AWARD/CONTRACT	1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)	RATING	PAGE OF PAGES 1 | 3

2. CONTRACT (Proc. Inst. Ident.) NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQUEST/PROJECT NO.
EP-C-17-031/68HE0C18F0796	See Block 20C	PR-R5-18-00281

5. ISSUED BY CODE CPOD

CPOD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: NWD
Cincinnati OH 45268

6. ADMINISTERED BY (If other than Item 5) CODE

SCD-C

7. NAME AND ADDRESS OF CONTRACTOR (No., street, country, State and ZIP Code)

TETRA TECH, INC.
Attn: George Townsend
10306 EATON PL STE 340
FAIRFAX VA 22030

CODE 198549560 FACILITY CODE

8. DELIVERY
☐ FOB ORIGIN ☒ OTHER (See below)

9. DISCOUNT FOR PROMPT PAYMENT

10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN ITEM

11. SHIP TO/MARK FOR CODE CPOD

CPOD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: NWD
Cincinnati OH 45268

12. PAYMENT WILL BE MADE BY CODE

13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:
☐ 10 U.S.C. 2304 (c) ( ) ☒ 41 U.S.C. 3304 (a) ( )

14. ACCOUNTING AND APPROPRIATION DATA
See Schedule

15A. ITEM NO	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
	Continued				

15G. TOTAL AMOUNT OF CONTRACT $89,912.00

16. TABLE OF CONTENTS

(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
		PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES	
	A	SOLICITATION/CONTRACT FORM			I	CONTRACT CLAUSES	
	B	SUPPLIES OR SERVICES AND PRICES/COSTS				PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.	
	C	DESCRIPTION/SPECS./WORK STATEMENT			J	LIST OF ATTACHMENTS	
	D	PACKAGING AND MARKING				PART IV - REPRESENTATIONS AND INSTRUCTIONS	
	E	INSPECTION AND ACCEPTANCE			K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	
	F	DELIVERIES OR PERFORMANCE					
	G	CONTRACT ADMINISTRATION DATA			L	INSTRS., CONDS., AND NOTICES TO OFFERORS	
	H	SPECIAL CONTRACT REQUIREMENTS			M	EVALUATION FACTORS FOR AWARD	

CONTRACTING OFFICER WILL COMPLETE ITEM 17 (SEALED-BID OR NEGOTIATED PROCUREMENT) OR 18 (SEALED-BID PROCUREMENT) AS APPLICABLE

17. ☒ CONTRACTOR' S NEGOTIATED AGREEMENT (*Contractor is required to sign this document and return* _____ *copies to issuing office.*) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (*Attachments are listed herein.*)

18. ☐ SEALED-BID AWARD (*Contractor is not required to sign this document.*) Your bid on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your bid, and (b) this award/contract. No further contractual document is necessary. (Block 18 should be checked only when awarding a sealed-bid contract.)

19A. NAME AND TITLE OF SIGNER (Type or print)

20A. NAME OF CONTRACTING OFFICER
Mark Cranley

19B. NAME OF CONTRACTOR

BY _____
(Signature of person authorized to sign)

19C. DATE SIGNED

20B. UNITED STATES OF AMERICA

BY ELECTRONIC SIGNATURE
(Signature of the Contracting Officer)

20C. DATE SIGNED
07/17/2018

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	DUNS Number: 198549560 Firm Fixed Price TO Michigan Stream Indicator Development TOCOR: Donna Keclik-Atch 1 Max Expire Date: 07/17/2020 Period of Performance: 07/18/2018 to 05/17/2019				
0001	Task Order Issuance Line Item: Technical Support for EPA/ORD/NCEA's Ecological Assessment Programs Delivery: 05/17/2019 Accounting Info: 17-E1D-05P3-202B06XP1-2505-1805PEX501-001 BFY: 17 Fund: E1D Budget Org: 05P3 Program (PRC): 202B06XP1 Budget (BOC): 2505 DCN - Line ID: 1805PEX501-001 Funding Flag: Complete Funded: $60,000.00 Accounting Info: 17-E1-05P3-202B06XP1-2505-1805PEX501-002 BFY: 17 Fund: E1 Budget Org: 05P3 Program (PRC): 202B06XP1 Budget (BOC): 2505 DCN - Line ID: 1805PEX501-002 Funding Flag: Complete Funded: $29,912.00 Option line currently unfunded and funding will be provided with possible exercise:				89,912.00
0001-2	Option Task Order Issuance Line Item: Technical Support for EPA/ORD/NCEA's Ecological Assessment Programs (Option Line Item) 05/18/2019 Delivery: 07/17/2020 Delivery-Invoice Payment Schedule shall not exceed a frequency greater than once a month and 90% of the task order price. Acceptance for invoicing is based on deliverable approval by the TOCOR. For efficient processing IAW FAR clause 52.232-32, performance based payment invoicing amounts will not be submitted until the TOCOR provides deliverable approval. The TOCOR will notify Tetra Tech within 14 days of submission of a deliverable of EPAs intention to approve or disapprove. Continued ...				40,000.00

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	TOCOR: Donna Keclik/312-886-6766/keclik.donna@epa.gov ALTOCOR: Belinda Montgomery/312-886-5949/Montgomery.belinda@epa.gov				

PERFORMANCE WORK STATEMENT
Tetra Tech, Inc.
Contact EP-C-17-031
Task Order PR-R5-18-00281 / 68HE0C18F0796

TITLE: Michigan Stream Indicator Development

PERIOD OF PERFORMANCE: Date of award through 24 months following award
Based period Tasks 1-4 period of performance July 18, 2018 to May 17, 2019
Option period Tasks 5- 8 May 18, 2019 to July 17, 2020

Task Order Contacting Officer Representative (TOCOR):
Donna Keclik
U.S. EPA, Region 5
77 W. Jackson Blvd.
Mail Code: (WW-16J)
Chicago, IL. 60604
312-886-6766
keclik.donna@epa.gov

Alternate TOCOR:
Belinda Montgomery
U.S. EPA, Region 5
77 W. Jackson Blvd.
Mail Code: (WW-16J)
Chicago, IL. 60604
312-886-5949
montgomery.belinda@epa.gov

Background

Comprehensive water quality monitoring is necessary to improve natural resource management, maintain sustainable ecosystems, and protect public health. Michigan Department of Environmental Quality (MDEQ), Surface Water Assessment Section (SWAS) developed a procedure which established the process necessary to monitor the fish community, macroinvertebrate community, and habitat quality in wadeable rivers and streams in support of ambient water quality monitoring, National Pollutant Discharge Elimination System (NPDES) permit support, and other point and nonpoint source needs. This procedure (biosurvey protocol) entitled Qualitative Biological and Habitat Survey Protocols for Wadeable Streams and Rivers (P51) was developed in 1990 and revised several times since.

In January 1997, the MDEQ completed a monitoring report entitled, "A Strategic Environmental Quality Monitoring Program for Michigan's Surface Waters" (Strategy). Program assessment led to an update of the 1997 Strategy in May 2005. The Strategy was developed specifically to identify the activities and resources needed to establish a comprehensive, state-of-the-art water quality monitoring program, and has guided Michigan's monitoring program implementation.

Biological integrity monitoring is one component of the Strategy. Biological communities integrate the cumulative effects of multiple environmental stressors; therefore, this monitoring component is an important tool for water quality evaluation. Good water quality is generally indicated by high biota (e.g. fish and macroinvertebrates) diversity and abundance, as well as an even distribution of individuals among taxa. Conversely, poor water quality is generally indicated by low biota diversity and/or abundance.

The biosurvey protocols consist of three parts including evaluation of the macroinvertebrate community, the fish community, and the habitat quality. Any one or combination of the three categories can be evaluated. The biological integrity of a stream is based on the results of the fish and macroinvertebrate communities.

Scope of Work

The scope of work for this Task Order is to assist in the revision of the P51 reference site selection methodology for macroinvertebrates and validate, and update if necessary, the metrics used in the scoring system. Both aspects of this project (reference sites and metrics) are needed to yield a scientifically robust revision to P51.

The following scope describes the recalibration of macroinvertebrate aquatic life indicators for Michigan wadeable streams, using the reference condition concept as the basis for defining the natural and stressor gradients. The recalibration will include accounting for natural variability for individual metrics, testing of multiple metrics against the stressor gradient, scoring metrics on a continuous scale, combining all subsets of responsive and non-redundant metrics in index alternatives to be tested for sensitivity, and selection of the most sensitive, comprehensive, and rational index for application in assessment programs. This process will include empirical analyses and subjective decision points, presented and modified iteratively.

Task 1: Communications and Administration - Base phase and continued through Option phase

The contractor shall provide management and administrative support for the project throughout its duration. The contractor shall participate in calls with the U. S. EPA TOCOR to discuss points of contact, roles and responsibilities, Quality Assurance Project Plan (QAPP) protocols, timelines, the schedule of benchmarks, milestones and deliverables, establish dates and times for monthly calls (if necessary) and monthly technical progress reports and general task order administrative and technical information.

Task 2: QAPP- Base phase

The contractor shall provide a QAPP that fully addresses the use of secondary data for purposes of this task order. The process for the QAPP development and review is:

- Within 15 business days after task order award, Tetra Tech will submit for U.S. EPA review a draft QAPP documenting how quality assurance (QA) and quality control (QC) will be applied to the compilation, evaluation, analysis and use of environmental data.
- U.S. EPA will review the draft QAPP, and provide the Contractor with written approval or written comments.

- Tetra Tech will submit a final QAPP within 5 business days of receipt of the written comments on the draft QAPP, unless otherwise instructed by the U. S. EPA TOCOR.

QAPP Requirements

The QAPP will be consistent with the use of secondary data. No new data will be generated for this project. The QAPP update will provide enough detail to clearly describe objectives of the project supported by the task order, the type of data to compiled or used under this task order to support the project objectives; the quality objectives needed to ensure that the data support the project objectives; and the quality assurance (QA) and quality control (QC) activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Task 3: Data Compilation-Base Phase

The contractor shall review background documents related to biomonitoring and assessment in Michigan such as "Reference Site Evaluation for Procedure 51, Wadeable Stream Bioassessment: Report and Recommendations" (MI/DEQ/WRD-17/016), other P51 documentation, the EPA critical elements review, and the memorandum prepared by Tetra Tech entitled *Comparison of Indexes for Assessment Technical Memorandum* (11/30/2014), on comparison of indexes for assessment.

MDEQ will transfer biomonitoring data to the contractor as complete and confirmed metadata and results for sites, samples, sample taxa lists, taxa traits, habitat, water quality, and other ancillary data, as determined to be appropriate and needed by MDEQ and the contract. The contractor shall assume that the transferred data have been subject to quality assurance reviews by MDEQ. Data will be compiled in Ecological Data Application System (EDAS), a MS Access relational database. Data will be formatted in the database to allow diverse metric calculations and extraction of all related data types (biological, water quality, habitat, site characteristics, etc.).

Geographic Information System (GIS) data will be transferred from MDEQ to the contractor as available and needed. The contractor shall use national GIS data coverages in addition to coverages provided by MDEQ.

Task 4: Review and Update of Reference Site Selection-Base Phase

The MDEQ self-evaluated their least disturbed reference site selection process for the current P51 assessment index. The evaluation suggests that an index recalibration is needed, in part because reference site selection was largely qualitative and resulted in inadequate numbers of reference sites in some ecoregions. In addition, recent sampling at potential new reference sites would augment the pool of reference sites for recalibration of the index.

Site conditions will be assessed for all sites associated with valid samples, including historical and recent data, as long as sampling protocols are comparable. A specific comparison will be made to determine the effects of a change in sampling protocols in 2006. The assessment will

explore land uses and landscape features associated with human activities. Water quality and habitat conditions will also be considered, though as a secondary screening to be evaluated in the context of the landscape setting. A set of disturbance criteria will be established to sort sites by disturbance condition and to establish least disturbed reference sites and most disturbed stressed sites. It is recommended that both ends of the stressor gradient should be distinguished to allow more flexibility in detecting metric and index sensitivity.

The balance between consistency in criteria across the state and even spatial distribution of reference sites will be examined. For example, consistent application of restrictive reference site criteria might result in spatial gaps where no reference sites can be identified due to widespread human development patterns. Different criteria for different areas of the state might be justified to accommodate index recalibration, which requires minimal numbers of reference sites per site class.

Given the interaction between site classes, development patterns, and index development requirements, establishment of reference sites should be an iterative process including site criteria application, site classification analysis, and discussion of the implications of consistent or spatially distinct reference site criteria.

Task 4a: GIS analysis -Base Phase

The variables that are robust in evaluating site conditions are those related to land use and landscape features related to human activities. Each sampled site will be characterized based on remotely sensed landscape conditions at the site and in the contributing watershed. GIS analysis will use coverages that are publically available through the National Hydrologic Dataset -plus (NHD+), the StreamCat database, and other coverages, as available and appropriate. Typical variables address reference site criteria, for example, % agricultural cover, % urban cover, road density, and specific discharges or activities (NPDES discharges, Confine Animal Feeding Operations (CAFO), mining activity, etc.).

Other variables indicating natural setting will be sampled during the same GIS analysis. These variables will be used to establish natural site classes and to determine metric variation with natural setting. Natural variables will include geologic types, elevation, stream slope, catchment size, ecoregion, temperature and precipitation, among others.

The contractor shall proceed with the GIS analysis using the stream segment on which the sampled site falls. The distance of the actual sampling location from the downstream pour-point of the segment will be recorded. Samples that are upstream of the pour-point by more than 50% of the segment length will be flagged and might be individually examined using aerial imagery to determine whether the upstream and downstream segments are in drastically different landscapes. GIS coverages that represent conditions in years close to the sampling years will be preferred.

Task 4b: Reference site criteria -Base Phase

The contractor will establish reference site criteria based on distributions of disturbance variables statewide. For each disturbance variable, a consistent criterion will be applied and results will be

scrutinized in the context of landscape gaps and numbers of reference sites in likely site classes (to be decided, possibly ecoregions). If gaps are consistently associated with landscape development patterns, then spatially distinct disturbance criteria will be explored, relaxing a criterion to allow the best available sites in a spatial gap to be defined as reference. Consistent criteria are preferred, so spatial distinctions in criteria will be limited as much as possible. Criteria will also be established for most disturbed stressed sites. Reference and stressed criteria will be compared to criteria used in other regional reference designations.

The contractor shall compare reference site designations to previous reference status in the MDEQ data set. All reference site designations will be reviewed by MDEQ. Conditions that are not recorded in the disturbance data set might be known to MDEQ staff. Site designations may be modified, after review by MDEQ, based on familiarity of changes in conditions over time. Modifications towards the middle of the stressor gradient are easily justified with familiar knowledge (re-designating a reference site as non-reference or a stressed site as non-reference). Re-designations towards the ends of the stressor gradient should be carefully documented to justify a subjective over-ride of empirical evidence.

Task 4c: Site classification -Base Phase

Site classification will proceed by exploring biological variability along natural gradients in reference sites. Taxonomic ordination and clustering are techniques for finding biological patterns or distinct expectations. Principal components analysis of metrics can also be conducted to find groupings based on a subset of metrics that are typically responsive and representative of diverse sample characteristics. When reference sites are used, then patterns or clusters can be associated with natural variables without concern that stressors are causing the differences. Natural determinants of patterns can be discerned using overlays of environmental variables in the ordinations and clusters. Separations in multidimensional taxonomic space or site clusters relative to the environmental variables can be visually graded and statistically quantified to find the best natural explanation for biological distinctions.

Multivariate principal components analysis of natural variables in all sites, regardless of reference status can be conducted to estimate site classes based on non-biological factors. Overlays of reference biological metrics on the natural ordinations could help to identify site classes for regions that are not well represented by reference sites.

The contractor shall scrutinize all site classification schemes for adequate representation of reference samples. All site classification schemes shall be presented to MDEQ for review, comment, and approval.

Task 5: Metric calculation, adjustment to natural setting, and performance evaluation-Option Phase

The contractor shall calculate metrics of the macroinvertebrate samples based on taxa counts, relative taxa representation, and relative abundance of individuals for groups of taxa defined by taxonomic hierarchies, feeding strategies, mode of locomotion (habit), tolerance to pollution, and other traits that are already defined by MDEQ or are easily gleaned from literature sources (e.g.,

National Rivers and Streams Assessment (NRSA)). Assignment of new traits based on environmental analyses is not anticipated. Typically more than 100 metrics are calculated to represent measures that have been shown to be responsive to stressor gradients in other index calibration projects. MDEQ might have suggestions for new metrics that can be calculated.

Metrics are expected to vary among site classes, though metrics might vary with natural variables that are not accounted for in the classification scheme. Therefore, metrics will be correlated with environmental variables in a correlation analysis and in classification and regression trees. If substantial variability among reference sites is explained by natural variables, then metric adjustments will be applied within the site classes. In this way, as much natural variability will be accounted for before assessing effects of stressors.

The contractor shall assess the metric performance by comparing distributions of reference metric values to those of stressed metric values, within site classes. A separation of values will indicate metric sensitivity. The separation will be quantified as discrimination efficiency (DE; the percentage of stressed values that are beyond the quartile of the reference distribution) and Z-score (the difference in mean reference and mean stressed scores as a factor of reference standard deviation). Both raw and adjusted metric values will be tested.

Metrics will be scored to equalize scales among them. All will be converted to values between 0 and 100 based on the observed 5th and 95th percentiles of the data. The extremes of the observed distribution (of all samples) are removed so that outlier values do not overly influence the effective scoring range of sensitive metrics. Scores previously used in assessment metrics will be compared to the new scoring system.

Task 6: Index combinations -Option Phase

Metrics that show high sensitivity and that MDEQ considers to be rational candidates for testing in an index will be entered into a series of index alternatives to be tested for sensitivity to the stressor gradient. As with individual metrics, the DE and Z-score will be used to assess sensitivity of each index alternative. The contractor shall, in an iterative R script, test all possible subsets of metrics, substituting metrics that are nearly as sensitive as each other in each iteration. The output will likely be several possible index alternative with similar sensitivity. MDEQ will be consulted to select the final index alternative that is sensitive and contains metrics that are meaningful to the MDEQ assessment program. The contractor shall include as one alternative, metrics currently used in MDEQ assessments.

The contractor shall validate the index with a subset of reference and stressed sites that are not used in the calibration analyses. In general, 10 validation samples per reference category and site class are needed for meaningful validation. If fewer than 10 validation samples are available (because removing 10 for validation would result in fewer than 15 for calibration), then validation will be accomplished in other ways. For example, the index can be correlated with an independent stressor gradient or validation can occur in the future with newly collected reference and stressed samples.

Task 7: Development of index calculation tools – Option Phase

The contractor shall prepare, in MS Access software, an index calculation tool. The tool will allow data entry, metric calculation and adjustment to natural gradients, and index calculation. It will be based on the Ecological Data Application System (EDAS), which will also be used by the contractor to organize data for analytical steps.

Task 8: Recommendations and reporting - Base phase and continued through Option phase

A draft and final report shall be prepared to describe the index development process. Draft chapters shall be prepared based on reference site selection, classification, metric evaluation, and index compilation, as well as a chapter on regional comparisons, recommendations, conclusions, and applications. A final report shall be prepared to address MDEQ and EPA comments on the draft chapters.

Deliverables and Schedule - Schedule dates listed below may vary based on date of award:

Task No.	Deliverable	Schedule
1	Progress Reports Other Communication	Due Monthly Due upon request by the TOCOR
2	Draft QAPP	Due 15 business days after award of Task Order but no later than May 15, 2018
2	Final QAPP	Due 5 business days of receipt of the written comments on the draft QAPP but no later than June 15, 2018
3	Data Compilation	Due July 15, 2018
4	Review and Update of Reference Site Selection: 4a GIS analysis 4b Reference site criteria 4c Site classification	Final Due for task 4 – 8 months after approval of QAPP 4a Due 3month after approval of QAPP but no later than Sept 15, 2018 4b Due 6 months after approval of QAPP but no later than Dec 30, 2018 4c Due 8 months after approval of QAPP but no later than Feb 28, 2019
5	Metric calculation, adjustment to natural setting, and performance evaluation	Due 12 months after Task Order award if additional funding is available, but no later than May 1, 2019
6	Index combinations	Due 15 months after Task Order award if additional funding is available but no later than August 1, 2019
7	Development of index calculation tools	Due 18 months after Task Order award if additional funding is available, but no later than Nov 1, 2019
8	Draft Recommendations and reporting	Due 22 months after award of Task Order, but no later than March 1, 2020

8	Final Recommendations and reporting	Due 24 months after award of Task Order April 30, 2020

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE 1 OF PAGES 3

2. AMENDMENT/MODIFICATION NO. P00001

3. EFFECTIVE DATE See Block 16C

4. REQUISITION/PURCHASE REQ. NO. PR-R5-18-00616

5. PROJECT NO. *(If applicable)*

6. ISSUED BY CODE CPOD

CPOD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: NWD
Cincinnati OH 45268

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

TETRA TECH, INC.
Attn: George Townsend
10306 EATON PL STE 340
FAIRFAX VA 22030

CODE 198549560 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

x 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-17-031
68HE0C18F0796

10B. DATED *(SEE ITEM 13)* 07/17/2018

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended , by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted ; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted , such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)* Net Increase: $39,835.00
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER *(Specify type of modification and authority)* UNILATERAL - LIMITATION OF FUNDS NOTICE (EP 52.232-100) (APR 1984)

E. IMPORTANT: Contractor ☒ is not. ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 198549560
Firm Fixed Price TO Michigan Stream Indicator Development
TOCOR: Donna Keclik-Atch 1 Max Expire Date: 07/17/2020
LIST OF CHANGES:
Reason for Modification: Funding Only Action with Option Exercise (All Within Original Scope)
Period Of Performance End Date changed from 17-MAY-19 to 17-JUL-20
Total Amount for this Modification: -$165.00
New Total Amount for this Version: $39,835.00
New Total Amount for this Award: $129,747.00
Obligated Amount for this Modification: $39,835.00
Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*
Mark Cranley

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA
ELECTRONIC SIGNATURE
(Signature of Contracting Officer)

16C. DATE SIGNED 09/04/2018

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	New Total Obligated Amount for this Award: $129,747.00 CHANGES FOR LINE ITEM NUMBER: 1-2 Total Amount changed from $40,000.00 to $39,835.00 Obligated Amount for this Modification: $39,835.00 Exercised option NEW ACCOUNTING CODE ADDED: Account code: 17-E1D-05P3-202B06XP1-2505-1805PEX503-001 Beginning FiscalYear 17 Ending Fiscal Year Fund (Appropriation) E1D Budget Organization 05P3 Program (PRC) 202B06XP1 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 1805PEX503-001 Amount: $35,511.00 Subject To Funding: N NEW ACCOUNTING CODE ADDED: Account code: 17-E1-05P3-202B06XP1-2505-1805PEX503-002 Beginning FiscalYear 17 Ending Fiscal Year Fund (Appropriation) E1 Budget Organization 05P3 Program (PRC) 202B06XP1 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 1805PEX503-002 Amount: $1,888.00 Subject To Funding: N NEW ACCOUNTING CODE ADDED: Account code: 18-E1-05P3-000B06XP1-2505-1805PEX503-003 Beginning FiscalYear 18 Ending Fiscal Year Fund (Appropriation) E1 Budget Organization 05P3 Program (PRC) 000B06XP1 Budget (BOC) 2505 Job # (Site/Project) Cost Organization Continued ...				

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	DCN-LineID 1805PEX503-003 Amount: $2,436.00 Subject To Funding: N Delivery: 07/17/2020 Delivery Location Code: CPOD CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 USA Payment: Period of Performance: 07/18/2018 to 07/17/2020 Delivery-Invoice Payment Schedule shall not exceed a frequency greater than once a month and 90% of the task order price. Acceptance for invoicing is based on deliverable approval by the TOCOR. For efficient processing IAW FAR clause 52.232-32, performance based payment invoicing amounts will not be submitted until the TOCOR provides deliverable approval. The TOCOR will notify Tetra Tech within 14 days of submission of a deliverable of EPAs intention to approve or disapprove. TOCOR: Donna Keclik/312-886-6766/keclik.donna@epa.gov ALTOCOR: Belinda Montgomery/312-886-5949/Montgomery.belinda@epa.gov				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE 1 OF PAGES 2

2. AMENDMENT/MODIFICATION NO. P00002

3. EFFECTIVE DATE See Block 16C

4. REQUISITION/PURCHASE REQ. NO. PR-R5-19-00285

5. PROJECT NO. *(If applicable)*

6. ISSUED BY CODE CPOD

CPOD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: NWD
Cincinnati OH 45268

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

TETRA TECH, INC.
Attn: George Townsend
10306 EATON PL STE 340
FAIRFAX VA 22030

CODE 198549560 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

x 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-17-031
68HE0C18F0796

10B. DATED *(SEE ITEM 13)* 07/17/2018

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended , by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted ; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted , such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER *(Specify type of modification and authority)* MUTUAL AGREEMENT- OTHER ADMINISTRATIVE ACTION - DELIVERY DATE EXTENSION

E. IMPORTANT: Contractor ☐ is not ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 198549560
Firm Fixed Price TO Michigan Stream Indicator Development
TOCOR: Donna Keclik-Atch 1 Max Expire Date: 07/17/2020
LIST OF CHANGES:
Reason for Modification: Other Administrative Action - NO COST Delivery Date extension for tasks 4b and 4c(only), listed in the original PWS. Final delivery, with associated base period tasks, slightly delayed due to the Gov shutdown and review by the State of Michigan.
Total Amount for this Modification: $0.00
New Total Amount for this Version: $89,912.00
New Total Amount for this Award: $129,747.00
CHANGES FOR LINE ITEM NUMBER: 1
Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*
Andrea Dehne

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA
ELECTRONIC SIGNATURE
(Signature of Contracting Officer)

16C. DATE SIGNED 05/10/2019

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	CHANGES FOR DELIVERY LOCATION: CAD Delivery Date changed from 05/17/2019 to 07/31/2019 Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 07/18/2018 to 07/17/2020				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE 1 OF PAGES 2

2. AMENDMENT/MODIFICATION NO. P00003

3. EFFECTIVE DATE See Block 16C

4. REQUISITION/PURCHASE REQ. NO. PR-R5-20-00296

5. PROJECT NO. *(If applicable)*

6. ISSUED BY CODE CPOD

CPOD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: NWD
Cincinnati OH 45268

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

TETRA TECH, INC.
Attn: John Hochheimer
10306 EATON PL STE 340
FAIRFAX VA 22030

CODE 198549560 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

x 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-17-031
68HE0C18F0796

10B. DATED *(SEE ITEM 13)* 07/17/2018

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended , by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted ; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted , such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER *(Specify type of modification and authority)* MUTUAL AGREEMENT- OTHER ADMINISTRATIVE ACTION - NO COST/PRICE DELIVERY DATE EXTENSION

E. IMPORTANT: Contractor ☐ is not ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 198549560
Firm Fixed Price TO Michigan Stream Indicator Development
TOCOR: Donna Keclik-Atch 1 Max Expire Date: 09/30/2020
LIST OF CHANGES:
Reason for Modification: Other Administrative Action -NO COST/PRICE DELIVERY DATE EXTENSION due to unanticipated delays involved with the state (MI) index iteration development.
Period Of Performance End Date changed from 17-JUL-20 to 30-SEP-20
Total Amount for this Modification: $0.00

Maximum Potential Expiration Date changed to : 09/30/2020

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*
Andrea Dehne

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA
ELECTRONIC SIGNATURE
(Signature of Contracting Officer)

16C. DATE SIGNED 05/01/2020

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	CHANGES FOR LINE ITEM NUMBER: 1-2 End Date changed from 17-JUL-20 to 30-SEP-20 CHANGES FOR DELIVERY LOCATION: CPOD Delivery Date changed from 07/17/2020 to 09/30/2020 Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 07/18/2018 to 09/30/2020				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE 1 OF PAGES 1

2. AMENDMENT/MODIFICATION NO. P00004

3. EFFECTIVE DATE See Block 16C

4. REQUISITION/PURCHASE REQ. NO.

5. PROJECT NO. *(If applicable)*

6. ISSUED BY CODE CPOD

CPOD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: NWD
Cincinnati OH 45268

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

TETRA TECH, INC.
Attn: John Hochheimer
10306 EATON PL STE 340
FAIRFAX VA 22030

CODE 198549560 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

x 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-17-031
68HE0C18F0796

10B. DATED *(SEE ITEM 13)* 07/17/2018

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended , by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted ; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted , such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
X	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☒ is not ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 198549560
Firm Fixed Price TO Michigan Stream Indicator Development
TOCOR: Donna Keclik Max Expire Date: 09/30/2020
The purpose of this modification is to incorporate the attached EPA blanket administrative modification signed by Raoul Scott on July 30, 2020. All other terms and conditions remain unchanged.
Payment:
Period of Performance: 07/18/2018 to 09/30/2020

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*
Andrea Dehne

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA
ELECTRONIC SIGNATURE
(Signature of Contracting Officer)

16C. DATE SIGNED 10/02/2020

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES

2. AMENDMENT/MODIFICATION NUMBER	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQUISITION NUMBER	5. PROJECT NUMBER *(If applicable)*
	08/13/2020		

6. ISSUED BY CODE

Raoul D. Scott, Director
OMS/ARM/OAS/Policy, Training and Oversight Division
US Environmental Protection Agency, Mail Code 3802R
1200 Pennsylvania Avenue, NW
Washington, DC 20004

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(Number, street, county, State and ZIP Code)*

To All EPA Contractors

CODE FACILITY CODE

(X) 9A. AMENDMENT OF SOLICITATION NUMBER

☐ 9B. DATED *(SEE ITEM 11)*

☒ 10A. MODIFICATION OF CONTRACT/ORDER NUMBER

To all EPA Contracts and Orders

10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NUMBER AS DESCRIBED IN ITEM 14.

CHECK ONE	
☐	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NUMBER IN ITEM 10A.
☒	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
☐	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
☐	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☒ is not ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

This contract/order is being modified in accordance with the applicability instructions in interim FAR Case 2019-009, and FAR 4.2105, requiring contracting officers to include FAR clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

See attached for the full text version of FAR 52.204-25. Contractor Acknowledgment of receipt required.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		Raoul D. Scott, Director Policy, Training and Oversight Division	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		RAOUL SCOTT Digitally signed by RAOUL SCOTT Date: 2020.07.30 11:40:17 -04'00' *(Signature of Contracting Officer)*	

Previous edition unusable

STANDARD FORM 30 (REV. 11/2016)
Prescribed by GSA FAR (48 CFR) 53.243

52.204-25 Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

As prescribed in 4.2105(b) and in the applicability instructions in interim FAR Case 2019-009, insert the following clause:

Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Aug 2020)

(a) *Definitions.* As used in this clause—

Backhaul means intermediate links between the core network, or backbone network, and the small subnetworks at the edge of the network (e.g., connecting cell phones/towers to the core telephone network). Backhaul can be wireless (e.g., microwave) or wired (e.g., fiber optic, coaxial cable, Ethernet).

Covered foreign country means The People's Republic of China.

Covered telecommunications equipment or services means–

(1) Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);

(2) For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);

(3) Telecommunications or video surveillance services provided by such entities or using such equipment; or

(4) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Critical technology means–

(1) Defense articles or defense services included on the United States Munitions List set forth in the International Traffic in Arms Regulations under subchapter M of chapter I of title 22, Code of Federal Regulations;

(2) Items included on the Commerce Control List set forth in Supplement No. 1 to part 774 of the Export Administration Regulations under subchapter C of chapter VII of title 15, Code of Federal Regulations, and controlled-

(i) Pursuant to multilateral regimes, including for reasons relating to national security, chemical and biological weapons proliferation, nuclear nonproliferation, or missile technology; or

(ii) For reasons relating to regional stability or surreptitious listening;

(3) Specially designed and prepared nuclear equipment, parts and components, materials, software, and technology covered by part 810 of title 10, Code of Federal Regulations (relating to assistance to foreign atomic energy activities);

(4) Nuclear facilities, equipment, and material covered by part 110 of title 10, Code of Federal Regulations (relating to export and import of nuclear equipment and material);

(5) Select agents and toxins covered by part 331 of title 7, Code of Federal Regulations, part 121 of title 9 of such Code, or part 73 of title 42 of such Code; or

(6) Emerging and foundational technologies controlled pursuant to section 1758 of the Export Control Reform Act of 2018 (50 U.S.C. 4817).

Interconnection arrangements means arrangements governing the physical connection of two or more networks to allow the use of another's network to hand off traffic where it is ultimately delivered (e.g., connection of a customer of telephone provider A to a customer of telephone company B) or sharing data and other information resources.

Reasonable inquiry means an inquiry designed to uncover any information in the entity's possession about the identity of the producer or provider of covered telecommunications equipment or services used by the entity that excludes the need to include an internal or third-party audit.

Roaming means cellular communications services (e.g., voice, video, data) received from a visited network when unable to connect to the facilities of the home network either because signal coverage is too weak or because traffic is too high.

Substantial or essential component means any component necessary for the proper function or performance of a piece of equipment, system, or service.

(b) Prohibition. (1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. The Contractor is prohibited from providing to the Government any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract, or extending or renewing a contract, with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract.

(c) *Exceptions.* This clause does not prohibit contractors from providing—

(1) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(2) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(d) Reporting requirement.

(1) In the event the Contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the Contractor is notified of such by a subcontractor at any tier or by any other source, the Contractor shall report the information in paragraph (d)(2) of this clause to the Contracting Officer, unless elsewhere in this contract are established procedures for reporting the information; in the case of the Department of Defense, the Contractor shall report to the website at https://dibnet.dod.mil. For indefinite delivery contracts, the Contractor shall report to the Contracting Officer for the indefinite delivery contract and the Contracting Officer(s) for any affected order or, in the case of the Department of Defense, identify both the indefinite delivery contract and any affected orders in the report provided at https://dibnet.dod.mil.

(2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause

(i) Within one business day from the date of such identification or notification: the contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

(ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: any further available information about mitigation actions undertaken or recommended. In addition, the Contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) *Subcontracts.* The Contractor shall insert the substance of this clause, including this paragraph (e) and excluding paragraph (b)(2), in all subcontracts and other contractual instruments, including subcontracts for the acquisition of commercial items.

(End of clause)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE 1 OF PAGES 2

2. AMENDMENT/MODIFICATION NO. P00005

3. EFFECTIVE DATE See Block 16C

4. REQUISITION/PURCHASE REQ. NO. PR-R5-21-00057

5. PROJECT NO. *(If applicable)*

6. ISSUED BY CODE CPOD

CPOD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: NWD
Cincinnati OH 45268

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

TETRA TECH, INC.
Attn: John Hochheimer
10306 EATON PL STE 340
FAIRFAX VA 22030

CODE 198549560 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

x 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-17-031
68HE0C18F0796

10B. DATED *(SEE ITEM 13)* 07/17/2018

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended , by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted ; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted , such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER *(Specify type of modification and authority)* BILATERAL AGREEMENT - CONFIRM DELIVERABLE RECEIPT IN FULL FOR TASK ORDER CLOSEOUT

E. IMPORTANT: Contractor ☐ is not ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 198549560
Firm Fixed Price TO Michigan Stream Indicator Development
TOCOR: Donna Keclik Max Expire Date: 09/30/2020
LIST OF CHANGES:
Reason for Modification: Confirm Order Close Out

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*
Andrea Dehne

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA
ELECTRONIC SIGNATURE
(Signature of Contracting Officer)

16C. DATE SIGNED 01/19/2021

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 07/18/2018 to 09/30/2020				