	WNW
7	70.8	81.4	5:00p	60.8	6:00a	0.8	6.5	0.00	10.4	65.0	6:30p	NNE
8	72.3	78.0	3:50p	66.7	7:10a	0.0	7.3	0.00	19.7	71.0	8:10a	NE
9	72.8	83.5	5:20p	59.3	7:30a	0.5	8.3	0.00	5.1	44.0	5:30p	NNE
10	70.4	83.4	4:00p	58.3	7:20a	1.2	6.5	0.00	2.0	22.0	1:20p	WNW
11	65.0	75.3	5:20p	56.5	7:10a	2.6	2.6	0.00	2.5	20.0	1:30p	W
12	57.9	62.6	12:10a	55.3	11:30p	7.1	0.0	0.00	0.5	12.0	11:10a	WNW
13	56.6	63.9	5:50p	51.4	5:40a	8.4	0.0	0.00	0.7	13.0	12:50p	NNW
14	61.2	67.5	4:50p	57.5	12:30a	3.9	0.1	0.01	1.0	15.0	1:30p	NNW
15	65.2	74.1	3:50p	59.3	2:30a	1.6	1.8	0.01	1.3	15.0	2:10a	WNW
16	64.6	70.7	4:10p	60.0	7:20a	1.7	1.3	0.00	0.9	13.0	5:20p	NW
17	64.2	70.4	4:10p	59.6	8:00a	1.8	1.0	0.00	1.5	17.0	3:00p	WNW
18	64.0	68.6	5:40p	60.5	5:30a	1.5	0.5	0.57	1.2	19.0	5:50p	SE
19	64.7	72.5	3:50p	61.1	7:30a	1.6	1.4	0.01	5.0	36.0	5:40p	SSW
20	63.1	69.9	5:10p	58.7	12:00m	2.8	0.9	0.01	1.3	16.0	3:20p	NW
21	61.8	70.6	5:10p	53.8	6:20a	4.3	1.1	0.00	1.2	18.0	12:50p	SE
22	65.7	73.0	4:30p	60.5	7:40a	1.2	2.0	0.00	3.2	25.0	3:20p	W
23	62.1	64.6	1:10p	59.5	5:00a	2.9	0.0	0.79	6.1	47.0	12:10p	SE
24	60.6	63.3	10:20a	58.3	11:30p	4.4	0.0	0.28	4.0	41.0	1:00p	SSW
25	59.6	64.0	5:20p	56.2	12:00m	5.4	0.0	0.41	7.4	44.0	5:00p	SSW
26	58.6	66.0	1:30p	54.6	5:10a	6.4	0.0	0.03	5.2	50.0	1:50p	SSW
27	59.4	67.1	4:10p	52.1	7:50a	5.8	0.2	0.00	2.3	21.0	1:50p	WNW
28	60.5	71.3	4:20p	50.6	6:10a	5.4	1.0	0.00	1.8	23.0	5:40p	NNW
29	63.1	75.6	4:10p	52.3	7:10a	3.9	2.0	0.00	1.2	18.0	12:20p	NNW
30	61.9	72.2	3:50p	55.5	7:20a	4.1	1.0	0.00	0.8	19.0	5:40p	NW
	64.3	83.5	9	50.6	28	89.4	69.6	2.12	3.4	71.0	8	NNW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 0
Min <= 0.0: 0
Max Rain: 0.79 ON 09/23/20
Days of Rain: 5 (>.01 in) 4 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for OCT. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	59.2	66.9	5:00p	55.5	8:00a	5.8	0.0	0.00	0.8	13.0	1:30p	WNW
2	59.9	69.8	4:50p	54.2	6:40a	5.6	0.5	0.00	0.4	12.0	1:30p	WNW
3	57.0	58.6	12:10a	55.4	8:00a	8.0	0.0	0.00	0.9	14.0	3:00p	NNW
4	57.7	59.9	3:30p	56.3	4:10a	7.3	0.0	0.04	0.3	16.0	11:40a	NNW
5	59.1	65.6	4:30p	53.7	7:30a	5.9	0.0	0.00	2.1	25.0	5:40p	NW
6	59.8	69.0	5:10p	54.5	4:20a	5.6	0.4	0.00	1.3	29.0	6:30p	NNW
7	57.9	62.2	6:10p	53.8	7:20a	7.1	0.0	0.00	0.1	9.0	9:30a	SE
8	61.1	69.1	3:50p	56.4	12:10a	4.3	0.4	0.00	2.0	24.0	3:50p	SSW
9	62.4	71.6	2:50p	56.5	7:00a	3.6	0.9	0.45	2.9	35.0	3:00p	W
10	57.2	60.6	2:50p	52.1	11:40p	7.8	0.0	0.78	8.9	52.0	10:10a	SSW
11	54.9	60.2	5:10p	49.8	7:10a	10.1	0.0	0.41	5.3	72.0	7:10p	SSW
12	57.2	63.3	4:30p	53.3	11:20p	7.8	0.0	0.00	8.2	67.0	3:20a	SSW
13	57.4	63.2	1:10p	49.5	6:00a	7.6	0.0	0.56	9.1	61.0	1:20p	SSW
14	57.0	63.9	3:40p	51.1	11:50p	8.0	0.0	0.00	4.5	37.0	9:40a	SSW
15	53.4	60.5	3:50p	45.3	7:50a	11.6	0.0	0.00	0.8	16.0	1:30p	WNW
16	60.3	64.8	4:00p	53.8	12:20a	4.7	0.0	0.00	10.9	64.0	10:00a	SSW
17	56.5	59.9	12:10a	52.4	8:40a	8.5	0.0	0.00	1.6	26.0	10:20a	SSW
18	59.6	66.6	3:30p	54.2	3:00a	5.5	0.1	0.03	8.2	54.0	10:40a	SSW
19	57.8	62.1	12:40p	53.3	12:00m	7.2	0.0	0.01	5.0	41.0	1:30p	SSW
20	54.5	60.0	3:40p	50.3	12:00m	10.5	0.0	0.01	0.6	19.0	2:20a	SE
21	49.7	54.2	2:50p	45.0	12:00m	15.3	0.0	0.04	1.7	37.0	12:50p	ENE
22	46.1	53.3	5:20p	39.7	6:10a	18.9	0.0	0.00	1.4	17.0	3:00p	SE
23	45.7	54.1	5:20p	38.7	4:40a	19.3	0.0	0.23	4.2	44.0	6:10p	SE
24	46.2	50.0	2:10p	43.6	10:30p	18.8	0.0	0.03	17.6	62.0	8:40a	N
25	43.7	49.1	2:10p	37.2	11:50p	21.3	0.0	0.00	11.4	41.0	7:30a	NE
26	43.7	51.8	4:50p	34.1	3:30a	21.3	0.0	0.00	1.0	14.0	2:40a	SE
27	50.0	57.7	5:10p	45.1	6:10a	15.0	0.0	0.00	0.8	15.0	3:20p	SSW
28	51.7	57.4	1:50p	44.2	7:50a	13.3	0.0	0.00	1.5	19.0	2:20p	SE
29	54.6	61.4	4:50p	47.1	11:30p	10.4	0.0	0.00	0.2	14.0	3:00a	S
30	53.9	60.0	3:20p	46.5	1:20a	11.1	0.0	0.06	6.7	51.0	11:40a	SSW
31	47.7	54.7	4:20p	38.6	8:50a	17.3	0.0	0.00	1.5	23.0	5:40p	N
	54.6	71.6	9	34.1	26	324.5	2.3	2.65	3.9	72.0	11	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 0
Min <= 0.0: 0
Max Rain: 0.78 ON 10/10/20
Days of Rain: 10 (>.01 in) 5 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for NOV. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	47.3	56.4	4:10p	37.4	7:00a	17.7	0.0	0.00	0.3	13.0	6:30a	SE
2	50.2	62.9	3:00p	39.5	6:30a	14.8	0.0	0.00	0.2	11.0	4:40a	SE
3	50.1	59.3	12:00m	45.1	3:00a	14.9	0.0	0.73	0.5	18.0	11:10p	SE
4	63.5	68.3	3:00p	59.3	12:10a	2.1	0.6	0.11	12.0	61.0	3:10p	SSW
5	53.7	61.1	12:20a	47.9	10:40p	11.3	0.0	0.22	4.7	48.0	11:00p	SSW
6	47.0	51.0	2:50p	39.6	11:20p	18.0	0.0	0.13	9.9	55.0	5:00a	N
7	39.6	45.0	7:10p	34.4	7:10a	25.4	0.0	0.08	2.0	43.0	3:40p	SE
8	40.3	48.1	2:20p	31.2	6:50a	24.7	0.0	0.00	6.8	46.0	1:50p	SE
9	38.1	45.1	4:30p	30.4	5:10a	26.9	0.0	0.02	4.5	47.0	11:10p	SE
10	44.7	48.3	11:20a	41.9	1:00a	20.3	0.0	0.15	4.2	39.0	2:30a	SSW
11	43.2	47.6	2:10p	40.2	4:50a	21.8	0.0	0.00	0.4	13.0	12:00m	SE
12	44.8	51.8	2:50p	38.9	6:20a	20.2	0.0	0.12	4.3	56.0	3:50p	SE
13	47.3	51.7	2:30p	43.1	11:20p	17.7	0.0	0.52	15.3	55.0	1:10p	SSW
14	44.9	49.7	1:20p	41.6	6:20a	20.1	0.0	0.43	2.9	36.0	3:30a	SSW
15	49.7	53.3	3:40p	47.1	11:10p	15.3	0.0	0.18	6.9	46.0	11:50a	SSW
16	47.2	48.3	11:10a	45.9	6:40a	17.8	0.0	0.33	0.2	17.0	11:40a	N
17	51.7	62.1	10:20a	44.5	5:00a	13.3	0.0	0.25	5.4	64.0	10:20a	SSE
18	47.6	52.8	12:30a	44.8	9:20p	17.4	0.0	0.28	4.0	48.0	3:50p	SSE
19	45.7	49.4	11:10a	42.3	6:40a	19.3	0.0	0.37	3.0	34.0	2:20p	SSW
20	49.4	54.4	11:40a	45.6	12:10a	15.6	0.0	0.00	1.7	30.0	11:50a	SSW
21	47.8	52.5	2:50p	41.5	12:00m	17.2	0.0	0.00	0.5	19.0	6:40p	WNW
22	42.2	45.9	1:40p	37.7	8:10a	22.8	0.0	0.17	0.2	15.0	2:20p	SE
23	46.1	49.9	1:50p	43.4	2:30a	18.9	0.0	0.07	1.6	32.0	10:10a	S
24	47.2	53.3	1:00p	42.7	12:00m	17.8	0.0	0.22	6.0	48.0	1:10p	SSW
25	46.0	51.2	2:40p	42.4	1:50a	19.0	0.0	0.02	1.7	23.0	7:30a	SSW
26	47.1	50.7	3:20p	44.6	5:50a	17.9	0.0	0.02	2.4	37.0	12:00p	SSW
27	48.8	53.6	3:20p	45.8	9:10a	16.2	0.0	0.00	0.9	21.0	7:50p	SE
28	46.0	49.4	1:10p	41.0	11:40p	19.0	0.0	0.00	0.6	25.0	1:10a	SSW
29	38.9	44.9	3:40p	33.9	10:30a	26.1	0.0	0.00	0.1	12.0	9:20p	SE
30	46.3	51.3	12:40p	38.9	12:50a	18.7	0.0	0.25	8.8	67.0	10:30a	SSW
	46.7	68.3	4	30.4	9	548.2	0.6	4.67	3.7	67.0	30	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 2
Min <= 0.0: 0
Max Rain: 0.73 ON 11/03/20
Days of Rain: 21 (>.01 in) 16 (>.1 in) 0 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for DEC. 2020

NAME: WeatherStation CITY: STATE:
ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	41.8	49.0	2:20p	34.4	6:00a	23.2	0.0	0.00	1.7	31.0	7:30p	NNE
2	41.7	53.7	3:00p	32.5	8:00a	23.3	0.0	0.00	0.4	26.0	1:00a	SSW
3	42.4	50.3	2:10p	33.9	4:30a	22.6	0.0	0.00	0.1	9.0	5:20p	SE
4	42.6	51.2	2:50p	35.6	7:20a	22.4	0.0	0.00	0.3	15.0	1:00p	ESE
5	42.7	54.2	3:40p	33.2	4:50a	22.3	0.0	0.01	0.6	22.0	10:00a	SE
6	49.6	55.5	1:50p	42.9	12:00m	15.4	0.0	0.02	2.4	32.0	1:00p	SSW
7	47.8	52.7	3:10p	41.7	1:00a	15.6	0.0	0.00	0.6	13.0	3:10a	SE
8	50.0	52.3	9:10a	48.2	5:10a	13.0	0.0	0.37	1.1	23.0	5:00p	SE
9	48.2	52.7	3:20p	41.5	11:50p	14.5	0.0	0.07	2.6	36.0	11:40a	SSW
10	41.3	45.6	3:40p	37.6	4:30a	21.2	0.0	0.05	1.8	32.0	6:30p	SE
11	42.6	45.5	1:10p	37.5	12:00m	20.1	0.0	0.02	0.9	27.0	2:30a	SSW
12	36.9	43.2	3:30p	29.2	8:40a	25.2	0.0	0.01	0.1	14.0	2:40a	SE
13	43.4	48.4	2:10p	38.6	12:10a	18.9	0.0	0.12	0.2	20.0	12:30a	SE
14	46.7	51.7	1:40p	44.5	12:10a	15.8	0.0	0.03	1.8	30.0	1:50p	SSW
15	47.1	48.9	3:00p	43.8	5:40a	15.4	0.0	0.34	4.8	50.0	3:50a	S
16	48.5	51.5	9:00p	46.1	3:40a	14.2	0.0	0.31	3.6	51.0	9:20p	SSW
17	47.6	50.6	1:30p	45.0	5:10a	14.6	0.0	0.06	6.9	50.0	3:20a	SSW
18	48.5	52.4	5:40p	44.4	9:10a	14.3	0.0	0.13	7.1	51.0	8:30p	SSE
19	49.3	54.1	12:00m	46.7	8:50a	13.9	0.0	0.42	4.8	50.0	12:50a	SSW
20	51.7	55.9	2:10a	47.8	11:10p	11.3	0.0	0.19	3.8	53.0	2:00a	SSW
21	47.6	61.2	1:00p	35.8	8:40p	14.6	0.0	1.07	5.8	58.0	5:30p	SSW
22	41.6	46.5	1:00p	35.6	12:00m	20.0	0.0	0.00	0.0	12.0	4:00a	SE
23	36.7	42.8	2:50p	29.7	5:50a	25.2	0.0	0.00	0.7	18.0	12:50p	NNW
24	35.0	41.9	2:10p	30.7	6:00a	26.9	0.0	0.01	0.6	19.0	2:40a	SE
25	39.6	45.8	12:00m	33.1	12:10a	22.3	0.0	0.30	0.4	31.0	11:50p	SE
26	47.1	50.0	2:50p	43.5	10:20p	15.4	0.0	0.04	4.8	42.0	11:40a	SSW
27	44.0	48.3	2:50a	34.5	12:00m	18.0	0.0	0.02	0.1	14.0	2:10a	SE
28	38.3	46.2	2:20p	30.9	9:10a	23.8	0.0	0.00	0.6	27.0	3:50p	SE
29	37.7	41.4	7:00p	32.2	4:30a	24.4	0.0	0.15	0.4	17.0	6:00a	SE
30	45.6	50.2	4:20p	39.7	3:30a	16.0	0.0	0.47	7.1	53.0	2:50p	SSE
31	49.1	51.5	1:00p	47.0	12:00m	14.1	0.0	0.10	4.9	50.0	3:40a	SSW
	44.3	61.2	21	29.2	12	577.9	0.0	4.31	2.3	58.0	21	SSW

Max >= 90.0: 0
Max <= 32.0: 0
Min <= 32.0: 4
Min <= 0.0: 0
Max Rain: 1.07 ON 12/21/20
Days of Rain: 20 (>.01 in) 11 (>.1 in) 1 (>1 in)
Heat Base: 65.0 Cool Base: 65.0 Method: Integration

ATTACHMENT C

ANNUAL PROTECTIVE CAP INSPECTION REPORT

SITE INSPECTION SUMMARY REPORT—CAP VISUAL MONITORING
CASCADE POLE AND LUMBER COMPANY

Date:	11/24/2020
Weather:	Overcast with light rain, ~45° F
Precipitation (prior 24 hrs):	0.11" on 11/23/2020
Completed By:	M. Tarbert, EIT, Maul Foster & Alongi, Inc.
Engineer of Record:	S. Taylor, PE, Maul Foster & Alongi, Inc.

General Observations:

This is the fifth annual cap inspection performed as required under the Consent Decree.

The cap (asphalt cap, concrete drip pad, building capped areas) all generally appear in good condition.

Typical site activities were being performed during the inspection, including movement of lumber poles, movement and handling of lumber boards, and some light construction activity at the CA-C drip pad associated with the ongoing drip pad expansion project.

No major areas of standing water were observed.

There was no visible demarcation fabric.

Specific Observations: To be noted with photographs, measurements, and locations:

Pavement Cap:

No settling, bulging, or punctures were observed.

Some minor linear asphalt cracks are continuing to form and should be closely monitored. These areas are shown on the attached figure.

Some fatigue cracking of asphalt was observed in localized areas of the site and should be closely monitored. These areas are shown on the attached figure.

Puget Sound Energy (PSE) is performing investigation work onsite to detect a potential natural gas leak along the western spur of the railroad on site. This work is being conducted in accordance with the 2015 Site Management Plan. This includes asphalt removal and minor excavation.

New asphalt was observed in several recently repaired areas, as shown on the attached figure.

Drip Pad Cap:

Drip pad was covered with steel plating in 2016, and is currently in good condition.

A drip pad extension and a humidity control system were recently constructed over the existing CA-C drip pad. Cap activities concluded on November 25, 2020.

No settling or bulging was observed.

Transfer Table Pit Cap:

No settling or bulging was observed.

Building Cap:

Appears to be in good condition; no foundation cracks or penetrations were observed.

Measurements:

Areas of recently repaired asphalt are also shown on the attached figure.

Approximate extent of areas where observed sealant fatigue and cracks forming are shown on the attached figure.

MAUL FOSTER ALONGI

PHOTOGRAPHS

Project Name: McFarland Cascade Pole and Lumber Company—Cap Inspection, 11.24.20
Project Number: 9081.01.19
Location: 1640 East Marc Street, Tacoma, Washington

Photo No. 1.

Description
Linear crack to monitor on eastern end of site, looking northwest.

Photo No. 2.

Description
Three-side structure covering the steel drip pad. View looking north.

MAUL FOSTER ALONGI

PHOTOGRAPHS

Project Name: McFarland Cascade Pole and Lumber Company—Cap Inspection, 11.24.20
Project Number: 9081.01.19
Location: 1640 East Marc Street, Tacoma, Washington

Photo No. 3.

Description
Steel-covered drip pad.
View looking northwest.

Photo No. 4.

Description
Steel-covered drip pad.
View looking northeast.

MAUL FOSTER ALONGI

PHOTOGRAPHS

Project Name: McFarland Cascade Pole and Lumber Company—Cap Inspection, 11.24.20
Project Number: 9081.01.19
Location: 1640 East Marc Street, Tacoma, Washington

Photo No. 5.

Description
Asphalt cap above horizontal recovery well, looking north.

Photo No. 6.

Description
Area to monitor approximately 200 feet south of the PCP Thermal Butt Vat.

MAUL FOSTER ALONGI

PHOTOGRAPHS

Project Name: McFarland Cascade Pole and Lumber Company—Cap Inspection, 11.24.20
Project Number: 9081.01.19
Location: 1640 East Marc Street, Tacoma, Washington

Photo No. 7.

Description
Area repaired with new asphalt at center of site, near railroad spur. View looking north.

Photo No. 8.

Description
Area repaired with new asphalt at center of site, near railroad spur. View looking south.

PHOTOGRAPHS

Project Name: McFarland Cascade Pole and Lumber Company—Cap Inspection, 11.24.20
Project Number: 9081.01.19
Location: 1640 East Marc Street, Tacoma, Washington

Photo No. 9.

Description
Area repaired with new asphalt north of the CA-C Drip Pad. View looking east.

Photo No. 10.

Description
Puget Sound Energy cap repair, near railroad spur.

PHOTOGRAPHS

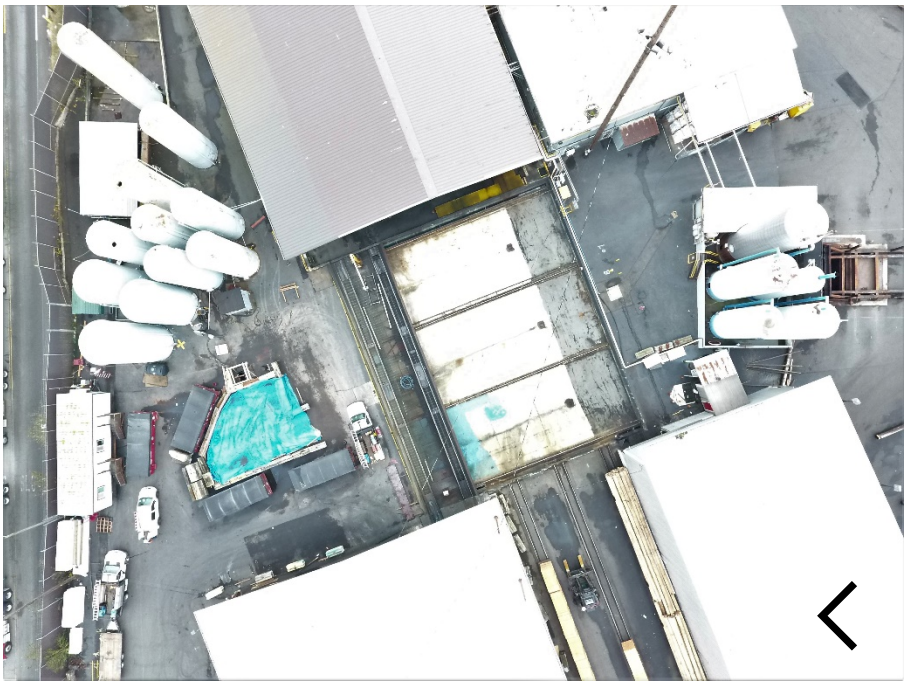
Project Name: McFarland Cascade Pole and Lumber Company—Cap Inspection, 11.24.20
Project Number: 9081.01.19
Location: 1640 East Marc Street, Tacoma, Washington

Photo No. 11.

Description
Transfer table area.
View looking northeast.

Photo No. 12.

Description
Aerial view of transfer table. North shown by arrow on photo.



PHOTOGRAPHS

Project Name: McFarland Cascade Pole and Lumber Company—Cap Inspection, 11.24.20
Project Number: 9081.01.19
Location: 1640 East Marc Street, Tacoma, Washington

Photo No. 13.

Description
Aerial view of cap repair areas at center of the site near railroad spur. North shown by arrow on photo.

Figure
2020 Cap Inspection

McFarland Cascade Pole
and Lumber Company
Tacoma, Washington

November 24, 2020

Legend

- Shallow Monitoring Well
- Deep Monitoring Well
- Railroad
- Site Boundary
- Linear Crack to Monitor
- Area to Watch
- Recent Repair - New Asphalt
- Protective Cap (Currently Paved) and Soil Restricted Area
- Property Boundary

0 100 200
Feet

Source: Aerial photograph obtained from Mapbox; site layout and features obtained from AECOM Environment, RETEC, MKA and USPCI; county parcel boundaries (July 2014) obtained from Pierce County.

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\9081.01 Cascade Pole\04_MTCA Closure Tacoma Facility\00_Projects\Fig_Protective Cap_2020.mxd
Project: 9081.01.04.00 Produced By: mjosef Approved By: hhirsch Print Date: 12/14/2020