

SOLDIER CANYON WATER TREATMENT AUTHORITY
Monthly Meeting Agenda
4424 Laporte Avenue
Fort Collins, CO 80521

Thursday February 8, 2024

Mission – The Authority delivers the highest quality treated water to its customers with financial responsibility, and following policies established by the Board in a professional, efficient, and ethical manner.

1. Call to Order 10:00 AM
2. Meeting Minutes for January 11, 2024 - **Action Item – Approve Minutes** - “Motion to approve the minutes from the meeting on January 11th, 2024”.
3. Financial Update – Brenda Griffith, **Action Item - Approve Financial Report** - “Motion to approve the SCWTA December 2023 Financial Report”.
4. Manager’s Update – Mark Kempton.
5. 2023 End of year treatment plant capacity update – Mark Kempton - **Information item only**.
6. 2024 Renewal and Replacement (R&R) Fund cash flow projections – Mark Kempton – **Information item only**.
7. Approve Work Orders for LSI Logic – Mark Kempton, **Action Item - Approve Work Orders** - “Motion to approve two Work Orders for LSI Logic.”
 - a. SCADA iFix system upgrade
 - b. PLC 11 (Filters 13-16) upgrade
8. Approve Bid Proposal for Falcon Technology to install a new liner at the PVP Sed Basin (50% cost share with City of Fort Collins) - Mark Kempton, **Action Item – Approve Bid Proposal** – “Motion to approve a Bid Proposal for Falcon Technology to reline the PVP Sed Basin.”
9. Other Business:

The next scheduled Authority Board Meeting is March 14, 2024, at 10:00 a.m.

Soldier Canyon Water Treatment Authority
Board Meeting
January 11, 2024

Present at the meeting:

Board Chairman, Chris Pletcher, FCLWD Manager
Board Vice Chairman, Mike Scheid, ELCO Manager
Board Treasurer, Eric Reckentine, NWCWD Manager
Board Director, Scott Cockroft, NWCWD Director
Board Director, Jim Borland, FCLWD Director
Board Director, Rod Rice, ELCO Director
Mark Kempton, SCWTA Manager
Richard Raines, SCWTA Water Resources Manager
Brenda Griffith, SCWTA Office Administrator

The meeting was called to order at 10:02 a.m. by Board Chairman Chris Pletcher.

Business Conducted

1. Minutes from December 14, 2023, Soldier Canyon Water Authority Board Meetings

Minutes from the December 14, 2023, meeting were presented. Eric Reckentine made a motion to approve the minutes. Scott Cockroft seconded the motion. The motion was unanimously approved.

2. Financial Update

Brenda Griffith presented and reviewed with the Authority Board monthly billing records, a review of the November 2023 O&M expenses and the financial dashboard. Eric Reckentine made a motion to approve the financial reports. Mike Scheid seconded the motion. The motion was unanimously approved.

3. Managers Update

Mark Kempton updated the Board on plant flows and water quality, operations, maintenance, and projects going on in the plant.

4. Munroe Canal Loss Study Change Order Request – Richard Raines

Richard explained the change order related to increased equipment rental fees. The additional cost for this change order is \$2,656.00. Eric Reckentine made a motion to approve the Munroe Canal Loss Study Change Order. Mike Scheid seconded the motion. The motion was unanimously approved.

5. Changeover of Board Chairman, Vice Chairman, and Treasurer positions

- a. Per Section 8 (d) the Authority Bylaws – On January 1, 2020, and January 1 of each even year thereafter the Vice-Chair shall become the Chair, the Treasurer shall become the Vice-Chair, and the Chair shall become the Treasurer.

6. 2024 Administration Resolution

Jim Borland made a motion to approve Resolution No. 2024 – 01, Annual Administrative Resolution. Scott Cockroft seconded the motion. The motion was unanimously approved.

7. Authority Creation Agreement

All signatures have been completed. Mark will follow up to complete.

8. IGA with Fort Collins for the PVP Sed Basin

Eric Reckentine made a motion to approve the IGA with the City of Fort Collins for the PVP Sed Basin. Jim Borland seconded the motion. The motion was unanimously approved.

9. Allottee name change petition with Northern Water for the PVP

Scott Cockroft made a motion to approve the Northern Water Allottee Name Change Petition for the PVP. Mike Scheid seconded the motion. The motion was unanimously approved.

10. CORA Public Records Request Policy Resolution

Jim Borland made a motion to approve Resolution No. 2024 – 02 Establishing a Policy for Requests for Public Records and Assessing Charges for the Production of Public Records. Eric Reckentine seconded the motion. The motion was unanimously approved.

11. Other Business

The Board discussed compensation changes for staff that report directly to the board, retroactive to the first of the year.

12. Adjournment

Mike Scheid made a motion to adjourn the meeting. Eric Reckentine seconded the motion. The motion was unanimously approved, and the meeting was adjourned at 11:05 a.m.

Respectfully submitted,

Mark Kempton – Board Secretary, Soldier Canyon Water Treatment Authority

Approved by Authority Board

Chris Pletcher - Board Chairman, Soldier Canyon Water Treatment Authority

**Soldier Canyon Water Treatment Authority
Custom Transaction Detail Report**

January 2024

Date	Num	Name	Memo	Amount
Jan 24				
01/01/2024		Auto pæ Silver Peaks Accounting	Jan. A/P - Monthly Fee	-1,000.00
01/03/2024	6495	Hensel Phelps Construction Co.	Dec. A/P - R & R Backup Generator/Filters 5 - 8	-7,536.00
01/03/2024		Pd onli Colorado State Treasurer	Dec. A/P - 4th Qtr. 2023	-1,297.79
01/11/2024	6496	A.R.C. Incorporated	Jan. A/P - Cleaning Services	-538.03
01/11/2024	6497	A1 Organics	Sludge	-4,867.20
01/11/2024	6498	Allimax Software	Dec. A/P - Maint. Software Annual Sup.	-4,460.00
01/11/2024	6499	American Equipment	Dec. A/P - Annual Hoist Inspections	-920.25
01/11/2024		Auto pæ American Heritage Life Ins. Co.	Dec. A/P - Voluntary Ins.	-189.69
01/11/2024	6500	Anfeald LLC	Dec. A/P - Fit Tests	-248.00
01/11/2024	6501	Brenntag Pacific, Inc.	Dec. A/P - Chlorite	-29,906.20
01/11/2024	6502	Capital Business Systems	Dec. A/P - Lab & Shop Printer	-79.86
01/11/2024	6503	CEBT	Dec. A/P - Jan. Ins.	-27,599.44
01/11/2024	6504	Colorado Analytical	Dec. A/P - Samples	-105.00
01/11/2024	6505	Continental Supply	Dec. A/P - auto parts/shop sup.	-75.36
01/11/2024	6506	Cummins Rocky Mountain Inc	Dec. A/P - New generator transfer switch	-12,915.00
01/11/2024	6507	Ditesco	R & R Filters 1-4, Filters 5-8, Backup Generator	-13,161.26
01/11/2024	6508	DPC Industries, Inc.	Dec. A/P - chlorine	-8,573.60
01/11/2024	6509	Employers Council Services, Inc.	Jan. A/P - 2024 Membership	-3,800.00
01/11/2024	6510	Fort Collins Connexion	Dec. A/P - Internet	-119.94
01/11/2024	6511	Frank Parts Company	Dec. A/P - Auto parts/sup.	-379.00
01/11/2024	6512	Grainger	Maint. Sup.	-557.16
01/11/2024	6513	Greystone Technology	IT Mgmt, Backups, Email	-3,855.00
01/11/2024	6514	HACH Company	Lab Supplies & Equipment	-7,891.83
01/11/2024	6515	Harcros Chemicals Inc	Dec. A/P - Soda Ash	-10,676.06
01/11/2024		pd onlir Home Depot	Dec. A/P - maint. supplies	-390.11
01/11/2024	6516	INDOFF, INC.	Dec. A/P - Uniforms/Embroidery	-1,361.53
01/11/2024	6517	Jax Inc. Mercantile Company	Dec. A/P - Uniforms	-695.87
01/11/2024	6518	Larimer County Solid Waste Mgmt	Dec. A/P - Plant clean up	-90.65
01/11/2024	6519	Logical Systems, LLC	Dec. A/P - R & R Stratus Server Upgrade	-2,978.50
01/11/2024	6520	Matsuda Enterprises	Dec. A/P - sludge hauling	-4,080.00

Soldier Canyon Water Treatment Authority
Custom Transaction Detail Report





January 2024

Date	Num	Name	Memo	Amount
01/11/2024	6521	Municipal H2O	Jan. A/P - Annual EPA RMP Compliance Service	-4,200.00
01/11/2024	6522	ODP Business Solutions	Office Supplies	-96.62
01/11/2024	6523	ONEPOINTSYNC	Dec. A/P - Phones	-220.55
01/11/2024	pd onlir	Phillips 66 CO/SYNCB	Dec. - Fuel	-167.12
01/11/2024	6524	Sam's Club	Dec. A/P - Misc Admin/Ops Sup.	-247.64
01/11/2024	pd onlir	Shell	Dec. A/P - Fuel	-165.01
01/11/2024	6525	The Sherwin Williams CO	Dec A/P - Paint/Supplies	-749.10
01/11/2024	6526	Thorp Controls	Dec. A/P - Modbus Ethernet	-3,530.00
01/11/2024	6527	US Bank	Dec. A/P - Copier Lease	-583.95
01/11/2024	6528	USALCO	Dec. A/P - CC2000	-17,617.50
01/11/2024	6529	VEOLIA WTS Analytical Instruments,	Jan. A/P - New TOC Analyzer	-48,256.12
01/11/2024	6530	Verizon Wireless	Dec. A/P - Cell phones	-612.47
01/11/2024	6531	VWR International, Inc.	Dec. A/P - Lab Sup.	-71.10
01/11/2024	6532	Wal-Mart	Misc. Ops Supplies	-9.54
01/11/2024	auto pa	Waste Management of No. Colo	Dec. A/P - Trash/Recycling	-741.33
01/11/2024	6533	Winlectric	Dec. A/P - Electrical Sup.	-3,739.63
01/11/2024	pd onlir	Xcel Energy	Dec. A/P - Electric & Gas	-4,190.48
01/11/2024	6534	Blue Earth Solutions, LLC	Dec. A/P - Permit & Regulatory Compliance Support	-3,536.25
01/11/2024	6535	Ditesco	Dec. A/P - Overland Ponds	-1,240.00
01/11/2024	6536	Lyons Gaddis Attorneys & Counselors	Dec. A/P - General	-56.00
01/11/2024	6537	NCWCD	Winter Deliveries & Rule 11 Charge	-106,890.98
01/11/2024	6538	Petty Cash	Jan. A/P - Board Mtgs., Shop Sup., Auto	-243.14
01/18/2024	Auto pe	BASIC Benefits	HRA Accts. Monthly fee & Annual Fee	-529.26
01/18/2024	6539	CenturyLink2	Jan. A/P - Phones	-66.82
01/18/2024	6540	City of Fort Collins	Dec. A/P - UCLPW	-14,644.25
01/18/2024	Pd onlir	First National Bank	Office Sup., Misc., Uniforms	-1,925.42
01/18/2024	Pd onlir	First National Bank Omaha	Dec. A/P - Misc., Off. Sup.	-301.09
01/18/2024	6541	HDR Engineering, Inc.	Dec. A/P - R & R 20 Year Master Plan	-25,797.50
01/18/2024	6542	Vibco, Inc.	Dec. A/P - Valve assy.	-2,937.52
01/18/2024	Pd onlir	Xcel Energy	Dec. A/P - Electric & Gas	-3,132.66
01/23/2024	6543	Ditesco	R & R Filters 5-8, Backup Generator	-8,043.80

Soldier Canyon Water Treatment Authority Custom Transaction Detail Report

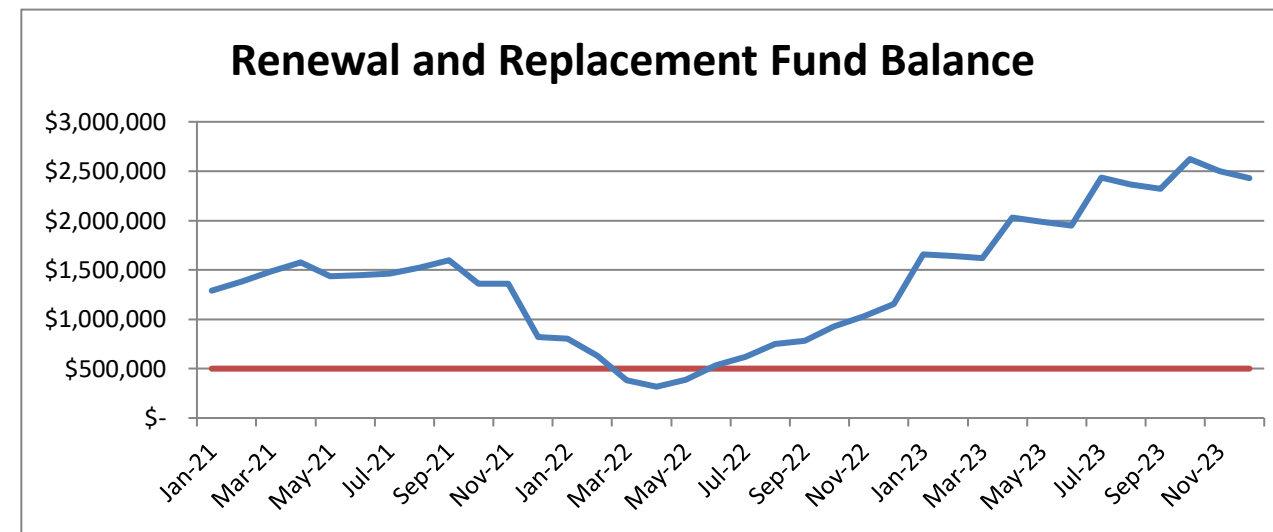
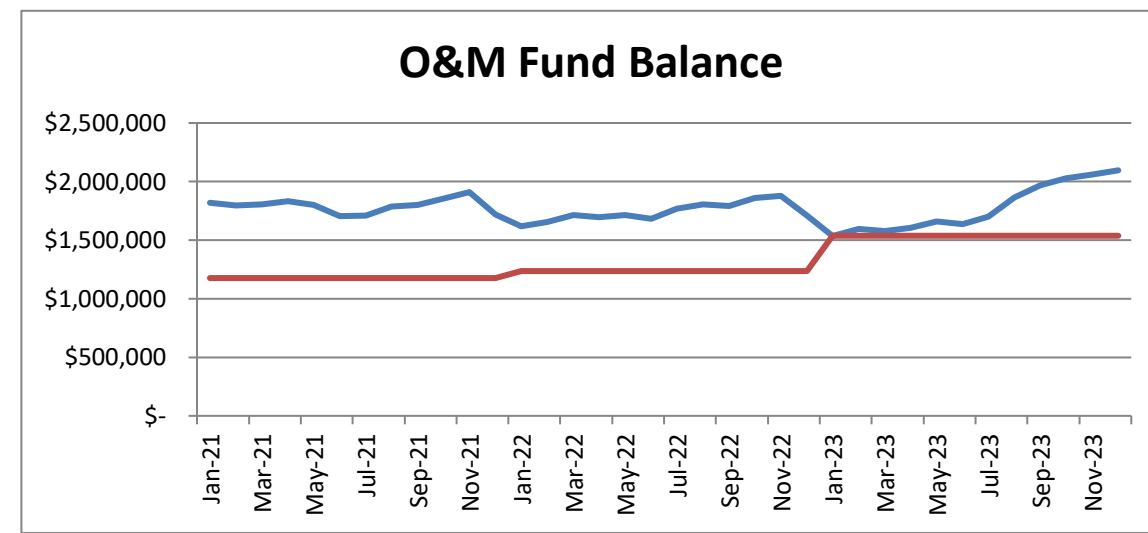
January 2024

Date	Num	Name	Memo	Amount
01/23/2024	pd onlir	Home Depot	Jan. A/P - maint. supplies	-364.88
Jan 24				<u>-405,256.06</u>

	Plant expenses that aren't normal monthly expenses
	Chemicals
	Renewal & Replacement
	Water Resources

	Months												YTD Total	Budget	% To Budget
	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23			
Revenue Total	968,282	463,025	464,463	971,141	503,442	501,943	1,058,163	543,607	539,976	993,826	476,361	465,241	7,949,470	8,154,204	97.49%
<i>Fixed O&M Revenue Total</i>	400,936	400,936	400,936	400,936	400,936	400,936	400,936	400,936	400,936	400,936	400,936	400,936	4,811,232	4,811,235	100.00%
<i>Variable O&M Revenue Total</i>	61,794	55,287	58,635	64,235	97,279	95,852	144,565	137,064	133,533	86,150	55,253	57,895	1,047,542	1,338,719	78.25%
<i>Renewal and Replacement Revenue Total</i>	500,999	-	-	500,999	-	-	500,999	-	-	500,999	-	-	2,003,996	2,004,000	100.00%
<i>Misc./Interest Income</i>	4,553.00	6,802.00	4,892.27	4,971	5,227	5,155	11,663	5,607	5,507	5,741	20,172	6,410	86,700	250	346.8011
Expenses Total	676,279	418,830	501,775	533,725	494,157	561,876	503,486	453,357	481,251	630,882	567,719	498,393	6,321,730	7,850,549	80.53%
<i>Fixed O&M Expenses</i>	556,678	379,324	384,955	366,799	285,290	397,403	307,184	306,365	293,948	311,166	371,745	353,864	4,314,721	4,811,235	89.68%
<i>Variable O&M Expenses</i>	119,601	25,161	95,753	74,094	167,558	124,860	185,874	74,746	142,474	121,856	73,042	74,097	1,279,116	1,035,314	123.55%
<i>Energy Expenses</i>	17,248	17,447	14,084	10,321	9,669	9,767	9,673	4,875	9,709	6,793	15,868	7,323	132,777	105,969	125.30%
<i>Chemical Expenses</i>	102,353	7,714	81,669	63,773	157,888	114,913	176,201	69,871	132,765	115,063	57,175	66,773	1,146,158	1,232,750	92.98%
<i>Renewal and Replacement Expenses</i>	-	14,345	21,067	92,832	41,309	39,613	10,428	72,246	44,829	197,860	122,932	70,432	727,893	2,004,000	36.32%

Reserves



Emergency Reserve Fund Balance end of Dec.
 Minimum Emergency Reserve Target
 +/- Target

2,096,001
1,537,489
558,512

2,429,551
500,000
1,929,551

Soldier Canyon Water Treatment Authority

Soldier Canyon Water Treatment Authority Board Meeting – Plant Manager’s Update

Thursday, February 8, 2024

- Backup Generator project:
 - Waiting for a disconnect switch – work will commence again in March.
- Filters 5-8:
 - Wall coatings are complete.
 - Installing air headers and piping inside filters.
 - Installing filter gallery effluent piping.
 - Planning for the arrival and storage of filter media and training staff on how to place the media per AWWA standards.
- HDR – 20-Year Master Plan:
 - Delivered Tank R&R memo.
- Stantec – 68 MGD Plant Rerating project.
 - Draft report delivered week of Jan 29th.
 - Expected submittal to CDPHE by end of February.
- Working on updates to the Employee Handbook. After a review by the Employers Council, will bring to the Board for approval.
- Staff successfully replaced the Chlorine Dioxide day tank and replumbed the feed and metering system to a simpler, more efficient configuration.
- Working with Ditesco to scope out design and project management services for 2024 projects on the 10-Year R&R list.
- Baker Tilly – Financial Audit week of January 29th.
- The City of Fort Collins signed the PVP Sed Basin IGA.

SOLDIER CANYON WATER TREATMENT AUTHORITY

To: Soldier Canyon Water Treatment Authority Board
From: Mark Kempton, P.E., CWP
cc: N/A
Date: February 8, 2024
Re: 2023 - End of Year Treatment Plant Capacity Update

The following is a summary of the treatment plant annual output and peak productions for the 2023 Calendar year.

1. **Maximum 24-hour flow percentage of plant capacity per District.**

ELCO – 12.5% (Treatment Capacity Share = 22.865%*)
FCLWD – 29.5% (Treatment Capacity Share = 38.405%*)
NWCWD – 23.4% (Treatment Capacity Share = 38.730%*)

*The Treatment Capacity Share defined in the Creation Agreement is based on a 24-hour volume.

2. **Annual production** for 2023 was 7,122 million gallons. This is approximately 15% lower than 2021, and 2022 production volumes. The annual percent breakdown by District was:

ELCO – 18.3%
FCLWD – 36.5%
NWCWD – 45.2%

3. The **peak daily plant production** of 46.6 MGD occurred on July 26, 2023, which is below the 48 MGD threshold listed below.

Section VII. C of the February 1, 2017, Soldier Canyon Water Treatment Authority Creation Agreement states: "Circumstances that shall be deemed to create the necessity to expand or improve the Treatment Facility or obtain additional Treated Water supplies to maintain appropriate levels of water service, include, but are not limited to, the Treatment Facility operating at eighty percent (80%) of maximum Treatment Capacity for ten (10) days during any forty-five (45) day period."

The current Plant Treatment Capacity is 60 million gallons per day (MGD), with 80% of capacity being 48 MGD.

SOLDIER CANYON WATER TREATMENT AUTHORITY

To: Soldier Canyon Water Treatment Authority Board
From: Mark Kempton, P.E., CWP
Date: February 8, 2024
Re: 2024 Renewal and Replacement Fund Cash Flow projections

The Renewal and Replacement (R&R) Fund receives approximately \$2 million per year to address the continuous renewal and replacement of plant assets such as valves, pumps, electrical systems, tanks, SCADA systems, and chemical feed systems. The \$2 million is paid to the Authority on a regular schedule of roughly \$500,000 per quarter. To plan for the successful completion of these projects, an adequate cash flow is necessary to replenish the Fund as work progresses. To assist the Board in evaluating these projects, below is a list of R&R projects in progress, proposed 2024 projects, and a projected cash flow analysis for the R&R Fund for the 2024 calendar year.

Completed Projects

PVP Control Improvements
Filters 1-4 Improvements
PLC #2 Upgrade
SCADA Stratus Server Upgrade

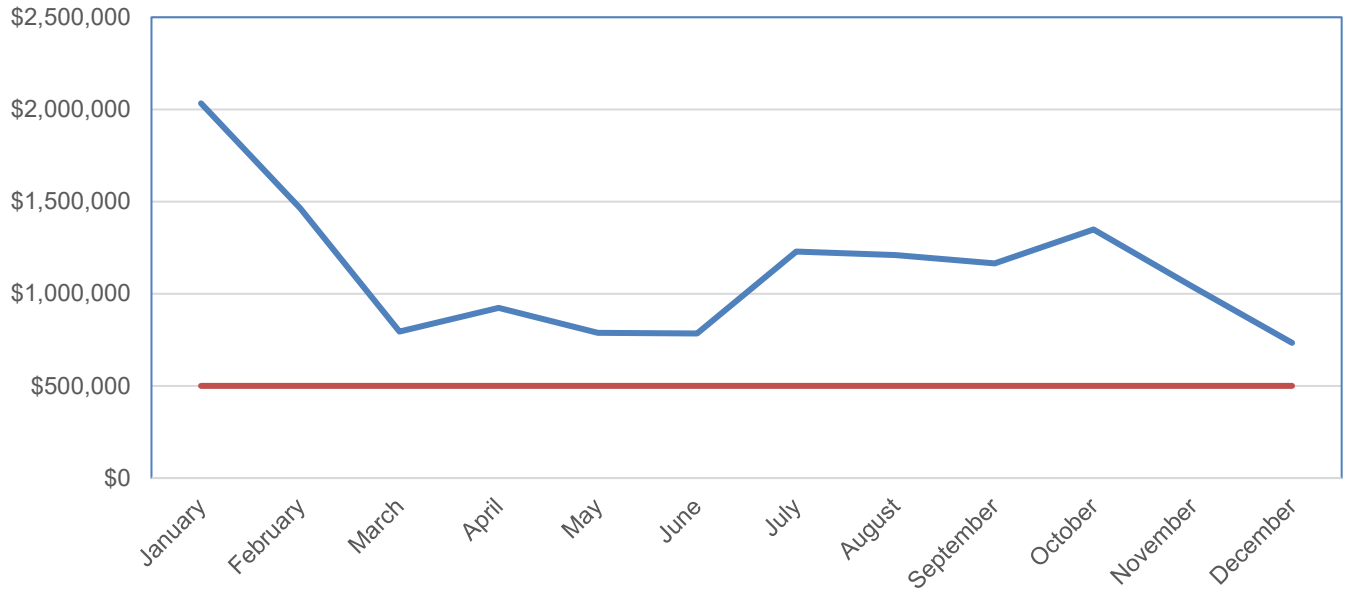
In Progress Projects

Filters 5-8 Improvements & Emergency Backup Generator - \$1,866,074
20 Year Master Plan - \$340,947
Plant Re-rating to 68 MGD - \$60,155

Proposed Projects for 2024

New Electrical Motor Control Center - \$570,000
Upgrade existing iFix SCADA system - \$29,000
Replace NWCWD 20" meter - \$377,000
Recoat Backwash Tanks 1 and 2 - \$230,000
Upgrade PLC 11 (Filters 13-16) - \$61,000
Upgrade Chlorine Dioxide System - \$525,000
Replace HDPE Liner at PVP Sed Basin - \$61,974
New POE sampling location at the CCT - \$35,000
Drain/ Fill valve for North Sed Basin - \$35,000

2024 R&R Fund Projected Cash Flow



SOLDIER CANYON WATER TREATMENT AUTHORITY

WORK ORDER (EXHIBIT A)

Work Order No. 2024-001

Effective Date: February 8, 2024

End Date: December 31, 2024

LSI Logical Systems, Inc. (Consultant) agrees to provide to Soldier Canyon Water Treatment Authority (Client), the professional services described for the Project identified below. The professional services shall be performed in accordance with, and shall be subject to, the terms and conditions of the Master Agreement for Professional Services executed by and between Consultant and Client on the 11th of August, 2022. The work shall be performed in accordance with the provided schedule.

WORK ORDER PROJECT NAME: iFix System Upgrade

WORK ORDER PROJECT DESCRIPTION: Upgrade the Plant SCADA system to the latest version of iFix.

SCWTA WORK ORDER BILLING NUMBER: 2004-001

CONSULTANT CONTACT : Ted Cookson, (303) 215-9950, Tcookson@logicalsysinc.com

CLIENT CONTACT: Mark Kempton, P.E., CWP - (970) 482-3143, mkempton@soldiercanyon.com

SCOPE OF WORK & SCHEDULE: See attached SOW & Schedule (the “**Work**”).

FEE ARRANGEMENT: Time and Materials Not to Exceed \$29,100.

SPECIAL TERMS AND CONDITIONS: Instructions for Payment: Please reference Work Order Billing Number on Invoice when submitting for payment. Please submit requests for payment to: Invoices@soldiercanyon.com.

APPROPRIATION : Client represents that it has available and has appropriated sufficient funds to pay the anticipated costs associated with this Work Order.

Soldier Canyon Water Treatment Authority
(Client)

LSI
(Consultant)

By: _____
Mark Kempton, P.E., CWP
Authority Manager

By: _____
Name:
Title:

Date: February 8, 2024

Date: _____

Address: 4424 LaPorte Avenue
Fort Collins, Colorado 80521
Phone: (970) 482-3143

Address: 400 Corporate Circle
Golden, CO 80401
Phone: (303) 215-9950



LOGICAL SYSTEMS, LLC - Golden Branch

400 CORPORATE CIR., SUITE R

GOLDEN, CO 80401

PHONE: (303) 215-9950

FAX: (303) 215-9952

www.logicalsystinc.com

Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

Mark Kempton

Soldier Canyon Filter Plant

4424 Laporte Ave

Fort Collins, CO 80521

970.482.3143 voice

mkempton@solidercanyon.com

Bid Prepared by Logical Systems, LLC

Proposal No. 27942

Solider Canyon Filter Plant

iFIX SCADA Upgrade



This document is confidential information of Logical Systems, LLC and is only for use by Soldier Canyon Filter Plant and Logical Systems, LLC. All information contained herein is to be strictly controlled and in no case can this information be shared outside of the parties listed here without prior written consent from both parties.



Submitted to: Mark Kempton

Creation Date: January 24, 2024

Submitted by: Ted Cookson

Last Revision Date: January 24, 2024

Reviewed by: Joey Attebery

rev24v0.0

Table of Contents

Overview	2
1 Scope of Work	3
2 Project Management	3
3 Software Licensing	3
4 Control System Integration Effort	3
5 Client Responsibilities	4
6 Schedule	5
7 On-Site Support	5
8 Pricing	6
9 Assumptions, Exclusions, and Clarifications	7
10 Terms and Conditions	7

Overview

Logical Systems, LLC is pleased to present this Time and Material proposal for the professional services required for the iFIX SCADA Upgrade at the Solider Canyon Filter Plant.

In 2023, LSI provided and commissioned new Stratus ftServer hardware and vSphere hypervisor to host Solider Canyon Filter Plant's SCADA and Historian systems. For this scope of work, LSI proposes to install the latest versions of the Plant's GE iFIX SCADA and Historian applications on new Windows Server virtual machines and upgrade the plants existing configurations to the latest application versions, and migrate existing data onto the new system. As part of the upgrade, the plant's legacy GE MBE Powertool Modbus communications driver will be migrated to the latest GE Industrial Gateway Server drivers, and legacy iFIX trend viewer screens will be updated to use GrayMatter SuperTrend graphics.

Submitted to: Mark Kempton
 Submitted by: Ted Cookson
 Reviewed by: Joey Attebery

Creation Date: January 24, 2024
 Last Revision Date: January 24, 2024

1 Scope of Work

The scope of work included herein is to modernize Soldier Canyon Filter Plant’s existing iFIX v5.8 based SCADA configuration and migrate the system to new Windows Server virtual machines. To accomplish the requested migration, LSI will install the latest versions of GE iFIX, Proficy Historian, ThinManager and WIN911 on new virtual machines provided by the Plant. LSI will then migrate the existing configurations to the new servers, update them to run on the latest software versions, and modernize the I/O driver connections and historical trend graphics using the latest available tools from GE and GrayMatter Systems.

This document forms the entire basis for the scope of work and deliverables between the two parties. No other terms other than those contained herein are agreed to. A written purchase order is required for confirmation of the order and must reference this proposal number.

It is recognized by the parties that the aforementioned scope of services is based on the current evaluation and corresponding request by Soldier Canyon Filter Plant and it is possible that variations in the scope of services specified herein may be adjusted from time to time based on newly found needs and requirements at the facility. In such an event, Logical Systems, LLC will use its best efforts to keep Soldier Canyon Filter Plant informed of any such variations and, in any event, shall receive Soldier Canyon Filter Plant’s advance approval prior to undertaking any variations that will increase the costs of services Logical Systems, LLC to Soldier Canyon Filter Plant.

2 Project Management

LSI shall provide specific for its scope, a Project Manager for this effort to serve as the point of contact between Soldier Canyon Filter Plant personnel, contractors, vendors, and the LSI resources working on the project. This allows for timely updates of project milestones and will ensure a seamless documented transfer of information between all parties minimizing the potential for scope changes.

3 Software Licensing

Included in this scope, LSI will provide the following commercial software licenses:

Qty	Description
1 ea.	GE Industrial Gateway Server Basic Perpetual License Includes 1 year pro-rated GlobalCare support, renewal sync'd to SCFP's other iFIX/Historian licenses
1 ea.	GrayMatter SuperTrend Annual Site License

4 Control System Integration Effort

4.1 iFIX Migration and Version Upgrade Effort

Current best practice documentation from GE recommends the use of a Windows domain controller for user authentication with iFIX and Historian. Whether or not iFIX uses a Domain controller must be determined at the time of installation and cannot easily be changed in the future. Accordingly, LSI will configure Domain users for the SCFP industrial control system (ICS) network. The domain controller server will also host licenses for the SCADA applications on the other servers.

Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

LSI will provide the SCADA and Historian upgrade and migration effort for the iFIX server (SCADA), that currently hosts Soldier Canyon's I/O drivers, iFIX database, WIN911, and Historian. LSI will migrate the plant's existing iFIX 5.8 configurations (database, picture/graphics files, etc.) and Historian archives to the new iFIX 2023 server. During the upgrade, LSI will create new IGS channels and devices to provide Modbus/TCP Ethernet connectivity to replace the legacy MBE driver, and update the iFIX database to use the new IGS addresses. LSI will update the system's existing real-time and historical trend pictures to use SuperTrend objects in place of the legacy FIX trend viewer. LSI will also migrate existing Historian system archives and verify historical data is accessible on the new system prior to decommissioning the old system.

LSI will migrate Soldier Canyon's existing ThinManager configurations from the old RDP server to the new RDP server, and update their iFIX clients to the latest version. Other control system files and folders stored on the existing RDP server will also be copied over to the new system prior to decommissioning the old server.

5 Client Responsibilities

5.1 Virtual Machine Infrastructure

Soldier Canyon Filter Plant is to provide three Windows Server 2022 virtual machines running on the new ftServer and vSphere hypervisor. Soldier Canyon Filter Plant is responsible for Windows activation/licensing of these virtual machines.

- "ICS-DC" Instance
 - Minimum resources: 8 GB RAM, 50 GB Datastore
 - Domain Controller role enabled for ICS network.
- "SCADA" Instance
 - Minimum resources: 16 GB RAM, 250 GB Datastore
- "RDP" Instance ThinManager Terminal Server / File Server
 - Minimum resources: 8 GB RAM, 200 GB Datastore
 - Remote Desktop Services role enabled, 20 RDP User CALs installed.

5.2 Source Documentation

Soldier Canyon Filter Plant is to make existing system network configuration documentation and PLC/SCADA configuration files from the existing process available to LSI as necessary to complete specific service requests.

5.3 Existing Equipment Condition

Any equipment required for this scope of work that is existing or provided by others is assumed to be fully functional and operational to support the scope of work. Any equipment found to be in unsatisfactory condition will be repaired or replaced as a change order, separate scope, or by others, as agreed upon by LSI and Soldier Canyon Filter Plant. Should the equipment condition impact LSI's ability to perform the scope, a change order or schedule adjustment may be required by LSI to proceed.

Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

5.4 On-Site Infrastructure for LSI Use

Soldier Canyon Filter Plant will, at a minimum, provide the following (as needed) for the LSI execution team and this scope:

1. Badged Site Access and Parking
2. Internet Access to LSI VPN and bandwidth for audio/video conferencing
3. Printing/Plotting
4. Working and Meeting Space

6 Schedule

A mutually agreeable schedules will be coordinated between LSI and Soldier Canyon Filter Plant staff after acceptance of order.

7 On-Site Support

LSI will provide on-site installation support on a **Time and Material** basis. This proposal includes an estimated five (5) day trips to Soldier Canyon Filter Plant for system commissioning, Owner staff training, or other purposes as directed by plant staff.

Unforeseen on-site delays with existing site conditions, network connections, production rescheduling, plant services, and personnel are not taken into account of which any of these could contribute to extending support over the estimated period. In addition, the estimated period does not account for personnel staying over a weekend or returning on-site for production standby.

All on-site scheduling and Time & Material billing will not be administered without the explicit knowledge and approval of the Soldier Canyon Filter Plant Project Manager.

Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

8 Pricing

Pricing is Time and Material.

Section	Section Total
Project Management	\$ 1,300
Software Licenses	\$ 3,300
Controls System Integration Effort	\$ 14,200
On-Site Support	\$ 10,300
Taxes (Note 1)	Not Included
Estimated Total	\$ 29,100

NOTES:

1. Federal, state, provincial, or local taxes, fees, or permits are not included. LSI will be required to charge and collect sales tax unless furnished with the appropriate exemption documentation.
2. Any overtime required of LSI will be billed at 1.5 times the normal bill rate. Overtime is defined as work exceeding eight (8) hours in a 24-hour period, over 40 hours in five (5) days, LSI Company holidays and Saturdays. National holidays and Sundays will be billed at two (2) times the normal rate. No overtime will be worked without prior approval by Soldier Canyon Filter Plant.
3. This Proposal is valid for 15 days, unless extended in writing by Logical Systems, LLC.
4. Please email purchase order to: clientPO@logicalsystinc.com.
5. Please include the LSI job number (27942) on the purchase order.

Remit Payments to:

Logical Systems, LLC

P.O. Box 341321

Memphis, TN 38184-1321

Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

9 Assumptions, Exclusions, and Clarifications

The following items are LSI's assumptions and/or exclusions for the scope of work defined herein:

1. Overall project management for the project is provided by others.
2. All site installation of the equipment provided in this scope will be by others.
3. Any additional control system hardware will be provided by others.
4. Any additional required software licenses will be supplied by the client.
5. During start-up, client provided electrical support will be available to assist with commissioning that may be required.
6. Electronic copies of CAD files requiring modifications will be supplied by the client in their native format. PDF file will not suffice for this work.
7. System integration and commissioning of equipment provided by others will be provided by others and include a data map for required communications parameters to effect proper machine operation.
8. This scope, proposal, and estimate is based on the source documentation as provided to LSI. If changes are made to or missing items or errors are found in the source documents, it may require LSI to request a change in contract amount and/or schedule.
9. The global supply chain is currently experiencing extended or unreliable lead times for material procurement. LSI will endeavor to hold schedule, but LSI is not responsible for supplier part or equipment delivery issues outside of our control.

10 Terms and Conditions

The terms and conditions shall be governed by the Master Agreement for Professional Services dated August 11, 2022 between Soldier Canyon Water Treatment Authority and Logical Systems, LLC.

End of Proposal

SOLDIER CANYON WATER TREATMENT AUTHORITY

WORK ORDER (EXHIBIT A)

Work Order No. 2024-002

Effective Date: February 8, 2024

End Date: December 31, 2024

LSI Logical Systems, Inc. (Consultant) agrees to provide to Soldier Canyon Water Treatment Authority (Client), the professional services described for the Project identified below. The professional services shall be performed in accordance with, and shall be subject to, the terms and conditions of the Master Agreement for Professional Services executed by and between Consultant and Client on the 11th of August, 2022. The work shall be performed in accordance with the provided schedule.

WORK ORDER PROJECT NAME: PLC 11 (Filters 13-16) Upgrade

WORK ORDER PROJECT DESCRIPTION: PLC 11 (Filters 13-16) Upgrade.

SCWTA WORK ORDER BILLING NUMBER: 2004-002

CONSULTANT CONTACT : Ted Cookson, (303) 215-9950, Tcookson@logicalsysinc.com

CLIENT CONTACT: Mark Kempton, P.E., CWP - (970) 482-3143, mkempton@soldiercanyon.com

SCOPE OF WORK & SCHEDULE: See attached SOW & Schedule (the “**Work**”).

FEE ARRANGEMENT: Time and Materials Not to Exceed \$60,800

SPECIAL TERMS AND CONDITIONS: Instructions for Payment: Please reference Work Order Billing Number on Invoice when submitting for payment. Please submit requests for payment to: Invoices@soldiercanyon.com.

APPROPRIATION : Client represents that it has available and has appropriated sufficient funds to pay the anticipated costs associated with this Work Order.

Soldier Canyon Water Treatment Authority
(Client)

LSI
(Consultant)

By: _____
Mark Kempton, P.E., CWP
Authority Manager

By: _____
Name:
Title:

Date: February 8, 2024

Date: _____

Address: 4424 LaPorte Avenue
Fort Collins, Colorado 80521
Phone: (970) 482-3143

Address: 400 Corporate Circle
Golden, CO 80401
Phone: (303) 215-9950

Soldier Canyon Water Treatment Authority

LSI Logic

ATTN: Ted Cookson

LSI Logic

400 Corporate Cr, Suite R

Golden, CO 80401

303-215-9950

tcookson@logicalsysinc.com

PURCHASE ORDER

DATE

01/31/2024

P.O. NO.

2024-002

QTY	DESCRIPTION	UNIT PRICE	TOTAL
1	Upgrade PLC 11 (Filters 13-16)	\$ 60,800.00	\$ 60,800.00
			\$ -
			\$ -
			\$ -
			\$ -
			\$ -
			\$ -
			\$ -
			\$ -
			\$ -
			\$ -
TOTAL			\$ 60,800.00

SPECIAL INSTRUCTIONS

See attached SOW and Budget from LSI

APPROVING PARTY

Authority Manager

APPROVING PARTY SIGNATURE

Mark Kempton

DATE

01/31/2024



LOGICAL SYSTEMS, LLC - Golden Branch

400 CORPORATE CIR., SUITE R

PHONE: (303) 215-9950

GOLDEN, CO 80401

FAX: (303) 215-9952

www.logicalsystinc.com

Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

Mark Kempton

Soldier Canyon Filter Plant

4424 Laporte Ave

Fort Collins, CO 80521

970.482.3143 voice

mkempton@soldiercanyon.com

Bid Prepared by Logical Systems, LLC

Proposal No. 27521

Soldier Canyon Filter Plant

PLC-11 (Filter 13-16) Improvements



This document is confidential information of Logical Systems, LLC and is only for use by Soldier Canyon Filter Plant and Logical Systems, LLC. All information contained herein is to be strictly controlled and in no case can this information be shared outside of the parties listed here without prior written consent from both parties.



Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

rev24v0.0

Table of Contents

Overview	2
1 Scope of Work	3
2 Equipment	3
3 Project Management	4
4 Hardware Design Effort	4
5 Documentation	4
6 Control System Integration Effort	4
7 On-Site Support.....	5
8 Installation	5
9 Client Responsibilities	6
10 Schedule.....	6
11 Pricing.....	7
12 Assumptions, Exclusions, and Clarifications.....	7
13 Terms and Conditions	8

Overview

Logical Systems, LLC is pleased to present this Time & Material proposal for the professional services required for the PLC-11 (Filter 13-16) Improvements on the Soldier Canyon Filter Plant.

The control system at Soldier Canyon Filter Plant mainly consists of Modicon Quantum programmable controllers that are reaching the end of their useful life. The plant has begun a phased upgrade strategy to replace the Quantum hardware with Modicon M340 and M580 processors and X80 series I/O modules. In 2022, LSI replaced the PLC-9 and PLC-10 Quantum hardware controlling Filters 5-12 with M-340 systems. LSI now proposes to upgrade the final filter cell PLC, PLC-11, controlling the operation of filters 13-16. LSI will migrate the existing Quantum logic onto the new platform and confirm there is adequate I/O capacity to accommodate automatic filter backwashing. LSI will also integrate the upgraded controller with the plant iFIX SCADA system.

As PLC-11 is the final filter controller lacking Ethernet communications capability, LSI will also re-route existing Modbus+ serial communications among Filter PLCs 8-12 and internal data concentrator PLC-16 to use Modbus/TCP Ethernet communications.

Submitted to: Mark Kempton
 Submitted by: Ted Cookson
 Reviewed by: Joey Attebery

Creation Date: January 24, 2024
 Last Revision Date: January 24, 2024

1 Scope of Work

This scope of work is based on LSI’s knowledge of the Soldier Canyon Filter Plant control system having reviewed the Modicon Quantum controller configuration and logic programs provided by the plant staff in February 2022. Our project team lead, Ted Cookson, performed a plant walkthrough with Soldier Canyon Filter Plant to identify PLC components nearing the end of support. This proposal is the next part of a phased migration plan begun by the plant staff to modernize the plant’s systems. Filters 1-4, 9-12, and 17-20 have already been upgraded from a Quantum to an M340 platform. This proposed scope of work extends this established approach to the next set of filter console controls, assumed to be Filters 5-8.

As part of this effort LSI will:

- Create I/O drawings to migrate the 28 existing Quantum I/O modules to X80 modules.
- Convert the existing Quantum ladder logic programs to the Control Expert platform
- Support the installation and commissioning of the new Owner provided hardware in the plant and integrate the new controller with the existing iFIX SCADA system.

This document forms the entire basis for the scope of work and deliverables between the two parties. No other terms other than those contained herein are agreed to. A written purchase order is required for confirmation of the order and must reference this proposal number.

It is recognized by the parties that the aforementioned scope of services is based on the current evaluation and corresponding request by Soldier Canyon Filter Plant and it is possible that variations in the scope of services specified herein may be adjusted from time to time based on newly found needs and requirements at the facility. In such an event, Logical Systems, LLC will use its best efforts to keep Soldier Canyon Filter Plant informed of any such variations and, in any event, shall receive Soldier Canyon Filter Plant’s advance approval prior to undertaking any variations that will increase the costs of services Logical Systems, LLC to Soldier Canyon Filter Plant.

2 Equipment

Soldier Canyon Filter Plant will provide the Modicon M340 controller hardware required to replace the existing Modicon Quantum controller backplane, processor, and I/O modules.

LSI will provide the necessary miscellaneous and/or consumable material to support the installation of the new controller.

Table 1 – Installation Support Material

Qty	Description
1 lot	MTW, 14AWG, 600V
1 lot	Heat shrink wire labels, 2 per I/O point
1 lot	Miscellaneous consumables

Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

3 Project Management

LSI shall provide specific for its scope, a Project Manager for this effort to serve as the point of contact between Soldier Canyon Filter Plant personnel, contractors, vendors, and the LSI resources working on the project. This allows for timely updates of project milestones and will ensure a seamless documented transfer of information between all parties minimizing the potential for scope changes.

4 Hardware Design Effort

Prior to M340 controller hardware installation, LSI will create I/O loop drawings for the upgraded control system to be used during installation of the new controllers. Using PDF drawings provided by Soldier Canyon Filter Plant as a basis, one drawing per PLC card will be created. In addition to the controller I/O module termination points, LSI's drawings will include existing Quantum termination points (card and point), signal descriptions, loop numbers, field wire numbers, etc. as available from the existing PDF as-builts. In addition to documenting the migration of existing I/O points, these drawings will identify controller I/O points that are reserved for future functions such as automatic filter backwash control.

LSI will provide a communications schematic for the new M340 controller to document the updated controller network configuration including expansion backplane details, controller-to-controller communications, and iFIX SCADA communications with the updated controller.

5 Documentation

As-built drawings of the Modicon controller I/O created during the design process will be provided after commissioning to capture any field changes during system startup. These drawings will be provided in PDF and hard copy format for incorporation with Soldier Canyon Filter Plant's existing operations & maintenance manuals. Native AutoCAD drawings will be provided for your records as well.

6 Control System Integration Effort

Control System Integration Effort

LSI will provide the control system integration effort for one filter cell M340 processor. Integration includes conversion of the existing Quantum/ProWorx32 controller logic to a Control Expert/M340 program and verifying the conversion of the logic. LSI will incorporate the addition of automatic filter I/O and programming.

As PLC-11 is the final filter controller lacking Ethernet communications capability, LSI will also re-route existing Modbus+ serial communications among Filter PLCs 8-12 and internal data concentrator PLC-16 to use Modbus/TCP Ethernet communications. M340 Modbus+ proxy hardware removed from existing filter consoles will be returned to Soldier Canyon Filter Plant for re-deployment in other plant locations.

LSI will also update the plant iFIX SCADA database and filter control screens, alarm configuration, and Proficy Historian data collection if these are affected by the controller logic conversion.

Submitted to: Mark Kempton

Creation Date: January 24, 2024

Submitted by: Ted Cookson

Last Revision Date: January 24, 2024

Reviewed by: Joey Attebery

7 On-Site Support

LSI will provide on-site installation support for the retrofitting of the existing equipment and the modifications to the control system configuration on a **Time and Material** basis. This proposal does provide a startup estimate for the sake of providing a complete project cost.

Unforeseen, on-site delays with existing site condition, network connections, production rescheduling, plant services, and personnel are not taken into account of which any of these could contribute to extending a line's startup over the estimated period. In addition, the estimated period does not account for personnel staying over a weekend or returning on-site for production standby.

All On-site scheduling and Time & Material billing will not be administered without the explicit knowledge and approval of the Soldier Canyon Filter Plant Project Manager.

7.1 Installation Support

LSI has budgeted for fifteen (15) days of on-site support for installation, assuming two (2) racks per week. Installation support includes:

- Demolition of existing controller racks and installation of the new controllers in the existing filter consoles.
- De-termination, relabeling, and re-termination of existing I/O wiring within the existing filter consoles by LSI or LSI's electrical subcontractor. This estimate includes ten (10) days of subcontractor effort. The subcontractor cost assumes a team of two (2) electricians on-site for the ten-day installation period.
- Support, clarification, and verification of I/O status in the controller and plant iFIX database by an LSI control engineer. This estimate includes five (5) days of verification and installation support.

7.2 Checkout and Commissioning

LSI has budgeted for two (2) days of on-site support to recommission the system after installation of the new controller.

- After static checks are complete, LSI will verify iFIX graphics, alarms, and historical trending are connected to the new controller and fully functional.
- Automatic SCADA and local manual operability of each filter will be verified with the assistance of plant operators.

8 Installation

LSI will install the Owner provided Modicon M340 controller hardware (PLC racks, I/O modules, etc.) and remove the existing Quantum hardware (PLC racks, I/O modules, etc.) in the existing filter consoles. Installation includes determination, relabeling, and re-termination of field wire within the existing consoles.

Submitted to: Mark Kempton

Submitted by: Ted Cookson

Reviewed by: Joey Attebery

Creation Date: January 24, 2024

Last Revision Date: January 24, 2024

9 Client Responsibilities

9.1 Source Documentation

Soldier Canyon Filter Plant is to provide applicable P&ID, schematic, and control loop drawings of the existing process to LSI.

9.2 Existing Equipment Condition

It is the responsibility of Soldier Canyon Filter Plant to ensure that all existing equipment to be reused, is fully functional and operational to support the scope of this proposal. Any equipment found not to be in satisfactory condition will be identified to the Owner.

9.3 On-Site Infrastructure for LSI Use

Soldier Canyon Filter Plant will, at a minimum, provide the following for the LSI execution team and this scope:

1. Badged Site Access and Parking (if required)
2. Internet Access to LSI VPN and bandwidth for audio/video conferencing
3. Printing/Plotting
4. Working and Meeting Space

10 Schedule

A mutually agreeable schedule will be coordinated between LSI and Soldier Canyon Filter Plant staff after receipt of purchase order.

Soldier Canyon Filter Plant should plan on a two-week outage of the four filters affected by the upgrade.

Submitted to: Mark Kempton
 Submitted by: Ted Cookson
 Reviewed by: Joey Attebery

Creation Date: January 24, 2024
 Last Revision Date: January 24, 2024

11 Pricing

Pricing is Time & Material.

Section	Section Total
Project Management	\$ 2,000
Hardware Design & Documentation Effort	\$ 11,900
Existing Program Conversion & Integration	\$ 6,300
Installation	\$ 21,500
Startup & Commissioning	\$ 18,400
Miscellaneous Field Supplies	\$ 700
Taxes (Note 1)	Not Included
Estimated Total	\$ 60,800

NOTES:

1. Federal, state, provincial, or local taxes, fees, or permits are not included. LSI™ will be required to charge and collect sales tax unless furnished with the appropriate exemption documentation.
2. Any overtime required of LSI will be billed at 1.5 times the normal bill rate. Overtime is defined as work exceeding eight (8) hours in a 24-hour period, over 40 hours in five (5) days, LSI Company holidays and Saturdays. National holidays and Sundays will be billed at two (2) times the normal rate. No overtime will be worked without prior approval by Soldier Canyon Filter Plant.
3. This Proposal is valid for 30 days, unless extended in writing by Logical Systems, LLC.
4. Please email purchase order to: clientPO@logicalsystinc.com.

Remit Payments to:

Logical Systems, LLC
 P.O. Box 341321
 Memphis, TN 38184-1321

12 Assumptions, Exclusions, and Clarifications

The following items are LSI's assumptions and/or exclusions for the scope of work defined herein:

1. Overall project management for the project is provided by others.
2. Except as noted, all site installation of the equipment provided in this scope will be by others.
3. Any additional control system hardware will be provided by others.
4. Any additional required software licenses will be supplied by the client.
5. During start-up, client provided electrical support will be available to assist with any re-wiring that may be required.
6. Electronic copies of CAD files requiring modifications will be supplied by the client in their native format. PDF file will not suffice for this work.
7. System integration and commissioning of equipment provided by others will be provided by others and include a data map for required communications parameters to effect proper machine operation.



LOGICAL SYSTEMS, LLC - Golden Branch

400 CORPORATE CIR., SUITE R

GOLDEN, CO 80401

PHONE: (303) 215-9950

FAX: (303) 215-9952

www.logicalsystinc.com

Submitted to: Mark Kempton

Creation Date: January 24, 2024

Submitted by: Ted Cookson

Last Revision Date: January 24, 2024

Reviewed by: Joey Attebery

8. This scope, proposal and estimate is based on the source documentation as provided to LSI. If changes are made to or missing items or errors are found in the source documents, it may require LSI to request a change in contract amount and/or schedule.
9. The global supply chain is currently experiencing extended or unreliable lead times for material procurement. LSI will endeavor to hold schedule, but LSI is not responsible for supplier part or equipment delivery issues outside of our control.

13 Terms and Conditions

The terms and conditions shall be governed by the Master Agreement for Professional Services dated August 11, 2022 between Soldier Canyon Water Treatment Authority and Logical Systems, LLC.

End of Proposal



Mr. Matt Smith
Soldier Caynon Water Treatment

CO Larmier

12/28/2023

RE: Quote #1228231603

Mr. Matt Smith ,

Below is the cost estimate for the above referenced Quote #1228231603.

Falcon Technologies and Services (FTSI) appreciated the opportunity to provide you this pricing proposal for Services to Soldier Caynon Water Treatment . We at FTSI look forward to partnering with you in all of your current and future SPCC solutions. Feel free to contact me with any questions at anyone of the outlets below.

Sincerely,

Oren Sparks
Sales
T: +1 970 616 2776 | M: +1 970 616 2776
FalconTSI.com



320 Gateway Drive STE 2
 Johnstown, CO 80513
 T: +1 970 460 9156

QUOTE

Quote Date: 12/28/2023
 Quote Expiration: 1/27/2024

Ship To: Soldier Caynon Water Treatment
 ATTN: Matt Smith

Bill To: Soldier Caynon Water Treatment
 ATTN: Matt Smith

Item	Description	Quantity	Unit Price	Total Value
10	SITEGUARD Spill Guard Containment 1015'X30'X0' Tan	1	\$119,628.87	\$119,628.87
20	Mobilization Hours	8	\$93.86	\$750.88
30	Sand Blast Unit	1	\$1,260.00	\$1,260.00
40	Sand - Media	1	\$1,050.00	\$1,050.00
50	Trencher	1	\$1,260.00	\$1,260.00

Total Amount* **\$123,949.75**

*State and Local taxes will be applied on invoice.

Additional comments and requirements to insure optimal results:

This is a "turn-key" solution with minimal dirt work required. Please grade pad in accordance with your desired water drainage.

P2P Fees:

Field Crews include Prep/Poly at \$50.00/hr/person. Rates utilize current diesel fuel prices and assume 50 mph travel time portal to portal.

Rock Clause:

Additional time and equipment required due to below grade rock will be invoiced at \$430/hr plus 3rd party mileage at \$2.50/mile plus \$40/Rock Blade. Additionally the Falcon crew will be charged at \$100/man/hour during the 3rd party rock truck activities.

Standby Time:

Standby time due to location not being ready when crew arrives or any other delays not related to Falcon will be charged at \$120/man/hr.

High Wind Conditions:

In case of winds in excess of 20 mph, additional charges for consumed polyurea may apply at a price of \$30.00/gallon.

THIS IS A QUOTE

GROUNDGUARD

Pre-sprayed liner that consists of geotextile substrate robotically coated with an impermeable layer of a proprietary polyurea



Ideal for applications in:

- Secondary containment
- Vapor barrier applications
- Wastewater treatment
- Above- and below-ground waterproofing
- Retention ponds
- Industrial facilities
- Ditches and irrigation canals (water reclamation)
- Landfill
- Aviation
- Mining
- Power generation
- Nuclear facilities
- Agricultural ponds
- Recreational ponds and lagoons



Features

- Chemically inert, environmentally friendly, contains no Volatile Organic Compounds (VOC)
- Proprietary state-of-the-art, automated manufacturing process provides the highest level of consistency and coverage per square foot
- Engineered and tested to resist tearing, puncturing and most chemicals
- Retains properties after years of exposure to UV light and extreme weather
- Over 25 million square feet produced and proven durable in harsh oilfield and industrial conditions



Benefits

- Far outlasts less durable alternative liners such as HDPE, LLDPE, PVC and EPDM
- Provides a seamless, weld-free liner solution, eliminating leaks due to weld failures
- Reduces installation time, resulting in lower costs
- Lays flatter for easier installation, reducing trip hazards
- Durable under heavy vehicle traffic
- Maintenance-free, easy to clean and reusable
- Lowers total cost of ownership with a proven useful life of 20+ years
- Eliminates labor-intensive surface preparation to various substrates
- Seamless waterproofing membrane has excellent impact and abrasion resistance for harsh environments

Customize to fit any application

GROUNDGUARD can be customized to your application with different types of slip-resistant options including crumb rubber, coal slag, aluminum oxide or quartz. Multiple color and woven or non-woven geotextile combinations are available.

GROUNDGUARD

Pre-sprayed liner that consists of geotextile substrate robotically coated with an impermeable layer of a proprietary polyurea

Elastomer physical properties

Physical Test	Test Method	Typical Value
Hardness, Shore A	ASTM D-2240	85-90
Tear strength (pli)	ASTM D-624	300-350
Elongation (%)	ASTM D-412	350-500

Standard liner properties

Physical Test	Test Method	Typical Value
Taber abrasion (mg wt loss)	ASTM D-4060	1.0* (0.001%)
Static coefficient of friction (wet/dry)	ASTM C-1028	0.77/1.02
Electrical resistance (Ω)	ASTM F-150	10 ¹² (insulative)
Permeability (perms)	ASTM E-96	0.05
Permeability (cm/sec)	ASTM D-4491	0 x 10 ⁻¹²

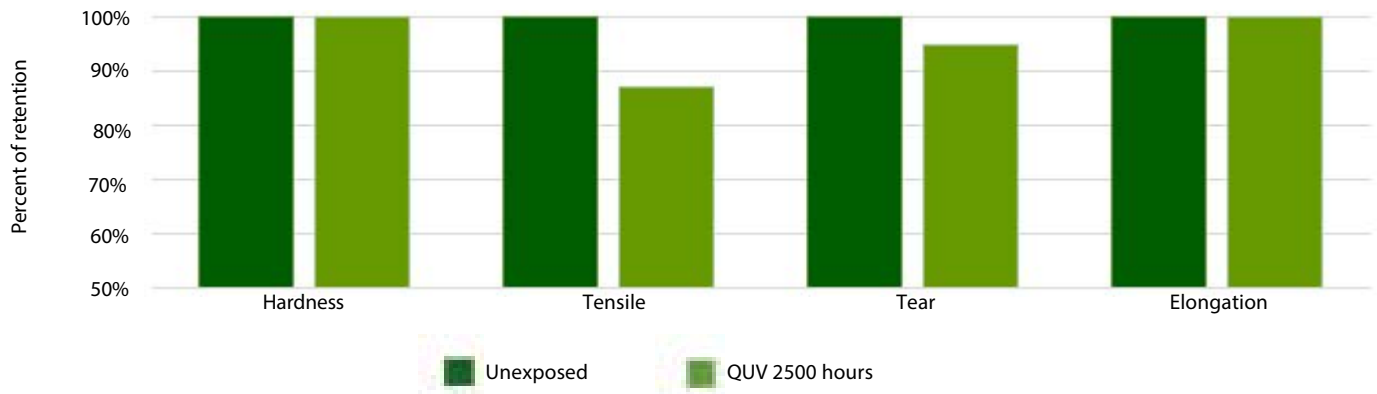
*Abrasion loss: tested at CS17 wheel, 1 kg load, 1,000 cycles

Coated geotextile physical properties

Liner description	Avg Thickness (mils)	ASTM D-412 Tensile strength (psi)	ASTM D-751 Puncture Resistance (lbs)	ASTM D-624 Tear Resistance (lbs)
16 oz Non-Woven Potable	60	911	140	78
16 oz Non-Woven	55	502	140	69
10 oz Non-Woven	55	811	99	47
Woven Heavy Duty	85	577	214	44
Woven Select	60	4,112	135	32
GROUNDGUARD LITE	40	15	37	19

Result is average of machine and transverse direction

Weatherability characteristics



Physical properties retention after 2500hrs QUV

Talk to ASSETGUARD to find out how we can keep your worksite compliant and environmentally safe. Learn more at +1 800 551 3247 | assetguardproducts.com

