

MEMORANDUM

DATE: January 14, 2021

TO: Tom Crawford, City Administrator

FROM: Christina Gomes, Recycling and Solid Waste Program Manager

RE: RFP 17-12, Ann Arbor Landfill Monitoring and Maintenance Program
Change Order No. 1 – Tetra Tech, Inc.

Please find attached for your review and signature proposed Change Order No. 2 – Tetra Tech, Inc related to the above referenced project, for Ann Arbor Landfill Monitoring and Maintenance Program.

This change order is for Amendment No. 4 to the Tetra Tech, Inc. Contract approved by Council summer of 2020. This amendment is for work (under separate subcontracts) to repair the clay landfill cap and separately, to repair the landfill discharge line. While the clay cap work came in under approved budget, the landfill discharge repair exceeded the approved amount (found under Tasks 3 and 4 in Amendment No. 4 Appendix) by \$34,676 – from \$78,745 to \$113,421. The source of the increased cost the following items and referenced the attached Word file for additional explanation:

- PW-3R-12 Line Upsize_Construction Delay Summary
- a. Delays due to conflicts on existing underground piping
 - b. Design Change from 4-inch pipe to 6-inch pipe
 - c. Meter diameter change 5.5 inches to 19 inches

There is a \$34,676 increase to the contract amount as a result of this change order and it has received the Contractor's acceptance.

Attachment

Change Order No. 1
PW-3R-12 Line Upsize_Construction Delay Summary



**PUBLIC SERVICES - PUBLIC WORKS UNIT
CHANGE ORDER FOR PROFESSIONAL CONTRACT
NO. R-20-278**

Contractor: Tetra Tech, Inc.

Date: 01/15/21

Contract Name: Landfill Monitoring and Maintenance Project

File No.: 20-0956

Project Acct. No.: 0072-061-6200-4919-5120

PO No.: 2020-00000170

Pay Item No.	Description of Change	Quantity	Unit	Unit Price	Addition (Deduction)
	NEW ITEM(S)				
	PW-3R-12 Discharge Line Replacement overage request from Contingency	1.00	LS	\$113,421.00	\$ 113,421.00
	ITEM(S) DEDUCTED				
	PW-3R-12 Discharge Line Replacement	1.00	LS	\$ (78,745.88)	\$ (78,745.88)
Sub-total of above changes					\$ 34,675.12
Net Addition (Deduction) this Change Order					\$ 34,675.12
Contract amount +/- Previous Change Orders Contingency					\$ 476,031.73
NEW TOTAL CONTRACT AMOUNT					\$ 510,706.85

Time of Completion: No Change; Add ___ days; Deduct ___ days.

Prepared by: Christina Gomes
Christina Gomes, Recycling and Solid Waste Project Coordinator

Date: 1/19/21

The Contractor agrees to the changes and prices outlined above.

Accepted by: [Signature]
Tetra Tech, Inc.

Date: 1/20/2021

Submitted by: [Signature]

Date: 2/3/2021

Reviewed by: [Signature] 02/09/2021

Date: _____

Approved by: [Signature] 02/17/2021

Date: _____

Approved by: [Signature] 02/18/2021

Date: _____

TOM CRAWFORD, CITY ADMINISTRATOR

Ann Arbor Landfill PW-3R-12 Line Upsize: Construction Delay Summary

- Insufficient straight-line space at the Drop-off Station yard to insert 4" discharge line into 6" containment line as originally designed.
- Design revised to omit containment line and upsize discharge line from 4" to 6" and to connect to sanitary on north side to accommodate utility configurations by drilling beneath all utilities instead of attempting to place line between them.
- Soil in area consists of stiff clays north of Ellsworth where utilities were being uncovered; took longer to excavate to locate utilities.
- City of Ann Arbor onsite to mark 24" storm water line utility north of Ellsworth on September 10th. It was supposed to have been marked by September 4th. The size and location of the pipe caused a redesign again for the location of the discharge line.
- The storm water line was marked in the same plane as the Century Link fiber optic line causing confusion about whether the fiber optic was actually marked correctly.
- Driller could not commit to Friday September 11th. The excavated utility locations on the north and south were backfilled and the project shutdown. **One and a half days were removed from the Job Site Services invoice for the drillers delay in the schedule, equipment breakdown and having to re-excavate the utilities the next week.**
- Driller onsite Tuesday September 15th and MISSDIG was called back out to identify the fiber optic line again on the north side of Ellsworth due to concerns it was marked incorrectly as well as utilities on the south side near the sidewalk that could not be located during excavation to confirm them. Directional drilling requires confirming the location of the lines with excavation to proceed.
 - Utility locator identified that a line marked fiber optic on the south side of Ellsworth was actually an empty electrical conduit.
 - The fiber optic line on the south side had to be relocated. It was mismarked next to the gas line north of the sidewalk when it was actually south.
 - Confirmed electric south of Ellsworth was correct.
 - Century Link relocated the fiber optic line north of Ellsworth is in the same place as the 24" stormwater line.
 - JSS excavated to 3' below the stormwater line and were not able to find the fiber optic. (the depth excavated was 9-feet total). The driller was not comfortable without seeing the line and Century Link was contacted to return again. The concern was that the fiber optic may not be in that plane but located somewhere north of south and potentially could be struck.
 - Century Link confirmed the location of the line but indicated that the depth is poorly constrained and could range from 8 to 16-feet below ground surface.
- Design plan revised to accommodate unknown depth of the Century Link fiber optic line and avoid it.
 - Discharge line was revised to start above the stormwater line and dive below the third fiber optic line nearest to the northern edge of Ellsworth.
 - This required starting the drilling further to the north to make the drilling angle needed.
 - This changed the configuration for the connection at the sanitary and required additional PVC piping and fittings to connect securely to the sanitary line.
- Stearns replaced the pump and drop pipe due to the iron buildup.
- Stearns configured piping to accommodate the 6-inch discharge line on the south side to the extraction well.

- Meter change in diameter to 4-inch changed the length of the meter (5.5 inches to 19 inches), which required reconfiguration to ensure a straight line of flow for accuracy in readings. This was getting built out when it was determined that the new 4-inch diameter flow meter requires that the chamber is full of water to accurately measure flow. The configuration could not continuously provide an accurate flow reading; therefore a 2-inch meter was decided on with the following implications:
 - Reworking the piping to accommodate the smaller meter.
 - Paul Matthews with the City indicated that they would prefer to upgrade to the new model flow meter rather than installing the old one. Tetra Tech picked up the new meter the same day (Friday, September 18).
 - The new 2-inch flow meter data cable was too short to exit the manhole. City personnel were unavailable for troubleshooting options delaying installation on Monday 9/21.
 - On Tuesday 9/22, reached Paul who indicated a technician would be onsite at 1PM to install a longer cable and re-program. The technician did not arrive, and Paul sent a message at 4:30 requesting a reschedule to 8AM the following morning. Installed Wednesday, September 23.

**PW-3R-12 Discharge Line Installation
Cost Summary**

Labor

Tt Proposed Budget	Actual Spent	Rationale for differences	Difference (Proposed vs Actual)
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Field Oversight / report

62 hours	121 hours	Differences in quote vs actual spent (\$4,793) primarily related to: Original scope costed for 4 days onsite plus additional time for prep/follow-up tasks. Due to field delays and changes to scope, the discharge line oversight and work took 8 days to complete. Delays and changes include the following: -Air knife/vac truck process to open pits was slower than anticipated due to stiff clays encountered along Ellsworth Road. -Issues with utility locates caused delay, concerns for subcontractors and changes to plan. This required additional utility locate visits from City of Ann Arbor, MISSDIG and Century Link personnel to confirm utility locations. -Utility locate issues included 24" storm sewer not marked on original utility locate, fiber optic line location/depth locate issues, utilities not encountered where located (miss-marked by locators) and empty conduit marked as fiber optic. -The unknown/unconfirmed fiber optic line depth by Century Link personnel caused a change in the plan for the discharge line installation. The discharge line was installed at a different depth and included additional piping changes to attach to sanitary line. -Installed 6 inch line instead of 4 inch inside a 6-inch containment line.	\$3,514.75
\$6,826.00	\$10,340.75		

ROW permit/cross sections and management - coordination, permits, field visits, correspondence w/ City

5 hours	34 hours	Work required ROW permit application and associated cross sections that were not originally budgeted for task. For previous purge well discharge line work (2012), cross section and plan were not required and not in the ROW permit application this time. City eTrakit system originally down when submitting ROW permit application; required additional communication with City Engineering requested as-built and due to changes in the utility locations from MISSDIG; had to update changes. Due to changes in scope/utility issues, additional project management coordination and time was required, including: -Coordinating, reviewing and completing ROW permit applications and editing the cross-section/plan map due to changes on the ground. -Coordination and completion of traffic control permitting needs. -Onsite visits - utility issues and guidance on determining revised discharge line path -Additional correspondence with City and subcontractor personnel related to utilities/infrastructure and discharge line path, ROW and traffic control permits	\$5,152.00
\$590.00	\$5,742.00		

Administrative

Or	1.25 hours	Under proposed budget/similar costs.	
\$128.00	\$80.00		-\$48.00
Letter Report			
\$2,056.00			

Total Labor Hour Cost Difference

Proposed Budget	Actual Spent	Difference
\$7,544.00	\$16,162.75	\$8,618.75

Other Direct Charges (ODCs)

Proposed Budget	Actual Spent		
Vehicle			
\$393.75	\$630.00	Costed for 5 days (\$75/day + markup); work took longer as outlined above, billed 8 days	\$236.25

Subcontractor Invoices

Proposed Budget	Actual Spent		
JSS			
\$39,606.00	\$61,551.00	Differences in quote vs actual spent (\$29,300) primarily related to:	\$21,945.00

PW-3R-12 Discharge Line Installation

Cost Summary

Contractor spent 8 days onsite; original quote for 4 days onsite (credited 1.5 days). Onsite work took longer as outlined above (daily crew and equipment rate doubled from \$22,400 to \$44,800).

Due to changes in discharge line installation (utilities and infrastructure, City input, field logistics), 100 LF of HDD pipe required instead of originally quoted 50 LF (doubled price from \$6,900 to \$13,800 for pipe).

Stearns

\$31,198.13

\$35,072.84

Issues primarily related to meter change delay.

\$3,874.71

Total for Subcontractors

\$70,804.13

\$96,623.84

Total Task Cost Difference (Tt Labor + ODCs + Subs)

Proposed Budget

Actual Spent

Difference

\$78,745.88

\$113,420.59

\$34,674.71