tyco Fire Protection Products

One Stanton Street
Marinette, WI 54143-2542
Tele: 715-735-7411

April 13, 2021

Mr. Christopher Black
U.S. Environmental Protection Agency, Region 5
Land, Chemicals and Redevelopment Division
77 West Jackson Blvd, LR-16J
Chicago, IL 60604-3590

RE: Bi-Weekly Summary Report for Pump Down Program
Tyco Fire Products LP Site
Marinette, WI

Dear Mr. Black:

The information provided herein is a summary of activities conducted at the Tyco Fire Products LP (Tyco) site associated with the Pump Down Program (PDP) for the former Salt Vault and 8th Street Slip areas. The PDP is required as part of the Administrative Order on Consent between Tyco and the U.S. Environmental Protection Agency (USEPA). This summary report covers the period from March 27, 2021 through April 9, 2021.

Summary of Work during Reporting Period

Work conducted during the reporting period included:

- Collection of manual water level readings at the designated monitoring points and extraction wells on March 31st and April 5th, 2021. The average water level, based on the most recent water level measurements (April 5th, 2021) during the reporting period, in the former Salt Vault was 581.19 feet above mean sea level (ft. AMSL), or 3.29 feet above the target level. The average water level in the former 8th Street Slip was 574.24 ft. AMSL, or 3.66 feet below the target level. A cumulative summary of manual water level readings and corrected elevations is attached as Table 1.

- Operation of the four extraction wells within the former Salt Vault (EW-10, EW-11, EW-13 and EW-14) was continuous from March 27, 2021 into March 29, 2021. Pumping from the extraction wells was suspended on March 29, 2021 to conduct equipment modifications in preparation for pump testing activities associated with the newly installed horizontal wells, HW-01 and HW-02. These wells were installed as part of the permanent upgrade to the extraction system within the pump down area and will ultimately be connected to a conveyance system that will direct the recovered groundwater to the groundwater treatment system to be upgraded at the

site. Extraction of groundwater from the former Salt Vault area recommenced on April 6, 2021, at the initiation of the pump test activities.

- Operation of the extraction wells within the 8th Street Slip area was on a more intermittent basis between March 27, 2021 and April 6, 2021 to maintain water levels which are presently below target levels. However, no groundwater has been extracted from the wells within the 8th Street Slip since April 6, 2021 when the pump testing associated with the newly installed horizontal wells was initiated.

- During pumping operations prior to April 6, 2021, total groundwater recovery rates in the former Salt Vault area averaged 1.06 gallons per minute (gpm) from the four extraction wells (EW-10, EW-11, EW-13 and EW-14) while total recovery rates in the former 8th Streep Slip area averaged 2.72 gpm from the two extraction wells when operated.

- Following the initiation of the pump test on April 6, 2021, extraction of groundwater from the two newly installed horizontal wells HW-01 and HW-02 averaged 3.0 gpm during the remainder of the reporting period.

- Off-site transportation of recovered groundwater was conducted during the reporting period Monday through Saturday of each week as needed to maintain operations.

A summary of pumping and disposal operations for the 2021 season is provided below.

Summary of Pump Down Operations (April 9, 2021)

	Gallons Pumped	Gallons Treated at GWTS[1]	Gallons Transported for Off Site Disposal
This Period	~42,200	~0	~42,200
2021 Operations to Date	~282,600	~0	~281,600

All quantities are estimated.

[1] GWTS – Groundwater Treatment System

Issues Encountered During Reporting Period

As noted above, operation of the four extraction wells within the former Salt Vault was continuous from March 27, 2021 into March 29, 2021. Pumping from the extraction wells was suspended on March 29, 2021 to conduct equipment modifications in preparation for pump testing activities associated with the newly installed horizontal wells, HW-01 and HW-02. Policies and procedures are continuously being evaluated on an ongoing basis to address the COVID-19 outbreak.

Issues To Be Resolved During Next Reporting Period

No operational issues were encountered during this reporting period that require resolution. Finally, policies and procedures are being evaluated on an ongoing basis to address the COVID-19 outbreak.

Anticipated Work During Next Reporting Period

Pumping operations within the area of the former Salt Vault will be maintained using the horizontal extraction wells; however, current extraction rates may be adjusted in an effort to further assess the effectiveness of the horizontal well extraction system. It is also expected that operation of the extraction wells within the 8th Street Slip will be intermittent to maintain water levels below target elevations. Finally, manual water level measurements will continue to be collected from the designated monitoring wells and extraction wells on a weekly basis.

If you have any questions regarding this report, please contact me at 262-349-2528 or jeffrey.howard.danko@jci.com.

Sincerely,

Jeffrey Danko
EHS Manager – Environmental Remediation

Attachments:

Table 1 –Pump Down Program Groundwater Elevation Monitoring

cc: Angela Carey – WDNR
Trevor Moen - WDNR
Ryan Suennen – Tyco Fire Products
Heather Ziegelbauer – Jacobs
Kirk Kapfhammer – Endpoint Solutions Corp.

Table 1. 2021 Pump Down Program Groundwater Elevation Monitoring
Tyco Fire Products LP, Marinette, Wisconsin

Target Elevation	577.9

Well ID	January 6, 2021		January 12, 2021		January 19, 2021		January 27, 2021		February 3, 2021		February 10, 2021		February 17, 2021		February 23, 2021		March 4, 2021		March 11, 2021		March 16, 2021		March 25, 2021		March 31, 2021		April 5, 2021	
	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)	DTW	Corrected Groundwater Elevation (for equivalent fresh water)
MW001M	8.08	579.04	8.24	578.88	8.25	578.87	8.27	578.85	8.35	578.77	9.04	578.08	9.10	578.02	8.79	578.33	8.82	578.30	7.68	579.44	7.69	579.43	8.01	579.11	6.58	580.54	6.03	581.09
MW001S	8.60	578.60	8.75	578.45	8.75	578.45	8.63	578.57	8.78	578.42	8.59	578.61	8.62	578.58	8.32	578.88	8.34	578.86	7.15	580.05	7.24	579.96	7.48	579.72	6.69	580.51	6.15	581.05
MW002M-R	11.75	578.76	11.38	579.14	11.50	579.02	11.48	579.04	11.43	579.09	11.72	578.79	11.79	578.72	11.48	579.04	11.47	579.05	10.34	580.19	10.40	580.13	10.62	579.91	9.85	580.69	9.34	581.20
MW002S-R	10.66	579.62	10.96	579.32	11.32	578.96	11.30	578.98	11.36	578.92	11.61	578.67	11.71	578.57	11.36	578.92	11.33	578.95	10.22	580.06	10.26	580.02	10.48	579.80	9.74	580.54	9.19	581.09
MW031M	9.10	578.93	8.87	579.16	8.84	579.19	8.64	579.39	8.94	579.09	9.14	578.88	9.13	578.90	8.74	579.29	8.79	579.24	NM	-	7.76	580.27	8.03	580.00	7.24	580.80	6.80	581.24
MW031S	9.70	579.17	9.58	579.29	9.67	579.20	9.62	579.25	9.65	579.22	9.93	578.94	9.82	579.05	9.67	579.20	9.08	579.79	NM	-	8.58	580.29	8.92	579.95	8.20	580.67	7.81	581.06
MW113S	11.63	578.65	11.23	579.05	11.30	578.98	11.26	579.02	11.32	578.96	11.57	578.71	11.65	578.63	11.30	578.98	11.30	578.98	10.22	580.06	10.21	580.07	10.47	579.81	9.70	580.58	9.12	581.16
MW113M	11.30	578.97	11.09	579.18	11.05	579.22	11.07	579.20	11.22	579.05	11.36	578.91	11.43	578.84	11.15	579.12	11.21	579.06	10.48	579.80	10.36	579.92	10.52	579.76	8.92	581.36	8.57	581.71
MW115P	10.06	579.02	10.25	578.83	10.24	578.84	10.21	578.87	9.83	579.25	10.05	579.03	10.30	578.78	9.98	579.10	9.49	579.59	7.68	581.40	7.53	581.55	8.02	581.06	7.82	581.26	7.83	581.25
MW115S	9.60	579.37	9.69	579.28	9.70	579.27	9.63	579.34	10.37	578.60	10.60	578.37	10.69	578.28	10.33	578.64	10.34	578.63	9.75	579.22	9.18	579.79	9.57	579.40	8.34	580.63	7.84	581.13
MW116P	10.33	579.53	10.20	579.66	10.30	579.56	10.26	579.60	10.37	579.49	10.51	579.35	10.65	579.21	10.51	579.35	10.49	579.37	9.85	580.01	9.69	580.18	9.67	580.20	9.57	580.30	9.20	580.67
MW116S	11.23	578.64	10.88	578.99	10.85	579.02	10.84	579.03	10.92	578.95	11.18	578.69	11.26	578.60	10.96	578.91	10.88	578.99	9.71	580.16	9.83	580.04	10.06	579.81	9.29	580.58	8.71	581.17
MW119D	7.14	581.58	7.23	581.49	7.25	581.47	7.21	581.51	7.38	581.34	7.42	581.30	7.56	581.16	7.55	581.17	7.67	581.05	7.66	581.06	7.70	581.02	7.71	581.01	7.74	580.98	7.73	580.99
EW-3	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
EW-10	24.12	562.90	25.03	561.99	24.81	562.21	24.96	562.06	24.93	562.09	24.35	562.67	24.72	562.30	23.78	563.24	24.75	562.27	23.89	563.13	24.84	562.18	25.78	561.24	6.51	580.55	6.12	580.94
EW-11	24.22	562.44	22.10	564.56	20.93	565.73	21.73	564.93	22.84	563.82	22.51	564.15	28.16	558.49	28.73	557.92	22.62	564.04	22.31	564.35	25.11	561.55	24.89	561.77	5.68	581.01	5.26	581.43
EW-13	25.37	559.68	24.30	560.75	22.13	562.93	22.63	562.43	21.91	563.15	21.79	563.27	26.54	558.50	26.75	558.29	21.18	563.88	21.30	563.76	18.24	566.83	18.61	566.46	4.55	580.57	4.05	581.07
EW-14	22.15	563.86	22.91	563.10	18.42	567.61	20.86	565.16	18.21	567.82	22.09	563.92	22.04	563.97	21.86	564.15	22.04	563.97	20.61	565.41	15.14	570.91	16.07	569.97	5.58	580.51	5.17	580.92
MW034M	13.36	574.86	13.27	574.95	14.10	574.12	14.06	574.16	14.26	573.96	13.43	574.79	13.40	574.82	13.98	574.24	14.24	573.98	13.42	574.80	13.98	574.24	14.03	574.19	13.51	574.71	13.99	574.23
MW034S	13.97	574.21	13.85	574.33	14.43	573.75	14.17	574.01	14.61	573.57	13.98	574.20	13.84	574.34	14.28	573.90	14.55	573.63	13.93	574.25	14.20	573.98	14.64	573.54	14.06	574.12	14.21	573.97
MW036M	14.31	574.22	14.48	574.05	14.74	573.79	14.65	573.88	14.88	573.64	14.81	573.72	14.40	574.13	14.52	574.01	14.92	573.60	14.59	573.94	14.62	573.91	15.04	573.48	14.74	573.79	14.63	573.90
MW036S	13.89	574.36	14.03	574.22	14.25	574.00	14.13	574.12	14.43	573.82	14.22	574.03	13.99	574.26	14.08	574.17	14.44	573.81	14.17	574.08	14.15	574.10	14.59	573.66	14.34	573.91	14.20	574.05
MW038M	11.75	574.39	11.91	574.23	12.23	573.91	12.16	573.98	12.38	573.76	12.09	574.05	NM	-	12.00	574.14	12.38	573.76	12.10	574.04	12.06	574.08	12.52	573.62	12.28	573.86	12.02	574.12
MW038S	13.55	574.27	13.73	574.09	14.06	573.76	13.93	573.89	14.21	573.61	13.91	573.91	13.65	574.17	13.85	573.97	14.21	573.61	13.87	573.95	13.89	573.93	14.39	573.43	14.06	573.76	13.82	574.00
MW120D	6.97	581.63	7.13	581.47	7.14	581.46	7.13	581.47	7.22	581.38	7.39	581.21	7.20	581.40	7.36	581.24	7.38	581.22	7.06	581.54	7.12	581.48	7.37	581.23	7.60	581.00	7.14	581.46
MW120M	14.20	574.71	14.20	574.71	14.36	574.54	14.28	574.63	14.54	574.36	14.40	574.50	14.31	574.60	14.32	574.59	14.54	574.36	14.35	574.55	14.28	574.63	14.26	574.65	14.24	574.67	14.19	574.72
MW120S	13.73	574.79	13.69	574.83	13.81	574.71	13.71	574.81	13.88	574.64	13.95	574.57	13.98	574.54	13.85	574.67	14.08	574.44	13.94	574.58	13.78	574.74	13.64	574.88	13.65	574.87	13.55	574.97
EW-2	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
EW-8	11.61	574.04	11.10	574.55	16.34	569.30	12.11	573.54	19.56	566.08	NM	-	11.52	574.13	19.87	565.77	18.15	567.49	11.64	574.01	16.48	569.16	19.43	566.21	7.89	577.77	17.91	567.73
EW-9	10.83	574.18	10.18	574.83	19.80	565.19	11.81	573.20	19.82	565.17	12.91	572.09	10.73	574.28	20.13	564.86	20.58	564.41	10.39	574.62	20.36	564.63	20.42	564.57	10.86	574.15	17.41	567.58
MW004M	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
MW004S	6.31	582.43	6.21	582.53	5.93	582.81	6.02	582.72	6.29	582.45	6.42	582.32	6.59	582.15	6.47	582.27	6.11	582.63	5.61	583.13	5.46	583.28	5.17	583.57	5.13	583.61	5.13	583.61
MW032M	6.46	581.90	6.33	582.03	6.23	582.13	6.30	582.06	6.49	581.87	6.64	581.72	6.71	581.64	6.45	581.91	6.34	582.02	5.87	582.49	5.68	582.68	5.81	582.55	5.83	582.53	5.68	582.68
MW032S	6.20	582.30	6.10	582.40	5.79	582.71	5.91	582.59	6.16	582.34	6.22	582.28	6.42	582.08	6.14	582.36	5.71	582.79	5.26	583.24	5.18	583.32	5.12	583.38	4.94	583.56	5.12	583.38
MW033M	5.20	582.53	5.19	582.54	4.83	582.91	4.87	582.87	5.32	582.41	5.34	582.39	5.47	582.26	5.38	582.35	5.05	582.68	4.49	583.25	4.29	583.46	4.23	583.52	4.01	583.74	4.05	583.70
MW033S	4.95	582.38	4.90	582.43	4.59	582.74	4.71	582.62	4.96	582.37	5.08	582.25	5.20	582.13	5.11	582.22	4.77	582.56	4.25	583.08	4.07	583.26	3.91	583.42	3.76	583.57	3.76	583.57
MW039M	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
MW039S	3.75	582.45	3.68	582.52	3.38	582.82	3.41	582.79	3.77	582.43	3.85	582.35	4.04	582.16	3.91	582.29	3.55	582.65	3.07	583.13	2.91	583.29	2.64	583.56	2.59	583.61	2.58	583.62
MW035M	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
MW035S	6.02	581.63	5.93	581.72	5.72	581.93	5.77	581.88	6.33	581.32	6.63	581.02	6.97	580.68	6.83	580.82	6.48	581.17	5.38	582.27	5.43	582.22	5.55	582.10	5.71	581.94	5.64	582.01
MW037M	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
MW037S	5.41	581.66	5.35	581.72	5.05	582.02	5.11	581.96	5.76	581.31	6.01	581.06	6.40	580.67	6.19	580.88	5.77	581.30	4.63	582.44	4.77	582.30	4.84	582.23	4.94	582.13	5.04	582.03
SG4	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	6.60	580.85	5.85	581.60
Rough Target Elevation Calc SV*		578.97		579.07		579.02		579.07		578.91		578.66		578.62		578.93		578.98		579.87		579.99		579.73		580.69		581.19
Rough Target Elevation Calc 8S*		574.48		574.43		574.07		574.18		573.92		574.22		574.41		574.21		573.90		574.27		574.20		573.93		574.21		574.24
Target Elevation (NAVD88)		577.90		577.9		577.9		577.9		577.90		577.90		577.90		577.90		577.90		577.90		577.90		577.90		577.90		577.90
SV Variance		1.07		1.17		1.12		1.17		1.01		0.76		0.72		1.03		1.08		1.97		2.09		1.83		2.79		3.29
8S Variance		-3.42		-3.47		-3.83		-3.72		-3.98		-3.68		-3.49		-3.69		-4.00		-3.63		-3.70		-3.97		-3.69		-3.66

Notes:
Measurements were collected from top of casing (TOC). All depth measurements are in feet.
Elevations are reported in feet above mean sea level (AMSL) relative top the North American Vertical Datum 1988 (NAVD88)
Shaded = Well part of evaluation during Drawdown and Interim Phases
Bold = Well part of Target Elevation calculation
- = Information not applicable or not collected
Area Definitions - SV - Salt Vault, 8SS - 8th Street Slip
*Wells identified for target elevation calculation are for during the drawdown and interim phases. Only wells outside the steepest portion of the cone of depression will be included in the calculation of the average elevations. The average elevation of all suitable measured wells will be considered the calculated elevation to compare against the target elevation. The number of post-drawdown phase wells used for this calculation may be reduced and will be determined based on results observed during the drawdown phase.
ID = identification; DTW = depth to water
NM = Not Measured; MW = Monitoring Well