August 10, 2018

Mr. Andrew Zwack
New York State Dept. of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Response to July 12, 2018 Comment Letter
Tecumseh Redevelopment Inc., Lackawanna, NY Site
ATP SWMU Group ECM
Annual Monitoring & Maintenance Summary Report
Reporting Period January 1-December 31, 2017

Dear Mr. Zwack:

On behalf of our client, Tecumseh Redevelopment Inc. (Tecumseh), TurnKey Environmental Restoration, LLC (TurnKey) has prepared the following responses to the Department's July 12, 2018 comments concerning the above-referenced report:

Comment 1. Cover System Monitoring: A completed Post-Closure Field Inspection Report (Appendix A of the ATP ECM Operation, Maintenance, & Monitoring Plan) should be included in the annual report submittal with a summary of the inspection findings in the main text.

Response: A Post-Closure Field Inspection Report reflecting current site conditions has been included with the revised report and will be completed for subsequent annual reports.

Comment 2. Groundwater Quality Monitoring: A more detailed discussion of benzene and cyanide concentrations, ranges, and trends should be included in this section. Wells 18A, 18C, 19A, and 19B appear to be representative of the groundwater discharging to Smokes Creek from the area north of the ATP confinement unit. The radiuses of influence for PW-2 and PW-3 do not appear to be identifying groundwater capture between the two wells.

Response: Table 5 (groundwater analytical summary) and associated trend charts and text have been updated to reflect the April 2018 groundwater sampling data, which were not available at the time of the original submittal. As discussed in the revised report, these data show significant and reductions in VOC concentrations at MW-18A, 18C, 19A and 19B located directly north of and downgradient of the ATP confinement unit. Cyanide levels dropped at these locations as well.

Absent an elevation monitoring point between adjacent exterior pumping wells PW-2 and PW-3, the area of influence between these two wells located just 167 feet apart is conservatively portrayed on the isopotential maps as relatively confined to the area surrounding the pumping wells. As there is limited surface infiltration and also very limited potential for lateral recharge in the very small area bounded by the pumping wells on the west and east, and the containment cell to the south, it is realistic

to expect groundwater capture between PW2 and PW3 to be similar to that between the other exterior adjacent pumping well pairs (i.e., PW1 and PW2, PW3 and PW4) with similar distance separation and operational set points.

The current pumping elevations avoid excessive drawdown and influence from Smokes Creek that might overload the pretreatment system, and more importantly mitigate exacerbating the natural steep hydraulic gradient between the containment cell and downgradient groundwater which would conflict with the goal of maintaining inward gradient toward the cell. Also note that the hydraulic gradients toward these pumping wells are quite steep (i.e., approx. 0.06 ft./ft.). There may also be some seasonal/temporary groundwater mounding between PW-2 and PW-3 due to infiltration from the storm water infiltration basin, particularly during the spring time. This is desirable, as the infiltration source is clean storm water from the vegetated cap that help flush the vadose zone contaminants to groundwater and toward the pumping wells.

Moreover, the approved January 2015 Engineering Report identifies the primary means for evaluating the efficacy of the ATP ECM as concentration reductions over time in the exterior monitoring wells MWS-18A & C and 19A & B. Based upon the recent favorable data for these monitoring locations we do not propose a change in exterior pumping operations at this time.

Comment 3. Conclusion and Recommendations: EW-3R is the only well identified as having the pump "on" and "off" settings altered during 2017. Note 3 in Table 1 indicates that the elevations for the extraction wells are the average of the on/off pump elevation settings. The elevations listed in Table 1 for EW-1, PW-2, PW-3, and PW-4 change throughout the year. These additional apparent pump setpoint adjustments should also be discussed in the report text (or the varying elevations in Table 1 should be corrected).

Response: Acknowledged, the set points for each of the extraction and pumping wells were adjusted in April 2017 with PW-1 also adjusted in September 2017. We have added a summary of the pump set point changes to Table 2 and revised the conclusion and recommendations section accordingly.

Comment 4. Table 1: Note 3 indicates that the average of the pump "on" and "off" setpoint elevations are listed for the extraction wells, however: the first two quarterly values for EW-1 (573.5) are above the "on" setpoint (573.0) indicated in the text; the first two quarterly values listed for EW-3R (574.0) are above either of the "on" setpoints (573.0 and 572.0) indicated in the text, although 571.5 is the elevation indicated for EW-3R on Figure 2; and the pump setpoints for wells PW-1 through PW-4 are not indicated in the text. Also see Comment 3 above. If any values in Table 1 are incorrect, please make any necessary revisions to Figures 2 through 5.

The Lake Erie water elevation values for 3 of the 4 quarterly monitoring periods are ~1.5 to 6 feet higher than the Smokes Creek water elevations at SG-02 (this also is exhibited on CMS Groundwater Assessment Plate 1), implying that there may be a problem with the SG-02 staff gauge. Resurveying the elevation on SG-02 may be warranted. Installing a staff gauge on the sheet piles near the mouth of Smokes Creek might also be useful to verify the NOAA lake level data and as a check on the SG-02 readings.

Response: The set point elevations listed in the Groundwater Capture section of the report refer to the set points at the time of the report (March 30, 2018). Nevertheless, as discussed above, certain extraction well and pumping well elevations were incorrectly listed based upon actual pump on/off settings on the reported dates. The elevations have been modified on the groundwater elevation table and Figures 2 through 5 in the revised report.

SG-02 is a surveyed reference point at the top of a steel sheet pile wall along the creek bank. The reference point elevation has been confirmed, but we have determined that in some instances field staff collected measurements from an incorrect reference point location. Corrected elevations are presented on Table 1 and Figures 2 through 5 in the revised report.

Comment 5. Figure 2: The EW-3R elevation is marked as 571.5 on the figure, however, Table 1 lists the elevation for EW-3R as 574.0. The value for SG-02 (566.68) is not shown on the figure. Is the elevation value for EW-1 correct?

Response: See response to Comment 4.

Comment 6. Figure 3: Is the elevation shown for EW-3R (574.0) correct? The water levels for several wells (e.g., MWS-18C, MWS19B, MWS-20B) are not indicated on the figure.

Response: The elevation shown for EW-3R (574.0) on Figure 3 is correct. In general, groundwater elevation differences between paired wells are minor and only one of the paired datapoints are used to generate the isopotential maps. The exception is data for the MW-23 pair, where apparent mounding within the fill at MW-23A biases the groundwater elevation by several feet. Data for MW-23B, which is screened within the sand unit, are consistent with surrounding data and have been employed in the isopotential maps.

Please contact us if you have questions or require additional information.

Sincerely,
TurnKey Environmental Restoration, LLC

Brock Greene
Project Environmental Scientist

Thomas Forbes, P.E.
Principal

ec: S. Radon, (NYSDEC – Region 9)
K. Nagel, (Tecumseh)
P. Werthman, (TurnKey)

File: 0071-017-222

August 10, 2018

Mr. Stanley Radon, CPG
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2915

Re: Tecumseh Redevelopment Inc., Lackawanna, NY Site
ATP SWMU Group ECM
Revised Annual Monitoring & Maintenance Summary Report
Reporting Period January 1- December 31, 2017

Dear Mr. Radon:

On behalf of Tecumseh Redevelopment Inc., TurnKey Environmental Restoration, LLC is herein providing a revised Annual Monitoring and Maintenance Summary Report for the Acid Tar Pits (ATP) Solid Waste Management Unit (SWMU) Group Expedited Corrective Measure (ECM). This summary report has been prepared in general accordance with the monitoring requirements presented in the updated (May 2017) Operation, Maintenance, and Monitoring (OM&M) Plan for the period of January 1, 2017 through December 31, 2017 and has been modified to address NYSDEC's July 12, 2018 comments on the prior March 2018 report.

BACKGROUND

The ATP-ECM is comprised of a three-phase constructed remedial measure: a soil-bentonite slurry wall keyed into native confining soils (Phase I); a cover system (Phase II); and a groundwater collection and pretreatment system (Phase III). The approximately 40-foot deep soil-bentonite slurry wall (referred to as the containment cell), was completed in the fall of 2011 and surrounds SWMUs S-11 and S-22 (see Figure 1).

Waste from SWMU S-24 was excavated, transported, and consolidated within the containment cell, and partially covered with a low-permeability multi-layer geosynthetic and interim soil cover in 2012. The interim cover, completed in the fall of 2012, was designed to allow for consolidation of additional wastes and final cover placement at a later date. The design incorporated a berm around the cell to prevent run-off of storm water in contact with consolidated wastes until the final cover was constructed. Groundwater/leachate extraction wells EW-1 and EW-2, installed within the containment cell, were activated on December

21, 2012. Groundwater/leachate is extracted from these wells via submersible pumps and conveyed to an onsite pretreatment system incorporating oil/water separation, filtration, pH adjustment and air stripping unit processes. The pretreated water is discharged to the plant sanitary sewer and ultimately the publicly operated sewerage system under a discharge permit with Erie County Sewer District No. 6. A third extraction well (EW-3) originally installed within the containment cell was not used due to water corrosivity (low pH) issues.

EW-1 and EW-2 maintained sufficient drawdown within the containment cell to maintain inward gradient across the southern and central portion of the cell, but groundwater levels within the northern portion of the cell remained elevated relative to those between the cell and Smokes Creek. The Department issued comments on the 2014 Annual Monitoring & Maintenance Summary Report requiring corrective measures to achieve an inward gradient across the entire cell. In response, Tecumseh installed a replacement well, deemed "EW-3R," in the northwestern portion of the cell near piezometer P-62D (see Figure 1). EW-3R construction was completed in June of 2015. Pump installation as well as force main and electrical connections were subsequently completed, and the extraction well was activated and fully operational by August 14, 2015. Foaming issues were originally encountered which necessitated slowly reducing the pump on and off levels in EW-3R to their present set points (see below).

Final waste consolidation and cover system construction was completed in late 2015. This work, deemed Operable Unit (OU) 2 and 3, respectively, is detailed in the January 2016 Construction Completion Report (CCR) prepared by Benchmark Environmental Engineering & Science, PLLC in association with TurnKey.

DOWNGRADIENT PUMPING WELL INSTALLATION

The results of the RCRA Corrective Measures Study (CMS) indicated that prior to the construction of the ATP-ECM containment cell, contamination from the Acid Tar Pits area had migrated northerly towards Smokes Creek. Although significant improvement in groundwater quality was observed following containment cell construction, downgradient concentrations remained in groundwater outside the ATP containment cell at levels above NY Groundwater Quality Standards. TurnKey prepared a conceptual remedial approach for this groundwater in a report titled "Engineering Report for Acid Tar Pit (ATP) SWMU Group Operable Unit OU-2[1] - External Groundwater Corrective Measure" dated April 2014 which was approved for implementation by the NYSDEC.

The remedy called for installation of four groundwater pumping wells (PW-1 through PW-4) between the containment cell and Smokes Creek, with discharge from the wells directed to a new force main leading to the ATP pretreatment system. The new wells were installed and

[1] OU-2 was re-designated by the NYSDEC to OU-3 in April 2015.

placed into service in Fall of 2015. Details of the pumping well and force main construction were provided to the Department in an April 2016 amendment to the February 2013 ATP SWMU Group Phase III Construction Completion Report. The well pumps and elevations are controlled from the pretreatment building and are intended to maintain a slight drawdown from static conditions to avoid competing with the inward gradient that is required across the containment cell.

GROUNDWATER CAPTURE

Prior to construction of the soil-bentonite slurry wall, a significant groundwater mound was present in the vicinity of the ATPs. According to the RCRA Facility Investigation (RFI), the groundwater mound was attributed to surface grading and multiple "perched" water zones within the ATPs resulting from layers of waste, slag, and other fill with varying hydraulic conductivities of waste material that retarded the vertical and horizontal flow of groundwater to the surrounding slag/fill and deeper native sand unit. During the interim period following construction of the soil-bentonite slurry wall (November 2011) and subsequent extraction well installation (December 2011) and activation (December 2012), groundwater mounding was observed within interior monitoring wells due to expected entrapment of groundwater and precipitation infiltration, as well as the slurry wall performing as designed to significantly retard groundwater flow.

Groundwater extraction wells EW-1 and EW-2 were activated on December 21, 2012 following completion of the ATP pretreatment system. EW-1 and EW-2 are currently set to energize at elevation 573 FMSL and de-energize 572 FMSL. In accordance with the March 31, 2017 Annual Monitoring & Maintenance Summary Report, the EW-3R pumping interval was dropped in spring of 2017 to a pump on elevation of 572 FMSL and a pump off elevation of 571 FMSL. However, incoming water exhibited whitish discoloration/foaming which inhibited pretreatment operations. Accordingly, the EW-3R pump settings were adjusted upward slightly (but still well below prior settings) and are currently set to energize at elevation 573 FMSL and de-energize at elevation 572 FMSL. A summary of pump set points with adjustment dates is provided on Table 1.

During 2017 the groundwater elevations in the network of wells and piezometers within and surrounding the ATP containment cell was monitored on a minimum quarterly/seasonal basis per the OM&M Plan. Table 2 presents groundwater elevation data obtained on February 21, April 10, July 6, and November 6, 2017. Isopotential maps corresponding to each of these events are presented as Figures 2 through 5. As shown, the inward gradient across the slurry wall was maintained, as it has been in prior years, across the southern area and central areas of the cell throughout 2017. In addition, pronounced influence toward the pumping wells is evident within the containment cell interior. Along the northern side of the cell, the gradient across the slurry wall was inward or relatively flat during the first, second and fourth quarters. During the July event the groundwater elevations at interior monitoring points on the northern side of the cell measured approximately 0.7 to 0.9 feet higher than the interpolated exterior elevation, likely due to the lowered exterior

groundwater elevations as drier weather conditions set in across western NY. This is reflected by the groundwater elevation data in Table 2, which indicate fairly consistent interior elevations along the northern side of the cell but lower levels exterior elevations in the monitoring wells between the creek and the slurry wall during the July event.

GROUNDWATER PRETREATMENT SYSTEM OPERATION AND MAINTENANCE

The groundwater treatment system was generally operated within design parameters during the current monitoring period with the exception of short-duration shutdowns related to routine maintenance (e.g., cleaning of the air stripper, changing out bag filters, etc.). Major routine and non-routine maintenance events as well as alarm conditions/corrective actions taken during the reporting period are listed on Table 1.

In June of 2016 a new panel was installed with cycle counters and hour meters for each of the internal extraction wells and external pumping wells. This work was completed by Tecumseh on a voluntary basis to improve monitoring of the system and aid in decisions concerning adjustment of on/off set-points. The recorded hours of operation and cycle counts since the panel was installed are presented for each of the extraction and pumping wells on Table 3.

The pretreatment system process flow rate and total gallons treated are monitored on the process discharge line via a flow sensor and transmitter, which are calibrated annually in accordance with ECSD Discharge Permit requirements. Table 4 provides a summary of the pretreatment system flow readings in terms of monthly totals and average daily flows. The total flow through the pretreatment system during the period January 1 through December 31, 2017 was approximately 1,616,120 gallons.

PW-1 through PW-4 pumps are not separately metered. However, the total flows from the pumping wells can be determined by subtracting the total metered flows from the extraction wells from the total flow processed through the pretreatment system. In 2017 the total volume of flow from the extraction wells was approximately 360,674 gallons. Thus it is estimated that the external pumping wells (PW-1 through PW-4) generated a total volume of approximately 1,255,446 gallons in 2017. A chart showing the relationship between the weekly totalizer flow and the estimated flow for extraction wells (EW's) and pumping wells (PW's) is located in Attachment 1.

GROUNDWATER QUALITY MONITORING

In accordance with the approved OM&M Plan, monitoring wells MWS-02, MWS-18A, MWS-18C, MWS-19A, MWS-19B, MWS-20A, and MWS-20B located downgradient of the containment cell are sampled annually in April for analysis of Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), arsenic, barium, chromium, lead, and cyanide. Metals analyses are also repeated for the filtered (soluble) fraction if the samples exhibit elevated turbidity.

Recent sampling results, including the April 2018 data, are summarized on Table 5 along with historical data from prior sampling events. Time versus concentration plots for total benzene, ethylbenzene toluene, and xylene (BETX) and cyanide are in Attachment 1.

The April 2018 data show a significant reduction in BTEX at all the monitored locations relative to the prior event with the exception of MWS-20A and 20B, which have historically yielded trace detections below groundwater quality standards and continue to exhibit non-detect or trace levels of petroleum VOCs. Total BTEX concentrations and in particular benzene, which represents the majority of the BTEX impact, have declined by an order of magnitude or more from historic high levels and reflect significant improvement in groundwater quality in Groundwater Discharge Sub-Area 2B downgradient of the ATP-ECM following completion of the slurry wall containment system in October 2011. Except for MWS-18A all BTEX levels are now well below 1 part per million. SVOC impacts, while historically not as pronounced as VOC impacts, have also declined with only MWS-19A exhibiting levels of certain SVOC parameters above groundwater quality standards. Similarly, cyanide levels dropped at each of the locations except MWS-02, which is well outside the capture area of the exterior pumping wells.

GROUNDWATER PRETREATMENT SYSTEM EFFLUENT MONITORING

Attachment 2 includes the April 2017 and October 2017 Semi-Annual Reports submitted to Erie County Sewer District No. 6. As presented in these reports, the pretreatment system effluent flow, pH, and regulated parameter concentrations were conformant with the permitted discharge limits on both events.

COVER SYSTEM MONITORING

A completed Post-Closure Field Inspection Report is included in Attachment 3. As presented in Attachment 3, the cover system, stormwater pond, and conveyance piping are in good condition and no corrective actions are required at this time.

CONCLUSIONS AND RECOMMENDATIONS

The groundwater pretreatment system is functioning as intended and in compliance with discharge permit limits.

Inward gradient was maintained during the across the containment cell throughout the year in the southern and central areas of the cell. Along the northern side of the cell, the gradient across the slurry wall was inward or relatively flat during the first, second and fourth quarters. The apparent higher interior groundwater/leachate levels along the northern side of the cell or portions thereof during the July event as compared to exterior groundwater elevations are believed to be attributable to the natural steep hydraulic gradient between the collection cell and Smokes Creek, which was exacerbated by the lower elevations measured in nearby monitoring well levels as drier conditions prevailed in July. Competing effects of

groundwater collection from the exterior groundwater pumping wells may also contribute but do not appear to have the same degree of influence as natural conditions and seasonal effects.

EW-3R pumping set-points were lowered in spring of 2017 following submittal of the 2016 annual report. Some foaming and odor issues were encountered, necessitating increasing the set points by a foot in August 2017. It is recommended that the current external pumping elevations be maintained, as further reductions in elevation may compromise the extraction well screen integrity and/or significantly reduce incoming groundwater/leachate quality to the point that pretreatment efficiency is impaired. Quarterly isopotential maps will continue to be developed to evaluate the effects of continued containment cell dewatering, which are expected to improve inward gradient. Nevertheless, it may not be feasible to overcome the natural steep hydraulic gradient during low water table conditions outside of the cell. All other routine operation, maintenance and monitoring will continue per the 2017 OM&M Plan.

Please contact us if you have any questions or require additional information.

Sincerely,
TurnKey Environmental Restoration, LLC

Thomas H. Forbes, P.E.
Principal Engineer

ec: A. Zwack, (NYSDEC – Region 9)
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P. Werthman (TurnKey)

File: 0071-017-322

TABLES

TABLE 1
ATP GROUNDWATER PRETREATMENT SYSTEM
SUMMARY OF MAJOR AND NON-ROUTINE SYSTEM O&M EVENTS

ATP ECM 2017 ANNUAL REPORT
TECUMSEH REDEVELOPMENT, INC.

Date	Alarm Condition	Cause	Response/Corrective Measure
1/19/17	None	System shut down for routine maintenance	Cleaned Air Stripper
3/24/17	None	System shut down for routine maintenance	Cleaned Air Stripper
5/19/17	None	System shut down for routine maintenance	Cleaned transfer pump and system piping
5/22/17	None	System shut down for routine maintenance	Cleaned Air Stripper
6/6/17	None	System shut down for routine maintenance	Tried to cleaned piping from building to EW's
7/25/17	High Air Stripper Sump	Flow rate leaving Air Stripper restricted	Cleaned effluent piping
8/14/17	High Air Stripper Sump	Flow rate leaving Air Stripper restricted	Recleaned effluent piping and reduced flow into Air Stripper
10/11/17	None	System shut down for routine maintenance	Cleaned Air Stripper
10/17/17	High Air Stripper Sump	Flow rate leaving Air Stripper restricted	Cleaned effluent piping
10/25/17	ph Out of Range	pH probe failure	Replaced pH Probe
11/6/17	EW-3 Well high Alarm	Voltage surge/lightning damaged well probes	Replaced EW-3R level transducer, Operated Manually until Transducer Received
12/4/17	High Air Stripper Sump	Flow rate leaving Air Stripper reduced	Tried to clean effluent line and reduced flow into Air Stripper

Date of Change	Groundwater Pump Elevation Modifications (for the report period)													
	EW-1 On	EW-1 Off	EW-2 On	EW-2 Off	EW-3R On	ER-3R Off	PW-1 On	PW-1 Off	PW-2 On	PW-2 Off	PW-3 On	PW-3 Off	PW-4 On	PW-4 Off
7/21/16	572.00	566.00	570.40	568.00	575.00	573.00	575.00	573.00	572.50	570.50	572.00	570.00	573.00	571.00
4/12/17	573.00	572.00	573.00	572.00	572.00	571.00	573.50	571.50	571.00	569.00	571.00	569.00	574.00	572.00
8/23/17	573.00	572.00	573.00	572.00	573.00	572.00	573.50	571.50	571.00	569.00	571.00	569.00	573.00	571.00
9/28/17	573.00	572.00	573.00	572.00	573.00	572.00	572.50	571.50	571.00	569.00	571.00	569.00	573.00	571.00

Note: Gray highlighted cells indicate that the pump elevation was changed on that date.

TABLE 2
ATP GROUNDWATER PRETREATMENT SYSTEM
GROUNDWATER ELEVATION SUMMARY [1,2]

ATP ECM 2017 ANNUAL REPORT
TECUMSEH REDEVELOPMENT, INC.

Well Designation	Hydrogeologic Unit	02/21/17	04/10/17	07/06/17	11/06/17
MWS-02	F	574.36	575.02	574.48	575.05
MWS-03	F	573.55	574.22	573.40	576.14
MWS-10	F	576.35	577.07	575.58	577.02
MWS-10B	S	575.61	576.14	575.50	576.61
MWS-11A	S	573.85	574.64	573.97	574.55
MWS-12A	F	575.23	576.09	574.77	575.99
MWS-12B	F,S	575.29	575.96	574.78	575.98
MWS-13	F,S	574.52	575.44	574.37	575.47
MWS-14	F,S	575.66	575.98	575.56	575.55
MWS-14B	S	576.39	577.18	575.88	576.61
MWS-15		574.01	574.83	574.14	574.69
MWS-18A	F	575.53	576.43	574.00	576.21
MWS-18C	S,CS	575.05	575.94	574.27	576.07
MWS-19A	F	572.84	573.29	573.32	573.96
MWS-19B	S	572.79	573.37	573.42	573.92
MWS-20A	S	577.22	578.28	575.07	577.42
MWS-20B	S,CS	577.10	578.18	574.98	577.31
MWS-21A	F,S	575.86	576.45	575.25	576.47
MWS-21B	S	573.29	573.88	575.24	576.19
MWS-23A	F	582.98	584.37	581.75	582.91
MWS-23B	S	576.06	576.46	575.31	576.82
MWS-24AR	F,S	576.12	576.79	575.38	576.92
MWS-24B	S,C	574.46	574.97	574.66	574.79
MWS-25A	F,S	575.82	576.41	575.21	576.41
MWS-25B	F,S	575.80	576.40	575.19	576.33
MWS-29A	F	577.43	577.50	577.32	577.47
MWS-2U1B		573.92	574.79	574.11	574.61
P-61D	S	573.27	573.78	573.55	574.21
P-62D	S	575.47	575.60	575.86	576.58
P-63D	S	576.06	577.12	575.02	577.27
P-64D	S	575.29	575.52	575.81	576.21
EW-1	S	569.00	569.00	572.50	572.50
EW-2	S	569.20	569.20	572.50	572.50
EW-3	S		576.10	575.66	577.20
EW-3R	S	574.00	574.00	571.50	572.50
PW-1	S	574.00	574.00	572.50	572.00
PW-2	S	571.50	571.50	570.00	570.00
PW-3	S	571.00	571.00	570.00	570.00
PW-4	S	572.00	572.00	573.00	573.00
SG-02	--	572.06	573.07	573.64	572.87
Lake Erie	--	572.1	572.9	573.5	572.4

Notes:

1. Elevation is measured in feet; distance above mean sea level (fmsl).
2. Groundwater elevation corrected based on the presence of free product (i.e., LNAPL), if applicable.
3. Groundwater elevations for extraction wells EW-1, EW-2, EW-3R, PW-1, PW-2, PW-3, and PW-4 presented in the table are reflective of the average of "pump on" and "pump off" elevations.
4. Groundwater elevations for extraction well EW-3 are measured from the top of riser, located in EW-3 manhole.
5. Lake Erie Elevation is taking from NOAA's Buffalo NY station 9063020.

Definitions:

fbTOR = feet below top of riser or reference elevation.
fmsl = feet above mean sea level.
Hydrogeologic Unit = as identified in the RFI & CMS
NM = not measured
NP = no product was observed
NA = not applicable

TABLE 3
ATP GROUNDWATER PRETREATMENT SYSTEM
EXTRACTION AND PUMPING WELL OPERATION SUMMARY

ATP ECM 2017 ANNUAL REPORT
TECUMSEH REDEVELOPMENT, INC.

Date	EW-1 Hours	EW-1 Cycles	EW-2 Hours	EW-2 Cycles	EW-3R Hours	EW-3R Cycles	PW-1 Hours	PW-1 Cycles	PW-2 Hours	PW-2 Cycles	PW-3 Hours	PW-3 Cycles	PW-4 Hours	PW-4 Cycles
1/6/2017	589.25	21253	48.51	7525	86.06	7054	1267.08	157281	66.67	15782	28.70	9310	775.08	13245
1/12/2017	613.25	21657	49.80	7672	93.84	7147	1288.78	160510	68.86	16337	29.92	9562	783.92	13730
1/20/2017	641.02	22364	52.18	7933	108.94	7320	1321.38	165541	71.88	17096	32.01	9880	818.80	14608
1/27/2017	668.05	23012	54.49	8174	124.30	7488	1351.80	170226	74.64	17773	33.80	10352	850.72	15394
2/2/2017	693.89	23580	56.76	8388	137.79	7618	1381.71	174784	77.58	18502	35.49	10704	876.48	16022
2/9/2017	725.39	24254	59.40	8626	154.12	7759	1413.05	179665	80.08	19272	37.36	11072	915.97	16621
2/17/2017	760.65	24938	62.43	8892	173.95	7913	1446.69	184902	84.17	20118	39.46	11520	1038.01	16985
2/24/2017	793.50	25538	65.26	9121	194.17	8040	1472.81	189131	86.80	20774	41.76	11876	1129.36	17333
3/3/2017	829.04	26140	68.47	9350	215.97	8165	1503.50	194013	90.38	21651	43.00	12279	1297.76	17333
3/9/2017	860.90	26633	71.42	9543	236.38	8269	1527.87	197917	93.25	22333	44.61	12602	1374.69	17629
3/16/2017	901.11	27223	75.08	9770	266.97	8388	1556.26	202609	96.49	23157	46.47	12985	1381.92	18318
3/24/2017	950.77	27862	78.94	10023	317.58	8489	1587.43	207785	100.15	24087	48.60	13423	1390.56	18966
3/30/2017	976.87	28372	82.26	10207	455.97	8489	1609.11	211390	102.60	24696	50.11	13723	1397.87	19540
4/7/2017	1009.49	29130	85.07	10472	626.49	8807	1641.38	216785	106.44	25660	52.32	14181	1412.27	20522
4/13/2017	1032.41	29785	87.07	10644	705.90	10041	1665.27	220583	109.45	26376	53.85	14487	1431.89	21160
4/21/2017	1044.49	31576	88.31	10875	805.26	13124	1710.27	226865	115.82	27716	56.12	14935	1533.37	21537
4/27/2017	1053.02	32900	89.19	11043	927.17	13593	1742.52	231492	120.50	28702	57.87	15268	1624.90	21735
5/5/2017	1069.04	34711	90.66	11276	981.11	16272	1786.60	237719	127.24	30021	60.46	15726	1668.39	23305
5/11/2017	1081.00	36061	92.02	11447	1038.00	17595	1821.00	242478	132.69	31162	62.68	16097	1751.00	23985
5/19/2017	1093.60	37685	93.11	11629	1190.80	17638	1860.86	247838	138.71	32332	65.91	16614	1899.69	24012
5/26/2017	1106.83	39492	94.69	11898	1313.50	18559	1886.37	251427	144.87	33577	68.95	17132	1977.43	24197
6/2/2017	1125.55	41023	97.44	12138	1444.25	19164	1895.06	252820	151.05	34795	71.41	17580	1979.07	24467
6/8/2017	1133.72	42246	98.64	12404	1489.45	21435	1901.58	253826	156.75	35897	73.81	17970	1979.62	24536
6/15/2017	1135.18	42911	99.80	12861	1504.42	22873	1907.42	254698	163.11	37097	76.40	18399	1979.62	24536
6/22/2017	1136.38	43526	100.31	13161	1512.91	23932	1913.52	255614	169.62	38811	79.27	18832	1979.62	24536
6/29/2017	1138.07	44196	103.01	13753	1537.86	25415	1928.09	257839	176.45	39556	82.49	19278	1979.63	24537
7/7/2017	1139.59	44846	104.80	14247	1554.15	26596	1933.67	258662	183.39	40785	86.21	19744	1979.63	24537
7/13/2017	1140.57	45146	105.42	14433	1558.94	27048	2022.11	258664	186.88	41348	88.24	19962	1979.63	24539
7/20/2017	1141.37	45761	105.96	14749	1569.93	27869	2192.83	258664	193.79	42446	92.53	20387	1979.63	24539
7/25/2017	1141.55	45873	106.01	14779	1573.08	28006	2223.72	258667	195.06	42643	93.36	20462	1979.63	24539
8/1/2017	1142.61	46537	106.49	15056	1613.06	28743	2253.36	258671	201.87	43586	97.16	20868	1979.63	24539
8/8/2017	1143.63	47186	106.88	15365	1763.87	28857	2253.36	258671	208.53	44795	101.76	21277	1979.63	24539
8/17/2017	1144.79	47918	107.54	15714	1766.48	28857	2253.42	258673	215.53	46052	106.42	21706	1979.63	24539
8/23/2017	1145.71	48491	107.97	15985	1769.86	29445	2253.42	258673	220.93	47043	110.51	22038	1979.63	24539
8/31/2017	1146.93	49255	108.55	16345	1773.46	30065	2253.43	258674	227.75	48416	116.84	22471	1980.22	24641
9/8/2017	1148.35	50066	109.19	16723	1777.41	30688	2253.51	258676	234.59	49821	124.06	22906	1980.26	24647
9/13/2017	1149.09	50528	109.51	16922	1779.54	31041	2253.54	258677	238.48	50621	129.11	23155	1980.58	24699
9/19/2017	1150.04	51137	109.92	17171	1782.33	31486	2253.57	258679	243.39	51553	137.09	23474	1980.65	24710
9/26/2017	1151.12	51822	110.37	17462	1785.48	31969	2253.57	258679	248.78	52513	145.62	23817	1980.65	24710
10/4/2017	1152.55	52594	110.91	17789	1789.36	32475	2262.73	261617	256.33	54032	154.82	24188	1980.65	24710
10/10/2017	1153.21	53073	111.25	17999	1791.96	32813	2273.27	264999	263.24	55508	162.79	24455	1980.65	24710
10/17/2017	1154.08	53637	111.63	18235	1794.85	33186	2280.36	267262	270.41	56994	171.60	24707	1980.65	24710
10/24/2017	1155.06	54265	112.04	18496	1798.05	33596	2290.13	270583	280.14	59076	179.17	24990	1980.65	24710
10/30/2017	1155.70	54665	112.32	18662	1800.40	33848	2296.79	272880	285.73	60271	184.58	25165	1980.80	24734
11/6/2017	1156.99	55448	112.83	18978	1805.33	34274	2329.48	278310	296.51	62512	197.59	25526	2002.43	25526
11/13/2017	1158.58	56369	113.40	19292	1812.06	35018	2428.22	278317	305.24	64242	197.81	25533	2101.18	25535
11/20/2017	1160.17	57329	113.90	19615	1813.84	35732	2428.22	278317	#REF!	66107	197.81	25533	2101.18	25535
11/27/2017	1161.75	58281	114.39	19936	1815.37	36309	2428.22	278317	324.01	67931	197.81	25533	2101.18	25535
12/4/2017	1163.30	59235	114.87	20247	1816.87	36833	2428.22	278317	332.72	69617	197.81	25533	2101.18	25535
12/11/2017	1165.05	60299	115.39	20586	1819.53	37386	2428.24	278320	344.17	71750	197.83	25536	2101.20	25538
12/18/2017	1166.66	61303	115.86	20898	1822.83	37900	2428.24	278320	354.06	73525	197.83	25536	2101.20	25538
12/22/2017	1167.60	61888	116.13	21078	1824.75	38177	2428.26	278321	359.13	74422	197.85	25537	2101.22	25539
12/28/2017	1169.10	62864	116.56	21358	1827.91	38606	2428.26	278321	367.57	75897	197.85	25537	2101.22	25539

TABLE 4
ATP GROUNDWATER COLLECTION
AND PRETREATMENT SYSTEM
SUMMARY OF PROCESS FLOW DATA

ATP ECM 2017 ANNUAL REPORT
TECUMSEH REDEVELOPMENT, INC.

Date	Totalizer (gallons)	Monthly Total Flow (gallons)	Gallons per Day (gallons)	Monthly Average Daily Flow (gpd)
12/28/2016	6,418,417	--	--	--
1/6/2017	6,488,665	**201,538**	7,805	**6,590**
1/12/2017	6,519,089		5,071	
1/20/2017	6,570,992		6,488	
1/27/2017	6,619,955		6,995	
2/2/2017	6,666,866	**194,470**	7,819	**6,982**
2/9/2017	6,715,858		6,999	
2/17/2017	6,770,211		6,794	
2/24/2017	6,814,425		6,316	
3/3/2017	6,862,081	**221,853**	6,808	**6,517**
3/9/2017	6,902,193		6,685	
3/14/2017	6,938,135		7,188	
3/24/2017	7,004,969		6,683	
3/30/2017	7,036,278		5,218	
4/7/2017	7,085,111	**205,218**	6,104	**7,330**
4/13/2017	7,130,640		7,588	
4/21/2017	7,198,953		8,539	
4/27/2017	7,241,496		7,091	
5/5/2017	7,307,025	**208,463**	8,191	**7,220**
5/11/2017	7,356,656		8,272	
5/19/2017	7,407,757		6,388	
5/26/2017	7,449,959		6,029	
6/2/2017	7,475,004	**106,152**	3,578	**3,130**
6/8/2017	7,495,371		3,395	
6/15/2017	7,512,866		2,499	
6/22/2017	7,530,920		2,579	
6/29/2017	7,556,111		3,599	
7/7/2017	7,574,854	**129,906**	2,343	**4,917**
7/13/2017	7,609,753		5,817	
7/20/2017	7,675,279		9,361	
7/25/2017	7,686,017		2,148	
8/1/2017	7,708,779	**69,254**	3,252	**1,888**
8/8/2017	7,719,376		1,514	
8/17/2017	7,732,233		1,429	
8/23/2017	7,741,061		1,471	
8/31/2017	7,755,271		1,776	
9/8/2017	7,767,804	**40,489**	1,567	**1,563**
9/13/2017	7,775,980		1,635	
9/19/2017	7,785,358		1,563	
9/26/2017	7,795,760		1,486	
10/4/2017	7,815,162	**81,807**	2,425	**2,354**
10/10/2017	7,832,729		2,928	
10/17/2017	7,846,496		1,967	
10/23/2017	7,861,610		2,519	
10/24/2017	7,865,606		2,293	
10/30/2017	7,877,567		1,994	
11/6/2017	7,915,707	**104,045**	5,449	**4,176**
11/13/2017	7,959,242		6,219	
11/20/2017	7,970,481		1,606	
11/27/2017	7,981,612		3,429	
12/4/2017	7,992,287	**52,925**	1,525	**1,683**
12/11/2017	8,006,154		1,981	
12/18/2017	8,018,627		1,782	
12/22/2017	8,024,349		1,431	
12/28/2017	8,034,537		1,698	
Total Volume Treated 01/01/2017 - 12/31/2017	**1,616,120**			

TABLE 5
ATP GROUNDWATER COLLECTION AND PRETREATMENT SYSTEM
GROUNDWATER ANALYTICAL SUMMARY[1]

ATP ECM 2017 INTERIM ANNUAL REPORT
TECUMSEH REDEVELOPMENT, INC.

Parameter	CAS No.	GWQS/GV[2]	Units	Monitoring Well Location, Sample Date(s), & Monitoring Program													
				MWS-02[3,4]							MWS-18A						
				11/8/1999	2/28/2012	4/10/2014	4/28/2015	4/7/2016	4/11/2017	4/17/2018	11/9/1999	2/28/2012	4/10/2014	4/28/2015	4/8/2016	4/11/2017	4/17/2018
				RFI	CMS-2012	CMS-2014	CMS-2015	CMS-2016	CMS-2017	CMS-2018	RFI	CMS-2012	CMS-2014	CMS-2015	CMS-2016	CMS-2017	CMS-2018
Field Measurements																	
Dissolved Oxygen	NA	-	MG/L	1.4	4.06	NA	1.85	3.6	2.27	3.66	0.4	2.5	NA	3.63	2.08	2.77	2.1
Field pH	NA	6.5 - 8.5	S.U	11.07	10.99	10.30	10.75	10.67	11.41	10.68	9.03	9.28	9.47	8.85	8.73	10.34	9.84
Redox Potential	NA	-	mV	-156	-156	205	210	-81	-245	221	-474	-103	-104	-54	-92	-1.23	-120
Specific Conductance	NA	-	UMHOS/CM	2,590	2280	2053	1905	1803	2096	1639	4,700	3323	2649	2623	2767	2470	2725
Temperature	NA	-	DEG C	14.8	10.1	13.1	13.6	11.3	12.9	7.9	15.3	12.2	13.7	13.7	9.1	13.2	8.4
Turbidity	NA	-	NTU	18	14.6	1.96	8.9	8.0	4.2	1.3	91	17.4	16.4	30	14.6	5.64	3.4
Volatile Organics (Method 8260B) (STARS List parameters in blue)																	
1,1-Dichloroethane	75-34-3	5	ug/l	8.3	9.8	1.1 J	1 J	1.2 J	3	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	95-63-6	5	ug/l	-	ND	ND	ND	ND	1 J	ND	-	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	0.6	ug/l	ND	1.7	ND	0.43 J	0.91	2.6	0.21 J	ND	ND	ND	ND	ND	110	ND
1,3,5-Trimethylbenzene	108-67-8	5	ug/l	-	0.54 J	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
1,4-Diethylbenzene	105-05-5	-	ug/l	-	0.55 J	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	622-96-8	-	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Acetone	67-64-1	50	ug/l	-	ND	7.2	14	2	5.1	7.8	-	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	1	ug/l	14	0.49 J	2.1	8.5	4.1	12	1	140000	39000 D	4200 D	7100 D	7000 D	4600 D	1900 D
Bromomethane	74-83-9	5	ug/l	ND	ND	ND	1.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	75-15-0	60	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	5	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Cyclohexane	110-82-7	-	ug/l	-	0.37 J	0.4 J	0.84 J	0.93 J	1.5 J	ND	-	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	98-82-8	5	ug/l	-	ND		2.3 J	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Methyl cyclohexane	108-87-2	-	ug/l	-	ND	2.2 J	3.6 J	3.3 J	8.7 J	1 J	-	ND	ND	ND	ND	ND	ND
Methylene chloride	75-09-2	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene (p-Cymene)	99-87-6	5	ug/l	-	ND	ND	2.3 J	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	5	ug/l	ND	0.38 J	ND	ND	0.3 J	0.52 J	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	5	ug/l	1.2 J	ND	ND	1.3 J	ND	1.1 J	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	5	ug/l	ND	0.57	ND	0.32 J	0.4 J	1	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, m/p	179601-23-1	5	ug/l	-	ND	ND	ND	ND	0.85 J	ND	-	ND	ND	ND	ND	ND	ND
Xylenes, o	95-47-6	5	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Xylenes, Total	1330-20-7	5	ug/l	1.9 J	ND	ND	ND	ND	0.85 J	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL BTEX	**NA**	**NA**	**ug/l**	**17.1**	**0.49**	**2.1**	**9.8**	**4.1**	**13.95**	**1**	**140000**	**39000**	**4200**	**7100**	**7000**	**4600**	**1900**
Semivolatile Organics (Method 8270C) (Base-Neutrals in black, Acid Extractables in blue and PAHs in red)																	
2,4-Dimethylphenol	105-67-9	50	ug/l	R	ND	ND	ND	ND	ND	ND	21 J	-	1.8 J	0.81 J	ND	ND	ND
2-Chloronaphthalene	91-58-7	10	ug/l	ND	ND	ND	ND	0.79	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	91-57-6	-	ug/l	-	0.16 J	0.65	0.21 J	1.9	2.4	0.27	-	0.12 J	0.08 J	0.09 J	0.19 J	0.15 J	0.11
2-Methylphenol (o-Cresol)	95-48-7	-	ug/l	R	ND	ND	ND	ND	ND	ND	31	-	6.8	3.5 J	1.6 J	ND	ND
3-Methylphenol (m-Cresol) / 4-Methylphenol (p-Cresol)	108-39-4/106-44-5	-	ug/l	R	ND	ND	ND	ND	ND	ND	ND	-	1.8 J	8.4	1.6 J	ND	ND
Acenaphthene	83-32-9	20	ug/l	-	0.29	0.15 J	ND	0.46	0.53	0.1	-	0.1 J	0.08 J	0.08 J	ND	0.09 J	0.06 J
Acenaphthylene	208-96-8	-	ug/l	ND	0.7	0.47	ND	1.5	1.8	0.32	ND	0.05 J	ND	ND	ND	0.06 J	0.05 J
Acetophenone	98-86-2	-	ug/l	-	ND	ND	ND	ND	ND	ND	-	48	1.9 J	1.1 J	ND	ND	ND
Anthracene	120-12-7	50	ug/l	ND	0.18 J	0.36	0.19 J	1.3 J	1.3	0.13	ND	ND	0.07 J	0.07 J	ND	0.04 J	0.04 J
Benzo(a)anthracene	56-55-3	0.002	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	50-32-8	0 (ND)	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	205-99-2	0.002	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	191-24-2	-	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	0.002	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Benzoic Acid	65-85-0	-	ug/l	-	-	-	9.1 J	ND	ND	ND	-	-	-	8.2 J	ND	ND	ND
Biphenyl	92-52-4	5	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	117-81-7	5	ug/l	3.8 J	ND	ND	2.3 J	ND	ND	3.9	ND	ND	1.3 J	11	ND	ND	ND
Butyl benzyl phthalate	85-68-7	50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Caprolactam	34876-18-1	-	ug/l	-	-	-	2.7 J	3.9 J	ND	ND	-	-	ND	ND	ND	ND	ND
Carbazole	86-74-8	-	ug/l	-	ND	0.5 J	ND	1.1 J	1.1 J	ND	-	ND	ND	ND	ND	ND	ND
Chrysene	218-01-9	0.002	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	-	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Dibenzofuran	132-64-9	-	ug/l	-	ND	0.81 J	ND	2.2	ND	ND	-	ND	ND	ND	ND	ND	ND
Fluoranthene	206-44-0	50	ug/l	2.2 J	1.3	0.38	0.11 J	1.4 J	1.2	0.18	ND	ND	0.05 J	ND	ND	ND	ND
Fluorene	86-73-7	50	ug/l	8.6 J	1.2	1.5	0.24	4.9	4.7	0.59	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene	193-39-5	0.002	ug/l	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Naphthalene	91-20-3	10	ug/l	25	0.27	2.2	0.87	6	9.1	0.94	ND	1.4	1.2	1.4	2.9	2.8	2.3
Pentachlorophenol	87-86-5	-	ug/l	R	ND	ND	ND	ND	1.1	ND	ND	-	ND	ND	ND	ND	ND
Phenanthrene	85-01-8	50	ug/l	14	0.2	2.6	0.27	9.5	8.4	0.49	ND	0.16 J	0.12 J	0.09 J	ND	0.06 J	0.03 J
Phenol	108-95-2	-	ug/l	R	ND	ND	2.5 J	ND	ND	ND	110	-	1.4 J	12	4.2 J	ND	ND
Pyrene	129-00-0	50	ug/l	1.3 J	0.88	0.26	0.11 J	0.72	ND	0.15	ND	ND	ND	ND	ND	ND	ND
Pyridine	110-86-1	50	ug/l	ND	-	ND	ND	ND	ND	ND	150 J	-	ND	ND	ND	ND	ND
TOTAL PAHs	**NA**	**NA**	**ug/l**	**51.1**	**5.18**	**8.57**	**2**	**27.68**	**29.43**	**3.17**	**ND**	**3.83**	**1.6**	**1.73**	**3.09**	**3.2**	**2.59**
TOTAL Phenolic Compounds	**NA**	**NA**	**ug/l**	**ND**	**ND**	**ND**	**2.5**	**ND**	**1.1**	**ND**	**162**	**-**	**11.8**	**24.71**	**7.4**	**ND**	**ND**
Total Metals																	
Arsenic, Total	7440-38-2	25	ug/l	2.3 B	4 J	1.33	1.88	4.4 J	6.19	1.33	7.7 B	4 J	3.71	3.95	7.5	3.57	5.43
Barium, Total	7440-39-3	1000	ug/l	37.6 B	41	42.29	38.94	33	18.5	31.95	40.6 B	24	26.03	27.56	24.7	19.76	17.41
Cadmium, Total	7440-43-9	5	ug/l	ND	-	-	-	-	-	-	ND	-	-	-	-	-	-
Chromium, Total	7440-47-3	50	ug/l	7.1	3 J	8.24	18.14 J	16 J	9.59	20.12	53.1	5 J	9.89	8.34	ND	3.96	6.77
Lead, Total	7439-92-1	25	ug/l	ND	3 J	0.27 J	0.8 J	ND	23.79	ND	7.3	4 J	2.09	1.24	ND	3.44	ND
Selenium, Total	7782-49-2	10	ug/l	8	-	-	-	-	-	-	ND	-	-	-	-	-	-
Dissolved Metals																	
Arsenic, Dissolved	7440-38-2	25	ug/l	2.2 B	-	-	-	-	-	-	6.1 B	-	-	-	-	-	-
Barium, Dissolved	7440-39-3	1000	ug/l	35.9 B	-	-	-	-	-	-	20.1 B	-	-	-	-	-	-
Cadmium, Dissolved	7440-43-9	5	ug/l	ND	-	-	-	-	-	-	ND	-	-	-	-	-	-
Chromium, Dissolved	7440-47-3	50	ug/l	0.56 B	-	-	-	-	-	-	2.8 B	-	-	-	-	-	-
Lead, Dissolved	7439-92-1	25	ug/l	ND	-	-	-	-	-	-	ND	-	-	-	-	-	-
Selenium, Dissolved	7782-49-2	10	ug/l	5.8	-	-	-	-	-	-	ND	-	-	-	-	-	-
General Chemistry																	
Cyanide, Total	57-12-5	200	ug/l	1200	1850	8250	8140	1860	92	6440	530 J	445	417	330	382	332	249
Total Recoverable Phenolics (TRP)	NONE	1 *	ug/l	ND	20 J	-	-	-	-	-	130	250	-	-	-	-	-

Parameter	Monitoring Well Location, Sample Date(s), & Monitoring Program													
	MWS-18C							MWS-19A						
	12/19,28/00	2/28/2012	4/10/2014	4/28/2015	4/8/2016	4/11/2017	4/17/2018	11/8/1999	2/28/2012	4/10/2014	4/28/2015	4/7/2016	4/11/2017	4/17/2017
	RFI	CMS-2012	CMS-2014	CMS-2015	CMS-2016	CMS-2017	CMS-2018	RFI	CMS-2012	CMS-2014	CMS-2015	CMS-2016	CMS-2017	CMS-2018
Field Measurements														
Dissolved Oxygen	na	3.76	NA	1.57	1.83	2.03	1.84	0.5	1.71	NA	1.33	1.68	1.60	2.80
Field pH	6.93	4.57	6.40	6.62	4.48	4.71	6.84	8.45	7.29	7.60	7.65	7.76	7.51	7.92
Redox Potential	-73	33	-83	-86	144	140	-78	-310	-159	-147	-163	-125	-96	-57
Specific Conductance	4,100	6634	3369	2746	7342	4660	3012	4,450	2743	1957	2121	2064	2055	1612
Temperature	11.2	12.1	13.0	12.4	10.8	13.1	9.0	13.3	10.4	15.4	13.1	11.6	12.7	9.6
Turbidity	233	39.6	107	112	73.9	124	16.6	72	10.6	2.55	3.55	6.0	6.31	49.1
Volatile Organics (Method 8260B) (STARS List parameters in blue)														
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	1.4 J	ND	1 J	1.5 J	1 J	ND
1,2,4-Trimethylbenzene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
1,4-Diethylbenzene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Acetone	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Benzene	65000 D	9600	340	910	4400	1400	43	1200	ND	34	70	56	40	13
Bromomethane	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	-	660	6.3 J	24 J	480	140 J	ND	-	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	0.77 J	ND	ND
Cyclohexane	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	0.47 J	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	2.2 J	ND	ND	ND
Methyl cyclohexane	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Methylene chloride	1.1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene (p-Cymene)	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	340 J	51 J	ND	11 J	140 J	72 J	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	0.84 J	ND	0.42 J	ND	0.32 J	0.21 J
Xylenes, m/p	-	85 J	ND	9.3 J	150	54 J	ND	-	2.6	ND	1.5 J	1.4 J	0.78 J	ND
Xylenes, o	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Xylenes, Total	500 J	85 J	ND	9.3 J	150	54 J	ND	13 J	2.6	ND	1.5	1.4 J	0.78 J	ND
TOTAL BTEX	**65840**	**9736**	**340**	**930.3**	**4690**	**1526**	**43**	**1213**	**2.6**	**34**	**71.5**	**57.4**	**40.78**	**13**
Semivolatile Organics (Method 8270C) (Base-Neutrals in black, Acid Extractables in blue and PAHs in red)														
2,4-Dimethylphenol	20 J	-	1.8 J	5.4	12	4.8 J	ND	10	-	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.08 J	ND
2-Methylnaphthalene	-	0.23	ND	ND	ND	0.07 J	ND	-	ND	ND	ND	ND	0.09 J	ND
2-Methylphenol (o-Cresol)	19 J	-	ND	2.3 J	8.2	ND	ND	ND	-	ND	ND	ND	ND	ND
3-Methylphenol (m-Cresol) / 4-Methylphenol (p-Cresol)	40 J	-	ND	9.5	31	9.9	ND	ND	-	ND	ND	ND	ND	ND
Acenaphthene	-	ND	ND	ND	0.09 J	ND	ND	-	0.09 J	ND	0.07 J	ND	0.1	0.04 J
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.07 J	ND
Acetophenone	-	4.6 J	2.9 J	9.3	43	11	ND	-	ND	ND	ND	ND	ND	ND
Anthracene	ND	0.07 J	0.12 J	0.08 J	0.14 J	0.06 J	0.06 J	ND	0.07 J	0.07 J	0.09 J	ND	0.04 J	0.09 J
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14
Benzo(b)fluoranthene	-	ND	ND	ND	ND	ND	ND	-	0.16 J	ND	ND	ND	ND	0.18
Benzo(ghi)perylene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	0.09 J
Benzo(k)fluoranthene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	0.08 J
Benzoic Acid	-	-	-	62	ND	ND	ND	-	-	-	-	ND	ND	ND
Biphenyl	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	ND	ND	ND	15	ND	ND	5.8	4.4 J	ND	ND	6.4	ND	ND	3.6
Butyl benzyl phthalate	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Caprolactam	-	-	22	16	ND	ND	ND	-	-	ND	ND	ND	ND	ND
Carbazole	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16
Dibenzo(a,h)anthracene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	0.04 J
Dibenzofuran	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	0.14 J	ND	ND	ND	ND	ND	0.08 J	ND	ND	ND	ND	0.24
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06 J	0.08 J
Indeno(1,2,3-cd)Pyrene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	0.1
Naphthalene	ND	0.42	0.17 J	0.23	0.53	0.21	ND	ND	ND	ND	ND	ND	0.08 J	0.05 J
Pentachlorophenol	ND	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	0.08 J	ND	ND	0.04 J	ND	ND	0.07 J	ND	ND	ND	ND	0.18
Phenol	280 J	-	3.6 J	20	76	27	ND	19	-	ND	ND	ND	ND	ND
Pyrene	ND	ND	0.11 J	ND	ND	ND	ND	ND	0.07 J	ND	ND	ND	ND	0.2
Pyridine	18000 D	-	ND	ND	ND	ND	ND	5.6 J	-	ND	ND	ND	ND	ND
TOTAL PAHs	**ND**	**0.72**	**0.62**	**0.31**	**0.76**	**0.38**	**0.06**	**ND**	**0.54**	**0.07**	**0.16**	**ND**	**0.44**	**1.83**
TOTAL Phenolic Compounds	**359**	**-**	**5.4**	**37.2**	**127.2**	**41.7**	**ND**	**29**	**-**	**ND**	**ND**	**ND**	**ND**	**ND**
Total Metals														
Arsenic, Total	16.1	5	6.88	9.23	118	8.98	4.47	5.9 B	7	3.45	3.5	7.1	3.01	2.76
Barium, Total	31.7 B	17	22.22	19.19	15.4	13.99	16.3	35.4 B	24	20.53	25.73	25.2	22.58	20
Cadmium, Total	1.9 B	-	-	-	-	-	-	1.4 B	-	-	-	-	-	-
Chromium, Total	27.4	230	30.8	358.3	240	260.6	6.05	4.5 B	ND	2.91	2.93	2.6 J	1.58	8.02
Lead, Total	9.7	25	1.98 J	ND	ND	3.38 J	ND	2.3 B	3 J	0.52 J	0.59 J	ND	0.77 J	10.73
Selenium, Total	ND	-	-	-	-	-	-	2.8 B	-	-	-	-	-	-
Dissolved Metals														
Arsenic, Dissolved	15.5	-	-	10.68	128	10.56	-	4.9 B	-	-	-	-	-	-
Barium, Dissolved	32.3 B	-	-	20.5	21.7	18.58	-	35.4 B	-	-	-	-	-	-
Cadmium, Dissolved	2.3 B	-	-	-	-	-	-	0.38 B	-	-	-	-	-	-
Chromium, Dissolved	15.3	-	-	838.5	160	166.2	-	2.4 B	-	-	-	-	-	-
Lead, Dissolved	7.7	-	-	ND	ND	4.96 J	-	ND	-	-	-	-	-	-
Selenium, Dissolved	ND	-	-	-	-	-	-	ND	-	-	-	-	-	-
General Chemistry														
Cyanide, Total	2400 J	621	612	446	272	1050	484	500	271	118	173	62	142	97
Total Recoverable Phenolics (TRP)	360	400	-	-	-	-	-	6	10 J	-	-	-	-	-

Parameter	Monitoring Well Location, Sample Date(s), & Monitoring Program													
	MWS-19B							MWS-20A						
	11/8/1999	2/28/2012	4/10/2014	4/28/2015	4/8/2016	4/11/2017	4/17/2018	11/9/1999	2/28/2012	4/10/2014	4/28/2015	4/8/2016	4/11/2017	4/17/2018
	RFI	CMS-2012	CMS-2014	CMS-2015	CMS-2016	CMS-2016	CMS-2018	RFI	CMS-2012	CMS-2014	CMS-2015	CMS-2016	CMS-2017	CMS-2018
Field Measurements														
Dissolved Oxygen	0.4	1.53	NA	1.06	0.92	1.44	1.33	1.1	2.04	NA	3.7	4.12	2.55	2.4
Field pH	5.84	5.66	6.22	6.21	6.67	6.99	7.65	9.02	9.20	9.37	9.47	9.66	9.78	10.09
Redox Potential	-136	-95	-43	-47	-67	-109	-141	416	0	-89	51	194	111	-57
Specific Conductance	1,030	7966	5077	4529	4433	3394	3175	2,130	985.9	926	656	895.2	1183	1193
Temperature	13.1	10.4	15.1	13.3	12.0	12.8	8.3	15.9	10.5	12.5	10.6	10.6	12.0	9.2
Turbidity	430	25.7	22.4	30	88	128	8.3	0.1	5.23	1.69	256	7.19	5.08	2.28
Volatile Organics (Method 8260B) (STARS List parameters in blue)														
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
1,4-Diethylbenzene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Acetone	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Benzene	27000	18000	2800 D	390 D	1500 D	5800 D	520	33	ND	ND	ND	0.22 J	0.63	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Cyclohexane	-	ND	ND	1.3 J	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Methyl cyclohexane	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene (p-Cymene)	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, m/p	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Xylenes, o	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	1.2 J	ND	ND	ND	ND	ND	ND
TOTAL BTEX	**27000**	**18000**	**2800**	**390**	**1500**	**5800**	**520**	**34.2**	**ND**	**ND**	**ND**	**0.22**	**0.63**	**ND**
Semivolatile Organics (Method 8270C) (Base-Neutrals in black, Acid Extractables in blue and PAHs in red)														
2,4-Dimethylphenol	73 J	-	19	14	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
2-Methylnaphthalene	-	ND	0.09 J	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
2-Methylphenol (o-Cresol)	150 J	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
3-Methylphenol (m-Cresol) / 4-Methylphenol (p-Cresol)	200 J	-	2.6 J	2.3 J	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
Acenaphthene	-	0.19 J	0.12 J	ND	0.11 J	0.1	0.05 J	-	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetophenone	-	8.4	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	0.05 J	0.04 J	ND	0.07 J	0.12 J	ND	0.21	0.08 J	0.1 J
Benzo(a)anthracene	ND	ND	ND	ND	ND	0.04 J	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	-	ND	ND	ND	ND	0.05 J	ND	-	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Benzoic Acid	-	-	-	-	ND	ND	ND	-	-	-	-	ND	ND	ND
Biphenyl	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	ND	ND	ND	11	ND	ND	3.4	ND	ND	ND	4.2	ND	ND	4
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Caprolactam	-	-	ND	ND	ND	ND	ND	-	-	ND	ND	ND	ND	ND
Carbazole	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Dibenzofuran	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND	0.07 J	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	0.09 J	ND	0.12 J	0.09 J	0.1	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
Naphthalene	ND	0.61	0.52	0.39	ND	0.05 J	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	0.12 J	0.09 J	ND	0.05 J	ND	ND	ND	ND	ND	ND	0.03 J	ND
Phenol	2100 D	-	1.2 J	0.59 J	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND	0.06 J	ND	ND	ND	ND	ND	ND	ND	ND
Pyridine	3200 D	-	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
TOTAL PAHs	**ND**	**0.8**	**0.94**	**0.48**	**0.23**	**0.56**	**0.19**	**ND**	**0.07**	**0.12**	**ND**	**0.21**	**0.11**	**0.1**
TOTAL Phenolic Compounds	**2523**	**-**	**22.8**	**16.89**	**ND**	**ND**	**ND**	**ND**	**-**	**ND**	**ND**	**ND**	**ND**	**ND**
Total Metals														
Arsenic, Total	21.9 J	ND	4.76	3.99	18.3	6.41	5.36	ND	5	4.05	5.03	7.2	4.23	3.06
Barium, Total	55.4 B	18	17.7	23.02	19	17.83	17.87	27.1 B	21	16.78	12.42	17.1	21.06	20.54
Cadmium, Total	ND	-	-	-	-	-	-	ND	-	-	-	-	-	-
Chromium, Total	398 J	10	9.21	11.21	7.5 J	9.38	1.48	7.6	10	17.84	23.62	1.9	23.32	15.48
Lead, Total	54	17	1.57 J	1.3 J	ND	22.76	1.34	ND	ND	ND	ND	ND	0.41 J	ND
Selenium, Total	ND	-	-	-	-	-	-	5	-	-	-	-	-	-
Dissolved Metals														
Arsenic, Dissolved	3.5 B	-	-	-	15.8	2.9	-	-	-	-	-	-	-	-
Barium, Dissolved	21.9 B	-	-	-	23.6	16.22	-	-	-	-	-	-	-	-
Cadmium, Dissolved	ND	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, Dissolved	87.8	-	-	-	3.1 J	0.24 J	-	-	-	-	-	-	-	-
Lead, Dissolved	11.3 B	-	-	-	ND	4.54 J	-	-	-	-	-	-	-	-
Selenium, Dissolved	ND	-	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry														
Cyanide, Total	820	774	468	568	317	419	266	120 J	-	75	29	34	124	88
Total Recoverable Phenolics (TRP)	3700	290	-	-	-	-	-	ND	20 J	-	-	-	-	-

Parameter	Monitoring Well Location, Sample Date(s), & Monitoring Program						
	MWS-20B						
	11/9/1999	2/28/2012	4/10/2014	4/28/2015	4/8/2016	4/11/2017	4/17/2018
	RFI	CMS-2012	CMS-2014	CMS-2015	CMS-2016	CMS-2017	CMS-2018
Field Measurements							
Dissolved Oxygen	0.4	2.11	NA	0.85	2.04	1.81	2.01
Field pH	7.29	7.38	7.63	7.63	7.49	7.23	8.48
Redox Potential	204	-150	-170	-180	-118	-58	-196
Specific Conductance	2,500	1329	1447	1076	1375	1275	1058
Temperature	13.2	10.7	13.5	10.9	10.2	12.7	9.6
Turbidity	146	11.1	26.6	3.92	20.4	9.52	22.2
Volatile Organics (Method 8260B) (STARS List parameters in blue)							
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	-	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	2.5	2.2	2.2	2.8	1.4
1,3,5-Trimethylbenzene	-	ND	ND	ND	ND	ND	ND
1,4-Diethylbenzene	-	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	-	ND	ND	ND	ND	ND	ND
Acetone	-	ND	ND	ND	1.7 J	ND	1.6 J
Benzene	ND	ND	0.28 J	0.63 J	0.32 J	0.5	0.23 J
Bromomethane	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	-	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	-	ND	ND	ND	ND	ND	ND
Cyclohexane	-	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	-	ND	ND	2.3 J	ND	ND	ND
Methyl cyclohexane	-	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene (p-Cymene)	-	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Xylenes, m/p	-	ND	ND	ND	ND	ND	ND
Xylenes, o	-	ND	ND	ND	ND	ND	ND
Xylenes, Total	2.5 J	ND	ND	ND	ND	ND	ND
TOTAL BTEX	**2.5**	**ND**	**0.28**	**0.63**	**0.32**	**0.5**	**0.23**
Semivolatile Organics (Method 8270C) (Base-Neutrals in black, Acid Extractables in blue and PAHs in red)							
2,4-Dimethylphenol	ND	-	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	-	ND	ND	ND	ND	ND
2-Methylnaphthalene	-	ND	ND	ND	ND	ND	ND
2-Methylphenol (o-Cresol)	ND	-	ND	ND	ND	ND	ND
3-Methylphenol (m-Cresol) / 4-Methylphenol (p-Cresol)	ND	-	ND	ND	1.3 J	ND	ND
Acenaphthene	-	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND
Acetophenone	-	ND	ND	ND	ND	ND	ND
Anthracene	ND	0.09 J	0.17 J	0.07 J	0.23 J	0.05 J	0.1 J
Benzo(a)anthracene	ND	ND	ND	ND	ND	0.02 J	0.02 J
Benzo(a)pyrene	ND	ND	0.11 J	ND	ND	ND	
Benzo(b)fluoranthene	-	ND	0.08 J	ND	ND	ND	ND
Benzo(ghi)perylene	-	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	-	ND	ND	ND	ND	ND	ND
Benzoic Acid	-	-	-	-	ND	ND	ND
Biphenyl	-	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	ND	ND	ND	5.6	ND	ND	ND
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	ND
Caprolactam	-	-	ND	ND	ND	ND	24
Carbazole	-	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	-	ND	ND	ND	ND	ND	ND
Dibenzofuran	-	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	0.09 J	ND	0.07 J	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene	-	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	-	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND	0.02 J	ND
Phenol	ND	-	ND	ND	ND	ND	ND
Pyrene	ND	ND	0.09 J	ND	0.06 J	ND	ND
Pyridine	ND	-	ND	ND	ND	ND	ND
TOTAL PAHs	**ND**	**0.09**	**0.54**	**0.07**	**0.36**	**0.09**	**0.12**
TOTAL Phenolic Compounds	**ND**	**-**	**ND**	**ND**	**1.3**	**ND**	**ND**
Total Metals							
Arsenic, Total	3.9 B	7	3.71	3.59	6.6	2.87	2.93
Barium, Total	54.7 B	31	39.08	24.7	39	33.75	30.93
Cadmium, Total	ND	-	-	-	-	-	-
Chromium, Total	37.6	3 J	10.49	1.57	5.3	1.23	3.36
Lead, Total	10.2	ND	4.43	0.14	ND	0.35 J	1.23 J
Selenium, Total	ND	-	-	-	-	-	-
Dissolved Metals							
Arsenic, Dissolved	3.1 B	-	-	-	-	-	-
Barium, Dissolved	34.6 B	-	-	-	-	-	-
Cadmium, Dissolved	ND	-	-	-	-	-	-
Chromium, Dissolved	ND	-	-	-	-	-	-
Lead, Dissolved	ND	-	-	-	-	-	-
Selenium, Dissolved	ND	-	-	-	-	-	-
General Chemistry							
Cyanide, Total	44 J	-	47	48	38	68	47
Total Recoverable Phenolics (TRP)	ND	40	-	-	-	-	-

Notes:

1. Only those compounds detected above the method detection limit at a minimum of one sample location are reported in this table.
2. NYSDEC Class "GA" Groundwater Quality Standards/Guldance Values (GWQS/GV) as per 6 NYCRR Part 703.
3. Acid extractables for recent groundwater were analyzed via Method 8270 in August 2013.
4. Surrogate recoveries for SVOC Acid Extractables were below acceptance criteria, re-extraction was performed outside holding time of 7 days, but within 14 days for analysis. Therefore, re-extracted results are presented as estimated (J qualified).

Qualifier Key:

B	The analyte
J	Estimated
ND	Not detected
R	Sample result was rejected by a third party validator.
D	Concentration
-	Not analyzed
*	The general

Color Code:

🟦	= concentration exceeds the GWQS/GV, but is less than 10 times the GWQS/GV
🟨	= concentration exceeds 10 times the GWQS/GV, but is less than 100 times the GWQS/GV
🟧	= concentration exceeds 100 times the GWQS/GV

FIGURES

F:\CAD\TurnKey\Tecumseh Redevelopment\Corrective Measures\ATP-ECM\ATP Pretreatment System O&M\Performance Monitoring Reports\2015\Figure 1; ATP SWMU Group & ECM.dwg

SWMU S-06

SWMU S-07/S-20

SWMU S-21

SWMU S-11

SWMU S-22

SWMU S-24

MWS-13

MWS-14

MWS-14B

MWS-29A

MWS-12A

MWS-12B

MWS-21A

MWS-21B

MWS-10

MWS-10B

MWS-25B

MWS-25A

MWS-19A

MWS-19B

ATP-PW1

ATP-PW2

ATP-PW3

ATP-PW4

EW-1

EW-2

EW-3

EW-3R

VHC

P-61D

P-62D 575.8

P-64D

P-63D

MWS-18C

MWS-18A

MWN-11

CREEK

SMOKES

P-37S

MWS-23A

MWS-23B

MWS-20A

MWS-20B

P-36S

MWS-24B

MWS-24A (obstruction)

WALL

MWN-24A

MWN-24B

ATP TREATMENT BUILDING

MWS-03

SG-02

BRIDGE #15

9 HIGHWAY

LEGEND:

- CMS AREA BOUNDARY
- APPROXIMATE BOUNDARY OF SWMU FROM RFI
- ATP-ECM CONTAINMENT CELL SLURRY WALL ALIGNMENT
- MWS-02 MONITORING WELL
- P-36S EXISTING PIEZOMETER
- EW-1 GROUNDWATER EXTRACTION WELL
- VHC VERTICAL HYDRAULIC CONDUIT
- ATP-PW2 PUMPING WELLS
- APPROXIMATE ALIGNMENT OF ATP-ECM FORCE MAIN
- APPROXIMATE ALIGNMENT ATP-ECM LEACHATE EXTRACTION LINE
- MH ATP-ECM MANHOLE
- ATP-ECM CLEAN-OUT

N

150' 0' 150' 300'

SCALE: 1 INCH = 150 FEET
SCALE IN FEET
(approximate)

DATE: MARCH 2016
DRAFTED BY: KRR

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

TURNKEY ENVIRONMENTAL RESTORATION, LLC

JOB NO.: 0071-014-322

ATP SWMU GROUP & ECM

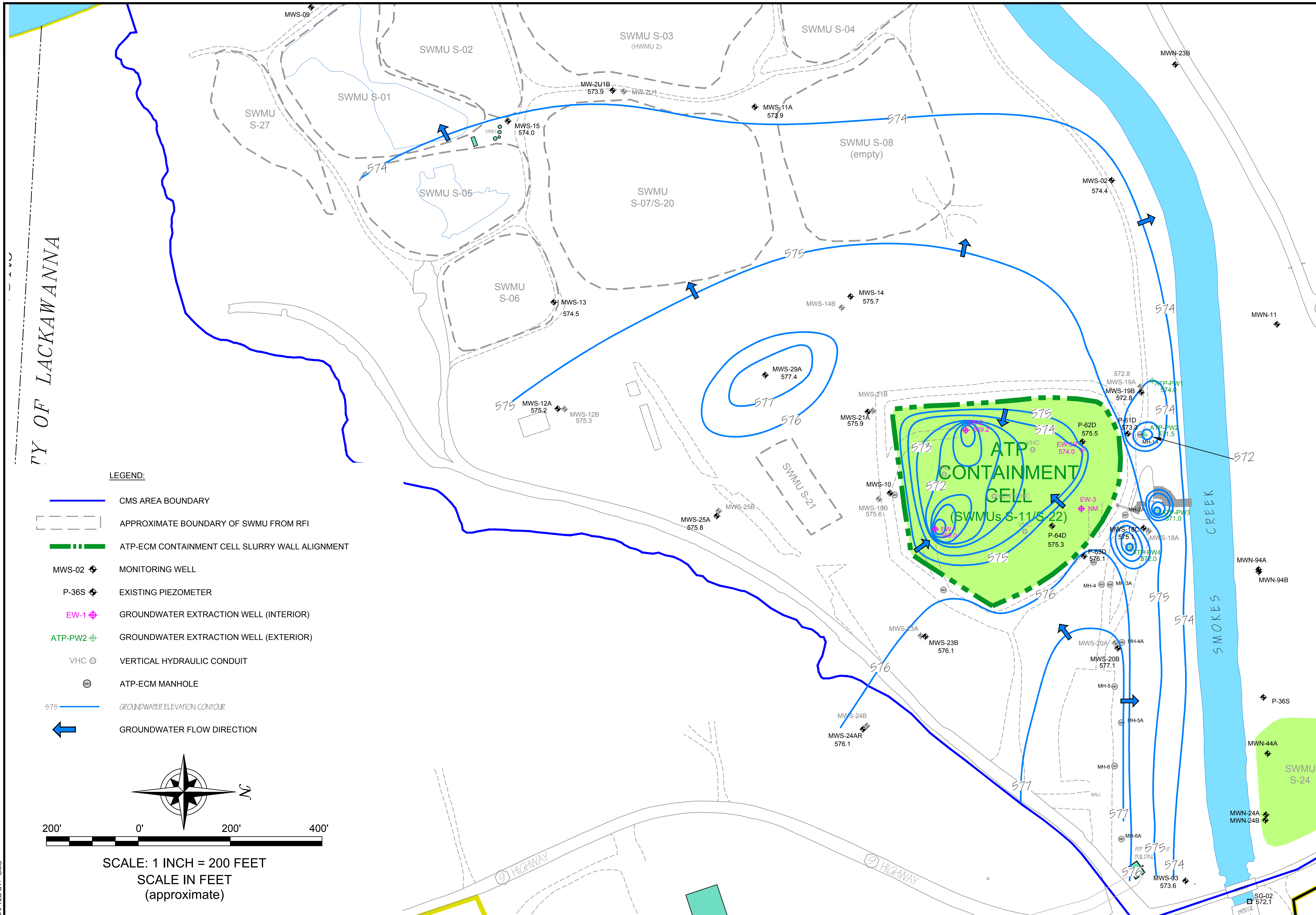
ANNUAL MONITORING & MAINTENANCE SUMMARY REPORT (2016)

TECUMSEH LACKAWANNA SITE
LACKAWANNA, NEW YORK

PREPARED FOR
TECUMSEH REDEVELOPMENT INC.

FIGURE 1

F:\CAD\TurnKey\Tecumseh Redevelopment\Corrective Measures\ATP-ECM\Groundwater Data & Isopotential Info\2018 Isopotential Maps\Figure 2: Isopotential Map (Feb 21 2017).dwg



SWMU S-02
SWMU S-03
(HWMU 2)
SWMU S-04
SWMU S-01
SWMU S-27
SWMU S-05
SWMU S-07/S-20
SWMU S-08
(empty)
SWMU S-06
SWMU S-21
SWMU S-24
ATP CONTAINMENT CELL
(SWMUs S-11/S-22)
SMOKES CREEK
CITY OF LACKAWANNA
HIGHWAY
MWS-09
MW-2U1B
573.9
MWS-15
574.0
MWS-11A
573.9
MWN-23B
MWS-02
574.4
MWS-13
574.5
MWS-14
575.7
MWS-14B
MWN-11
MWS-29A
577.4
MWS-12A
575.2
MWS-12B
575.3
MWS-21A
575.9
MWS-21B
MWS-10
MWS-10B
575.6
MWS-25A
575.8
MWS-25B
MWS-19A
MWS-19B
572.8
P-61D
573.3
P-62D
575.5
P-64D
575.3
P-63D
576.1
ATP-PW1
ATP-PW2
ATP-PW3
ATP-PW4
EW-1
EW-2
EW-3
NM
MWS-23A
MWS-23B
576.1
MWS-20A
MWS-20B
577.1
MWS-24B
MWS-24AR
576.1
MWN-94A
MWN-94B
P-36S
MWN-44A
MWN-24A
MWN-24B
MWS-03
573.6
SG-02
572.1
ATP BUILDING
LEGEND:
CMS AREA BOUNDARY
APPROXIMATE BOUNDARY OF SWMU FROM RFI
ATP-ECM CONTAINMENT CELL SLURRY WALL ALIGNMENT
MWS-02 MONITORING WELL
P-36S EXISTING PIEZOMETER
EW-1 GROUNDWATER EXTRACTION WELL (INTERIOR)
ATP-PW2 GROUNDWATER EXTRACTION WELL (EXTERIOR)
VHC VERTICAL HYDRAULIC CONDUIT
ATP-ECM MANHOLE
575 GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
N
200' 0' 200' 400'
SCALE: 1 INCH = 200 FEET
SCALE IN FEET
(approximate)

DATE: JANUARY 2018
DRAFTED BY: CMC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635
TurnKey Environmental Restoration, LLC

JOB NO.: 0071-013-217

ISOPOTENTIAL MAP

ATP - ECM

February 21, 2017

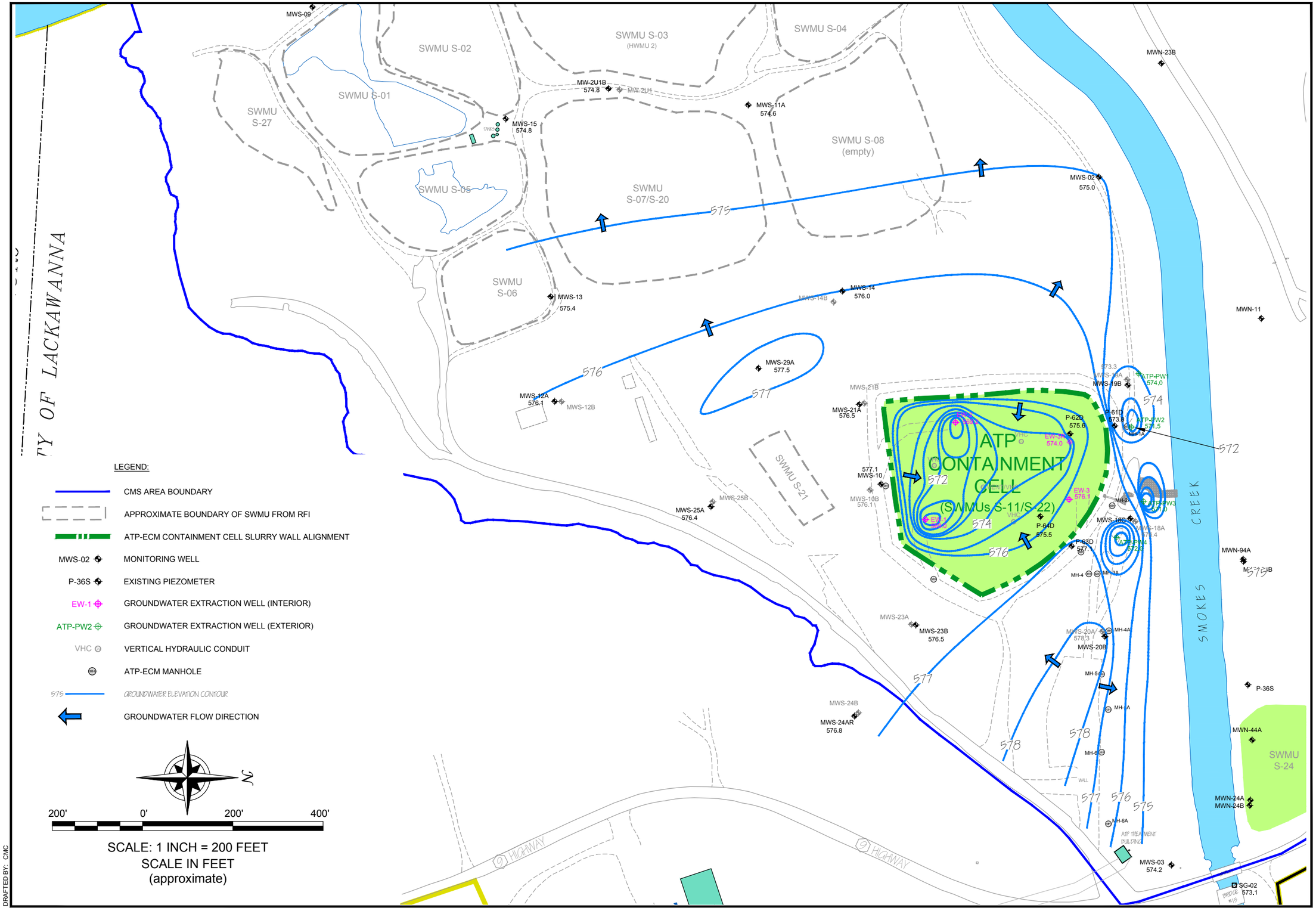
LACKAWANNA, NEW YORK

PREPARED FOR

TECUMSEH REDEVELOPMENT INC.

FIGURE 2

F:\CAD\TurnKey\Tecumseh Redevelopment\Corrective Measures\ATP-ECM\Groundwater Data & Isopotential Info\2017 Isopotential Maps\Figure 3; April 10 2017 Isopotential Map.dwg



LEGEND:

- CMS AREA BOUNDARY
- APPROXIMATE BOUNDARY OF SWMU FROM RFI
- ATP-ECM CONTAINMENT CELL SLURRY WALL ALIGNMENT
- MWS-02 — MONITORING WELL
- P-36S — EXISTING PIEZOMETER
- EW-1 — GROUNDWATER EXTRACTION WELL (INTERIOR)
- ATP-PW2 — GROUNDWATER EXTRACTION WELL (EXTERIOR)
- VHC — VERTICAL HYDRAULIC CONDUIT
- MH — ATP-ECM MANHOLE
- 575 — GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

N

200' 0' 200' 400'

SCALE: 1 INCH = 200 FEET
SCALE IN FEET
(approximate)

DATE: JANUARY 2018
DRAFTED BY: CMC

2558 HAMBURG TURNPIKE
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TURNKEY ENVIRONMENTAL RESTORATION, LLC

JOB NO.: 0071-013-217

ISOPOTENTIAL MAP

ATP - ECM

April 10, 2017

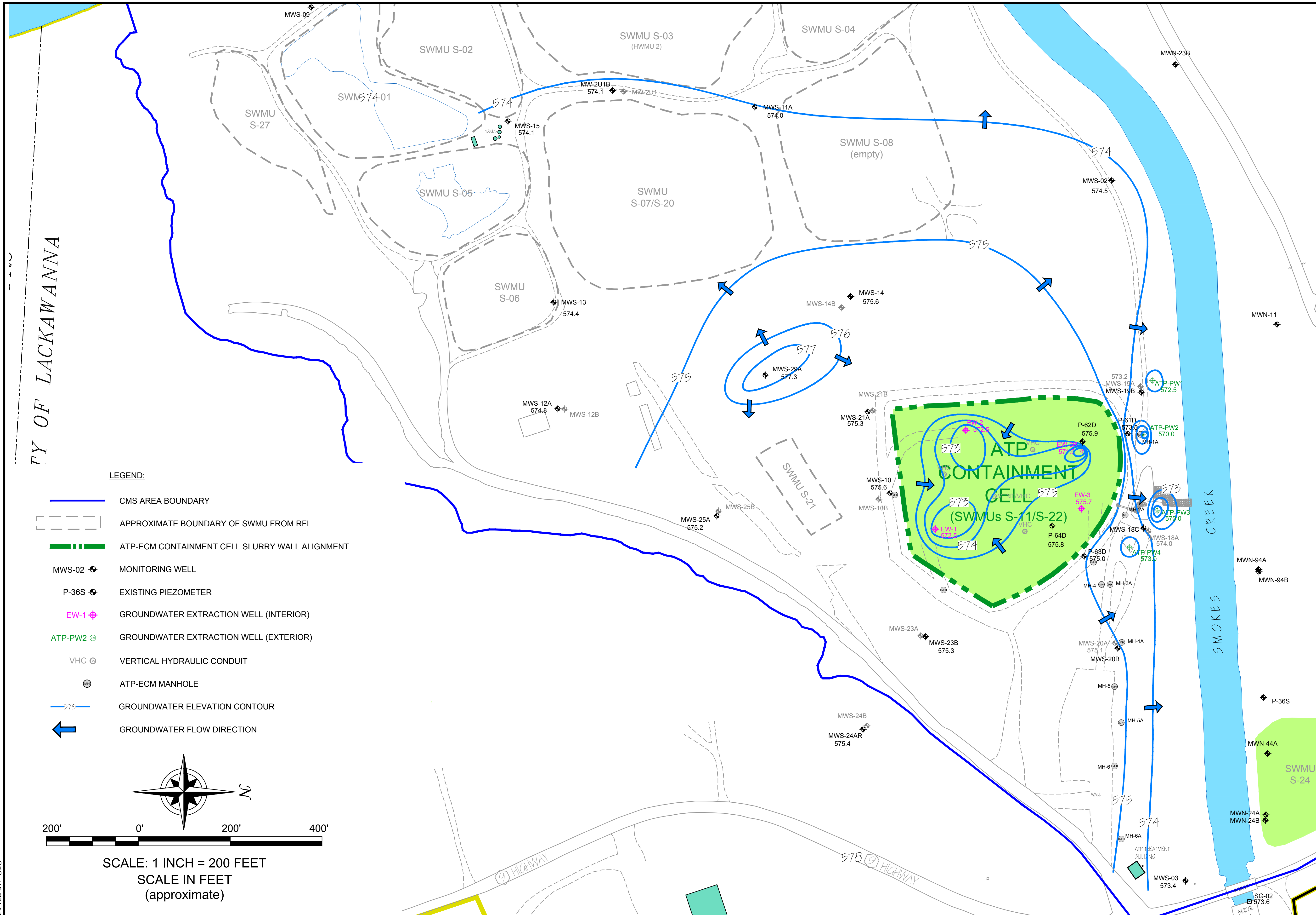
LACKAWANNA, NEW YORK

PREPARED FOR

TECUMSEH REDEVELOPMENT INC.

FIGURE 3

F:\CAD\TurnKey\Tecumseh Redevelopment\Corrective Measures\ATP-ECM\Groundwater Data & Isopotential Info\2017 Isopotential Maps\Figure 4; July 6 2017 Isopotential Map.dwg



SWMU S-02
SWMU S-03
(HWMU 2)
SWMU S-04
SWMU S-01
SWMU S-27
SWMU S-05
SWMU S-07/S-20
SWMU S-08
(empty)
SWMU S-06
SWMU S-21
SWMU S-24
ATP CONTAINMENT CELL
(SWMUs S-11/S-22)
SMOKES CREEK
MWS-09
MW-2U1B
574.1
MWS-15
574.1
MWS-11A
574.0
MWS-02
574.5
MWN-23B
MWS-13
574.4
MWS-14
575.6
MWS-14B
MWS-29A
577.3
MWS-12A
574.8
MWS-12B
MWS-21B
MWS-21A
575.3
MWS-10
575.6
MWS-10B
MWS-25A
575.2
MWS-25B
MWS-23A
MWS-23B
575.3
MWS-24B
MWS-24AR
575.4
MWS-20B
MWS-03
573.4
MWN-11
MWN-94A
MWN-94B
P-36S
MWN-44A
MWN-24A
MWN-24B
P-62D
575.9
P-64D
575.8
P-63D
575.0
MWS-18C
MWS-18A
574.0
MWS-19B
ATP-PW1
572.5
ATP-PW2
570.0
ATP-PW3
570.0
ATP-PW4
573.0
EW-1
EW-2
EW-3
575.7
SG-02
573.6
ATP TREATMENT BUILDING
HIGHWAY
CITY OF LACKAWANNA
574
575
576
577
578
573
LEGEND:
CMS AREA BOUNDARY
APPROXIMATE BOUNDARY OF SWMU FROM RFI
ATP-ECM CONTAINMENT CELL SLURRY WALL ALIGNMENT
MWS-02 MONITORING WELL
P-36S EXISTING PIEZOMETER
EW-1 GROUNDWATER EXTRACTION WELL (INTERIOR)
ATP-PW2 GROUNDWATER EXTRACTION WELL (EXTERIOR)
VHC VERTICAL HYDRAULIC CONDUIT
ATP-ECM MANHOLE
575 GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
N
200' 0' 200' 400'
SCALE: 1 INCH = 200 FEET
SCALE IN FEET
(approximate)

DATE: JANUARY 2018
DRAFTED BY: CMC

2558 HAMBURG TURNPIKE
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(716) 856-0635

TurnKey Environmental Restoration, LLC

JOB NO.: 0071-013-217

ISOPOTENTIAL MAP

ATP - ECM

July 6, 2017

LACKAWANNA, NEW YORK

PREPARED FOR

TECUMSEH REDEVELOPMENT INC.

FIGURE 4

F:\CAD\TurnKey\Tecumseh Redevelopment\Corrective Measures\ATP-ECM\Groundwater Data & Isopotential Info\2018 Isopotential Maps\Figure 5, DATE Isopotential Map.dwg

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0071-013-217

CITY OF LACKAWANNA

SWMU S-01
SWMU S-02
SWMU S-03
(HWMU 2)
SWMU S-04
SWMU S-05
SWMU S-06
SWMU S-07/S-20
SWMU S-08
(empty)
SWMU S-21
SWMU S-24
SWMU S-27

MWS-09
MW-2U1B 574.6
MW-2U1
MWS-15 574.7
574.6 MWS-11A
MWS-13 575.5
MWS-14B
MWS-14 575.6
MWS-29A 577.5
MWS-12A 576.0
MWS-12B
MWS-21B
MWS-21A 576.5
MWS-10
MWS-10B 576.6
MWS-25A 576.4
MWS-25B
MWS-23A
MWS-23B 576.8
MWS-24B
MWS-24AR 576.9
MWS-02 575.1
MWN-23B
MWN-11
574.0 MWS-19A
MWS-19B
ATP-PW1 572.0
P-61D 574.2
P-62D 576.6
ATP-PW2 570.0
MW-1A
MH-2
ATP-PW3 570.0
MWS-18C
MWS-18A 576.2
ATP-PW4 573.0
P-63D 577.3
P-64D 576.2
EW-3 577.2
EW-1
ATP CONTAINMENT CELL (SWMUs S-11/S-22)
MWN-94A
MWN-94B
MH-4
MH-3A
MWS-20A
MH-4A
MWS-20B 577.4
MH-5
MH-5A
P-36S
MWN-44A
MH-6
MH-6A
ATP TREATMENT BUILDING
MWS-03 576.1
MWN-24A
MWN-24B
SG-02 572.9
BRIDGE #15
SMOKES CREEK
9 HIGHWAY
9 HIGHWAY

575 576 577 574 573

LEGEND:

- CMS AREA BOUNDARY
- APPROXIMATE BOUNDARY OF SWMU FROM RFI
- ATP-ECM CONTAINMENT CELL SLURRY WALL ALIGNMENT
- MWS-02 MONITORING WELL
- P-36S EXISTING PIEZOMETER
- EW-1 GROUNDWATER EXTRACTION WELL (INTERIOR)
- ATP-PW2 GROUNDWATER EXTRACTION WELL (EXTERIOR)
- VHC VERTICAL HYDRAULIC CONDUIT
- MH ATP-ECM MANHOLE
- 575 GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

N

200' 0' 200' 400'

SCALE: 1 INCH = 200 FEET
SCALE IN FEET
(approximate)

DATE: JANUARY 2017
DRAFTED BY: CMC

ISOPOTENTIAL MAP

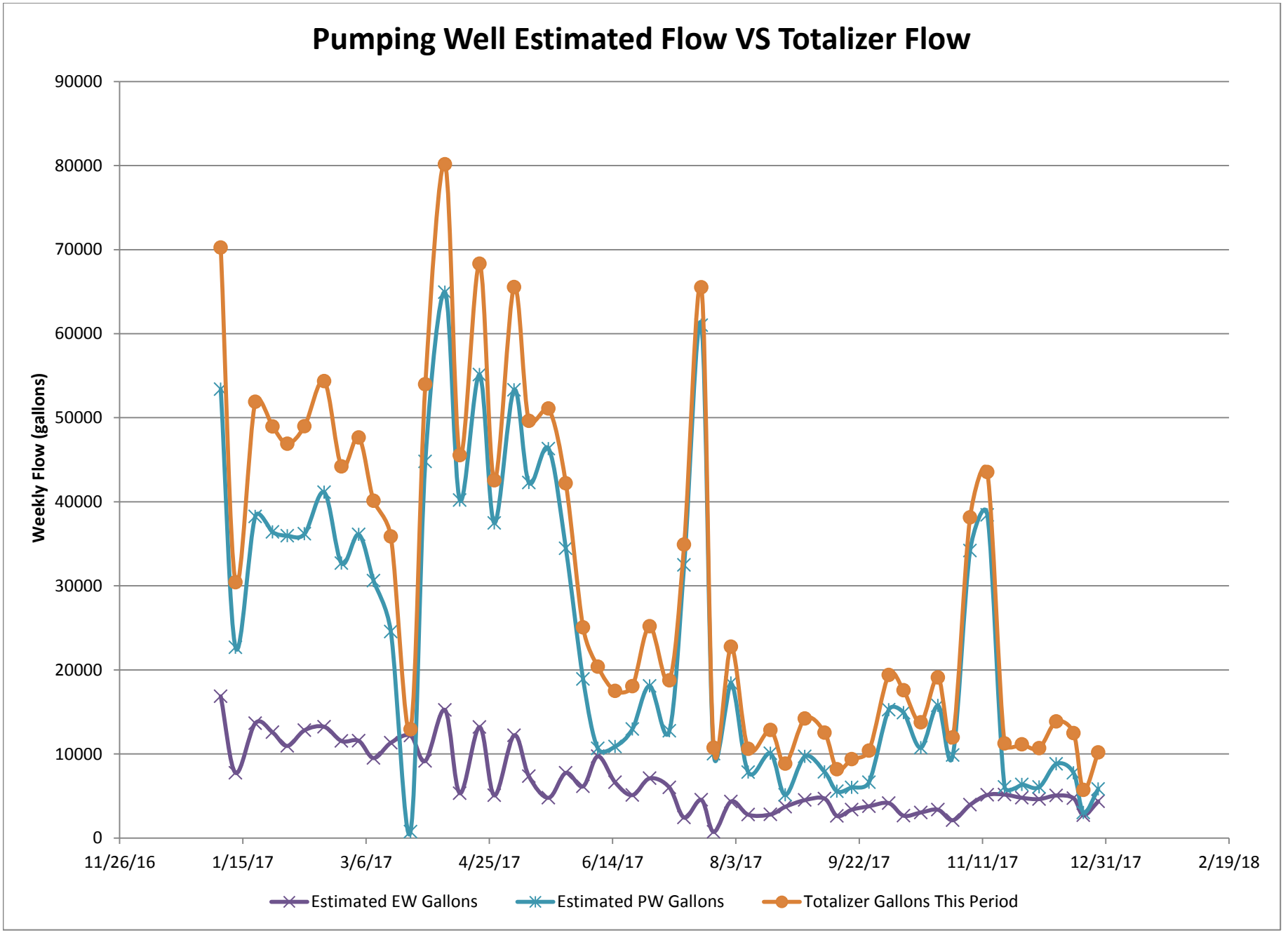
ATP - ECM
November 6, 2017
LACKAWANNA, NEW YORK

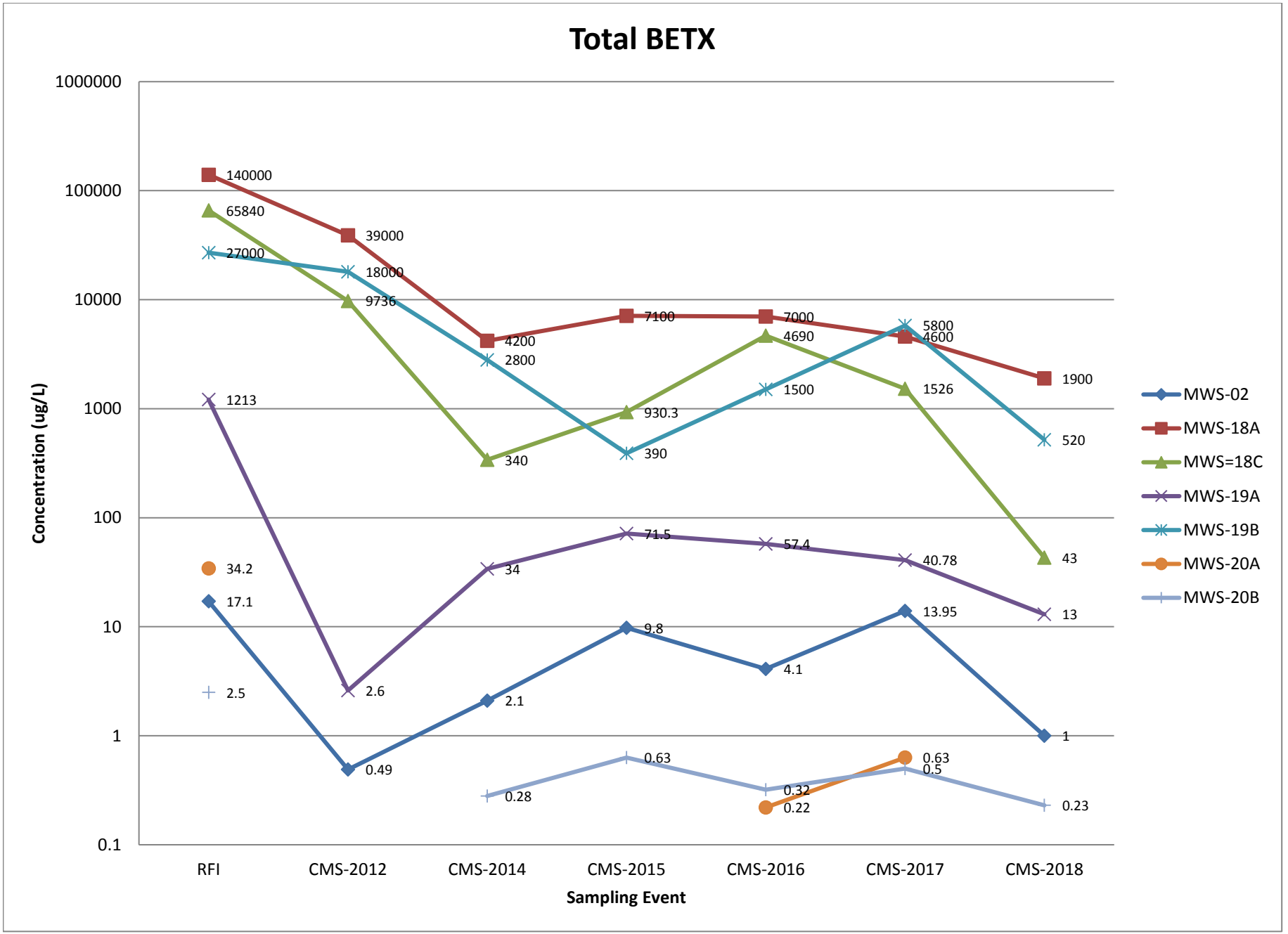
PREPARED FOR
TECUMSEH REDEVELOPMENT INC.

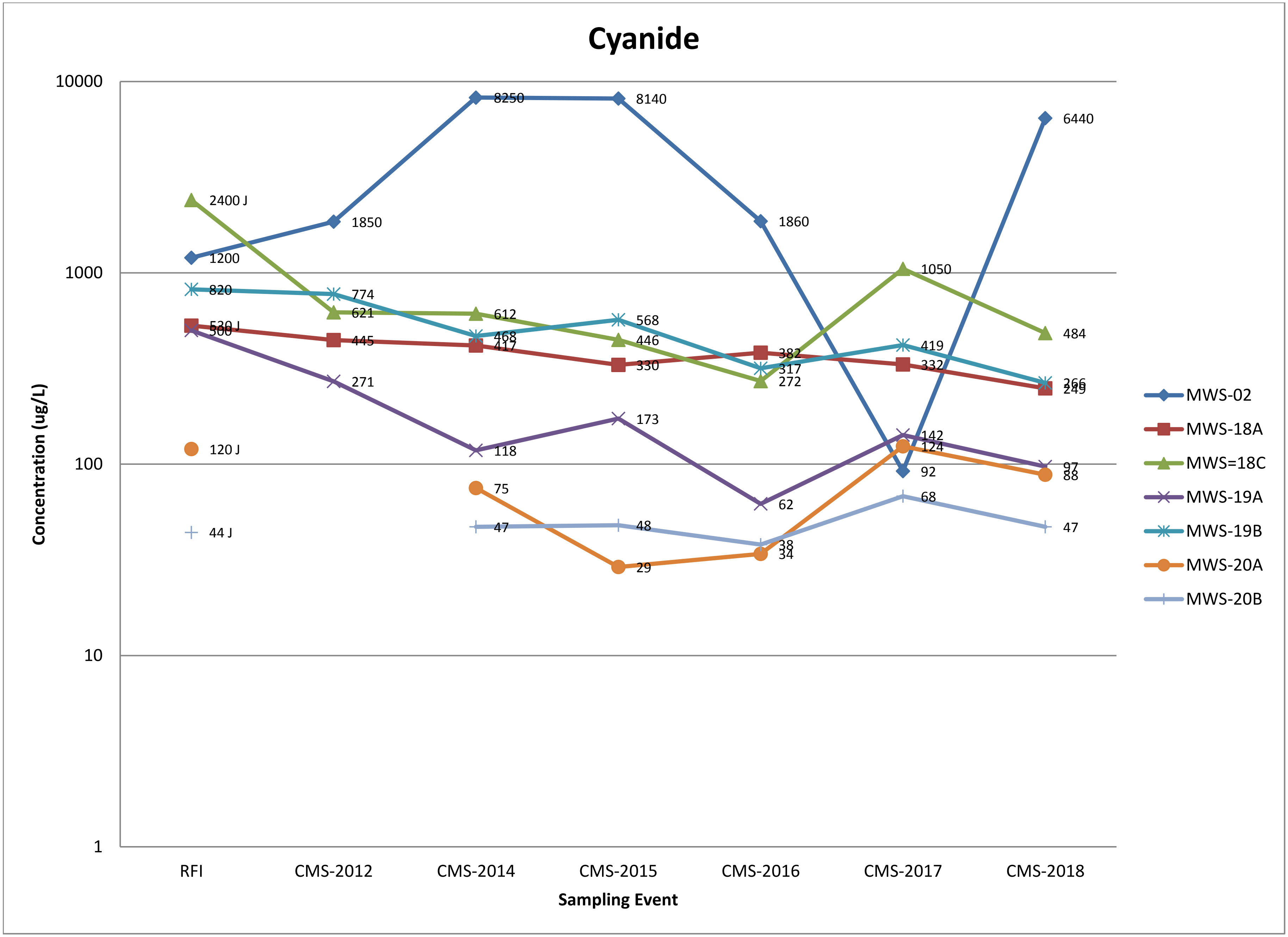
FIGURE 5

ATTACHMENT 1

CONCENTRATION AND FLOW VS TIME PLOTS


Pumping Well Estimated Flow VS Totalizer Flow
Weekly Flow (gallons)
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
11/26/16
1/15/17
3/6/17
4/25/17
6/14/17
8/3/17
9/22/17
11/11/17
12/31/17
2/19/18
Estimated EW Gallons
Estimated PW Gallons
Totalizer Gallons This Period


Total BETX
1000000
100000
10000
1000
100
10
1
0.1
Concentration (ug/L)
140000
39000
4200
7100
7000
4600
1900
65840
9736
340
930.3
4690
1526
43
27000
18000
2800
390
1500
5800
520
1213
2.6
34
71.5
57.4
40.78
13
34.2
17.1
0.49
2.1
9.8
4.1
13.95
1
2.5
0.28
0.63
0.32
0.22
0.63
0.5
0.23
RFI
CMS-2012
CMS-2014
CMS-2015
CMS-2016
CMS-2017
CMS-2018
Sampling Event
MWS-02
MWS-18A
MWS=18C
MWS-19A
MWS-19B
MWS-20A
MWS-20B


Cyanide
10000
1000
100
10
1
Concentration (ug/L)
8250
8140
6440
2400 J
1850
1860
1200
1050
820
774
621
612
568
530 J
500
468
445
446
417
382
330
317
272
419
332
484
266
249
271
173
118
120 J
142
124
97
92
88
75
62
68
44 J
47
48
38
34
29
47
RFI
CMS-2012
CMS-2014
CMS-2015
CMS-2016
CMS-2017
CMS-2018
Sampling Event
MWS-02
MWS-18A
MWS=18C
MWS-19A
MWS-19B
MWS-20A
MWS-20B

ATTACHMENT 2

2017 REPORTS TO ERIE COUNTY SEWER DISTRICT NO. 6

TURNKEY

Strong Advocates, Effective Solutions, Integrated Implementation

April 24, 2017

Ms. Laura Surdej
Erie County Sewer/Southtown's Sewage Treatment Plant
2060 Lehigh St
Lackawanna, NY 14218

Re: ECSD No.6 Discharge Permit LA-03 –Semi-Annual Report (October 2016 – April 2017)
Lackawanna, New York

Dear Ms. Surdej:

TurnKey Environmental Restoration, LLC (TurnKey) has prepared this correspondence on behalf of our client, Tecumseh Redevelopment Inc., in accordance with Erie County Sewer District No. 6 (ECSD No. 6), Permit No. LA-03 (Rev. June 2015). As required by the permit, this semi-annual report summarizes flow, pH and compliance sample results for the report period from October 31, 2016 through April 2017.

Turnkey personnel recorded totalizer (total gallons) and pH readings weekly during the reporting period. Table 1 summarizes the total volume (gallons), calculated daily flow (gallons per day) and pH readings.

On April 3, 2017 TurnKey personnel collected an effluent (outfall) water sample and submitted the sample under chain-of-custody command to Alpha Analytical for laboratory analysis in accordance with the discharge permit. Table 2 summarizes the analytical results; Attachment 1 contains the Laboratory Analytical Report.

As of April 7, 2017 a total of 7,085,111 gallons of water has been pre-treated and discharged to the ECSD No.6 collection and conveyance system. The calculated daily flow for the report period has ranged between 3,474 and 8,781 GPD, well below permitted flows of up to 45,000 GPD. The pH readings have been between 5.35 and 6.55 standard units, with a permitted operating range of 5 and 12 standard units. Please note that the flow meter was subjected to annual calibration in September 2016 by a third party. The calibration certificate is presented as Attachment 2.

Please contact us if you have any questions or require additional information.

Sincerely,
TurnKey Environmental Restoration, LLC

Thomas H. Forbes, P.E.
Principal Engineer

File: 0071-016-222

TABLES

TABLE 1

SUMMARY OF EFFLUENT FLOW AND pH

ATP GROUNDWATER PRE-TREATMENT SYSTEM
Tecumseh Redevelopment, Inc.
Lackawanna, New York

Date	Totalizer (gallons)	Total Gallons this event	Calculated GPD (gallons/day)	pH
Permit Limits:			**45,000 GPD**	**5-12**
10/31/16	6,049,012	44,583	6,369	6.55
11/7/16	6,089,247	40,235	5,748	6.10
11/14/16	6,138,191	48,944	6,992	6.07
11/21/16	6,184,193	46,002	6,572	5.62
11/29/16	6,211,987	27,794	3,474	5.82
12/6/16	6,257,476	45,489	6,498	5.90
12/12/16	6,297,451	39,975	6,663	5.70
12/20/16	6,361,139	63,688	7,961	5.37
12/28/16	6,418,417	57,278	7,160	5.73
1/6/17	6,488,665	70,248	8,781	5.51
1/12/17	6,519,089	30,424	5,071	5.42
1/20/17	6,570,992	51,903	6,488	5.41
1/27/17	6,619,955	48,963	6,995	5.76
2/2/17	6,666,866	95,874	7,990	5.35
2/9/17	6,715,858	48,992	6,999	5.61
2/17/17	6,770,211	54,353	6,794	5.68
2/24/17	6,814,425	44,214	6,316	5.58
3/3/17	6,862,081	47,656	5,295	5.75
3/9/17	6,902,193	40,112	6,685	5.91
3/14/17	6,938,135	35,942	7,188	5.39
3/24/17	7,004,969	66,834	6,683	5.85
3/30/17	7,036,278	31,309	5,218	5.97
4/7/17	7,085,111	48,833	6,976	5.92

TABLE 2

SUMMARY OF EFFLUENT WATER ANALYTICAL DATA

ATP GROUNDWATER PRE-TREATMENT SYSTEM
Tecumseh Redevelopment, Inc.
Lackawanna, New York

Parameter [1]	Effluent 04/03/17	Discharge Permit Limitations [2]
Volatile Organic Compounds (VOCs - Method 624) - mg/L		
Benzene	0.0028	--
Metal Compounds (Method 200.7 Rev 4.4) - mg/L [3]		
Antimony	0.00063 J	**Monitor**
Arsenic	0.00529	**Monitor**
Barium	0.0289	**Monitor**
Beryllium	0.00044 J	**Monitor**
Chromium	0.01132	**Monitor**
Iron	98.5	**Monitor**
Nickel	0.00103 J	**Monitor**
Titanium	0.006 J	**Monitor**
General Chemistry - mg/L		
Cyanide, Total	0.683	**Monitor**
Ammonia (as N)	35.7	**Monitor**
Phenolics, Total Recoverable	0.14	**Monitor**
Sulfate	1600	**Monitor**
pH	6.62	**5-12**
Total Toxic Organic Pollutants (TTO) [4]	0.0028	**2.13**

Notes:

1. Only those parameters detected are presented in this table; all others were reported as non-detect.
2. Per the June 2015 Erie County Sewer District No. 6 Discharge Permit LA-03 (Revised)
3. Metals include Ag, As, Ba, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Ti, and Zn
4. TTO is determined by totaling the reported compound concentrations detected via EPA Methods 624.

Definitions:

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

ATTACHMENT 1

Laboratory Data

ANALYTICAL REPORT

Lab Number:	L1710124
Client:	Turnkey Environmental Restoration, LLC 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Tom Forbes
Phone:	(716) 856-0599
Project Name:	ATP PRE-TREATMENT SYS-EFFLUENT
Project Number:	0071-016-222
Report Date:	04/13/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1710124-01	PROCESS EFFLUENT	WATER	TECUMSEH - LACKAWANNA	04/03/17 14:30	04/03/17

Project Name:	ATP PRE-TREATMENT SYS-EFFLUENT	**Lab Number:**	L1710124
Project Number:	0071-016-222	**Report Date:**	04/13/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	ATP PRE-TREATMENT SYS-EFFLUENT	**Lab Number:**	L1710124
Project Number:	0071-016-222	**Report Date:**	04/13/17

Case Narrative (continued)

Report Submission

This report replaces the report issued April 10, 2017, and includes the results of the Chromium analysis performed on L1710124-01.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics by Method 624

L1710124-01: The sample has elevated detection limits due to the dilution required by the sample matrix. Sample is cloudy

The WG990606-9 LCS recoveries for 1,1,1-trichloroethane (110%), ethylbenzene (125%), vinyl chloride (120%), 1,2-dichlorobenzene (140%), 1,3-dichlorobenzene (135%) and 1,4-dichlorobenzene (135%), associated with L1710124-01, are outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 04/13/17

ORGANICS

VOLATILES

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT **Lab Number:** L1710124

Project Number: 0071-016-222 **Report Date:** 04/13/17

SAMPLE RESULTS

Lab ID: L1710124-01 D
Client ID: PROCESS EFFLUENT
Sample Location: TECUMSEH - LACKAWANNA
Matrix: Water
Analytical Method: 5,624
Analytical Date: 04/04/17 17:24
Analyst: GT

Date Collected: 04/03/17 14:30
Date Received: 04/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	12	1.5	2.5
1,1-Dichloroethane	ND		ug/l	3.8	0.72	2.5
Chloroform	ND		ug/l	3.8	0.55	2.5
Carbon tetrachloride	ND		ug/l	2.5	0.81	2.5
1,2-Dichloropropane	ND		ug/l	8.8	0.66	2.5
Dibromochloromethane	ND		ug/l	2.5	0.82	2.5
1,1,2-Trichloroethane	ND		ug/l	3.8	0.60	2.5
2-Chloroethylvinyl ether	ND		ug/l	25	1.4	2.5
Tetrachloroethene	ND		ug/l	3.8	0.83	2.5
Chlorobenzene	ND		ug/l	8.8	0.74	2.5
1,2-Dichloroethane	ND		ug/l	3.8	0.80	2.5
1,1,1-Trichloroethane	ND		ug/l	5.0	0.74	2.5
Bromodichloromethane	ND		ug/l	2.5	0.64	2.5
trans-1,3-Dichloropropene	ND		ug/l	3.8	0.66	2.5
cis-1,3-Dichloropropene	ND		ug/l	3.8	0.80	2.5
Bromoform	ND		ug/l	2.5	0.81	2.5
1,1,2,2-Tetrachloroethane	ND		ug/l	2.5	0.56	2.5
Benzene	2.8		ug/l	2.5	0.57	2.5
Toluene	ND		ug/l	2.5	0.81	2.5
Ethylbenzene	ND		ug/l	2.5	0.78	2.5
Chloromethane	ND		ug/l	12	1.6	2.5
Bromomethane	ND		ug/l	12	3.3	2.5
Vinyl chloride	ND		ug/l	2.5	0.76	2.5
Chloroethane	ND		ug/l	5.0	0.65	2.5
1,1-Dichloroethene	ND		ug/l	2.5	0.92	2.5
trans-1,2-Dichloroethene	ND		ug/l	3.8	0.82	2.5
Trichloroethene	ND		ug/l	2.5	0.83	2.5
1,2-Dichlorobenzene	ND		ug/l	12	0.64	2.5
1,3-Dichlorobenzene	ND		ug/l	12	0.64	2.5
1,4-Dichlorobenzene	ND		ug/l	12	0.65	2.5

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT **Lab Number:** L1710124

Project Number: 0071-016-222 **Report Date:** 04/13/17

SAMPLE RESULTS

Lab ID: L1710124-01 D Date Collected: 04/03/17 14:30

Client ID: PROCESS EFFLUENT Date Received: 04/03/17

Sample Location: TECUMSEH - LACKAWANNA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Acrolein[1]	ND		ug/l	20	3.2	2.5
Acrylonitrile[1]	ND		ug/l	25	2.4	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	108		80-120
Fluorobenzene	106		80-120
4-Bromofluorobenzene	112		80-120

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT **Lab Number:** L1710124

Project Number: 0071-016-222 **Report Date:** 04/13/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,624
Analytical Date: 04/04/17 09:46
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG990606-10					
Methylene chloride	ND		ug/l	5.0	0.62
1,1-Dichloroethane	ND		ug/l	1.5	0.29
Chloroform	ND		ug/l	1.5	0.22
Carbon tetrachloride	ND		ug/l	1.0	0.32
1,2-Dichloropropane	ND		ug/l	3.5	0.27
Dibromochloromethane	ND		ug/l	1.0	0.33
1,1,2-Trichloroethane	ND		ug/l	1.5	0.24
2-Chloroethylvinyl ether	ND		ug/l	10	0.54
Tetrachloroethene	ND		ug/l	1.5	0.33
Chlorobenzene	ND		ug/l	3.5	0.30
1,2-Dichloroethane	ND		ug/l	1.5	0.32
1,1,1-Trichloroethane	ND		ug/l	2.0	0.30
Bromodichloromethane	ND		ug/l	1.0	0.25
trans-1,3-Dichloropropene	ND		ug/l	1.5	0.26
cis-1,3-Dichloropropene	ND		ug/l	1.5	0.32
Bromoform	ND		ug/l	1.0	0.32
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.22
Benzene	ND		ug/l	1.0	0.23
Toluene	ND		ug/l	1.0	0.32
Ethylbenzene	ND		ug/l	1.0	0.31
Chloromethane	ND		ug/l	5.0	0.64
Bromomethane	ND		ug/l	5.0	1.3
Vinyl chloride	ND		ug/l	1.0	0.30
Chloroethane	ND		ug/l	2.0	0.26
1,1-Dichloroethene	ND		ug/l	1.0	0.37
trans-1,2-Dichloroethene	ND		ug/l	1.5	0.33
Trichloroethene	ND		ug/l	1.0	0.33
1,2-Dichlorobenzene	ND		ug/l	5.0	0.26
1,3-Dichlorobenzene	ND		ug/l	5.0	0.25

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT **Lab Number:** L1710124

Project Number: 0071-016-222 **Report Date:** 04/13/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,624
Analytical Date: 04/04/17 09:46
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG990606-10					
1,4-Dichlorobenzene	ND		ug/l	5.0	0.26
Acrolein[1]	ND		ug/l	8.0	1.3
Acrylonitrile[1]	ND		ug/l	10	0.97

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	109		80-120
Fluorobenzene	107		80-120
4-Bromofluorobenzene	116		80-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT

Project Number: 0071-016-222

Lab Number: L1710124

Report Date: 04/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG990606-9								
Methylene chloride	105		-		70-111	-		30
1,1-Dichloroethane	110		-		78-116	-		30
Chloroform	110		-		86-111	-		30
Carbon tetrachloride	95		-		60-112	-		30
1,2-Dichloropropane	105		-		83-113	-		30
Dibromochloromethane	95		-		58-129	-		30
1,1,2-Trichloroethane	100		-		80-118	-		30
2-Chloroethylvinyl ether	100		-		69-124	-		30
Tetrachloroethene	115		-		80-126	-		30
Chlorobenzene	125		-		80-126	-		30
1,2-Dichloroethane	100		-		82-110	-		30
1,1,1-Trichloroethane	**110**	Q	-		72-109	-		30
Bromodichloromethane	100		-		71-120	-		30
trans-1,3-Dichloropropene	95		-		73-106	-		30
cis-1,3-Dichloropropene	100		-		78-111	-		30
Bromoform	90		-		45-131	-		30
1,1,2,2-Tetrachloroethane	100		-		81-122	-		30
Benzene	110		-		84-116	-		30
Toluene	110		-		83-121	-		30
Ethylbenzene	**125**	Q	-		84-123	-		30
Chloromethane	100		-		70-144	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT

Project Number: 0071-016-222

Lab Number: L1710124

Report Date: 04/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG990606-9								
Bromomethane	105		-		63-141	-		30
Vinyl chloride	**120**	Q	-		56-118	-		30
Chloroethane	105		-		74-130	-		30
1,1-Dichloroethene	105		-		77-116	-		30
trans-1,2-Dichloroethene	110		-		81-121	-		30
Trichloroethene	110		-		84-118	-		30
1,2-Dichlorobenzene	**140**	Q	-		78-128	-		30
1,3-Dichlorobenzene	**135**	Q	-		77-125	-		30
1,4-Dichlorobenzene	**135**	Q	-		77-125	-		30
Acrolein[1]	72		-		40-160	-		30
Acrylonitrile[1]	78		-		66-123	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	108				80-120
Fluorobenzene	106				80-120
4-Bromofluorobenzene	116				80-120

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG990606-6 QC Sample: L1709872-01 Client ID: MS Sample												
Methylene chloride	ND	4000	4800	**120**	Q	-	-		70-111	-		30
1,1-Dichloroethane	ND	4000	5000	**125**	Q	-	-		78-116	-		30
Chloroform	4800	4000	10000	**130**	Q	-	-		86-111	-		30
Carbon tetrachloride	ND	4000	4800	**120**	Q	-	-		60-112	-		30
1,2-Dichloropropane	ND	4000	4900	**123**	Q	-	-		83-113	-		30
Dibromochloromethane	ND	4000	4000	100		-	-		58-129	-		30
1,1,2-Trichloroethane	ND	4000	4200	105		-	-		80-118	-		30
2-Chloroethylvinyl ether	ND	4000	3600	90		-	-		69-124	-		30
Tetrachloroethene	ND	4000	4700	118		-	-		80-126	-		30
Chlorobenzene	ND	4000	4700	118		-	-		80-126	-		30
Trichlorofluoromethane	ND	4000	5200	**130**	Q	-	-		83-128	-		30
1,2-Dichloroethane	ND	4000	4800	**120**	Q	-	-		82-110	-		30
1,1,1-Trichloroethane	ND	4000	4900	**123**	Q	-	-		72-109	-		30
Bromodichloromethane	ND	4000	4300	108		-	-		71-120	-		30
trans-1,3-Dichloropropene	ND	4000	4000	100		-	-		73-106	-		30
cis-1,3-Dichloropropene	ND	4000	4200	105		-	-		78-111	-		30
Bromoform	ND	4000	3600	90		-	-		45-131	-		30
1,1,2,2-Tetrachloroethane	ND	4000	4200	105		-	-		81-122	-		30
Benzene	ND	4000	5100	**128**	Q	-	-		84-116	-		30
Toluene	ND	4000	4700	118		-	-		83-121	-		30
Ethylbenzene	ND	4000	4800	120		-	-		84-123	-		30

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG990606-6 QC Sample: L1709872-01 Client ID: MS Sample												
Chloromethane	230J	4000	5900	**148**	Q	-	-		70-144	-		30
Bromomethane	ND	4000	3400	85		-	-		63-141	-		30
Vinyl chloride	ND	4000	5700	**143**	Q	-	-		56-118	-		30
Chloroethane	ND	4000	5100	128		-	-		74-130	-		30
1,1-Dichloroethene	ND	4000	5100	**128**	Q	-	-		77-116	-		30
trans-1,2-Dichloroethene	ND	4000	5000	**125**	Q	-	-		81-121	-		30
cis-1,2-Dichloroethene[1]	ND	4000	4900	**123**	Q	-	-		85-110	-		30
Trichloroethene	ND	4000	5100	**128**	Q	-	-		84-118	-		30
1,2-Dichlorobenzene	ND	4000	5200	**130**	Q	-	-		78-128	-		30
1,3-Dichlorobenzene	ND	4000	4800	120		-	-		77-125	-		30
1,4-Dichlorobenzene	ND	4000	4800	120		-	-		77-125	-		30
p/m-Xylene[1]	ND	8000	9300	116		-	-		81-121	-		30
o-Xylene[1]	ND	4000	4600	115		-	-		81-124	-		30
Styrene[1]	ND	4000	4400	110		-	-		84-133	-		30
Acetone[1]	6200	10000	17000	108		-	-		40-160	-		30
Carbon disulfide[1]	ND	4000	4600	115		-	-		54-134	-		30
2-Butanone[1]	520J	10000	10000	100		-	-		57-116	-		30
Vinyl acetate[1]	ND	8000	9000	113		-	-		40-160	-		30
4-Methyl-2-pentanone[1]	ND	10000	9500	95		-	-		79-125	-		30
2-Hexanone[1]	ND	10000	9400	94		-	-		78-120	-		30
Acrolein[1]	ND	8000	7800	98		-	-		40-160	-		30

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG990606-6 QC Sample: L1709872-01 Client ID: MS Sample												
Acrylonitrile[1]	ND	8000	8100	101		-	-		66-123	-		30
Dibromomethane[1]	ND	4000	4400	110		-	-		65-126	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
4-Bromofluorobenzene	105				80-120
Fluorobenzene	107				80-120
Pentafluorobenzene	109				80-120

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG990606-5 QC Sample: L1709872-01 Client ID: DUP Sample						
Methylene chloride	ND	ND	ug/l	NC		30
1,1-Dichloroethane	ND	ND	ug/l	NC		30
Chloroform	4800	4900	ug/l	2		30
Carbon tetrachloride	ND	ND	ug/l	NC		30
1,2-Dichloropropane	ND	ND	ug/l	NC		30
Dibromochloromethane	ND	ND	ug/l	NC		30
1,1,2-Trichloroethane	ND	ND	ug/l	NC		30
2-Chloroethylvinyl ether	ND	ND	ug/l	NC		30
Tetrachloroethene	ND	ND	ug/l	NC		30
Chlorobenzene	ND	ND	ug/l	NC		30
Trichlorofluoromethane	ND	ND	ug/l	NC		30
1,2-Dichloroethane	ND	ND	ug/l	NC		30
1,1,1-Trichloroethane	ND	ND	ug/l	NC		30
Bromodichloromethane	ND	ND	ug/l	NC		30
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		30
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		30
Bromoform	ND	ND	ug/l	NC		30
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC		30
Benzene	ND	ND	ug/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG990606-5 QC Sample: L1709872-01 Client ID: DUP Sample						
Toluene	ND	ND	ug/l	NC		30
Ethylbenzene	ND	ND	ug/l	NC		30
Chloromethane	230J	250J	ug/l	NC		30
Bromomethane	ND	ND	ug/l	NC		30
Vinyl chloride	ND	ND	ug/l	NC		30
Chloroethane	ND	ND	ug/l	NC		30
1,1-Dichloroethene	ND	ND	ug/l	NC		30
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		30
cis-1,2-Dichloroethene[1]	ND	ND	ug/l	NC		30
Trichloroethene	ND	ND	ug/l	NC		30
1,2-Dichlorobenzene	ND	ND	ug/l	NC		30
1,3-Dichlorobenzene	ND	ND	ug/l	NC		30
1,4-Dichlorobenzene	ND	ND	ug/l	NC		30
p/m-Xylene[1]	ND	ND	ug/l	NC		30
o-Xylene[1]	ND	ND	ug/l	NC		30
Xylene (Total)[1]	ND	ND	ug/l	NC		30
Styrene[1]	ND	ND	ug/l	NC		30
Acetone[1]	6200	5900	ug/l	5		30
Carbon disulfide[1]	ND	ND	ug/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG990606-5 QC Sample: L1709872-01 Client ID: DUP Sample						
2-Butanone[1]	520J	ND	ug/l	NC		30
Vinyl acetate[1]	ND	ND	ug/l	NC		30
4-Methyl-2-pentanone[1]	ND	ND	ug/l	NC		30
2-Hexanone[1]	ND	ND	ug/l	NC		30
Acrolein[1]	ND	ND	ug/l	NC		30
Acrylonitrile[1]	ND	ND	ug/l	NC		30
Dibromomethane[1]	ND	ND	ug/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	110		109		80-120
Fluorobenzene	109		109		80-120
4-Bromofluorobenzene	104		106		80-120

METALS

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT **Lab Number:** L1710124

Project Number: 0071-016-222 **Report Date:** 04/13/17

SAMPLE RESULTS

Lab ID: L1710124-01 Date Collected: 04/03/17 14:30

Client ID: PROCESS EFFLUENT Date Received: 04/03/17

Sample Location: TECUMSEH - LACKAWANNA Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	0.00063	J	mg/l	0.00400	0.00042	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00529		mg/l	0.00100	0.00016	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Barium, Total	0.02890		mg/l	0.00100	0.00017	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Beryllium, Total	0.00044	J	mg/l	0.00100	0.00010	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00100	0.00005	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Chromium, Total	0.01132		mg/l	0.00100	0.00017	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Iron, Total	98.5		mg/l	0.050	0.009	1	04/05/17 06:05	04/05/17 14:03	EPA 3005A	19,200.7	AB
Lead, Total	ND		mg/l	0.00100	0.00034	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	0.00006	1	04/05/17 10:30	04/05/17 19:03	EPA 245.1	3,245.1	EA
Nickel, Total	0.00103	J	mg/l	0.00200	0.00055	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00100	0.00026	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM
Titanium, Total	0.006	J	mg/l	0.010	0.002	1	04/05/17 06:05	04/05/17 14:03	EPA 3005A	19,200.7	AB
Zinc, Total	ND		mg/l	0.01000	0.00341	1	04/05/17 06:05	04/05/17 10:50	EPA 3005A	3,200.8	AM

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT **Lab Number:** L1710124

Project Number: 0071-016-222 **Report Date:** 04/13/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG991143-1										
Iron, Total	ND		mg/l	0.050	0.009	1	04/05/17 06:05	04/05/17 12:29	19,200.7	PS
Titanium, Total	ND		mg/l	0.010	0.002	1	04/05/17 06:05	04/05/17 12:29	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG991146-1										
Antimony, Total	0.00084	J	mg/l	0.00400	0.00042	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	0.00016	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Barium, Total	ND		mg/l	0.00100	0.00017	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Beryllium, Total	ND		mg/l	0.00100	0.00010	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00100	0.00005	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	0.00055	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Selenium, Total	ND		mg/l	0.00200	0.00173	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Silver, Total	ND		mg/l	0.00100	0.00026	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	04/05/17 06:05	04/05/17 10:20	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG991257-1										
Mercury, Total	ND		mg/l	0.00020	0.00006	1	04/05/17 10:30	04/05/17 18:48	3,245.1	EA

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT **Lab Number:** L1710124

Project Number: 0071-016-222 **Report Date:** 04/13/17

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT

Project Number: 0071-016-222

Lab Number: L1710124

Report Date: 04/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG991143-2								
Iron, Total	93		-		85-115	-		
Titanium, Total	95		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG991146-2								
Antimony, Total	97		-		85-115	-		
Arsenic, Total	109		-		85-115	-		
Barium, Total	102		-		85-115	-		
Beryllium, Total	101		-		85-115	-		
Cadmium, Total	106		-		85-115	-		
Chromium, Total	97		-		85-115	-		
Copper, Total	103		-		85-115	-		
Lead, Total	105		-		85-115	-		
Nickel, Total	99		-		85-115	-		
Selenium, Total	101		-		85-115	-		
Silver, Total	98		-		85-115	-		
Zinc, Total	100		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG991257-2								
Mercury, Total	113		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG991143-3 QC Sample: L1710246-01 Client ID: MS Sample												
Iron, Total	0.015J	1	0.995	100		-	-		75-125	-		20
Titanium, Total	0.005J	1	0.966	97		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG991146-3 QC Sample: L1710365-01 Client ID: MS Sample												
Antimony, Total	0.00376J	0.5	0.6019	120		-	-		70-130	-		20
Arsenic, Total	0.00024J	0.12	0.1249	104		-	-		70-130	-		20
Barium, Total	0.0050	2	1.976	98		-	-		70-130	-		20
Beryllium, Total	ND	0.05	0.05194	104		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05781	113		-	-		70-130	-		20
Chromium, Total	0.00048J	0.2	0.1997	100		-	-		70-130	-		20
Copper, Total	0.00907	0.25	0.2590	100		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5307	104		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4895	98		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1310	109		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05055	101		-	-		70-130	-		20
Zinc, Total	0.00529J	0.5	0.5006	100		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG991257-3 QC Sample: L1710094-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00307	**61**	Q	-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG991146-4 QC Sample: L1710365-01 Client ID: DUP Sample						
Antimony, Total	0.00376J	0.00894	mg/l	NC		20
Arsenic, Total	0.00024J	0.00033J	mg/l	NC		20
Beryllium, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.00048J	0.00054J	mg/l	NC		20
Copper, Total	0.00907	0.00869	mg/l	4		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	0.00064J	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.00529J	0.00575J	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG991257-4 QC Sample: L1710094-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222
Lab Number: L1710124
Report Date: 04/13/17

SAMPLE RESULTS

Lab ID: L1710124-01
Client ID: PROCESS EFFLUENT
Sample Location: TECUMSEH - LACKAWANNA
Matrix: Water
Date Collected: 04/03/17 14:30
Date Received: 04/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.683		mg/l	0.010	0.003	2	04/04/17 22:14	04/05/17 14:52	121,4500CN-CE	JO
Nitrogen, Ammonia	35.7		mg/l	1.88	0.562	25	04/05/17 12:45	04/05/17 23:52	121,4500NH3-BH	AT
Sulfate	1600		mg/l	500	68.	50	04/04/17 15:20	04/04/17 15:20	121,4500SO4-E	AW
Phenolics, Total	0.14		mg/l	0.030	0.010	1	04/06/17 15:41	04/07/17 15:41	4,420.1	AW

Project Name: ATP PRE-TREATMENT SYS-EFFLUEN
Project Number: 0071-016-222
Lab Number: L1710124
Report Date: 04/13/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG990530-1										
Sulfate	1.6	J	mg/l	10	1.4	1	04/04/17 15:20	04/04/17 15:20	121,4500SO4-E	AW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG991022-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	04/04/17 20:04	04/05/17 13:42	121,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG991406-1										
Nitrogen, Ammonia	ND		mg/l	0.075	0.022	1	04/05/17 12:45	04/05/17 23:30	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG991815-1										
Phenolics, Total	ND		mg/l	0.030	0.010	1	04/06/17 15:41	04/07/17 15:40	4,420.1	AW

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT

Project Number: 0071-016-222

Lab Number: L1710124

Report Date: 04/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG990530-2								
Sulfate	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG991022-2								
Cyanide, Total	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG991406-2								
Nitrogen, Ammonia	96		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG991815-2								
Phenolics, Total	98		-		70-130	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG990530-4 QC Sample: L1709981-01 Client ID: MS Sample												
Sulfate	96.	200	290	98		-	-		55-147	-		14
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG991022-4 QC Sample: L1710109-01 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.195	98		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG991406-4 QC Sample: L1710369-01 Client ID: MS Sample												
Nitrogen, Ammonia	0.058J	4	3.62	90		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG991815-4 QC Sample: L1710140-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.44	110		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG990530-3 QC Sample: L1709981-01 Client ID: DUP Sample						
Sulfate	96.	99	mg/l	3		14
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG991022-3 QC Sample: L1709736-01 Client ID: DUP Sample						
Cyanide, Total	ND	0.002J	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG991406-3 QC Sample: L1710369-01 Client ID: DUP Sample						
Nitrogen, Ammonia	0.058J	0.051J	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG991815-3 QC Sample: L1710140-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: ATP PRE-TREATMENT SYS-EFFLUENT
Project Number: 0071-016-222

Lab Number: L1710124
Report Date: 04/13/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1710124-01A	Vial Na2S2O3 preserved	A	N/A	4.2	Y	Absent	624(3)
L1710124-01B	Vial Na2S2O3 preserved	A	N/A	4.2	Y	Absent	624(3)
L1710124-01C	Vial Na2S2O3 preserved	A	N/A	4.2	Y	Absent	624(3)
L1710124-01D	Plastic 120ml unpreserved	A	7	4.2	Y	Absent	SO4-4500(28)
L1710124-01E	Plastic 250ml NaOH preserved	A	>12	4.2	Y	Absent	TCN-4500(14)
L1710124-01F	Plastic 500ml H2SO4 preserved	A	<2	4.2	Y	Absent	NH3-4500(28)
L1710124-01G	Plastic 250ml HNO3 preserved	A	<2	4.2	Y	Absent	CD-2008T(180),NI-2008T(180),BE-2008T(180),TI-UI(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),BA-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1710124-01H	Amber 500ml H2SO4 preserved	A	<2	4.2	Y	Absent	TPHENOL-420(28)

*Values in parentheses indicate holding time in days

Project Name:	ATP PRE-TREATMENT SYS-EFFLUENT	**Lab Number:**	L1710124
Project Number:	0071-016-222	**Report Date:**	04/13/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Report Format: DU Report with 'J' Qualifiers

Project Name:	ATP PRE-TREATMENT SYS-EFFLUENT	**Lab Number:**	L1710124
Project Number:	0071-016-222	**Report Date:**	04/13/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	ATP PRE-TREATMENT SYS-EFFLUENT	**Lab Number:**	L1710124
Project Number:	0071-016-222	**Report Date:**	04/13/17

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 4/4/17

ALPHA Job #: L1710124

Client Information
Client: Turnkey Env Restoration
Address: 2558 Hamburg Turnpike
Buffalo, NY, 14218
Phone: 716-856-0599
Fax: 716-856-0583
Email: tforbes@bbchmarkees.com

Project Information
Project Name: ATP pretreatment System - Effluent
Project Location: Tecumseh - Lackawanna
Project #: 0071-016-222
(Use Project name as Project #) ☐
Project Manager: Tom Forbes
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☐ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☑

Other project specific requirements/comments:

Please specify Metals or TAL. Cyanide, Antimony, Arsenic, Barium, Beryllium, Cadmium, Copper, Pb, Hg, Ni, Selenium, Silver, Thallium, Zinc, Fe,

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 624	Metals + Cyanide	Sulfate	NH3	TCN	Phenols			Sample Specific Comments	Total Bottle
10124-01	Process Effluent	4/3/17	1430	W	RLO	✓	✓	✓	✓	✓	✓				
	~~FRP Blank~~			~~W~~	~~RLO~~	✓									

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	P	P	P	A			
Preservative	~~A~~	C	A	D	E	D			

Relinquished By:	Date/Time	Received By:	Date/Time
	4/3/17 1500	Eric Snyder ARL	4/3/17 1645
Eric Snyder ARL	4/3/17 1645		4/4/17 00:40

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ATTACHMENT 2

Flow Meter Calibration Certificate

Cold Spring Environmental

3248 Buffalo Rd., Varysburg, N.Y. 14167
Ph: 716-863-7052

September 23, 2016

Ref: Flow Meter Calibration

Dear Mr. Dubisz

Calibration Date: September 23, 2016
Site location: Pretreatment Building
Equipment Model:Signet GF 8550
Equipment type: Closed Pipe impellor
Equipment S/N: 61009161010
Measuring device: 2 inch pipe
Output type: none
Totalizer multiplier: 1 gallon

Displayed level/flow rate: 0 GPM
Measured Level/flow rate: 0 GPM
Displayed level/flow rate: 39 GPM
Measured Level/flow rate: 39 GPM
Percent Difference: 0%
Adjustment: no
Note: cleaned the impellor, measured the totalizer at 39 GPM and found it to be correct

Please contact me with any questions.

Sincerely, *Jon Wolak*

Jon Wolak

jonwolak@yahoo.com

Strong Advocates, Effective Solutions, Integrated Implementation

October 30, 2017

Ms. Laura Surdej
Erie County Sewer/Southtown's Sewage Treatment Plant
2060 Lehigh St
Lackawanna, NY 14218

Re: ECSD No.6 Discharge Permit LA-03 –Semi-Annual Report (May 2017 – October 2017)
Lackawanna, New York

Dear Ms. Surdej:

TurnKey Environmental Restoration, LLC (TurnKey) has prepared this correspondence on behalf of our client, Tecumseh Redevelopment Inc., in accordance with Erie County Sewer District No. 6 (ECSD No. 6), Permit No. LA-03 (Rev. June 2015). As required by the permit, this semi-annual report summarizes flow, pH and compliance sample results for the report period from May 1, 2017 through October 2017.

Turnkey personnel recorded totalizer (total gallons) and pH readings weekly during the reporting period. Table 1 summarizes the total volume (gallons), calculated daily flow (gallons per day) and pH readings.

On October 23, 2017 TurnKey personnel collected an effluent (outfall) water sample and submitted the sample under chain-of-custody command to Alpha Analytical for laboratory analysis in accordance with the discharge permit. Table 2 summarizes the analytical results; Attachment 1 contains the Laboratory Analytical Report. All parameters meet corresponding permitted discharge limits.

As of October 23, 2017 a total of 7,861,610 gallons of water has been pre-treated and discharged to the ECSD No.6 collection and conveyance system. The calculated daily flow for the subject reporting period has ranged between 1429 and 9,361 GPD, well below permitted flows of up to 45,000 GPD. The pH readings have been between 5.74 and 6.55 standard units, with a permitted operating range of 5 and 12 standard units. Please note that the flow meter was subjected to annual calibration in July 2017 by a third party. The calibration certificate is presented as Attachment 2.

Please contact us if you have any questions or require additional information.

Sincerely,
TurnKey Environmental Restoration, LLC

Thomas H. Forbes, P.E.
Principal Engineer

File: 0071-017-222

TABLES

TABLE 1

SUMMARY OF EFFLUENT FLOW AND pH

ATP GROUNDWATER PRE-TREATMENT SYSTEM
Tecumseh Redevelopment, Inc.
Lackawanna, New York

Date	Totalizer (gallons)	Total Gallons this event	Calculated GPD (gallons/day)	pH
Permit Limits:			**45,000 GPD**	**5-12**
1/6/17	6,488,665	70,248	8,781	5.51
1/12/17	6,519,089	30,424	5,071	5.42
1/20/17	6,570,992	51,903	6,488	5.41
1/27/17	6,619,955	48,963	6,995	5.76
2/2/17	6,666,866	95,874	7,990	5.35
2/9/17	6,715,858	48,992	6,999	5.61
2/17/17	6,770,211	54,353	6,794	5.68
2/24/17	6,814,425	44,214	6,316	5.58
3/3/17	6,862,081	47,656	5,295	5.75
3/9/17	6,902,193	40,112	6,685	5.91
3/14/17	6,938,135	35,942	7,188	5.39
3/24/17	7,004,969	66,834	6,683	5.85
3/30/17	7,036,278	31,309	5,218	5.97
4/7/17	7,085,111	48,833	6,976	5.92
4/13/17	7,130,640	45,529	7,588	5.99
4/21/17	7,198,953	68,313	8,539	5.96
4/27/17	7,241,496	42,543	7,091	5.91
5/5/17	7,307,025	65,529	8,191	5.74
5/11/17	7,356,656	49,631	8,272	6.50
5/19/17	7,407,757	51,101	6,388	6.65
5/26/17	7,449,959	42,202	6,029	6.61
6/2/17	7,475,004	25,045	4,174	6.19
6/8/17	7,495,371	20,367	3,395	6.15
6/15/17	7,512,866	17,495	2,499	5.90
6/22/17	7,530,920	18,054	2,579	6.02
6/29/17	7,556,111	25,191	3,599	5.87
7/7/17	7,574,854	18,743	2,343	5.97
7/13/17	7,609,753	34,899	5,817	6.13
7/20/17	7,675,279	65,526	9,361	6.26
7/25/17	7,686,017	10,738	2,148	6.36
8/1/17	7,708,779	22,762	3,794	5.79
8/8/17	7,719,376	10,597	1,514	6.30
8/17/17	7,732,233	12,857	1,429	6.20
8/23/17	7,741,061	8,828	1,471	6.29
8/31/17	7,755,271	14,210	1,776	6.31
9/8/17	7,767,804	12,533	1,567	6.33
9/13/17	7,775,980	8,176	1,635	6.16

TABLE 1

SUMMARY OF EFFLUENT FLOW AND pH

ATP GROUNDWATER PRE-TREATMENT SYSTEM
Tecumseh Redevelopment, Inc.
Lackawanna, New York

Date	Totalizer (gallons)	Total Gallons this event	Calculated GPD (gallons/day)	pH
9/19/17	7,785,358	9,378	1,563	6.22
9/26/17	7,795,760	10,402	1,486	6.18
10/4/17	7,815,162	19,402	2,425	6.19
10/10/17	7,832,729	17,567	2,928	6.23
10/17/17	7,846,496	13,767	1,967	6.34
10/23/17	7,861,610	15,114	2,519	6.11

TABLE 2

SUMMARY OF EFFLUENT WATER ANALYTICAL DATA

ATP GROUNDWATER PRE-TREATMENT SYSTEM
Tecumseh Redevelopment, Inc.
Lackawanna, New York

Parameter [1]	Effluent 10/23/17	Discharge Permit Limitations [2]
Volatile Organic Compounds (VOCs - Method 624) - mg/L		
Benzene	0.0017	--
TOTAL VOCs (mg/L)	**0.0017**	--
Semi-Volatile Organic Compounds (SVOCs - Method 625) - mg/L		
Naphthalene	0.0012 J	--
Acenaphthylene	0.0084	--
2,4-Dimethylphenol	0.0012	--
Phenol	0.097	--
TOTAL SVOCs (mg/L)	**0.1078 J**	--
Polychlorinated Biphenyls (PCBs) (Method 608)- mg/L		
All Compounds Non-Detect		--
Organochlorine Pesticide Compounds (Method 608) - mg/L		
All Compounds Non-Detect		--
Metal Compounds (Method 200.7 Rev 4.4) - mg/L [3]		
Antimony	0.00045 J	**Monitor**
Arsenic	0.00573	**Monitor**
Barium	0.03076	**Monitor**
Beryllium	0.00066 J	**Monitor**
Chromium	0.01247	**Monitor**
Iron	237	**Monitor**
Nickel	0.0044	**Monitor**
Selenium	0.005	**Monitor**
Titanium	0.005 J	**Monitor**
Zinc	0.00703 J	**Monitor**
General Chemistry - mg/L		
Cyanide, Total	2.35	**Monitor**
Ammonia (as N)	36.3	**Monitor**
Phenolics, Total Recoverable	0.33	**Monitor**
Sulfate	2200	**Monitor**
Oil & Grease	ND<5.2	**Monitor**
pH	5.9	**5-12**
Total Toxic Organic Pollutants (TTO) [4]	0.11	**2.13**

Notes:

1. Only those parameters detected are presented in this table; all others were reported as non-detect.
2. Per the June 2015 Erie County Sewer District No. 6 Discharge Permit LA-03 (Revised)
3. Metals include Ag, As, Ba, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Ti, and Zn
4. TTO is determined by totaling the reported compound concentrations detected via EPA Methods 608, 624, & 625.

Definitions:

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

ATTACHMENT 1

Laboratory Data

ANALYTICAL REPORT

Lab Number:	L1738414
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Tom Forbes
Phone:	(716) 856-0599
Project Name:	ATP PRE-TREATMENT OM&M
Project Number:	T0071-017-222
Report Date:	10/30/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1738414-01	EFFLUENT	WATER	1951 HAMBURG TURNPIKE	10/23/17 09:30	10/23/17
L1738414-02	TRIP BLANK	WATER	1951 HAMBURG TURNPIKE	10/23/17 00:00	10/23/17

Project Name:	ATP PRE-TREATMENT OM&M	**Lab Number:**	L1738414
Project Number:	T0071-017-222	**Report Date:**	10/30/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	ATP PRE-TREATMENT OM&M	**Lab Number:**	L1738414
Project Number:	T0071-017-222	**Report Date:**	10/30/17

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The element list for metals analysis was specified by the client.

A Trip Blank was received in the laboratory, but not listed on the Chain of Custody, and was not analyzed.

Volatile Organics by Method 624

The WG1055168-9 LCS recoveries for chloroform (115%), 1,1,1-trichloroethane (120%), trans-1,3-dichloropropene (110%) and vinyl chloride (125%), associated with L1738414-01, are outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

The WG1055168-9 LCS recovery, associated with L1738414-01, is above the acceptance criteria for acrolein (162%); however, the associated sample is non-detect to the RL for this target analyte. The results of the original analysis are reported.

PCBs

WG1056035: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was not available for reporting; therefore, the Matrix Spike and Laboratory Duplicate results could not be reported.

Total Metals

The WG1056013-3 MS recovery for iron (0%), performed on L1738414-01, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps Melissa Cripps

Title: Technical Director/Representative Date: 10/30/17

ORGANICS

VOLATILES

Project Name: ATP PRE-TREATMENT OM&M **Lab Number:** L1738414

Project Number: T0071-017-222 **Report Date:** 10/30/17

SAMPLE RESULTS

Lab ID: L1738414-01
Client ID: EFFLUENT
Sample Location: 1951 HAMBURG TURNPIKE

Date Collected: 10/23/17 09:30
Date Received: 10/23/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 5,624
Analytical Date: 10/24/17 16:32
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	5.0	0.62	1
1,1-Dichloroethane	ND		ug/l	1.5	0.29	1
Chloroform	ND		ug/l	1.5	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.32	1
1,2-Dichloropropane	ND		ug/l	3.5	0.27	1
Dibromochloromethane	ND		ug/l	1.0	0.33	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.24	1
2-Chloroethylvinyl ether	ND		ug/l	10	0.54	1
Tetrachloroethene	ND		ug/l	1.5	0.33	1
Chlorobenzene	ND		ug/l	3.5	0.30	1
1,2-Dichloroethane	ND		ug/l	1.5	0.32	1
1,1,1-Trichloroethane	ND		ug/l	2.0	0.30	1
Bromodichloromethane	ND		ug/l	1.0	0.25	1
trans-1,3-Dichloropropene	ND		ug/l	1.5	0.26	1
cis-1,3-Dichloropropene	ND		ug/l	1.5	0.32	1
Bromoform	ND		ug/l	1.0	0.32	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.22	1
Benzene	17		ug/l	1.0	0.23	1
Toluene	ND		ug/l	1.0	0.32	1
Ethylbenzene	ND		ug/l	1.0	0.31	1
Chloromethane	ND		ug/l	5.0	0.64	1
Bromomethane	ND		ug/l	5.0	1.3	1
Vinyl chloride	ND		ug/l	1.0	0.30	1
Chloroethane	ND		ug/l	2.0	0.26	1
1,1-Dichloroethene	ND		ug/l	1.0	0.37	1
trans-1,2-Dichloroethene	ND		ug/l	1.5	0.33	1
Trichloroethene	ND		ug/l	1.0	0.33	1
1,2-Dichlorobenzene	ND		ug/l	5.0	0.26	1
1,3-Dichlorobenzene	ND		ug/l	5.0	0.25	1
1,4-Dichlorobenzene	ND		ug/l	5.0	0.26	1

Project Name: ATP PRE-TREATMENT OM&M **Lab Number:** L1738414

Project Number: T0071-017-222 **Report Date:** 10/30/17

SAMPLE RESULTS

Lab ID: L1738414-01 Date Collected: 10/23/17 09:30

Client ID: EFFLUENT Date Received: 10/23/17

Sample Location: 1951 HAMBURG TURNPIKE Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Acrolein[1]	ND		ug/l	8.0	1.3	1
Acrylonitrile[1]	ND		ug/l	10	0.97	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	108		80-120
Fluorobenzene	104		80-120
4-Bromofluorobenzene	100		80-120

Project Name: ATP PRE-TREATMENT OM&M **Lab Number:** L1738414

Project Number: T0071-017-222 **Report Date:** 10/30/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,624
Analytical Date: 10/24/17 09:05
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1055168-10					
Methylene chloride	ND		ug/l	5.0	0.62
1,1-Dichloroethane	ND		ug/l	1.5	0.29
Chloroform	ND		ug/l	1.5	0.22
Carbon tetrachloride	ND		ug/l	1.0	0.32
1,2-Dichloropropane	ND		ug/l	3.5	0.27
Dibromochloromethane	ND		ug/l	1.0	0.33
1,1,2-Trichloroethane	ND		ug/l	1.5	0.24
2-Chloroethylvinyl ether	ND		ug/l	10	0.54
Tetrachloroethene	ND		ug/l	1.5	0.33
Chlorobenzene	ND		ug/l	3.5	0.30
1,2-Dichloroethane	ND		ug/l	1.5	0.32
1,1,1-Trichloroethane	ND		ug/l	2.0	0.30
Bromodichloromethane	ND		ug/l	1.0	0.25
trans-1,3-Dichloropropene	ND		ug/l	1.5	0.26
cis-1,3-Dichloropropene	ND		ug/l	1.5	0.32
Bromoform	ND		ug/l	1.0	0.32
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.22
Benzene	ND		ug/l	1.0	0.23
Toluene	ND		ug/l	1.0	0.32
Ethylbenzene	ND		ug/l	1.0	0.31
Chloromethane	ND		ug/l	5.0	0.64
Bromomethane	ND		ug/l	5.0	1.3
Vinyl chloride	ND		ug/l	1.0	0.30
Chloroethane	ND		ug/l	2.0	0.26
1,1-Dichloroethene	ND		ug/l	1.0	0.37
trans-1,2-Dichloroethene	ND		ug/l	1.5	0.33
Trichloroethene	ND		ug/l	1.0	0.33
1,2-Dichlorobenzene	ND		ug/l	5.0	0.26
1,3-Dichlorobenzene	ND		ug/l	5.0	0.25

Project Name: ATP PRE-TREATMENT OM&M **Lab Number:** L1738414

Project Number: T0071-017-222 **Report Date:** 10/30/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,624
Analytical Date: 10/24/17 09:05
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1055168-10					
1,4-Dichlorobenzene	ND		ug/l	5.0	0.26
Acrolein[1]	ND		ug/l	8.0	1.3
Acrylonitrile[1]	ND		ug/l	10	0.97

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	105		80-120
Fluorobenzene	103		80-120
4-Bromofluorobenzene	98		80-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1055168-9								
Methylene chloride	105		-		70-111	-		30
1,1-Dichloroethane	110		-		78-116	-		30
Chloroform	**115**	Q	-		86-111	-		30
Carbon tetrachloride	95		-		60-112	-		30
1,2-Dichloropropane	100		-		83-113	-		30
Dibromochloromethane	110		-		58-129	-		30
1,1,2-Trichloroethane	115		-		80-118	-		30
2-Chloroethylvinyl ether	100		-		69-124	-		30
Tetrachloroethene	125		-		80-126	-		30
Chlorobenzene	100		-		80-126	-		30
1,2-Dichloroethane	110		-		82-110	-		30
1,1,1-Trichloroethane	**120**	Q	-		72-109	-		30
Bromodichloromethane	115		-		71-120	-		30
trans-1,3-Dichloropropene	**110**	Q	-		73-106	-		30
cis-1,3-Dichloropropene	110		-		78-111	-		30
Bromoform	110		-		45-131	-		30
1,1,2,2-Tetrachloroethane	100		-		81-122	-		30
Benzene	110		-		84-116	-		30
Toluene	115		-		83-121	-		30
Ethylbenzene	105		-		84-123	-		30
Chloromethane	100		-		70-144	-		30
Bromomethane	90		-		63-141	-		30
Vinyl chloride	**125**	Q	-		56-118	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1055168-9								
Chloroethane	110		-		74-130	-		30
1,1-Dichloroethene	110		-		77-116	-		30
trans-1,2-Dichloroethene	110		-		81-121	-		30
Trichloroethene	110		-		84-118	-		30
1,2-Dichlorobenzene	95		-		78-128	-		30
1,3-Dichlorobenzene	95		-		77-125	-		30
1,4-Dichlorobenzene	100		-		77-125	-		30
Acrolein[1]	**162**	Q	-		40-160	-		30
Acrylonitrile[1]	115		-		66-123	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	106				80-120
Fluorobenzene	102				80-120
4-Bromofluorobenzene	97				80-120

Matrix Spike Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055168-6 QC Sample: L1738198-02 Client ID: MS Sample												
Methylene chloride	ND	200	210	105		-	-		70-111	-		30
1,1-Dichloroethane	ND	200	220	110		-	-		78-116	-		30
Chloroform	ND	200	230	**115**	Q	-	-		86-111	-		30
Carbon tetrachloride	ND	200	200	100		-	-		60-112	-		30
1,2-Dichloropropane	ND	200	200	100		-	-		83-113	-		30
Dibromochloromethane	ND	200	210	105		-	-		58-129	-		30
1,1,2-Trichloroethane	ND	200	210	105		-	-		80-118	-		30
2-Chloroethylvinyl ether	ND	200	180	90		-	-		69-124	-		30
Tetrachloroethene	ND	200	200	100		-	-		80-126	-		30
Chlorobenzene	ND	200	190	95		-	-		80-126	-		30
Trichlorofluoromethane	ND	200	210	105		-	-		83-128	-		30
1,2-Dichloroethane	ND	200	220	110		-	-		82-110	-		30
1,1,1-Trichloroethane	ND	200	230	**115**	Q	-	-		72-109	-		30
Bromodichloromethane	ND	200	220	110		-	-		71-120	-		30
trans-1,3-Dichloropropene	ND	200	190	95		-	-		73-106	-		30
cis-1,3-Dichloropropene	ND	200	160	80		-	-		78-111	-		30
Bromoform	ND	200	210	105		-	-		45-131	-		30
1,1,2,2-Tetrachloroethane	ND	200	180	90		-	-		81-122	-		30
Benzene	ND	200	220	110		-	-		84-116	-		30
Toluene	ND	200	210	105		-	-		83-121	-		30
Ethylbenzene	ND	200	190	95		-	-		84-123	-		30
Chloromethane	ND	200	210	105		-	-		70-144	-		30
Bromomethane	ND	200	120	**60**	Q	-	-		63-141	-		30
Vinyl chloride	ND	200	230	115		-	-		56-118	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055168-6 QC Sample: L1738198-02 Client ID: MS Sample												
Chloroethane	ND	200	220	110		-	-		74-130	-		30
1,1-Dichloroethene	ND	200	210	105		-	-		77-116	-		30
trans-1,2-Dichloroethene	ND	200	210	105		-	-		81-121	-		30
cis-1,2-Dichloroethene[1]	ND	200	220	110		-	-		85-110	-		30
Trichloroethene	ND	200	200	100		-	-		84-118	-		30
1,2-Dichlorobenzene	ND	200	150	**75**	Q	-	-		78-128	-		30
1,3-Dichlorobenzene	ND	200	160	80		-	-		77-125	-		30
1,4-Dichlorobenzene	ND	200	160	80		-	-		77-125	-		30
p/m-Xylene[1]	ND	400	380	95		-	-		81-121	-		30
o-Xylene[1]	ND	200	190	95		-	-		81-124	-		30
Styrene[1]	ND	200	200	100		-	-		84-133	-		30
Acetone[1]	ND	500	570	114		-	-		40-160	-		30
Carbon disulfide[1]	ND	200	210	105		-	-		54-134	-		30
2-Butanone[1]	ND	500	510	102		-	-		57-116	-		30
Vinyl acetate[1]	ND	400	470	118		-	-		40-160	-		30
4-Methyl-2-pentanone[1]	ND	500	520	104		-	-		79-125	-		30
2-Hexanone[1]	ND	500	510	102		-	-		78-120	-		30
Acrolein[1]	ND	400	550	138		-	-		40-160	-		30
Acrylonitrile[1]	ND	400	420	105		-	-		66-123	-		30
Dibromomethane[1]	ND	200	210	105		-	-		65-126	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055168-6 QC Sample: L1738198-02 Client ID: MS Sample												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
4-Bromofluorobenzene	97				80-120
Fluorobenzene	101				80-120
Pentafluorobenzene	105				80-120

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055168-5 QC Sample: L1738198-02 Client ID: DUP Sample						
Methylene chloride	ND	ND	ug/l	NC		30
1,1-Dichloroethane	ND	ND	ug/l	NC		30
Chloroform	ND	ND	ug/l	NC		30
Carbon tetrachloride	ND	ND	ug/l	NC		30
1,2-Dichloropropane	ND	ND	ug/l	NC		30
Dibromochloromethane	ND	ND	ug/l	NC		30
1,1,2-Trichloroethane	ND	ND	ug/l	NC		30
2-Chloroethylvinyl ether	ND	ND	ug/l	NC		30
Tetrachloroethene	ND	ND	ug/l	NC		30
Chlorobenzene	ND	ND	ug/l	NC		30
Trichlorofluoromethane	ND	ND	ug/l	NC		30
1,2-Dichloroethane	ND	ND	ug/l	NC		30
1,1,1-Trichloroethane	ND	ND	ug/l	NC		30
Bromodichloromethane	ND	ND	ug/l	NC		30
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		30
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		30
Bromoform	ND	ND	ug/l	NC		30
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC		30
Benzene	ND	ND	ug/l	NC		30
Toluene	ND	ND	ug/l	NC		30
Ethylbenzene	ND	ND	ug/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055168-5 QC Sample: L1738198-02 Client ID: DUP Sample						
Chloromethane	ND	ND	ug/l	NC		30
Bromomethane	ND	ND	ug/l	NC		30
Vinyl chloride	ND	ND	ug/l	NC		30
Chloroethane	ND	ND	ug/l	NC		30
1,1-Dichloroethene	ND	ND	ug/l	NC		30
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		30
cis-1,2-Dichloroethene[1]	ND	ND	ug/l	NC		30
Trichloroethene	ND	ND	ug/l	NC		30
1,2-Dichlorobenzene	ND	ND	ug/l	NC		30
1,3-Dichlorobenzene	ND	ND	ug/l	NC		30
1,4-Dichlorobenzene	ND	ND	ug/l	NC		30
p/m-Xylene[1]	ND	ND	ug/l	NC		30
o-Xylene[1]	ND	ND	ug/l	NC		30
Xylene (Total)[1]	ND	ND	ug/l	NC		30
Styrene[1]	ND	ND	ug/l	NC		30
Acetone[1]	ND	ND	ug/l	NC		30
Carbon disulfide[1]	ND	ND	ug/l	NC		30
2-Butanone[1]	ND	ND	ug/l	NC		30
Vinyl acetate[1]	ND	ND	ug/l	NC		30
4-Methyl-2-pentanone[1]	ND	ND	ug/l	NC		30
2-Hexanone[1]	ND	ND	ug/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055168-5 QC Sample: L1738198-02 Client ID: DUP Sample						
Acrolein[1]	ND	ND	ug/l	NC		30
Acrylonitrile[1]	ND	ND	ug/l	NC		30
Dibromomethane[1]	ND	ND	ug/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	105		106		80-120
Fluorobenzene	101		103		80-120
4-Bromofluorobenzene	99		98		80-120

SEMIVOLATILES

Project Name: ATP PRE-TREATMENT OM&M
Lab Number: L1738414
Project Number: T0071-017-222
Report Date: 10/30/17

SAMPLE RESULTS

Lab ID: L1738414-01
Client ID: EFFLUENT
Sample Location: 1951 HAMBURG TURNPIKE

Matrix: Water
Analytical Method: 5,625
Analytical Date: 10/27/17 06:57
Analyst: SZ

Date Collected: 10/23/17 09:30
Date Received: 10/23/17
Field Prep: Not Specified
Extraction Method: EPA 625
Extraction Date: 10/25/17 00:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	0.72	1
Benzidine[1]	ND		ug/l	20	8.3	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.91	1
Hexachlorobenzene	ND		ug/l	2.0	0.67	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.55	1
2-Chloronaphthalene	ND		ug/l	2.0	0.79	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.3	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.88	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Azobenzene[1]	ND		ug/l	2.0	0.61	1
Fluoranthene	ND		ug/l	2.0	0.64	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.68	1
4-Bromophenyl phenyl ether[1]	ND		ug/l	2.0	0.78	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.54	1
Hexachlorobutadiene	ND		ug/l	2.0	0.67	1
Hexachlorocyclopentadiene[1]	ND		ug/l	10	3.7	1
Hexachloroethane	ND		ug/l	2.0	0.74	1
Isophorone	ND		ug/l	5.0	0.79	1
Naphthalene	1.2	J	ug/l	2.0	0.81	1
Nitrobenzene	ND		ug/l	2.0	0.68	1
NDPA/DPA[1]	ND		ug/l	2.0	0.73	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.54	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.3	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.1	1
Di-n-butylphthalate	ND		ug/l	5.0	0.97	1
Di-n-octylphthalate	ND		ug/l	5.0	0.99	1
Diethyl phthalate	ND		ug/l	5.0	0.73	1
Dimethyl phthalate	ND		ug/l	5.0	0.70	1
Benzo(a)anthracene	ND		ug/l	2.0	0.68	1

Project Name: ATP PRE-TREATMENT OM&M **Lab Number:** L1738414

Project Number: T0071-017-222 **Report Date:** 10/30/17

SAMPLE RESULTS

Lab ID: L1738414-01 Date Collected: 10/23/17 09:30

Client ID: EFFLUENT Date Received: 10/23/17

Sample Location: 1951 HAMBURG TURNPIKE Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)pyrene	ND		ug/l	2.0	0.63	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.65	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.68	1
Chrysene	ND		ug/l	2.0	0.68	1
Acenaphthylene	8.4		ug/l	2.0	0.63	1
Anthracene	ND		ug/l	2.0	0.69	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.71	1
Fluorene	ND		ug/l	2.0	0.66	1
Phenanthrene	ND		ug/l	2.0	0.66	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.68	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.73	1
Pyrene	ND		ug/l	2.0	0.62	1
n-Nitrosodimethylamine[1]	ND		ug/l	2.0	0.78	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.80	1
p-Chloro-m-cresol[1]	ND		ug/l	2.0	0.66	1
2-Chlorophenol	ND		ug/l	2.0	0.62	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.78	1
2,4-Dimethylphenol	12		ug/l	5.0	1.4	1
2-Nitrophenol	ND		ug/l	5.0	1.3	1
4-Nitrophenol	ND		ug/l	10	1.1	1
2,4-Dinitrophenol	ND		ug/l	20	8.0	1
4,6-Dinitro-o-cresol[1]	ND		ug/l	10	1.9	1
Pentachlorophenol	ND		ug/l	5.0	2.8	1
Phenol	97		ug/l	5.0	0.74	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	44		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	76		15-120
2,4,6-Tribromophenol	106		10-120
4-Terphenyl-d14	87		33-120

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222
Lab Number: L1738414
Report Date: 10/30/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,625
Analytical Date: 10/26/17 22:37
Analyst: SZ

Extraction Method: EPA 625
Extraction Date: 10/25/17 00:00

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1055923-1					
Acenaphthene	ND		ug/l	2.0	0.72
Benzidine[1]	ND		ug/l	20	8.3
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.91
Hexachlorobenzene	ND		ug/l	2.0	0.67
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.55
2-Chloronaphthalene	ND		ug/l	2.0	0.79
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.3
2,4-Dinitrotoluene	ND		ug/l	5.0	0.88
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1
Azobenzene[1]	ND		ug/l	2.0	0.61
Fluoranthene	ND		ug/l	2.0	0.64
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.68
4-Bromophenyl phenyl ether[1]	ND		ug/l	2.0	0.78
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.54
Hexachlorobutadiene	ND		ug/l	2.0	0.67
Hexachlorocyclopentadiene[1]	ND		ug/l	10	3.7
Hexachloroethane	ND		ug/l	2.0	0.74
Isophorone	ND		ug/l	5.0	0.79
Naphthalene	ND		ug/l	2.0	0.81
Nitrobenzene	ND		ug/l	2.0	0.68
NDPA/DPA[1]	ND		ug/l	2.0	0.73
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.54
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.3
Butyl benzyl phthalate	ND		ug/l	5.0	1.1
Di-n-butylphthalate	ND		ug/l	5.0	0.97
Di-n-octylphthalate	ND		ug/l	5.0	0.99
Diethyl phthalate	ND		ug/l	5.0	0.73
Dimethyl phthalate	ND		ug/l	5.0	0.70

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222
Lab Number: L1738414
Report Date: 10/30/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,625
Analytical Date: 10/26/17 22:37
Analyst: SZ

Extraction Method: EPA 625
Extraction Date: 10/25/17 00:00

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1055923-1					
Benzo(a)anthracene	ND		ug/l	2.0	0.68
Benzo(a)pyrene	ND		ug/l	2.0	0.63
Benzo(b)fluoranthene	ND		ug/l	2.0	0.65
Benzo(k)fluoranthene	ND		ug/l	2.0	0.68
Chrysene	ND		ug/l	2.0	0.68
Acenaphthylene	ND		ug/l	2.0	0.63
Anthracene	ND		ug/l	2.0	0.69
Benzo(ghi)perylene	ND		ug/l	2.0	0.71
Fluorene	ND		ug/l	2.0	0.66
Phenanthrene	ND		ug/l	2.0	0.66
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.68
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.73
Pyrene	ND		ug/l	2.0	0.62
n-Nitrosodimethylamine[1]	ND		ug/l	2.0	0.78
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.80
p-Chloro-m-cresol[1]	ND		ug/l	2.0	0.66
2-Chlorophenol	ND		ug/l	2.0	0.62
2,4-Dichlorophenol	ND		ug/l	5.0	0.78
2,4-Dimethylphenol	ND		ug/l	5.0	1.4
2-Nitrophenol	ND		ug/l	5.0	1.3
4-Nitrophenol	ND		ug/l	10	1.1
2,4-Dinitrophenol	ND		ug/l	20	8.0
4,6-Dinitro-o-cresol[1]	ND		ug/l	10	1.9
Pentachlorophenol	ND		ug/l	5.0	2.8
Phenol	ND		ug/l	5.0	0.74

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222
Lab Number: L1738414
Report Date: 10/30/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,625
Analytical Date: 10/26/17 22:37
Analyst: SZ

Extraction Method: EPA 625
Extraction Date: 10/25/17 00:00

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1055923-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	35		21-120
Phenol-d6	24		10-120
Nitrobenzene-d5	54		23-120
2-Fluorobiphenyl	57		15-120
2,4,6-Tribromophenol	74		10-120
4-Terphenyl-d14	91		33-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1055923-2								
Acenaphthene	96		-		47-145	-		30
1,2,4-Trichlorobenzene	67		-		44-142	-		30
Hexachlorobenzene	103		-		1-152	-		30
Bis(2-chloroethyl)ether	91		-		12-158	-		30
2-Chloronaphthalene	86		-		60-118	-		30
3,3'-Dichlorobenzidine	42		-		1-262	-		30
2,4-Dinitrotoluene	131		-		39-139	-		30
2,6-Dinitrotoluene	109		-		50-158	-		30
Fluoranthene	105		-		26-137	-		30
4-Chlorophenyl phenyl ether	101		-		25-158	-		30
4-Bromophenyl phenyl ether[1]	101		-		53-127	-		30
Bis(2-chloroisopropyl)ether	104		-		36-166	-		30
Bis(2-chloroethoxy)methane	95		-		33-184	-		30
Hexachlorobutadiene	67		-		24-116	-		30
Hexachloroethane	65		-		40-113	-		30
Isophorone	102		-		21-196	-		30
Naphthalene	80		-		21-133	-		30
Nitrobenzene	106		-		35-180	-		30
n-Nitrosodi-n-propylamine	101		-		1-230	-		30
Bis(2-Ethylhexyl)phthalate	120		-		8-158	-		30
Butyl benzyl phthalate	115		-		1-152	-		30
Di-n-butylphthalate	111		-		1-118	-		30
Di-n-octylphthalate	123		-		4-146	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1055923-2								
Diethyl phthalate	109		-		1-114	-		30
Dimethyl phthalate	101		-		1-112	-		30
Benzo(a)anthracene	114		-		33-143	-		30
Benzo(a)pyrene	113		-		17-163	-		30
Benzo(b)fluoranthene	110		-		24-159	-		30
Benzo(k)fluoranthene	114		-		11-162	-		30
Chrysene	109		-		17-168	-		30
Acenaphthylene	93		-		33-145	-		30
Anthracene	103		-		27-133	-		30
Benzo(ghi)perylene	101		-		1-219	-		30
Fluorene	102		-		59-121	-		30
Phenanthrene	96		-		54-120	-		30
Dibenzo(a,h)anthracene	105		-		1-227	-		30
Indeno(1,2,3-cd)Pyrene	100		-		1-171	-		30
Pyrene	101		-		52-115	-		30
2,4,6-Trichlorophenol	107		-		37-144	-		30
P-Chloro-M-Cresol[1]	106		-		22-147	-		30
2-Chlorophenol	89		-		23-134	-		30
2,4-Dichlorophenol	92		-		39-135	-		30
2,4-Dimethylphenol	98		-		32-119	-		30
2-Nitrophenol	104		-		29-182	-		30
4-Nitrophenol	85		-		1-132	-		30
2,4-Dinitrophenol	87		-		1-191	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1055923-2								
4,6-Dinitro-o-cresol[1]	124		-		1-181	-		30
Pentachlorophenol	90		-		14-176	-		30
Phenol	56		-		5-112	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	55				21-120
Phenol-d6	43				10-120
Nitrobenzene-d5	94				23-120
2-Fluorobiphenyl	85				15-120
2,4,6-Tribromophenol	107				10-120
4-Terphenyl-d14	94				33-120

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055923-3 QC Sample: L1700010-117 Client ID: MS Sample												
Acenaphthene	ND	40	36	90		-	-		47-145	-		30
Benzidine[1]	ND	40	15J	38		-	-		1-70	-		30
1,2,4-Trichlorobenzene	ND	40	26	65		-	-		44-142	-		30
Hexachlorobenzene	ND	40	36	90		-	-		1-152	-		30
Bis(2-chloroethyl)ether	ND	40	33	83		-	-		12-158	-		30
2-Chloronaphthalene	ND	40	34	85		-	-		60-118	-		30
3,3'-Dichlorobenzidine	ND	80	32	40		-	-		1-262	-		30
2,4-Dinitrotoluene	ND	40	48	120		-	-		39-139	-		30
2,6-Dinitrotoluene	ND	40	44	110		-	-		50-158	-		30
Azobenzene[1]	ND	40	38	95		-	-		44-115	-		30
Fluoranthene	ND	40	40	100		-	-		26-137	-		30
4-Chlorophenyl phenyl ether	ND	40	37	93		-	-		25-158	-		30
4-Bromophenyl phenyl ether[1]	ND	40	35	88		-	-		53-127	-		30
Bis(2-chloroisopropyl)ether	ND	40	35	88		-	-		36-166	-		30
Bis(2-chloroethoxy)methane	ND	40	38	95		-	-		33-184	-		30
Hexachlorobutadiene	ND	40	26	65		-	-		24-116	-		30
Hexachlorocyclopentadiene[1]	ND	40	20	50		-	-		7-118	-		30
Hexachloroethane	ND	40	22	55		-	-		40-113	-		30
Isophorone	ND	40	37	93		-	-		21-196	-		30
Naphthalene	ND	40	31	78		-	-		21-133	-		30
Nitrobenzene	ND	40	38	95		-	-		35-180	-		30
NitrosoDiPhenylAmine(NDPA)/DPA[1]	ND	40	38	95		-	-		45-112	-		30
n-Nitrosodi-n-propylamine	ND	40	36	90		-	-		1-230	-		30
Bis(2-Ethylhexyl)phthalate	ND	40	47	120		-	-		8-158	-		30

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055923-3 QC Sample: L1700010-117 Client ID: MS Sample												
Butyl benzyl phthalate	ND	40	43	110		-	-		1-152	-		30
Di-n-butylphthalate	ND	40	42	110		-	-		1-118	-		30
Di-n-octylphthalate	ND	40	47	120		-	-		4-146	-		30
Diethyl phthalate	ND	40	40	100		-	-		1-114	-		30
Dimethyl phthalate	ND	40	40	100		-	-		1-112	-		30
Benzo(a)anthracene	ND	40	43	110		-	-		33-143	-		30
Benzo(a)pyrene	ND	40	42	110		-	-		17-163	-		30
Benzo(b)fluoranthene	ND	40	42	110		-	-		24-159	-		30
Benzo(k)fluoranthene	ND	40	43	110		-	-		11-162	-		30
Chrysene	ND	40	42	110		-	-		17-168	-		30
Acenaphthylene	ND	40	38	95		-	-		33-145	-		30
Anthracene	ND	40	38	95		-	-		27-133	-		30
Benzo(ghi)perylene	ND	40	38	95		-	-		1-219	-		30
Fluorene	ND	40	37	93		-	-		59-121	-		30
Phenanthrene	ND	40	36	90		-	-		54-120	-		30
Dibenzo(a,h)anthracene	ND	40	39	98		-	-		1-227	-		30
Indeno(1,2,3-cd)Pyrene	ND	40	38	95		-	-		1-171	-		30
Pyrene	ND	40	38	95		-	-		52-115	-		30
Biphenyl[1]	ND	40	31	78		-	-		43-112	-		30
Aniline[1]	ND	40	21	53		-	-		1-75	-		30
4-Chloroaniline[1]	ND	40	30	75		-	-		10-100	-		30
1-Methylnaphthalene[1]	ND	40	38	95		-	-		41-115	-		30
2-Nitroaniline[1]	ND	40	46	120		-	-		43-131	-		30
3-Nitroaniline[1]	ND	40	35	88		-	-		27-98	-		30

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055923-3 QC Sample: L1700010-117 Client ID: MS Sample												
4-Nitroaniline[1]	ND	40	40	100		-	-		41-112	-		30
Dibenzofuran[1]	ND	40	37	93		-	-		23-126	-		30
2-Methylnaphthalene[1]	ND	40	32	80		-	-		40-109	-		30
Acetophenone[1]	ND	40	30	75		-	-		46-113	-		30
n-Nitrosodimethylamine[1]	ND	40	17	43		-	-		15-68	-		30
2,4,6-Trichlorophenol	ND	40	43	110		-	-		37-144	-		30
P-Chloro-M-Cresol[1]	ND	40	40	100		-	-		22-147	-		30
2-Chlorophenol	ND	40	33	83		-	-		23-134	-		30
2,4-Dichlorophenol	ND	40	37	93		-	-		39-135	-		30
2,4-Dimethylphenol	ND	40	37	93		-	-		32-119	-		30
2-Nitrophenol	ND	40	39	98		-	-		29-182	-		30
4-Nitrophenol	ND	40	32	80		-	-		1-132	-		30
2,4-Dinitrophenol	ND	40	33	83		-	-		1-191	-		30
4,6-Dinitro-o-cresol[1]	ND	40	44	110		-	-		1-181	-		30
Pentachlorophenol	ND	40	31	78		-	-		14-176	-		30
Phenol	ND	40	20	50		-	-		5-112	-		30
2-Methylphenol[1]	ND	40	33	83		-	-		38-102	-		30
3-Methylphenol/4-Methylphenol[1]	ND	40	31	78		-	-		35-103	-		30
2,4,5-Trichlorophenol[1]	ND	40	44	110		-	-		47-126	-		30
Benzoic Acid[1]	ND	40	7.7J	19		-	-		2-55	-		30
Benzyl Alcohol[1]	ND	40	31	78		-	-		31-103	-		30
Carbazole[1]	ND	40	38	95		-	-		46-114	-		30
Pyridine[1]	ND	40	9.5	24		-	-		1-57	-		30
n-Decane[1]	ND	40	16J	40		-	-		40-140	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055923-3 QC Sample: L1700010-117 Client ID: MS Sample												

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
2,4,6-Tribromophenol	94				10-120
2-Fluorobiphenyl	88				15-120
2-Fluorophenol	52				21-120
4-Terphenyl-d14	91				33-120
Nitrobenzene-d5	85				23-120
Phenol-d6	41				10-120

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055923-4 QC Sample: L1700010-117 Client ID: DUP Sample						
Acenaphthene	ND	ND	ug/l	NC		30
Benzidine[1]	ND	ND	ug/l	NC		30
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC		30
Hexachlorobenzene	ND	ND	ug/l	NC		30
Bis(2-chloroethyl)ether	ND	ND	ug/l	NC		30
2-Chloronaphthalene	ND	ND	ug/l	NC		30
3,3'-Dichlorobenzidine	ND	ND	ug/l	NC		30
2,4-Dinitrotoluene	ND	ND	ug/l	NC		30
2,6-Dinitrotoluene	ND	ND	ug/l	NC		30
Azobenzene[1]	ND	ND	ug/l	NC		30
Fluoranthene	ND	ND	ug/l	NC		30
4-Chlorophenyl phenyl ether	ND	ND	ug/l	NC		30
4-Bromophenyl phenyl ether[1]	ND	ND	ug/l	NC		30
Bis(2-chloroisopropyl)ether	ND	ND	ug/l	NC		30
Bis(2-chloroethoxy)methane	ND	ND	ug/l	NC		30
Hexachlorobutadiene	ND	ND	ug/l	NC		30
Hexachlorocyclopentadiene[1]	ND	ND	ug/l	NC		30
Hexachloroethane	ND	ND	ug/l	NC		30
Isophorone	ND	ND	ug/l	NC		30
Naphthalene	ND	ND	ug/l	NC		30
Nitrobenzene	ND	ND	ug/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055923-4 QC Sample: L1700010-117 Client ID: DUP Sample						
NitrosoDiPhenylAmine(NDPA)/DPA[1]	ND	ND	ug/l	NC		30
n-Nitrosodi-n-propylamine	ND	ND	ug/l	NC		30
Bis(2-Ethylhexyl)phthalate	ND	ND	ug/l	NC		30
Butyl benzyl phthalate	ND	ND	ug/l	NC		30
Di-n-butylphthalate	ND	ND	ug/l	NC		30
Di-n-octylphthalate	ND	ND	ug/l	NC		30
Diethyl phthalate	ND	ND	ug/l	NC		30
Dimethyl phthalate	ND	ND	ug/l	NC		30
Benzo(a)anthracene	ND	ND	ug/l	NC		30
Benzo(a)pyrene	ND	ND	ug/l	NC		30
Benzo(b)fluoranthene	ND	ND	ug/l	NC		30
Benzo(k)fluoranthene	ND	ND	ug/l	NC		30
Chrysene	ND	ND	ug/l	NC		30
Acenaphthylene	ND	ND	ug/l	NC		30
Anthracene	ND	ND	ug/l	NC		30
Benzo(ghi)perylene	ND	ND	ug/l	NC		30
Fluorene	ND	ND	ug/l	NC		30
Phenanthrene	ND	ND	ug/l	NC		30
Dibenzo(a,h)anthracene	ND	ND	ug/l	NC		30
Indeno(1,2,3-cd)Pyrene	ND	ND	ug/l	NC		30
Pyrene	ND	ND	ug/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055923-4 QC Sample: L1700010-117 Client ID: DUP Sample						
Biphenyl[1]	ND	ND	ug/l	NC		30
Aniline[1]	ND	ND	ug/l	NC		30
4-Chloroaniline[1]	ND	ND	ug/l	NC		30
1-Methylnaphthalene[1]	ND	ND	ug/l	NC		30
2-Nitroaniline[1]	ND	ND	ug/l	NC		30
3-Nitroaniline[1]	ND	ND	ug/l	NC		30
4-Nitroaniline[1]	ND	ND	ug/l	NC		30
Dibenzofuran[1]	ND	ND	ug/l	NC		30
2-Methylnaphthalene[1]	ND	ND	ug/l	NC		30
Acetophenone[1]	ND	ND	ug/l	NC		30
n-Nitrosodimethylamine[1]	ND	ND	ug/l	NC		30
2,4,6-Trichlorophenol	ND	ND	ug/l	NC		30
P-Chloro-M-Cresol[1]	ND	ND	ug/l	NC		30
2-Chlorophenol	ND	ND	ug/l	NC		30
2,4-Dichlorophenol	ND	ND	ug/l	NC		30
2,4-Dimethylphenol	ND	ND	ug/l	NC		30
2-Nitrophenol	ND	ND	ug/l	NC		30
4-Nitrophenol	ND	ND	ug/l	NC		30
2,4-Dinitrophenol	ND	ND	ug/l	NC		30
4,6-Dinitro-o-cresol[1]	ND	ND	ug/l	NC		30
Pentachlorophenol	ND	ND	ug/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055923-4 QC Sample: L1700010-117 Client ID: DUP Sample						
Phenol	ND	ND	ug/l	NC		30
2-Methylphenol[1]	ND	ND	ug/l	NC		30
3-Methylphenol/4-Methylphenol[1]	ND	ND	ug/l	NC		30
2,4,5-Trichlorophenol[1]	ND	ND	ug/l	NC		30
Benzoic Acid[1]	ND	ND	ug/l	NC		30
Benzyl Alcohol[1]	ND	ND	ug/l	NC		30
Carbazole[1]	ND	ND	ug/l	NC		30
Pyridine[1]	ND	ND	ug/l	NC		30
n-Decane[1]	ND	ND	ug/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	29		34		21-120
Phenol-d6	25		26		10-120
Nitrobenzene-d5	53		60		23-120
2-Fluorobiphenyl	63		63		15-120
2,4,6-Tribromophenol	78		84		10-120
4-Terphenyl-d14	91		93		33-120

PCBS

Project Name: ATP PRE-TREATMENT OM&M
Lab Number: L1738414
Project Number: T0071-017-222
Report Date: 10/30/17

SAMPLE RESULTS

Lab ID: L1738414-01
Client ID: EFFLUENT
Sample Location: 1951 HAMBURG TURNPIKE

Matrix: Water
Analytical Method: 5,608
Analytical Date: 10/27/17 10:36
Analyst: JW

Date Collected: 10/23/17 09:30
Date Received: 10/23/17
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 10/25/17 08:27
Cleanup Method: EPA 3665A
Cleanup Date: 10/26/17
Cleanup Method: EPA 3660B
Cleanup Date: 10/27/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.050	0.021	1	A
Aroclor 1221	ND		ug/l	0.050	0.028	1	A
Aroclor 1232	ND		ug/l	0.050	0.012	1	A
Aroclor 1242	ND		ug/l	0.050	0.014	1	A
Aroclor 1248	ND		ug/l	0.050	0.014	1	A
Aroclor 1254	ND		ug/l	0.050	0.022	1	A
Aroclor 1260	ND		ug/l	0.050	0.023	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	42		30-150	A

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222
Lab Number: L1738414
Report Date: 10/30/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 10/27/17 10:49
Analyst: JW

Extraction Method: EPA 608
Extraction Date: 10/25/17 08:27
Cleanup Method: EPA 3665A
Cleanup Date: 10/26/17
Cleanup Method: EPA 3660B
Cleanup Date: 10/27/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1056035-1						
Aroclor 1016	ND		ug/l	0.050	0.021	A
Aroclor 1221	ND		ug/l	0.050	0.028	A
Aroclor 1232	ND		ug/l	0.050	0.012	A
Aroclor 1242	ND		ug/l	0.050	0.014	A
Aroclor 1248	ND		ug/l	0.050	0.014	A
Aroclor 1254	ND		ug/l	0.050	0.022	A
Aroclor 1260	ND		ug/l	0.050	0.023	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	67		30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1056035-2									
Aroclor 1016	91		-		30-150	-		30	A
Aroclor 1260	81		-		30-150	-		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59				30-150	A
Decachlorobiphenyl	56				30-150	A

PESTICIDES

Project Name: ATP PRE-TREATMENT OM&M
Lab Number: L1738414
Project Number: T0071-017-222
Report Date: 10/30/17

SAMPLE RESULTS

Lab ID: L1738414-01
Client ID: EFFLUENT
Sample Location: 1951 HAMBURG TURNPIKE

Matrix: Water
Analytical Method: 5,608
Analytical Date: 10/27/17 12:23
Analyst: KEG

Date Collected: 10/23/17 09:30
Date Received: 10/23/17
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 10/25/17 04:55
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.020	0.003	1	A
Lindane	ND		ug/l	0.020	0.003	1	A
Alpha-BHC	ND		ug/l	0.020	0.004	1	A
Beta-BHC	ND		ug/l	0.020	0.006	1	A
Heptachlor	ND		ug/l	0.020	0.004	1	A
Aldrin	ND		ug/l	0.020	0.003	1	A
Heptachlor epoxide	ND		ug/l	0.020	0.006	1	A
Endrin	ND		ug/l	0.040	0.004	1	A
Endrin aldehyde	ND		ug/l	0.040	0.003	1	A
Endrin ketone[1]	ND		ug/l	0.040	0.005	1	A
Dieldrin	ND		ug/l	0.040	0.003	1	A
4,4'-DDE	ND		ug/l	0.040	0.004	1	A
4,4'-DDD	ND		ug/l	0.040	0.005	1	A
4,4'-DDT	ND		ug/l	0.040	0.005	1	A
Endosulfan I	ND		ug/l	0.020	0.006	1	A
Endosulfan II	ND		ug/l	0.040	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.040	0.005	1	A
Methoxychlor[1]	ND		ug/l	0.100	0.006	1	A
Toxaphene	ND		ug/l	0.400	0.126	1	A
Chlordane	ND		ug/l	0.200	0.042	1	A
cis-Chlordane[1]	ND		ug/l	0.020	0.004	1	A
trans-Chlordane[1]	ND		ug/l	0.020	0.008	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	98		30-150	A
Decachlorobiphenyl	65		30-150	A

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222
Lab Number: L1738414
Report Date: 10/30/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 10/27/17 12:10
Analyst: KEG

Extraction Method: EPA 608
Extraction Date: 10/24/17 08:56
Cleanup Method: EPA 3620B
Cleanup Date: 10/26/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1055594-1						
Delta-BHC	ND		ug/l	0.020	0.003	A
Lindane	ND		ug/l	0.020	0.003	A
Alpha-BHC	ND		ug/l	0.020	0.004	A
Beta-BHC	ND		ug/l	0.020	0.006	A
Heptachlor	ND		ug/l	0.020	0.004	A
Aldrin	ND		ug/l	0.020	0.003	A
Heptachlor epoxide	ND		ug/l	0.020	0.006	A
Endrin	ND		ug/l	0.040	0.004	A
Endrin aldehyde	ND		ug/l	0.040	0.003	A
Endrin ketone[1]	ND		ug/l	0.040	0.005	A
Dieldrin	ND		ug/l	0.040	0.003	A
4,4'-DDE	ND		ug/l	0.040	0.004	A
4,4'-DDD	ND		ug/l	0.040	0.005	A
4,4'-DDT	ND		ug/l	0.040	0.005	A
Endosulfan I	ND		ug/l	0.020	0.006	A
Endosulfan II	ND		ug/l	0.040	0.004	A
Endosulfan sulfate	ND		ug/l	0.040	0.005	A
Methoxychlor[1]	ND		ug/l	0.100	0.006	A
Toxaphene	ND		ug/l	0.400	0.126	A
Chlordane	ND		ug/l	0.200	0.042	A
cis-Chlordane[1]	ND		ug/l	0.020	0.004	A
trans-Chlordane[1]	ND		ug/l	0.020	0.008	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	47		30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1055594-2									
Delta-BHC	75		-		30-150	-		30	A
Lindane	85		-		30-150	-		30	A
Alpha-BHC	83		-		30-150	-		30	A
Beta-BHC	87		-		30-150	-		30	A
Heptachlor	91		-		30-150	-		30	A
Aldrin	83		-		30-150	-		30	A
Heptachlor epoxide	84		-		30-150	-		30	A
Endrin	98		-		30-150	-		30	A
Endrin aldehyde	79		-		30-150	-		30	A
Endrin ketone[1]	92		-		30-150	-		30	A
Dieldrin	99		-		30-150	-		30	A
4,4'-DDE	89		-		30-150	-		30	A
4,4'-DDD	93		-		30-150	-		30	A
4,4'-DDT	99		-		30-150	-		30	A
Endosulfan I	98		-		30-150	-		30	A
Endosulfan II	96		-		30-150	-		30	A
Endosulfan sulfate	91		-		30-150	-		30	A
Methoxychlor[1]	100		-		30-150	-		30	A
cis-Chlordane[1]	87		-		30-150	-		30	A
trans-Chlordane[1]	62		-		30-150	-		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1055594-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72				30-150	A
Decachlorobiphenyl	73				30-150	A

Matrix Spike Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055594-3 QC Sample: L1700010-110 Client ID: MS Sample													
Delta-BHC	ND	0.5	0.478	96		-	-		19-140	-		30	A
Lindane	ND	0.5	0.534	107		-	-		56-123	-		30	A
Alpha-BHC	ND	0.5	0.530	106		-	-		37-134	-		30	A
Beta-BHC	ND	0.5	0.556	111		-	-		17-147	-		30	A
Heptachlor	ND	0.5	0.574	**115**	Q	-	-		40-111	-		30	A
Aldrin	ND	0.5	0.534	107		-	-		40-120	-		30	A
Heptachlor epoxide	ND	0.5	0.534	107		-	-		37-142	-		30	A
Endrin	ND	0.5	0.619	**124**	Q	-	-		56-121	-		30	A
Endrin aldehyde	ND	0.5	0.482	96		-	-		42-122	-		30	A
Endrin ketone[1]	ND	0.5	0.528	106		-	-		30-150	-		30	A
Dieldrin	ND	0.5	0.616	123		-	-		52-126	-		30	A
4,4'-DDE	ND	0.5	0.565	113		-	-		30-145	-		30	A
4,4'-DDD	ND	0.5	0.589	118		-	-		31-141	-		30	A
4,4'-DDT	ND	0.5	0.636	127		-	-		38-127	-		30	A
Endosulfan I	ND	0.5	0.602	120		-	-		45-153	-		30	A
Endosulfan II	ND	0.5	0.603	121		-	-		.1-202	-		30	A
Endosulfan sulfate	ND	0.5	0.587	117		-	-		26-144	-		30	A
Methoxychlor[1]	ND	0.5	0.628	126		-	-		30-150	-		30	A
cis-Chlordane[1]	ND	0.5	0.537	107		-	-		30-150	-		30	A
trans-Chlordane[1]	ND	0.5	0.362	72		-	-		30-150	-		30	A

Matrix Spike Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055594-3 QC Sample: L1700010-110 Client ID: MS Sample												

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*	*Column*
2,4,5,6-Tetrachloro-m-xylene	92				30-150	A
Decachlorobiphenyl	82				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055594-4 QC Sample: L1700010-110 Client ID: DUP Sample							
Delta-BHC	ND	ND	ug/l	NC		30	A
Lindane	ND	ND	ug/l	NC		30	A
Alpha-BHC	ND	ND	ug/l	NC		30	A
Beta-BHC	ND	ND	ug/l	NC		30	A
Heptachlor	ND	ND	ug/l	NC		30	A
Aldrin	ND	ND	ug/l	NC		30	A
Heptachlor epoxide	ND	ND	ug/l	NC		30	A
Endrin	ND	ND	ug/l	NC		30	A
Endrin aldehyde	ND	ND	ug/l	NC		30	A
Endrin ketone[1]	ND	ND	ug/l	NC		30	A
Dieldrin	ND	ND	ug/l	NC		30	A
4,4'-DDE	ND	ND	ug/l	NC		30	A
4,4'-DDD	ND	ND	ug/l	NC		30	A
4,4'-DDT	ND	ND	ug/l	NC		30	A
Endosulfan I	ND	ND	ug/l	NC		30	A
Endosulfan II	ND	ND	ug/l	NC		30	A
Endosulfan sulfate	ND	ND	ug/l	NC		30	A
Methoxychlor[1]	ND	ND	ug/l	NC		30	A
Toxaphene	ND	ND	ug/l	NC		30	A
Chlordane	ND	ND	ug/l	NC		30	A
cis-Chlordane[1]	ND	ND	ug/l	NC		30	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055594-4 QC Sample: L1700010-110 Client ID: DUP Sample							
trans-Chlordane[1]	ND	ND	ug/l	NC		30	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		87		30-150	A
Decachlorobiphenyl	57		89		30-150	A

METALS

Project Name: ATP PRE-TREATMENT OM&M
Lab Number: L1738414
Project Number: T0071-017-222
Report Date: 10/30/17

SAMPLE RESULTS

Lab ID: L1738414-01
Client ID: EFFLUENT
Sample Location: 1951 HAMBURG TURNPIKE
Matrix: Water
Date Collected: 10/23/17 09:30
Date Received: 10/23/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	0.00045	J	mg/l	0.00400	0.00042	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00573		mg/l	0.00100	0.00016	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Barium, Total	0.03076		mg/l	0.00100	0.00017	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Beryllium, Total	0.00066	J	mg/l	0.00100	0.00010	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Chromium, Total	0.01247		mg/l	0.00100	0.00017	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Iron, Total	237		mg/l	0.050	0.009	1	10/25/17 10:00	10/26/17 17:57	EPA 3005A	19,200.7	AB
Lead, Total	ND		mg/l	0.00100	0.00034	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	0.00006	1	10/25/17 14:00	10/26/17 13:53	EPA 245.1	3,245.1	MG
Nickel, Total	0.00440		mg/l	0.00200	0.00055	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Selenium, Total	0.00500		mg/l	0.00500	0.00173	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM
Titanium, Total	0.005	J	mg/l	0.010	0.002	1	10/25/17 10:00	10/26/17 17:57	EPA 3005A	19,200.7	AB
Zinc, Total	0.00703	J	mg/l	0.01000	0.00341	1	10/25/17 10:00	10/25/17 13:53	EPA 3005A	3,200.8	AM

Project Name: ATP PRE-TREATMENT OM&M **Lab Number:** L1738414

Project Number: T0071-017-222 **Report Date:** 10/30/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1056011-1										
Antimony, Total	ND		mg/l	0.00400	0.00042	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Arsenic, Total	ND		mg/l	0.0010	0.0002	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Barium, Total	ND		mg/l	0.00100	0.00017	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Beryllium, Total	ND		mg/l	0.00100	0.00010	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Lead, Total	ND		mg/l	0.0005	0.0003	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	0.00055	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	10/25/17 10:00	10/25/17 13:36	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1056013-1										
Iron, Total	ND		mg/l	0.050	0.009	1	10/25/17 10:00	10/26/17 17:48	19,200.7	AB
Titanium, Total	ND		mg/l	0.010	0.002	1	10/25/17 10:00	10/26/17 17:48	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1056195-1										
Mercury, Total	ND		mg/l	0.00020	0.00006	1	10/25/17 14:00	10/26/17 13:45	3,245.1	MG

Project Name: ATP PRE-TREATMENT OM&M **Lab Number:** L1738414

Project Number: T0071-017-222 **Report Date:** 10/30/17

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1056011-2								
Antimony, Total	88		-		85-115	-		
Arsenic, Total	99		-		85-115	-		
Barium, Total	95		-		85-115	-		
Beryllium, Total	95		-		85-115	-		
Cadmium, Total	103		-		85-115	-		
Chromium, Total	98		-		85-115	-		
Copper, Total	98		-		85-115	-		
Lead, Total	101		-		85-115	-		
Nickel, Total	98		-		85-115	-		
Selenium, Total	104		-		85-115	-		
Silver, Total	94		-		85-115	-		
Zinc, Total	96		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1056013-2								
Iron, Total	102		-		85-115	-		
Titanium, Total	99		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1056195-2								
Mercury, Total	109		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056011-3 QC Sample: L1738414-01 Client ID: EFFLUENT												
Antimony, Total	0.00045J	0.5	0.5716	114		-	-		70-130	-		20
Arsenic, Total	0.00573	0.12	0.1320	105		-	-		70-130	-		20
Barium, Total	0.03076	2	2.063	102		-	-		70-130	-		20
Beryllium, Total	0.00066J	0.05	0.05274	105		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05720	112		-	-		70-130	-		20
Chromium, Total	0.01247	0.2	0.2114	99		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2546	102		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5291	104		-	-		70-130	-		20
Nickel, Total	0.00440	0.5	0.5088	101		-	-		70-130	-		20
Selenium, Total	0.00500	0.12	0.1310	105		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04851	97		-	-		70-130	-		20
Zinc, Total	0.00703J	0.5	0.5210	104		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056011-5 QC Sample: L1738426-01 Client ID: MS Sample										
Antimony, Total	ND	0.5	0.4849	97		-	-	70-130	-	20
Arsenic, Total	0.0009J	0.12	0.1215	101		-	-	70-130	-	20
Barium, Total	0.0038	2	1.934	96		-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.05226	104		-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.05367	105		-	-	70-130	-	20
Chromium, Total	0.0003J	0.2	0.1964	98		-	-	70-130	-	20
Copper, Total	0.0053	0.25	0.2477	97		-	-	70-130	-	20
Lead, Total	0.0014	0.51	0.5064	99		-	-	70-130	-	20
Nickel, Total	0.0008J	0.5	0.4946	99		-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1235	103		-	-	70-130	-	20
Silver, Total	ND	0.05	0.04788	96		-	-	70-130	-	20
Zinc, Total	ND	0.5	0.4813	96		-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056013-3 QC Sample: L1738414-01 Client ID: EFFLUENT										
Iron, Total	237.	1	227	**0**	Q	-	-	75-125	-	20
Titanium, Total	0.005J	1	0.975	98		-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056195-3 QC Sample: L1738414-01 Client ID: EFFLUENT										
Mercury, Total	ND	0.005	0.00464	93		-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056195-5 QC Sample: L1738448-01 Client ID: MS Sample										
Mercury, Total	ND	0.005	0.00458	92		-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056011-4 QC Sample: L1738414-01 Client ID: EFFLUENT						
Antimony, Total	0.00045J	0.00090J	mg/l	NC		20
Arsenic, Total	0.00573	0.0058	mg/l	1		20
Barium, Total	0.03076	0.03033	mg/l	1		20
Beryllium, Total	0.00066J	0.00069J	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.01247	0.01273	mg/l	2		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.00440	0.00437	mg/l	1		20
Selenium, Total	0.00500	0.00495J	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.00703J	0.00705J	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056011-6 QC Sample: L1738426-01 Client ID: DUP Sample						
Arsenic, Total	0.0009J	0.0008J	mg/l	NC		20
Lead, Total	0.0014	0.0015	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056013-4 QC Sample: L1738414-01 Client ID: EFFLUENT						
Iron, Total	237.	239	mg/l	1		20
Titanium, Total	0.005J	0.005J	mg/l	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056195-4 QC Sample: L1738414-01 Client ID: EFFLUENT					
Mercury, Total	ND	ND	mg/l	NC	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1056195-6 QC Sample: L1738448-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222
Lab Number: L1738414
Report Date: 10/30/17

SAMPLE RESULTS

Lab ID: L1738414-01
Client ID: EFFLUENT
Sample Location: 1951 HAMBURG TURNPIKE
Matrix: Water

Date Collected: 10/23/17 09:30
Date Received: 10/23/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	2.35		mg/l	0.025	0.009	1	10/24/17 15:35	10/25/17 12:46	121,4500CN-CE	LH
pH (H)	5.9		SU	-	NA	1	-	10/24/17 05:22	121,4500H+-B	UN
Nitrogen, Ammonia	36.3		mg/l	0.750	0.240	10	10/25/17 02:30	10/25/17 21:40	121,4500NH3-BH	AT
Sulfate	2200		mg/l	1000	140	100	10/25/17 13:57	10/25/17 13:57	121,4500SO4-E	BR
Oil & Grease, Hem-Grav	ND		mg/l	5.2	5.2	1.3	10/24/17 17:00	10/24/17 18:00	74,1664A	ML
Phenolics, Total	0.33		mg/l	0.030	0.010	1	10/24/17 19:00	10/24/17 22:04	4,420.1	ML

Project Name: ATP PRE-TREATMENT OM&M **Lab Number:** L1738414

Project Number: T0071-017-222 **Report Date:** 10/30/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1055756-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	10/24/17 15:35	10/25/17 12:37	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1055827-1										
Oil & Grease, Hem-Grav	ND		mg/l	4.0	4.0	1	10/24/17 17:00	10/24/17 18:00	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1055890-1										
Phenolics, Total	ND		mg/l	0.030	0.010	1	10/24/17 19:00	10/24/17 21:59	4,420.1	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1055934-1										
Nitrogen, Ammonia	0.025	J	mg/l	0.075	0.024	1	10/25/17 02:30	10/25/17 21:11	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1056156-1										
Sulfate	1.6	J	mg/l	10	1.4	1	10/25/17 13:57	10/25/17 13:57	121,4500SO4-E	BR

Lab Control Sample Analysis

Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M

Project Number: T0071-017-222

Lab Number: L1738414

Report Date: 10/30/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1055520-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1055756-2								
Cyanide, Total	97		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1055827-2								
Oil & Grease, Hem-Grav	90		-		78-114	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1055890-2								
Phenolics, Total	94		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1055934-2								
Nitrogen, Ammonia	96		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1056156-2								
Sulfate	95		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055756-4 QC Sample: L1738448-01 Client ID: MS Sample												
Cyanide, Total	0.002J	0.2	0.189	94		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055827-4 QC Sample: L1738514-02 Client ID: MS Sample												
Oil & Grease, Hem-Grav	ND	42.6	40	93		-	-		78-114	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055890-4 QC Sample: L1738448-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.41	102		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055934-4 QC Sample: L1738441-01 Client ID: MS Sample												
Nitrogen, Ammonia	0.648	4	4.32	92		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1056156-4 QC Sample: L1737986-14 Client ID: MS Sample												
Sulfate	15.	40	59	110		-	-		55-147	-		14

Lab Duplicate Analysis
Batch Quality Control

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055520-2 QC Sample: L1738385-01 Client ID: DUP Sample						
pH	7.7	7.7	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055756-3 QC Sample: L1738114-02 Client ID: DUP Sample						
Cyanide, Total	0.016	0.020	mg/l	24		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055827-3 QC Sample: L1738515-01 Client ID: DUP Sample						
Oil & Grease, Hem-Grav	ND	ND	mg/l	NC		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055890-3 QC Sample: L1738448-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055934-3 QC Sample: L1738441-01 Client ID: DUP Sample						
Nitrogen, Ammonia	0.648	0.657	mg/l	1		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1056156-3 QC Sample: L1737986-14 Client ID: DUP Sample						
Sulfate	15.	14	mg/l	7		14

Project Name: ATP PRE-TREATMENT OM&M
Project Number: T0071-017-222

Lab Number: L1738414
Report Date: 10/30/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1738414-01A	Vial Na2S2O3 preserved	A	NA		5.8	Y	Absent		624(3)
L1738414-01B	Vial Na2S2O3 preserved	A	NA		5.8	Y	Absent		624(3)
L1738414-01C	Vial Na2S2O3 preserved	A	NA		5.8	Y	Absent		624(3)
L1738414-01D	Plastic 250ml HNO3 preserved	A	<2	<2	5.8	Y	Absent		CD-2008T(180),NI-2008T(180),BE-2008T(180),TI-UI(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),BA-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1738414-01E	Plastic 500ml H2SO4 preserved	A	<2	<2	5.8	Y	Absent		NH3-4500(28)
L1738414-01F	Plastic 250ml NaOH preserved	A	>12	>12	5.8	Y	Absent		TCN-4500(14)
L1738414-01G	Amber 500ml H2SO4 preserved	A	<2	<2	5.8	Y	Absent		TPHENOL-420(28)
L1738414-01H	Plastic 250ml unpreserved	A	7	7	5.8	Y	Absent		SO4-4500(28),PH-4500(.01)
L1738414-01I	Amber 1000ml HCl preserved	A	NA		5.8	Y	Absent		OG-1664(28)
L1738414-01J	Amber 1000ml HCl preserved	A	NA		5.8	Y	Absent		OG-1664(28)
L1738414-01K	Amber 1000ml Na2S2O3	A	7	7	5.8	Y	Absent		NYPCB-608-2L(7)
L1738414-01L	Amber 1000ml Na2S2O3	A	7	7	5.8	Y	Absent		NYPCB-608-2L(7)
L1738414-01M	Amber 1000ml Na2S2O3	A	7	7	5.8	Y	Absent		NYPCB-608-2L(7)
L1738414-01N	Amber 1000ml Na2S2O3	A	7	7	5.8	Y	Absent		NYPCB-608-2L(7)
L1738414-01O	Amber 1000ml Na2S2O3	A	7	7	5.8	Y	Absent		PESTICIDE-608(7)
L1738414-01P	Amber 1000ml Na2S2O3	A	7	7	5.8	Y	Absent		PESTICIDE-608(7)
L1738414-01Q	Amber 1000ml Na2S2O3	A	7	7	5.8	Y	Absent		625(7)
L1738414-01R	Amber 1000ml Na2S2O3	A	7	7	5.8	Y	Absent		625(7)
L1738414-02A	Vial Na2S2O3 preserved	A	NA		5.8	Y	Absent		ARCHIVE()
L1738414-02B	Vial Na2S2O3 preserved	A	NA		5.8	Y	Absent		ARCHIVE()

*Values in parentheses indicate holding time in days

Project Name:	ATP PRE-TREATMENT OM&M	**Lab Number:**	L1738414
Project Number:	T0071-017-222	**Report Date:**	10/30/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report with 'J' Qualifiers

Project Name:	ATP PRE-TREATMENT OM&M	**Lab Number:**	L1738414
Project Number:	T0071-017-222	**Report Date:**	10/30/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	ATP PRE-TREATMENT OM&M	**Lab Number:**	L1738414
Project Number:	T0071-017-222	**Report Date:**	10/30/17

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10/25/17

ALPHA Job #: L1738414

Client Information

Client: Benchmark Environmental
Address: 2558 Hamburg Turnpike,Ste300
Buffalo, NY 14218
Phone: 716-856-0599
Fax:
Email: tforbes@benchmarkturnkey.com

Project Information

Project Name: ATP Pre-treatment OM&M
Project Location: 1951 Hamburg Turnpike
Project #: T 0071-~~014-342~~ 017-022
(Use Project name as Project #) ☐
Project Manager: Candace Fox
ALPHAQuote #:

Turn-Around Time

Standard ☐ Due Date: 10/27/17
Rush (only if pre approved) ☒ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☑ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☑ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Total Metals: Sb,As,Ba,Be,Cd,Cr,Cu,Fe,Pb,Hg,Ni,Se,Ag,Ti,Zn PCB has an RL of 65 ppt

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	624 PP List	Metals, Total	Ammonia	608 PEST/PCBs	Phenolics	625 PP List	Cyanide	pH,Sulfate	Sample Specific Comments	Total Bottles
38911-01	EFFLUENT	10/23/17	09:30	Water	THF	x	x	x	x	x	x	x	x		16

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	P	A	A	A	P	P	
Preservative	H	C	D	H	D	H	E	A	

Relinquished By:	Date/Time	Received By:	Date/Time
	10/23/17		
	10/25/17 1620		10/25/17 1615
			10/24/17 0240

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10/24/17

ALPHA Job #: L1738914

Client Information

Client: Benchmark Environmental
Address: 2558 Hamburg Turnpike,Ste300
Buffalo, NY 14218
Phone: 716-856-0599
Fax:
Email: tforbes@benchmarkturnkey.com

Project Information

Project Name: ATP Pre-treatment OM&M
Project Location: 1951 Hamburg Turnpike
Project #: T0071-~~014-012~~ 017-322
(Use Project name as Project #) ☐
Project Manager: Candace Fox
ALPHAQuote #:

Turn-Around Time

Standard ☐ Due Date: 10/27/17
Rush (only if pre approved) ☒ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☑ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Total Metals: Sb,As,Ba,Be,Cd,Cr,Cu,Fe,Pb,Hg,Ni,Se,Ag,Ti,Zn PCB has an RL of 65 ppt

Please specify Metals or TAL.

ANALYSIS

OG-1664

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	OG-1664	Sample Specific Comments	Total Bottle
38414-01	EFFLUENT	10/23/17	09:30	Water	THF	x		2

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A												
Preservative	B												

Relinquished By:	Date/Time	Received By:	Date/Time
Josh Skerry via FedEx	10/23/17 16:20	[illegible] via FedEx	10/23/17 16:45
			10/24/17 0240

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

ATTACHMENT 2

Flow Meter Calibration Certificate

Cold Spring Environmental

3248 Buffalo Rd., Varysburg, N.Y. 14167
Ph: 716-863-7052

July 16, 2017

Ref: Flow Meter Calibration

Dear Mr. Dubisz

Calibration Date: July 12, 2017
Site location: Pretreatment Building
Equipment Model:Signet GF 8550
Equipment type: Closed Pipe impellor
Equipment S/N: 61009161010
Measuring device: 2 inch pipe
Output type: none
Totalizer multiplier: 1 gallon

Displayed level/flow rate: 0 GPM
Measured Level/flow rate: 0 GPM
Displayed level/flow rate: 32-33 GPM
Measured Level/flow rate: 32-33 GPM
Percent Difference: 0%
Adjustment: no
Note: cleaned the impellor, measured the totalizer at 33 GPM and found it to be correct

Please contact me with any questions.

Sincerely, *Jon Wolak*

Jon Wolak

jonwolak@yahoo.com

ATTACHMENT 3

POST-CLOSURE FIELD INSPECTION REPORT

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

Field Inspection Report
Post-Remedial Operation, Maintenance & Monitoring Plan

Property Name: ATP SWMU Group ECM Project No.: T0071-017-222

Client: Tecumseh Redevelopment, Inc.

Property Address: 1951 Hamburg Turnpike City, State: Lackawanna, NY Zip Code: 14218

Preparer's Name: Brock Greene Date/Time: 8-6-18 / 09:30

CERTIFICATION

The results of this inspection were discussed with the Site Manager. Any corrective actions required have been identified and noted in this report, and a supplemental Corrective Action Form has been completed. Proper implementation of these corrective actions have been discussed with the Site Manager, agreed upon, and scheduled.

Preparer / Inspector: Brock Greene **Date:** 8-6-18

Signature:

Next Scheduled Inspection Date: April 2019

ATP Containment Cell and Pretreatment Building Access

1. Is the access road in need of repair?	☐ yes	☑ no	☐ N/A
2. Sufficient signage posted (No Trespassing)?	☑ yes	☐ no	☐ N/A
3. Has there been any noted or reported trespassing?	☐ yes	☑ no	☐ N/A

Please note any irregularities/ changes in site access and security: None

Final Surface Cover / Vegetation

The integrity of the vegetative soil cover or other surface coverage (e.g., slag) over the entire Site must be maintained. The following documents the condition of the above.

1. Final Cover is in Place and in good condition?	☑ yes	☐ no	☐ N/A
Cover consists of (mainly): Grass			
2. Evidence of erosion?	☐ yes	☑ no	☐ N/A
3. Cracks visible in slag perimeter road?	☐ yes	☑ no	☐ N/A
4. Evidence of distressed vegetation/turf?	☐ yes	☑ no	☐ N/A
5. Evidence of unintended traffic and/or rutting?	☐ yes	☑ no	☐ N/A
6. Evidence of uneven settlement and/or ponding?	☐ yes	☑ no	☐ N/A

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

Field Inspection Report
Post-Remedial Operation, Maintenance & Monitoring Plan

Final Surface Cover / Vegetation

7. Damage to any surface coverage?	☐ yes	☑ no	☐ N/A
8. Extraction Well access roads (3) in stable condition?	☑ yes	☐ no	☐ N/A

Please provide more information below.

Cover is in good condition

Storm Water Pond

1. Is there water accumulation in the pond?	☐ yes	☑ no	☐ N/A
2. Is there sign of erosion or loss of oversized slag on sideslopes of pond?	☐ yes	☑ no	☐ N/A
3. Are the inlet or outlet structures/pipes clogged with debris?	☐ yes	☑ no	☐ N/A
4. Is there sign of erosion on the emergency spillway and the down chute to Smokes Creek?	☐ yes	☑ no	☐ N/A

If yes to any questions 2 through 4 above, please provide more information below.

Gas Vent Monitoring and Maintenance

Are there signs of stressed vegetation around gas vents?	☐ yes	☑ no	☐ N/A
Is gas vent currently intact and operational?	☑ yes	☐ no	☐ N/A
Has regular maintenance and monitoring been documented and enclosed or referenced?	☒ yes	☐ no	☐ N/A

No maintenance has been required; vent remains intact & free of blockage

Field Inspection Report
Post-Remedial Operation, Maintenance & Monitoring Plan

Conveyance Piping Leak Detection

Are there signs of a groundwater/leachate leak in the cleanout manholes?	☐ yes	☑ no	☐ N/A
Is there evidence of a leak having occurred before this inspection date?	☐ yes	☑ no	☐ N/A

This space for Notes and Comments

Please include the following Attachments:

1. Photographs

SITE PHOTOGRAPHS

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 1: ATP Treatment Building (Looking north)

Photo 2: Gate at treatment building limiting access to the containment cell (Looking west)

Photo 3: Perimeter road with containment cell on the left (Looking north)

Photo 4: Perimeter road with containment cell on the left (Looking south)

SITE PHOTOGRAPHS

Photo 5:

Photo 6:

Photo 7:

Photo 8:

Photo 5: Containment cell cover (Looking west)

Photo 6: Containment cell cover (Looking southeast)

Photo 7: Top of containment cell cover (Looking north)

Photo 8: Containment cell cover with perimeter road in background (Looking south)

SITE PHOTOGRAPHS

Photo 5:

Photo 6:

Photo 7:

Photo 8:

Photo 5: Dry stormwater pond (Looking north)

Photo 6: Outlet structure for the stormwater pond (Looking north)

Photo 7: Inlet structure for the stormwater pond (Looking north)

Photo 8: Gas vent at the top of the containment cell (Looking west)