

# DRAIN FIELD REPAIR

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Proposal for  
NORTH FORK SSD

Prepared for  
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## Contact Information

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# Project Description

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## SUMMARY

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APCO is pleased to provide a proposal for repair of the Drain Field Radio I/O panel and communications at North Fork SSD. APCO will replace the water-damaged Drain Field Radio I/O panel and add additional hardware to the Plant Radio I/O panel to allow communication between the Plant and Drain Field sites. APCO's scope for this project is detailed below.

## DRAIN FIELD RADIO I/O PANEL

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### LABOR

- Panel design and drawings
- Panel fabrication
- HMI integration
- I/O radio programming and configuration
- Terminations of wiring inside panel (panel to be installed and wire pulled by Sundance personnel)
- Testing and commissioning

### HARDWARE

- NEMA 4X enclosure
- Backplane
- Transceiver
- Heater
- Power supply and distribution
- Transformer
- I/O radio digital input cards
- Yagi antenna
- Other hardware needed for a complete and functional control panel



## PLANT RADIO I/O PANEL

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### LABOR

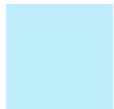
- Panel design and drawings
- I/O radio programming and configuration
- Hardware installation in existing Plant Radio I/O panel
- Testing and commissioning

### HARDWARE

- Transceiver
- PLC relays
- I/O radio digital output cards
- Power distribution

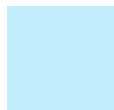
## Assumptions/Clarifications

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- APCO will coordinate with Sundance on the specific panel location and the wiring needed to integrate the drain field monitoring hardware.
- It is assumed that there is sufficient spare I/O and space in the existing Plant Radio I/O panel to add needed hardware for radio communication.
- The existing plant Yagi antenna will be used for communications to the drain fields.
- It is assumed that any required trench work will be provided by Sundance.
- It is assumed that all floats are functioning.
- The Drain Field Radio I/O panel will be installed by Sundance.
- All conduit and the radio antenna will be installed by Sundance.
- Panel terminations in both the Drain Field Radio I/O panel and the Plant Radio I/O panel will be performed by APCO.
- It is assumed that signal/power wires and all wire pulling will be provided by Sundance.
- If APCO needs to provide further installation support (anything more than specified in the scope above) that support will be billed at Time and Expense, according to APCO's current service rates.

## Budget



This project will be carried out on a Fixed Fee basis and this proposal has been prepared in accordance with this billing structure. The project will be billed on a percent complete basis until the fulfilment of the listed price. Equipment procurement is a part of the project and will be billed upon receipt by APCO.

Sales tax will not be charged if a Utah state sales tax exemption certificate is provided or already on file.

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|------------------------|-----------------|
| Labor & Expenses       | \$ 19,717       |
| Hardware (Remote Site) | \$ 14,457       |
| Hardware (Plant Site)  | \$ 5,598        |
| <i>Sales Tax</i>       | <i>\$ 1,454</i> |
| <br>Project Total      | <br>\$ 41,227   |

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## Conclusion

We look forward to working with you on this and future projects. Please contact me if you have any questions.

Sincerely,

Cameron Price  
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