ELDRIDGE ELECTRIC AND WATER UTILITY BOARD

August 22, 2023
5:00 pm
City Hall, 305 N. 3rd Street

1. Call to order
2. Public Comment
3. Approval of Agenda
4. Approval of Minutes –August 8, 2023

5. Financial
   A. Consideration to Approve Bills Payable

6. Electric Department – Mike Anderson
   A. Outage
   B. Cost of Power Analysis
   C. PCA Update
   D. Department update

7. Water Department – Brock Kroeger
   A. Water Tower Reports
   B. Department Update

8. Administrative –
   A. Department Update

9. Adjournment

NEXT REGULAR MEETING Tuesday, September 5, 2023 at 5:00pm

Agenda

The regular meeting of the Eldridge Electric and Water Utility Board was called to order at 5:00 P.M. on August 8, 2023, at Eldridge City Hall.

Board members present were Brock Kroeger, Mike Anderson, Paula Steward, and Jim Skadal. Barb O'Brien was absent. Also, present Jake Rowe and Jody Coffman. Visitors Dan Collins, Andy Ristau, Chad Hanson, and Jay Anderson.

Public Comment- None

Motion by Anderson, second by Skadal to approve the agenda All ayes.

Motion by Steward second by Anderson to approve the minutes from July 18, 2023. All ayes.

FINANCIAL – Motion by Kroeger to approve bills payable in the amount of $233,576.67, second by Skadal. All ayes.

ELECTRIC –
Representatives from CMPAS gave a presentation about the services they provided for us and what other services they offer.

Department update: The crew has completed Ivy Aces and are now installing cables in Grunwald Grove. They are also installing new services. Gabe has given his notice and his last day will be 8-10-23.

WATER- Water testing was done on 7-11-23 at locations. All passed.

KLM completed their inspection.

ISG was here last week and worked with the Water Department on training and troubleshooting.

Department update: Regal Manufacturing received the regulator, we a just waiting for an official statement. Lead and copper samples are being taken and sent this week. We received a letter from the EPA wanting information about the Chlorine leak. The crew is flushing. The last safety meeting was about chlorine safety.

ADMINSTRATION-

Department update: No update

Motion by Skadal to adjourn the meeting at 6:13 P.M., second by Anderson. All ayes.

Jody Coffman
Billing Clerk

Agenda

Utility Bills Payable for AUGUST 8, 2023

TOTAL CHECKS	34,839.17
MidAmerican Wire Transfer- WS4 - Louisa energy charge - CMMPA	211,750.51
Credit Cards	919.43
PAYROLL August 19, 202	$28,128.04
TOTAL	**275,637.15**

VENDOR SET: 01 City of Eldridge
BANK: 00 FIRST CENTRAL UTILITY
DATE RANGE: 0/00/0000 THRU 99/99/9999

Agenda

VENDOR	I.D.	NAME	STATUS	CHECK DATE	AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
1		KONRADY, MATT							
	I-000202308083784	US REFUND	R	8/08/2023			225423		
	630 2033	DEPOSIT REFUNDS PAYABLE	03-2790-08		22.24				22.24
1		RAAP, KIM							
	I-000202308083782	US REFUND	R	8/08/2023			225424		
	630 2033	DEPOSIT REFUNDS PAYABLE	01-6223-05		90.56				90.56
1		VANACKER, SETH							
	I-000202308083783	US REFUND	R	8/08/2023			225425		
	630 2033	DEPOSIT REFUNDS PAYABLE	03-2680-11		75.20				75.20
1		COUNSIL IV, EDWARD							
	I-000202308153787	US REFUND	R	8/15/2023			225426		
	630 2033	DEPOSIT REFUNDS PAYABLE	01-6161-08		72.03				72.03
1		PHIPPS, MADISON							
	I-000202308153788	US REFUND	R	8/15/2023			225427		
	630 2033	DEPOSIT REFUNDS PAYABLE	06-2210-15		15.68				15.68
1		LOONEY, DEVIN							
	I-000202308163792	US REFUND	R	8/16/2023			225428		
	630 2033	DEPOSIT REFUNDS PAYABLE	01-6038-19		68.24				68.24
000324		ADAIR COUNTY TREASURER							
	I-202308173809	PROPERTY TAXES	R	8/17/2023			225431		
	630 5-820-64181	PROPERTY TAXES	PROPERTY TAXES		2,674.00				2,674.00
001988		ALLIANT ENERGY CO.							
	I-202308173825	UTILITIES	R	8/17/2023			225432		
	600 5-810-6371	UTILITIES	UTILITIES		216.98				216.98
002648		AUXIANT							
	I-202308173823	CLAIM FUNDING	R	8/17/2023			225433		
	821 5-630-6184	UTILITY INSURANCE REIMBURSEMEN	CLAIM FUNDING		15.10				15.10
000047		CENTRAL SCOTT TELEPHONE							
	I-202308173828	WIFI, TELEPHONE	R	8/17/2023			225434		
	600 5-810-6373	TELEPHONE & INTERNET	WIFI, TELEPHONE		277.28				
	630 5-820-6373	TELEPHONE & INTERNET	WIFI, TELEPHONE		493.00				770.28
000131		CINTAS CORPORATION							
	I-4164232607U	MATS	R	8/17/2023			225435		
	630 5-820-6310	B & G MATERIAL	MATS		45.49				45.49

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VENDOR	I.D.	NAME	STATUS	CHECK DATE	AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
000231		COMMUNITY ACTION OF EASTERN IO							
	I-202308173812	PROJECT SHARE	R	8/17/2023			225436		
	630 5-820-64131	PROJECT SHARE REMITTANCE	PROJECT SHARE		29.00				29.00
000890		DELTA DENTAL							
	I-202308173814	ACT INSURED EMPLOYEES	R	8/17/2023			225437		
	600 5-810-6150	GROUP INSURANCE	ACT INSURED EMPLOYEE		245.08				
	630 5-820-6150	GROUP INSURANCE	ACT INSURED EMPLOYEE		213.16				458.24
000103		ELDRIDGE WELDING							
	I-109089	1 PC 1/2X1" FLAT 60"	R	8/17/2023			225438		
	630 5-820-6332	VEHICLE MAINTENANCE	1 PC 1/2X1" FLAT 60"		26.00				26.00
000125		FLETCHER-REINHARDT CO.							
	I-S1301508.015	SECONDARY EXTENSION	R	8/17/2023			225439		
	630 5-820-6507	OPERATING SUPPLIES & MATERIALS	SECONDARY EXTENSION		178.48				178.48
003226		HAWKINS INC.							
	I-6551971	CHLORINE	R	8/17/2023			225440		
	600 5-810-6501	TREATMENT MATERIALS	CHLORINE		10.00				10.00
000429		J & R SUPPLY INC							
	I-2307617-IN	CHLORINE REGULATOR	R	8/17/2023			225441		
	600 5-810-6311	WATER PLANT MAINTENANCE	CHLORINE REGULATOR		3,963.00				3,963.00
000777		MENARDS							
	I-14947	PAINT	R	8/17/2023			225442		
	630 5-820-6507	OPERATING SUPPLIES & MATERIALS	PAINT		47.94				47.94
001605		METERING & TECHNOLOGY SOLUTION							
	I-INV28512	3" WATER METER HEAD	R	8/17/2023			225443		
	600 5-810-63711	OPERATING SUPPLIES & MATERIAL	3" WATER METER HEAD		128.99				128.99
000763		MUSCATINE COUNTY TREAS							
	I-202308173815	PROPERTY TAXES	R	8/17/2023			225444		
	630 5-820-64181	PROPERTY TAXES	PROPERTY TAXES		23.00				23.00
000323		NORTH SCOTT PRESS							
	I-202308173830	UTILITY BOARD	R	8/17/2023			225445		
	630 5-820-6414	PUBLISHING	UTILITY BOARD		135.15				135.15
000335		POLK COUNTY TREASURER							
	I-202308173816	PROPERTY TAXES	R	8/17/2023			225446		
	630 5-820-64181	PROPERTY TAXES	PROPERTY TAXES		1,879.00				1,879.00

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VENDOR	I.D.	NAME	STATUS	CHECK DATE	AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
002774		PREMIER PEST MANAGEMENT							
	I-26918U	GEN PEST	R	8/17/2023			225447		
	630 5-820-6310	B & G MATERIAL	GEN PEST		12.50				12.50
003828		QC ANALYTICAL SERVICES LLC							
	I-2308039	COLIFORM	R	8/17/2023			225448		
	600 5-810-6451	WATER TESTING	COLIFORM		200.00				200.00
000356		QC METALLURGICAL LAB							
	I-B2934	BACTERIA & ECOLI	R	8/17/2023			225449		
	600 5-810-6451	WATER TESTING	BACTERIA & ECOLI		25.00				25.00
000935		RESCO							
	I-902755-01	U-GUARD ADAPTER	R	8/17/2023			225450		
	630 5-820-6560	INTO INVENTORY	U-GUARD ADAPTER		610.00				610.00
000403		SCOTT COUNTY TREASURER							
	I-202308173817	PROPERTY TAXES	R	8/17/2023			225451		
	630 5-820-64181	PROPERTY TAXES	PROPERTY TAXES		13,014.00				13,014.00
001982		SHARED IT INC							
	I-10774U	IT SERVICES	R	8/17/2023			225452		
	600 5-810-6373	TELEPHONE & INTERNET	IT SERVICES		137.55				
	630 5-820-6373	TELEPHONE & INTERNET	IT SERVICES		137.55				275.10
000461		STATE HYGENIC LABORATORY							
	I-260779	FLUORIDE	R	8/17/2023			225453		
	600 5-810-6451	WATER TESTING	FLUORIDE		21.00				21.00
003236		TIPTON ELECTRIC MOTORS INC.							
	I-314914	AIR COMPRESSOR MOTOR	R	8/17/2023			225454		
	600 5-810-6310	B & G MATERIAL	AIR COMPRESSOR MOTOR		1,056.52				1,056.52
000459		U.S. POST OFFICE							
	I-202308173821	POSTAGE	R	8/17/2023			225455		
	630 5-820-6508	POSTAGE	POSTAGE		500.00				500.00
002227		UNUM LIFE INSURANCE COMPANY OF							
	I-202308173819	ACT INSURED EMPLOYESS	R	8/17/2023			225456		
	600 5-810-6150	GROUP INSURANCE	ACT INSURED EMPLOYES		86.36				
	630 5-820-6150	GROUP INSURANCE	ACT INSURED EMPLOYES		178.40				264.76
000691		VERIZON WIRELESS							
	I-9941641465U	UTILITY CELLULAR	R	8/17/2023			225457		
	630 5-820-6373	TELEPHONE & INTERNET	UTILITY CELLULAR		122.63				
	600 5-810-6373	TELEPHONE & INTERNET	UTILITY CELLULAR		168.86				291.49

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VENDOR I.D.	NAME	STATUS	CHECK DATE	AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
000033	WELLMARK BLUE CROSS							
I-2322300006576U	ACT INSURED EMPLOYEES	R	8/17/2023			225458		
600 5-810-6150	GROUP INSURANCE	ACT INSURED EMPLOYEE		1,925.32				
630 5-820-6150	GROUP INSURANCE	ACT INSURED EMPLOYEE		4,270.77				6,196.09
000650	WEX BANK							
I-91133295U	FUEL	R	8/17/2023			225459		
600 5-810-6331	VEHICLE OPERATION	FUEL		736.36				
630 5-820-6331	VEHICLE OPERATION	FUEL		691.75				1,428.11

* * T O T A L S * *	NO			INVOICE AMOUNT	DISCOUNTS	CHECK AMOUNT
REGULAR CHECKS:	35			34,839.17	0.00	34,839.17
HAND CHECKS:	0			0.00	0.00	0.00
DRAFTS:	0			0.00	0.00	0.00
EFT:	0			0.00	0.00	0.00
NON CHECKS:	0			0.00	0.00	0.00
VOID CHECKS:	0	VOID DEBITS	0.00			
		VOID CREDITS	0.00	0.00	0.00	

TOTAL ERRORS: 0

** G/L ACCOUNT TOTALS **

G/L ACCOUNT	NAME	AMOUNT
600 5-810-6150	GROUP INSURANCE	2,256.76
600 5-810-6310	B & G MATERIAL	1,056.52
600 5-810-6311	WATER PLANT MAINTENANCE	3,963.00
600 5-810-6331	VEHICLE OPERATION	736.36
600 5-810-6371	UTILITIES	216.98
600 5-810-63711	OPERATING SUPPLIES & MATERIAL	128.99
600 5-810-6373	TELEPHONE & INTERNET	583.69
600 5-810-6451	WATER TESTING	246.00
600 5-810-6501	TREATMENT MATERIALS	10.00
	*** FUND TOTAL ***	9,198.30
630 2033	DEPOSIT REFUNDS PAYABLE	343.95
630 5-820-6150	GROUP INSURANCE	4,662.33
630 5-820-6310	B & G MATERIAL	57.99
630 5-820-6331	VEHICLE OPERATION	691.75
630 5-820-6332	VEHICLE MAINTENANCE	26.00
630 5-820-6373	TELEPHONE & INTERNET	753.18
630 5-820-64131	PROJECT SHARE REMITTANCE	29.00
630 5-820-6414	PUBLISHING	135.15

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** G/L ACCOUNT TOTALS **

G/L ACCOUNT	NAME	AMOUNT
630 5-820-64181	PROPERTY TAXES	17,590.00
630 5-820-6507	OPERATING SUPPLIES & MATERIALS	226.42
630 5-820-6508	POSTAGE	500.00
630 5-820-6560	INTO INVENTORY	610.00
	*** FUND TOTAL ***	25,625.77
821 5-630-6184	UTILITY INSURANCE REIMBURSEMEN	15.10
	*** FUND TOTAL ***	15.10

	NO	INVOICE AMOUNT	DISCOUNTS	CHECK AMOUNT
VENDOR SET: 01 BANK: 00 TOTALS:	35	34,839.17	0.00	34,839.17
BANK: 00 TOTALS:	35	34,839.17	0.00	34,839.17
REPORT TOTALS:	35	34,839.17	0.00	34,839.17

Agenda

SELECTION CRITERIA

VENDOR SET: 01-City of Eldridge
VENDOR: ALL
BANK CODES: Include: 00
FUNDS: All

CHECK SELECTION

CHECK RANGE: 225423 THRU 225459
DATE RANGE: 0/00/0000 THRU 99/99/9999
CHECK AMOUNT RANGE: 0.00 THRU 999,999,999.99
INCLUDE ALL VOIDS: YES

PRINT OPTIONS
SEQUENCE: CHECK NUMBER

PRINT TRANSACTIONS: YES
PRINT G/L: YES
UNPOSTED ONLY: NO
EXCLUDE UNPOSTED: NO
MANUAL ONLY: NO
STUB COMMENTS: YES
REPORT FOOTER: NO
CHECK STATUS: NO
PRINT STATUS: * - All

Employee	Transaction Date	Vendor	Description	Amount	Charging Number
Jacob Rowe	7/25/2023	American Water College	Study Guide for Bryson	$179.99	600-5-810-6230
Gabe Stricker	7/11/2023	UPS	Shipping	$29.16	630-5-820-6457
Gabe Stricker	8/8/2023	UPS	Shipping	$21.50	630-5-820-6457
Gabe Stricker	7/24/2023	Hy-Vee	Gatorade	$20.96	630-5-820-6240
Jacob Powell	7/17/2023	Commercial Printers	Shipping	$12.89	600-5-810-6508
Jacob Powell	7/17/2023	Hach Company	Flouride and Nitrite Testing	$467.20	600-5-810-6451
Jacob Powell	7/18/2023	Hy-Vee	Water Plant Supplies	$32.00	600-5-810-6310
Jacob Powell	7/19/2023	Commercial Printers	Shipping	$13.16	600-5-810-6508
Jacob Powell	7/21/2023	Ferguson	Hydrant Wrenches	$55.16	600-5-810-6765
Jacob Powell	7/24/2023	Commercial Printers	Shipping	$28.15	600-5-810-6508
Jacob Powell	8/7/2023	Hy-Vee	Water Plant Supplies	$7.47	600-5-810-6310
Jacob Powell	8/8/2023	Commercial Printers	Shipping	$51.79	600-5-810-6508
Total				~~$739.44~~	

919.43

Agenda

Agenda

OUTAGE REPORT

Date: 8/18/23

Address: 312 W Price St.

Outage Time: 8:20 am – 8:50 am

Cause: Animal Contact

# of Customers: 5

Agenda

RETAIL

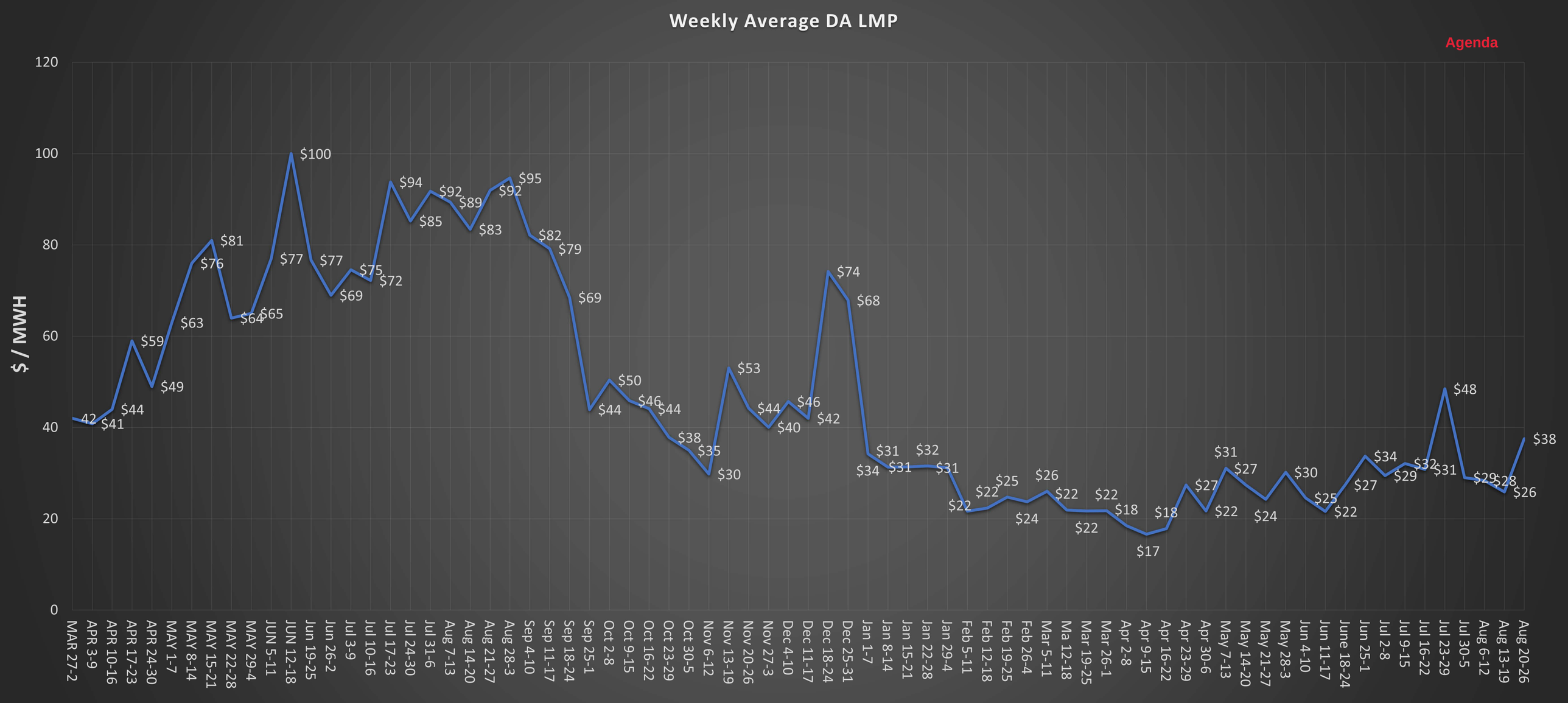
	JULY	AUGUST	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	YTD	21-22	DIFFERENCE
CMPAS EXPENSE															
ENERGY SUPPLY	325,233	347,683	267,656	136,013	107,426	172,721	96,727	61,853	67,054	58,065	74,472	129,073	1,843,975	1,904,123	
TRANSMISSION	48,454	41,931	38,379	44,344	8,872	30,582	36,225	23,690	19,288	17,850	20,536	44,929	375,078	416,334	
CAPACITY	23,230	23,230	22,480	23,230	22,480	23,230	23,270	21,011	23,244	19,216	23,244	950	248,815	29,769	
TOTAL	396,916	412,843	328,515	203,586	138,778	226,533	156,222	106,553	109,587	95,130	118,251	174,952	2,467,868	2,350,226	5.01%
kWh	4,096,665	3,809,991	3,345,481	2,812,748	2,968,948	3,468,532	3,389,696	2,984,235	3,129,745	3,144,180	2,954,628	3,823,336	39,928,185	41,386,711	-3.52%
RATE	0.0969	0.1084	0.0982	0.0724	0.0467	0.0653	0.0461	0.0357	0.0350	0.0303	0.0400	0.0458	0.06181	0.05679	8.84%
UTILITY SALES															
SALES	324,034	334,668	346,560	312,022	213,757	216,265	221,348	272,204	237,769	218,735	219,975	219,296	3,136,633	3,267,381	-4.00%
PCA	195,679	204,355	214,430	138,718	100,831	102,997	44,045	60,050	48,785	22,976	24,748	24,266	1,181,880	(436,596)	
TOTAL	519,713	539,023	560,990	450,740	314,588	319,262	265,393	332,254	286,554	241,711	244,723	243,562	4,318,513	2,830,785	52.56%
kWh	3,621,234	3,785,927	3,972,628	3,504,967	2,552,789	2,605,569	2,733,705	3,567,867	3,026,548	2,750,214	2,728,479	2,659,056	37,508,983	39,193,951	-4.30%
RATE	0.1435	0.1424	0.1412	0.1286	0.1232	0.1225	0.0971	0.0931	0.0947	0.0879	0.0897	0.0916	0.11513	0.07223	59.41%
NET INCOME															
NET RETAIL INCOME	122,797	126,180	232,475	247,154	175,810	92,729	109,171	225,701	176,967	146,581	126,472	68,610	1,850,645	480,559	285.10%
NET INCOME/kWh	0.0339	0.0333	0.0585	0.0705	0.0689	0.0356	0.0399	0.0633	0.0585	0.0533	0.0464	0.0258	0.04934	0.01226	302.40%

GENERATION

	JULY	AUGUST	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	YTD	21-22	DIFFERENCE
GENERATION EXPENSE															
WS4	87,000	123,000	70,000	17,000	-	5,000	46,000	66,000	95,000	7,000	32,000	67,000	615,000	534,000	
LGS	39,000	60,000	84,000	72,000	84,000	56,000	55,000	77,000	50,000	54,000	92,000	65,000	788,000	1,028,000	
TOTAL EXPENSE	126,000	183,000	154,000	89,000	84,000	61,000	101,000	143,000	145,000	61,000	124,000	132,000	1,403,000	1,562,000	-10.18%
GENERATION PRODUCTION															
WS4-MWH	1,782	2,266	2,479	916	1,640	2,235	1,839	770	179	(39)	1,633	2,515	18,213	12,211	
LGS-MWH	2,666	2,534	1,055	726	864	2,032	1,278	1,124	1,615	625	1,662	1,597	17,777	16,781	
TOTAL MWH	4,448	4,800	3,534	1,642	2,504	4,267	3,117	1,894	1,793	586	3,295	4,112	35,990	28,992	24.14%
GENERATION SALES															
WS4	120,408	170,561	140,903	37,904	67,402	84,143	52,693	15,186	6,778	(36)	46,525	76,103	818,569	488,670	
LGS	208,970	227,712	98,951	35,637	51,979	123,751	47,066	30,210	43,535	18,742	49,700	51,732	987,985	738,365	
TRANSMISSION	9,380	9,351	9,264	9,328	9,045	9,263	9,222	8,995	9,097	9,016	9,066	9,408	110,435	108,299	
TOTAL INCOME	338,758	407,624	249,119	82,869	128,426	217,157	108,981	54,390	59,410	27,722	105,291	137,243	1,916,989	1,335,334	43.56%
NET INCOME															
NET INCOME	212,758	224,624	95,119	(6,131)	44,426	156,157	7,981	(88,610)	(85,590)	(33,278)	(18,709)	5,243	513,989	(226,666)	326.76%

RETAIL / GENERATION NET INCOME

	JULY	AUGUST	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	YTD	21-22	DIFFERENCE
NET EXPENSE															
WHOLESALE EXPENSE	126,000	183,000	154,000	89,000	84,000	61,000	101,000	143,000	145,000	61,000	124,000	132,000	1,403,000	1,562,000	
RETAIL EXPENSE	396,916	412,843	328,515	203,586	138,778	226,533	156,222	106,553	109,587	95,130	118,251	174,952	2,467,868	2,350,226	
TOTAL	522,916	595,843	482,515	292,586	222,778	287,533	257,222	249,553	254,587	156,130	242,251	306,952	3,870,868	3,912,226	-1.06%
NET REVENUE															
WHOLESALE REVENUES	338,758	407,624	249,119	82,869	128,426	217,157	108,981	54,390	59,410	27,722	105,291	137,243	1,916,989	1,335,334	
RETAIL REVENUES	519,713	539,023	560,990	450,740	314,588	319,262	265,393	332,254	286,554	241,711	244,723	243,562	4,318,513	2,830,785	
TOTAL	858,471	946,647	810,109	533,609	443,014	536,419	374,374	386,644	345,964	269,433	350,014	380,805	6,235,502	4,166,119	49.67%
NET INCOME															
NET INCOME	335,554	350,804	327,594	241,023	220,236	248,886	117,151	137,091	91,378	113,304	107,762	73,852	2,364,634	253,893	831.35%
RATE/kWh	0.0927	0.0927	0.0825	0.0688	0.0863	0.0955	0.0429	0.0384	0.0302	0.0412	0.0395	0.0278	0.06304	0.00648	873.19%


Weekly Average DA LMP
Agenda
$ / MWH
120
100
80
60
40
20
0
42
$41
$44
$59
$49
$63
$76
$81
$64
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$38
MAR 27-2
APR 3-9
APR 10-16
APR 17-23
APR 24-30
MAY 1-7
MAY 8-14
MAY 15-21
MAY 22-28
MAY 29-4
JUN 5-11
JUN 12-18
Jun 19-25
Jun 26-2
Jul 3-9
Jul 10-16
Jul 17-23
Jul 24-30
Jul 31-6
Aug 7-13
Aug 14-20
Aug 21-27
Aug 28-3
Sep 4-10
Sep 11-17
Sep 18-24
Sep 25-1
Oct 2-8
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Oct 16-22
Oct 23-29
Oct 30-5
Nov 6-12
Nov 13-19
Nov 20-26
Nov 27-3
Dec 4-10
Dec 11-17
Dec 18-24
Dec 25-31
Jan 1-7
Jan 8-14
Jan 15-21
Jan 22-28
Jan 29-4
Feb 5-11
Feb 12-18
Feb 19-25
Feb 26-4
Mar 5-11
Ma 12-18
Mar 19-25
Mar 26-1
Apr 2-8
Apr 9-15
Apr 16-22
Apr 23-29
Apr 30-6
May 7-13
May 14-20
May 21-27
May 28-3
Jun 4-10
Jun 11-17
June 18-24
Jun 25-1
Jul 2-8
Jul 9-15
Jul 16-22
Jul 23-29
Jul 30-5
Aug 6-12
Aug 13-19
Aug 20-26

Agenda

Eldridge, Iowa

Inspection Report:
300,000-Gallon Capacity
Iowa Street Tower

Prepared by:

KLM Engineering, Inc.
1976 Wooddale Drive, Suite 4 | Woodbury, MN 55125
651.773.5111 | www.klmengineering.com

August 2023

Project No.: 4738-22

Table of Contents

1.0| PROJECT INFORMATION

KLM Project No.: 4738-22 **Customer P. O. Number:** N/A

Tank Owner: Eldridge, Iowa **Phone:** 563-285-4841

Street/City/State/Zip: 305 North Third Street, Eldridge, IA 52748

Tank Owner Contact: Jake Rowe, Line Foreman

Owner's Tank Designation: Iowa Street Tower

Tank Description: Toro Ellipsoidal

Tank Street Location: 200 East Iowa Street, Eldridge, IA 52748

Purpose of Inspection: Condition Assessment

Date of Inspection: August 1, 2023

Inspected By: Devin Severson, NACE #78234, and Matt Finley

Type of Inspection: KLM standard dry tank cleanout inspection

Manufacturer: Unknown **Construction Date:** Unknown

Serial No.: Unknown **Design Code:** AWWA D100

Capacity: 300,000 gallons

Type of Construction: Welded

Tank Diameter: ~44 Feet

Height to: Overall ~135 Feet

Height to: HWL ~130 Feet LWL ~100 Feet

Tank Construction Drawings: Not Available to KLM

Previous Inspection Records: Not Available to KLM

EXISTING COATING INFORMATION

	Interior Wet	Exterior
Date Last Coated	Unknown	Unknown
Full or Spot Repair	Full	Full
Coating Contractor	Unknown	Unknown
Surface Preparation	Blast	Blast
Paint System	Alkyd	Alkyd
Paint Manufacturer	Unknown	Unknown
Paint Chip Samples	Taken	Taken

Eldridge, Iowa

300,000-GALLON CAPACITY
IOWA STREET TOWER

2.0| REFERENCES

The tank interior and exterior areas were evaluated in conformance with the following:

a. KLM Engineering, Inc. Proposal.

b. General guidelines of AWWA Manual M42 Appendix C “Inspecting and Repairing Steel Water Tanks, and Elevated Tanks for Water Storage.”

c. KLM "Procedures and Guidelines for Inspecting Existing Steel and Concrete Water Storage Tanks."

d. AWWA Standard D100-11; Welded Carbon Steel Tanks for Water Storage.

e. Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers; Recommended Standards for Water Works 2018 Edition.

3.0| COATINGS EVALUATION

3.1| Lead and Chromium Content Analysis

Paint samples were taken from areas of the reservoir commonly found to have heavy metal (lead, chromium, etc.) based primers and are filed at KLM’s office for future testing. Additional fees would apply to have these samples tested if requested outside of specification development by KLM for the next reconditioning. Higher concentrations of heavy metals were commonly used in coatings for many years as a corrosion inhibitor and to improve durability. Specifically, the use of lead was phased out by federal regulations starting in the 1970’s. Lower quantities of the other metals may still be in use today.

Should test results show higher concentrations of metals in the samples, specifications would be developed to address worker safety and methods for removal and disposal of the coatings. Proprietary products are available to incorporate into the blasting removal process to mitigate risks to workers and convert the waste into a non-hazardous material that can be disposed of at typical construction debris landfills.

3.2| Interior Wet Coating

The interior wet coating is in fair condition with greater than five percent visible coating failures above the high-water line (HWL) and approximately one percent coating failures below the HWL. Failures above the HWL consist of corrosion along unwelded roof plate overlap joints, unwelded finial vent and wet access manway collars, intermittently welded joints between the rafters and the roof plates, and unwelded overlap joint between the roof plates and upper torus. Failures below the HWL consist of pinhole corrosion along the intermittently welded shell stiffener ring and isolated pinhole corrosion at random locations on the bowl and riser cone. Dark brown and rust colored staining is very pronounced along the HWL but still present on most of the surfaces below the water level. A minor amount of sediment accumulation was present and removed from the bowl area during the cleanout. See photos in Appendix A.

3.3| Exterior Coating

The exterior appears to have been overcoated several times but is in good overall condition with less than three percent visible coating failures. Failures consist of pinhole corrosion on the access ladders and balcony handrail. Dirt and organic growth are present on the lower torus and bowl, making the tower appear dirty in those areas. The accumulation is not a significant impact to the coating, however. See photos in Appendix A.

3.4| Replacement Coating Systems

When the next full reconditioning is required, KLM recommends preparing surfaces in accordance with NACE guidance and applying a coating system for each area according to the following.

3.4.1| Interior Wet Coating

Surface preparation should be performed according to SSPC-SP10 Near White Metal Blast criteria.

Apply a two-coat system:

1. moisture cured zinc-rich
2. NSF 61 certified epoxy

3.4.2| Exterior Coating

Surface preparation should be performed according to SSPC-SP6 Commercial Blast Clean criteria.

Apply a four-coat system:

1. moisture cured zinc-rich
2. polyamidoamine epoxy
3. aliphatic acrylic urethane
4. fluoropolymer

4.0| STRUCTURE MODIFICATIONS

Structure modifications and repairs serve to bring the tank into compliance with OSHA regulations, AWWA standards, and Iowa DNR regulations. They also improve areas of the tank that are prone to premature development of corrosion, repair surface defects resultant from tank construction, remove abandoned and unnecessary equipment, and improve tank maintenance capabilities.

The following is a list of recommended modifications and repairs to be included during the next reservoir reconditioning. Detailed information important to each item will be determined when developing the project specifications. Additional minor modifications, not impacting the estimated project cost, may be identified and incorporated at that time.

Photographs referred to in this section are in Appendix A.

4.1| Interior Wet Modifications

4.1.1 Seal weld miscellaneous roof and upper torus joints to prevent rust streaking and corrosion in areas inaccessible to paint. See photos 2 through 7.

4.1.2 Seal weld all bolted roof-framing connections and remove all nuts and bolts after welding. Welding rafter connections are a standard in AWWA D100-11. See photos 2 through 7.

4.1.3 Seal weld the intermittently welded stiffener angles, shell stiffener ring, and support column stiffeners for compliance with AWWA D100-11. See photos 2 through 10.

4.1.4 Install a welded-in-place grating at the top of the wet riser. This grating should be capable of supporting a painter's rigging. Having this arrangement facilitates future maintenance and prevents a fall down the wet riser. See photo 19.

4.1.5 Replace the gasket on the wet riser manway. See photos 21 and 42.

4.1.6 Grind off all weld spatter and erection scab marks for compliance with AWWA D100-11.

4.2| Exterior Modifications

4.2.1 Install a pipe-style roof handrail conforming to OSHA regulations to enclose the existing roof manway and the finial vent. Include installing a non-skid walkway within the area of the handrailing and a self-closing gate where the roof ladder meets the handrail.

4.2.2 Install two hinge-covered ventilation manways on the roof, outside the new handrail to provide additional ventilation during the interior surface preparation and coating.

4.2.3 Remove the existing aviation light and install a new LED aviation light and bracket on the new roof handrail. See photo 23.

4.2.4 Replace the existing ladders with new ladders conforming to OSHA regulations. The existing ladders do not meet current OSHA rung width and ladder rail spacing requirements. Include installing cable style safety climbing devices on the new ladders. See photos 23, 29, 30, 39, and 41.

4.2.5 Install a mid-rail on the balcony handrail conforming to OSHA regulations. See photos 33 and 34.

4.2.6 Seal weld the intermittently welded seam between the topside of the balcony and the shell to conform to AWWA D100-11. See photos 35 and 36.

4.2.7 Install intermediate braces under the balcony, centered between the support columns, for reinforcement and stiffening. The balcony is very flexible and deflects noticeably under the weight of a person. See photo 37.

4.2.8 Install one additional pressure-style manway in the bottom section of the wet riser, 180 degrees from the existing manway, to improve ventilation during reconditioning and bring the tank into compliance with OSHA confined space entry requirements. See photo 42.

4.2.9 Install a corrosion-resistant, heavy-gauge, No. 24 mesh screen on the overflow pipe outlet to comply with DNR regulations. See photo 46.

4.2.10 Install a splash pad under the overflow pipe outlet as recommended by AWWA D100-11. See photo 45.

4.3| Cathodic Protection (CP) System

4.3.1 The reservoir has remnants of an old, abandoned cathodic protection system but nothing that is currently in use. A cathodic protection system is not required if the coating is applied and maintained properly and would only serve to protect the surfaces in contact with the water.

5.0| PROPERTY CONSIDERATIONS

5.1| Site and Environmental Considerations

5.1.1 The site includes the tower and antenna buildings located within the City's fence-enclosed maintenance facility. The area under the tower is maintained grass. The site is adjacent to East Iowa Street and surrounded by commercial buildings.

5.1.2 In conformance with Iowa DNR regulations, an analysis has been performed to determine the methods of pollution control required for this storage structure during reconditioning. Precautions must be taken to maintain air quality and to prevent the drift of dust and fugitive emissions. Such precautions shall include, but not be limited to, the use of water or chemicals where possible or the use of a containment system with negative air.

5.2| Telecommunications Considerations

5.2.1 The tower has some telecommunications equipment, including antennas, coaxial cables, support brackets and other miscellaneous equipment. The Owner is advised to maintain accurate records of each of the antenna sites on the tower, including as-built drawings, site manager and owner contact information, upgrades performed, and future plans for antenna installations or upgrades. These records will help facilitate the future reconditioning with a minimal amount of effort on the Owner's part.

5.2.2 Working around and protecting the telecommunications equipment, including antennas, coaxial cables, support brackets, and other miscellaneous equipment during future reconditioning will incur additional costs. The antenna owner(s) should be responsible for these expenses under clause(s) in the antenna lease agreements. These costs are not included in the cost estimate, as they vary considerably from tower to tower.

5.2.3 Prior to reconditioning, in accordance with the lease requirements of each antenna owner, the Owner should notify the telecommunications owners or manager of the work to be performed. The Owner should also determine whether: a) the antenna owners will pay the additional costs to work around and protect the antennas; b) the antenna owners will temporarily remove their antennas and associated equipment to facilitate reconditioning; or c) the Owner will have to pay for these costs themselves.

6.0| RECONDITIONING SUMMARY

6.1| Reconditioning Summary and Cost Estimate

KLM recommends inspecting and evaluating the interior and exterior coatings, per the service agreement, again in five years to monitor conditions.

While not requiring repairs or coating replacement at this time, for budgetary purposes, if structure modifications and interior and exterior coating replacements were to be performed, the estimated current cost would be between $700,000 and $750,000. For competitive bids, the project should be bid 9 to 12 months before the desired starting date.

An experienced tank-coating contractor with the proper crew and equipment should be able to complete the project in eight weeks. At the time of reconditioning, the tower will need to be drained and remain off-line during interior structure modifications, abrasive blasting, and painting. However, most of the exterior structure modifications can be performed prior to draining, with the tank in-service.

KLM ENGINEERING, INC.

Report prepared by:

Thomas Brown

Thomas Amarvi-Brown, P.E.
Civil Engineer
MN License No. 58770

Report reviewed by:

Rodney Ellis

Rodney Ellis
Vice President/COO
NACE Certified Coatings Inspector No. 1686
AWS/CWI 0404031

APPENDIX A

PHOTOGRAPHS

Photo No. 1
Overall view of tower

Photo No. 2
View of interior roof

Photo No. 3
Interior roof conditions

Photo No. 4
Rafters and compression ring

Photo No. 5
Roof and upper torus

Photo No. 6
Roof and upper torus

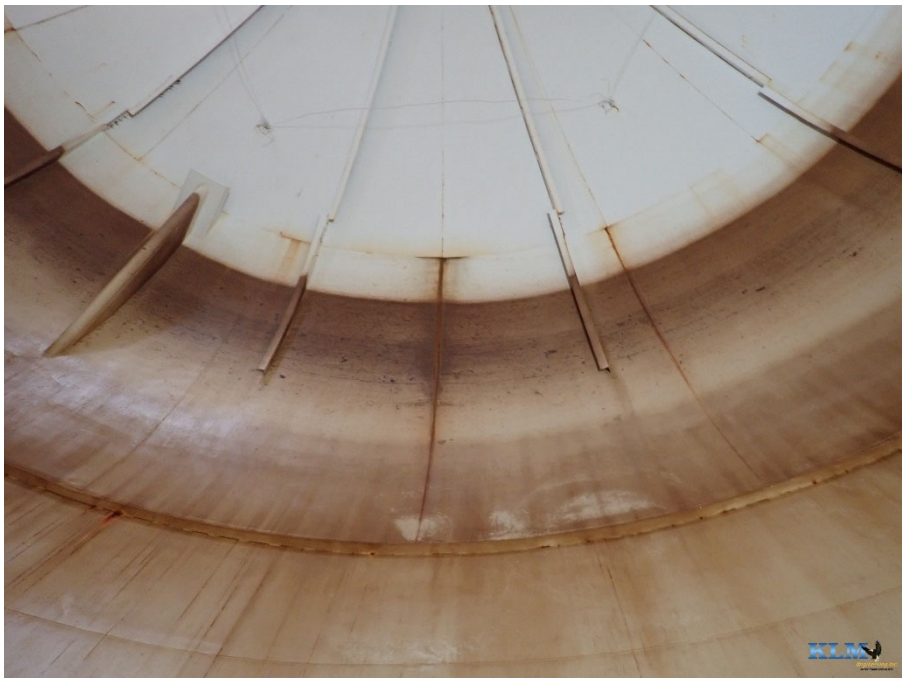

Photo No. 7
Upper torus and shell conditions

Photo No. 8
Shell coating conditions

Photo No. 9
Shell coating conditions

Photo No. 10
Shell stiffener ring

Photo No. 11
Shell coating conditions

Photo No. 12
Bowl conditions prior to cleanout

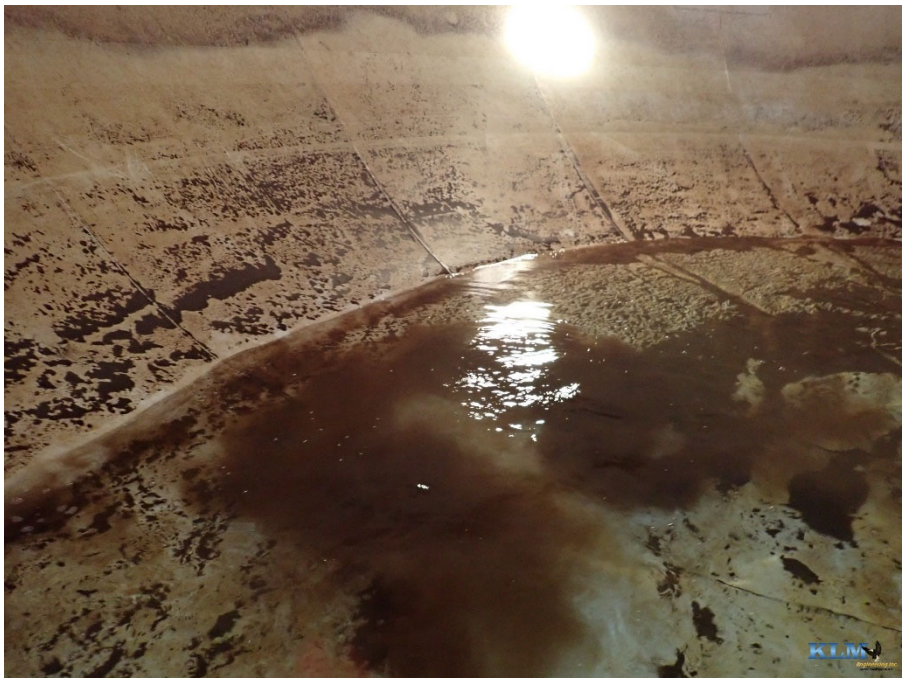

Photo No. 13
Bowl conditions prior to cleanout

Photo No. 14
Bowl conditions prior to cleanout

Photo No. 15
Bowl conditions prior to cleanout

Photo No. 16
Bowl conditions prior to cleanout

Photo No. 17
Bowl conditions after cleanout

Photo No. 18
Bowl conditions after cleanout

Photo No. 19
Cone and top of wet riser

Photo No. 20
View of bowl after cleanout

Photo No. 21
Bottom of wet riser

Photo No. 22
Fill pipe

Photo No. 23
View of roof
Finial vent and aviation light visible

Photo No. 24
Wet access manway

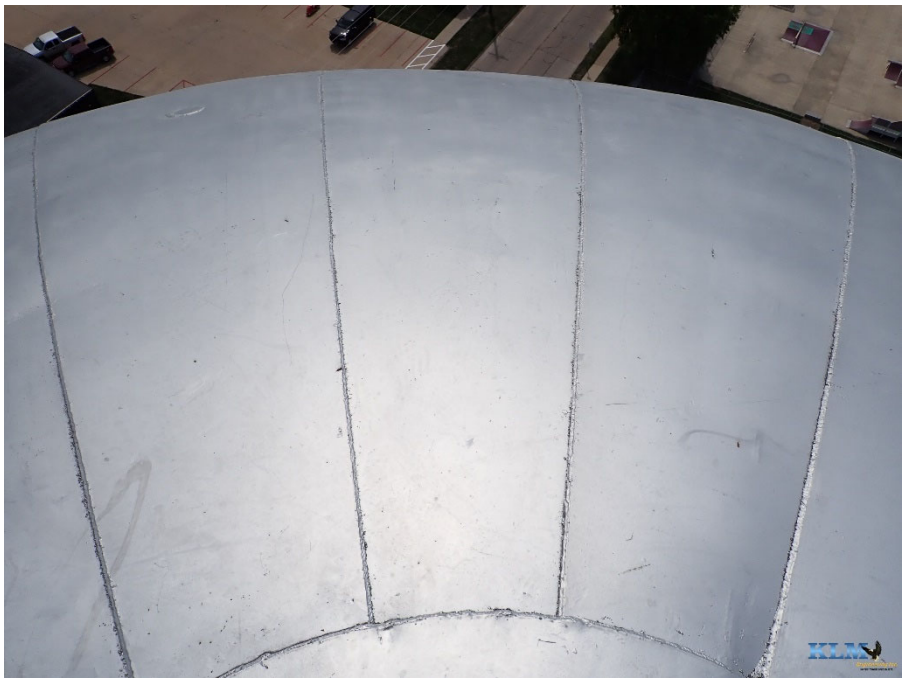

Photo No. 25
Roof coating conditions

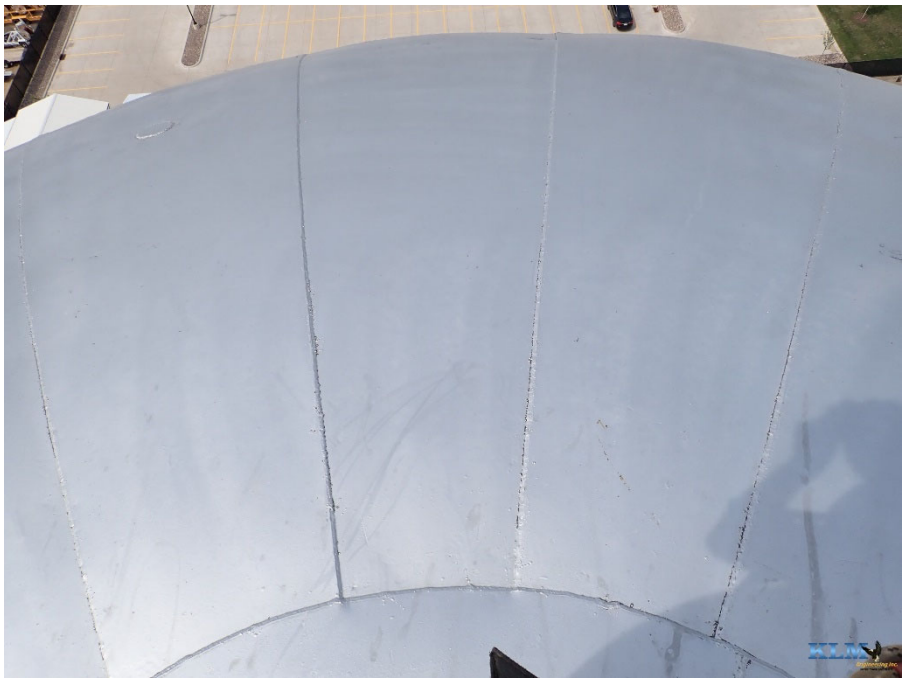

Photo No. 26
Roof coating conditions

Photo No. 27
Roof coating conditions

Photo No. 28
Roof coating conditions

Photo No. 29
Roof coating conditions

Photo No. 30
Roof access ladder

Photo No. 31
Shell lettering conditions

Photo No. 32
Shell lettering conditions

Photo No. 33
Balcony platform and handrail

Photo No. 34
Balcony platform and handrail

Photo No. 35
Balcony platform conditions

Photo No. 36
Balcony platform conditions

Photo No. 37
Water compartment

Photo No. 38
Bowl conditions

Photo No. 39
Column access ladder

Photo No. 40
View of wet riser and columns

Photo No. 41
Column access ladder at grade

Photo No. 42
Wet riser conditions with manway visible

Photo No. 43
Wet riser foundation conditions with cleanout valve

Photo No. 44
Typical conditions of column foundation

Photo No. 45
Column and overflow pipe outlet conditions

Photo No. 46
Overflow pipe screen conditions

APPENDIX B

INSPECTION AND EVALUATION METHODS

1.0| INSPECTION AND EVALUATION METHODS

Some or all of the following procedures were performed as applicable.

1.1| Methods

1.1.1 The inspection of the base metal and coatings on interior and exterior surfaces included only areas accessible without scaffolding or special rigging. Where possible, the base metal and coating on the interior wet surfaces were examined from either a rubber raft while the tank was being drained, by a Remote Operated Vehicle (ROV) with the tower in service, or with both.

1.1.2 Tank plate thickness was measured at random locations on the liquid holding shell. The overall structural condition of the tank was visually examined.

1.1.3 No structural analysis was done to determine if the tank design complies with the AWWA D100-11 Standard for "Welded Carbon Steel Tanks for Water Storage." However, any observed non-conformance to the AWWA D100-11 standard is noted in this report.

1.1.4 Although compliance with OSHA regulations was not a part of this inspection, any unsafe conditions or violations of current OSHA regulation that were observed are noted in this report.

1.2| Examination and Evaluation Techniques

Some or all of the following procedures were performed as applicable.

1.2.1| Site

The tank site was evaluated for proper drainage conditions affecting access and lead paint abatement during reconditioning.

Also, the following site dimensions were obtained: distance to fence(s), power lines, owner buildings, public property, private property/buildings, school/playgrounds, public parks, and other property.

1.2.2| Foundations

The tank concrete foundation(s) were/was visually examined for cracks, spalling, conditions of grout, indications of distress/settlement, and elevation above grade.

1.2.3| Tank Plate Thickness

Plate thickness measurements were taken using ultrasonic methods (UTM). The readings were taken using a digital readout Elcometer MTG6 Ultrasonic Thickness Gage that has a dual element probe (transducer). The probe's transmitter element sends a short ultrasonic pulse through the material. The pulse gets reflected as an echo from the opposite side of the plate and returns to the probe's receiver element. The round-trip time is directly related to the material's thickness.

1.2.4| Coating Thickness

Interior and exterior coatings, where accessible, were tested in accordance with Steel Structures Painting Council SSPC-PA2-18 "Procedure for Determining Conformance to Dry Coating Thickness Requirements" using PosiTector-6000-F1 Type 2 gages.

1.2.5| Coating Adhesion

Adhesion testing of the coating to the steel, and inner coat adhesion, was performed by ASTM D-3359: Shear Adhesion Test, Measuring Adhesion by Tape Test. In addition, subjective coating adhesion evaluation was performed using a penknife.

1.2.6| Coating Serviceability

The estimated remaining coating life or serviceability evaluation was performed using a wide variety of inspection instruments such as dry film thickness gauge, pen knife, Tooke gauge, adhesion tester(s), 30x microscope and serviceability evaluation experience (minimum experience 10 years).

The instrument inspection was combined with a close visual inspection of all accessible coatings. This was done to detect any holidays (misses), skips, runs, sags, surface containments, overspray, dry spray, poor coating cohesion, inter-coat delamination, loss of adhesion to the substrate, adverse conditions of the steel underneath the coating, or any other defects affecting the intended service.

1.2.7| Coating Lead and Chromium Content Analysis

Samples may have been taken of the various types of coatings present on the interior and exterior surfaces. GPI Laboratories, Inc. of Grand Rapids, Michigan tests these coatings in conformance with ASTM D-3335 Standard Test Methods for Concentrations of Lead and Chromium in Paint.

Agenda

Eldridge, Iowa

Inspection Report:
750,000-Gallon Capacity
16th Avenue Tower

Prepared by:

KLM Engineering, Inc.
1976 Wooddale Drive, Suite 4 | Woodbury, MN 55125
651.773.5111 | www.klmengineering.com

August 2023

Project No.: 4739-22

Table of Contents

1.0| PROJECT INFORMATION

KLM Project No.: 4739-22 **Customer P. O. Number:** N/A

Tank Owner: Eldridge, Iowa **Phone:** 563-285-4841

Street/City/State/Zip: 305 North Third Street, Eldridge, IA 52748

Tank Owner Contact: Jake Rowe, Line Foreman

Owner's Tank Designation: 16th Avenue Tower

Tank Description: Single Pedestal

Tank Street Location: 401 South 16th Avenue, Eldridge, IA 52748

Purpose of Inspection: Condition Assessment

Date of Inspection: August 2, 2023

Inspected By: Devin Severson, NACE #78234, and Matt Finley

Type of Inspection: KLM standard ROV inspection

Manufacturer: CB&I Constructors, Inc. **Construction Date:** 2001

Serial No.: 121774 **Design Code:** AWWA D100-96

Capacity: 750,000 gallons

Type of Construction: Welded

Tank Diameter: 64'-8"

Height to: Overall ~144 Feet

Height to: HWL 139'-0" LWL 99'-0"

Tank Construction Drawings: Available to KLM

Previous Inspection Records: Liquid Engineering 2020 report

EXISTING COATING INFORMATION

	Interior Wet	Interior Dry	Exterior
Date Last Coated	2001	2001	2001
Full or Spot Repair	New/Complete	New/Complete	New/Complete
Coating Contractor	CB&I	CB&I	CB&I
Surface Preparation	Blast	Blast	Blast
Paint System	Zinc/Epoxy	Zinc/Epoxy	Zinc/Epoxy/Urethane
Paint Manufacturer	Unknown	Unknown	Unknown
Paint Chip Samples	N/A	N/A	N/A

Eldridge, Iowa

750,000-GALLON CAPACITY
16TH AVENUE TOWER

2.0| REFERENCES

The tank interior and exterior areas were evaluated in conformance with the following:

a. KLM Engineering, Inc. Proposal.

b. General guidelines of AWWA Manual M42 Appendix C “Inspecting and Repairing Steel Water Tanks, and Elevated Tanks for Water Storage.”

c. KLM "Procedures and Guidelines for Inspecting Existing Steel and Concrete Water Storage Tanks."

d. AWWA Standard D100-11; Welded Carbon Steel Tanks for Water Storage.

e. Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers; Recommended Standards for Water Works 2018 Edition.

3.0| COATINGS EVALUATION

3.1| Lead and Chromium Content Analysis

The total lead and chromium content of the interior and exterior coatings was not analyzed. Based on the 2001 construction date of the tank, and regulations in effect at that time limiting the use of lead or chromium-based coatings, KLM anticipates that neither the interior nor exterior coatings are lead or chromium-based paints and will not generate hazardous waste during reconditioning.

3.2| Interior Wet Coating

The tower was constructed and originally painted by CB&I Constructors, Inc. in 2001. The interior wet coating is in poor overall condition with greater than five percent visible coating failures above and below the high-water line (HWL). Failures above the HWL consist of pinhole corrosion along roof weld seams and rafters and on the ladder, and isolated coating delamination with resulting advanced corrosion on the roof plates and upper section of the drywell tube. Failures below the HWL consist of localized widespread surface corrosion on the drywell tube, likely due to ice abrasion, and spot corrosion located primarily along weld seams on the shell and in the bowl. Minimal sediment accumulation, estimated at one-inch deep, is present in the bowl area. See photos in Appendix A.

3.3| Interior Dry Coating

The interior dry coating is in good to fair overall condition, with coating failures limited to areas susceptible to condensation, such as the drywell tube, bowl, and landings (sweating areas). The sweating areas have approximately 30 to 40 percent of the surface area showing visible coating failures. Those failures have been termed micro-cracking and have been seen on other towers of similar age and epoxy coating. Despite these failures, the severity of corrosion is minimal, with the coating continuing to protect the structure. The coating in the remainder of the dry area is in good condition with minimal failures observed. See photos in Appendix A.

3.4| Exterior Coating

The exterior coating is in poor overall condition with greater than ten percent visible coating failures observed throughout the structure. Coating failures consist of pinhole and spot corrosion randomly located throughout the tower, including the roof plates, manways, couplings, vents, and handrail, and the lower torus, painter's rail, and overflow pipe. Widespread pinhole corrosion, indicative of low paint thickness (mils), is visible as rust coloration across the shell exterior, lower torus, pedestal, and base cone areas. Furthermore, widespread UV degradation of the topcoat is evident by the dull and chalky appearance of the tower exterior. See photos in Appendix A.

3.5| Replacement Coating Systems

For the next full reconditioning, KLM recommends preparing surfaces in accordance with NACE guidance and applying a coating system for each area according to the following.

3.5.1| Interior Wet Coating

Surface preparation should be performed according to SSPC-SP10 Near White Metal Blast criteria.

Apply a two-coat system:

1. moisture cured zinc-rich
2. NSF 61 certified epoxy

3.5.2| Interior Dry Coating

Surface preparation should be performed according to SSPC-SP6 Commercial Blast Clean criteria.

Apply a three-coat system:

1. moisture cured zinc-rich
2. polyamidoamine epoxy
3. polyamidoamine epoxy

3.5.3| Exterior Coating

Surface preparation should be performed according to SSPC-SP6 Commercial Blast Clean criteria.

Apply a four-coat system:

1. moisture cured zinc-rich
2. polyamidoamine epoxy
3. aliphatic acrylic urethane
4. fluoropolymer

4.0| STRUCTURE MODIFICATIONS

Structure modifications and repairs serve to bring the tank into compliance with OSHA regulations, AWWA standards, and Iowa DNR regulations. They also improve areas of the tank that are prone to premature development of corrosion, repair surface defects resultant from tank construction, remove abandoned and unnecessary equipment, and improve tank maintenance capabilities.

The following is a list of recommended modifications and repairs to be included during the next reservoir reconditioning. Detailed information important to each item will be determined when developing the project

specifications. Additional minor modifications, not impacting the estimated project cost, may be identified and incorporated at that time.

Photographs referred to in this section are in Appendix A.

4.1| Interior Wet Modifications

4.1.1 Remove the pipe style safety climb device on the ladder. Install an anchor point on the underside of the roof adjacent to the access manway. Include a self-retracting lifeline (SRL) to allow for safe access while ascending and descending the ladder. See photos 2 and 3.

4.1.2 Replace the gasket on the manway located in the drywell tube. See photo 31.

4.1.3 Grind off all weld spatter and erection scab marks for compliance with AWWA D100-11.

4.2| Interior Dry Modifications

4.2.1 Replace the pipe style safety climb device with easier to operate cable-style safety climb devices on all ladders in the pedestal. See photos 35 through 42 and 46 through 49.

4.2.2 Install a pressure style manway in the tower bowl to improve ventilation during reconditioning and bring the tank into compliance with OSHA confined space entry requirements. Include a ladder from the top platform to the bowl for safe access. See photos 40 through 42.

4.2.3 Replace the bowl drain plug with a stainless-steel freeze-resistant valve to better facilitate cleaning and draining the bowl. See photos 32 and 52.

4.2.4 Install welded cable stand-offs inside the drywell tube and pedestal for attachment of electrical and coaxial cables. The existing expansion and U-bolt brackets tend to damage the coatings without additional protection and collect condensation. See photos 35 through 53.

4.2.5 Temporarily remove the insulation and aluminum jacketing from the inlet pipe to facilitate abrasive blasting and painting of the pipe. Reinstall after coating is complete. See photos 41 through 44 and 47 through 54.

4.2.6 Install removable ports in the center of each of the pedestal landings to facilitate use of the containment system used during the next reconditioning. See photos 44, 47, 49, and 52.

4.2.7 Consider installing a concrete pad in the base to improve base cone use and reduce dirt tracked throughout the tower. See photos 51, 53, and 54.

4.3| Exterior Modifications

4.3.1 Install a climb assist on the exterior (roof side) of the drywell tube to improve safety while transitioning in and out of the tube. See photos 55 and 56.

4.3.2 Install a stop chain connecting the manway cover at the top of the access manway to the manway curb to prevent the cover from opening 180 degrees. See photos 55 and 56.

4.3.3 Replace the non-conforming finial vent with an aluminum pressure pallet style vent. The new vent and vent screen design should meet AWWA D100-11 and DNR regulations. See photos 55 and 58.

4.3.4 Install one additional hinge-covered ventilation manway on the roof, outside the handrail to provide additional ventilation during the interior surface preparation and coating. See photo 61.

4.3.5 Replace the existing aviation light on the handrail with a LED version of the same strobe fixture to reduce maintenance needs. See photo 57.

4.3.6 Install an additional corrosion-resistant, heavy-gauge, No. 24 mesh screen on the overflow pipe outlet to comply with DNR regulations. See photo 72.

4.4| Cathodic Protection (CP) System

4.4.1 The reservoir does not have a cathodic protection system, and one is not required if the coating is applied and maintained properly.

5.0| PROPERTY CONSIDERATIONS

5.1| Site and Environmental Considerations

5.1.1 The site includes the tank and adjacent fenced antenna enclosure, with antenna carrier building, in an open area with maintained grass and a paved driveway. The site is located within Eldridge Dog Park and is bordered by South 16th Avenue to the west and agriculture fields to the east. The nearest power pole is approximately 105 feet from the tower.

5.2| Telecommunications Considerations

5.2.1 The tower has some telecommunications equipment, including antennas, coaxial cables, support brackets and other miscellaneous equipment. The Owner is advised to maintain accurate records of each of the antenna sites on the tower, including as-built drawings, site manager and owner contact information, upgrades performed, and future plans for antenna installations or upgrades. These records will help facilitate the future reconditioning with a minimal amount of effort on the Owner's part.

5.2.2 Working around and protecting the telecommunications equipment, including antennas, coaxial cables, support brackets, and other miscellaneous equipment during future reconditioning will incur additional costs. The antenna owner(s) should be responsible for these expenses under clause(s) in the antenna lease agreements. These costs are not included in the cost estimate, as they vary considerably from tower to tower.

5.2.3 Prior to reconditioning, in accordance with the lease requirements of each antenna owner, the Owner should notify the telecommunications owners or manager of the work to be performed. The Owner should also determine whether: a) the antenna owners will pay the additional costs to work around and protect the antennas; b) the antenna owners will temporarily remove their antennas and associated equipment to facilitate reconditioning; or c) the Owner will have to pay for these costs themselves.

6.0| RECONDITIONING SUMMARY

6.1| Reconditioning Summary and Cost Estimate

Based on the interior and exterior conditions, KLM recommends fully replacing the interior wet, interior dry sweating areas, and exterior coatings in the next one (1) to two (2) years to protect the structure. The cost for structure modifications and coatings replacement (including use of an exterior containment system) is estimated between $750,000 and $800,000. For competitive bids, the project should be bid 9 to 12 months before the desired starting date.

An experienced tank-coating contractor with the proper crew and equipment should be able to complete the project in 13 weeks. At the time of reconditioning, the tower will need to be drained and remain off-line during interior structure modifications, abrasive blasting, and painting. However, most of the exterior structure modifications can be performed prior to draining, with the tank in-service.

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APPENDIX A

PHOTOGRAPHS

Photo No. 1
Overall view of the tower

Photo No. 2
Interior roof conditions

Photo No. 3
Roof and manway conditions

Photo No. 4
Coating conditions on roof

Photo No. 5
Interior roof conditions

Photo No. 6
Roof conditions

Photo No. 7
Roof with rafter and rigging coupling visible

Photo No. 8
Interior roof at drywell tube connection

Photo No. 9
Top of drywell tube and roof conditions

Photo No. 10
Roof conditions with vent and rafter visible

Photo No. 11
Interior roof conditions

Photo No. 12
Coating conditions on roof

Photo No. 13
Roof conditions

Photo No. 14
Roof coating conditions

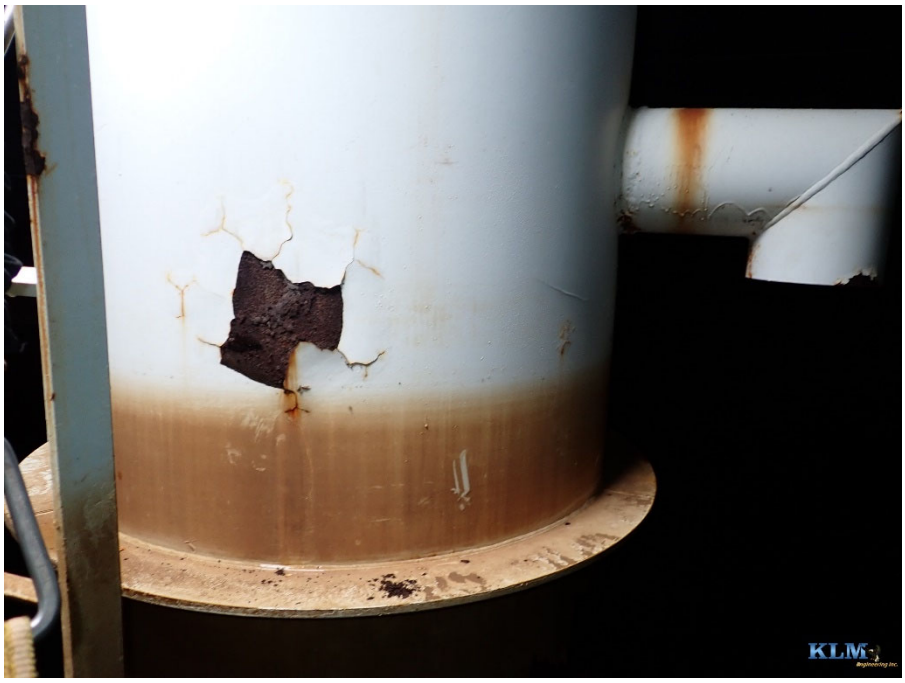

Photo No. 15
Drywell tube with overflow pipe inlet visible
Advanced corrosion visible

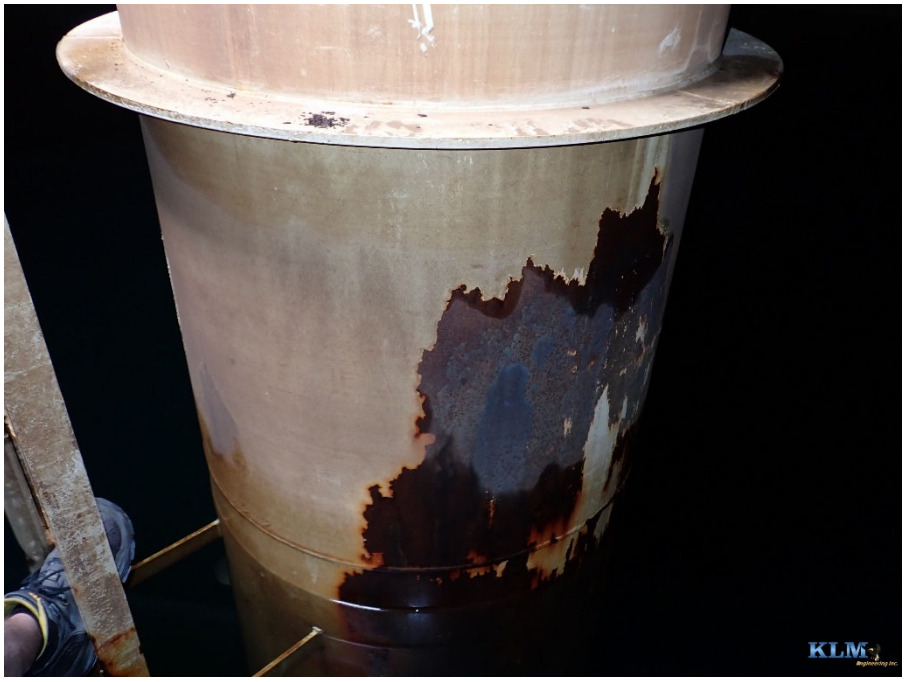

Photo No. 16
Drywell tube above HWL conditions
Widespread corrosion visible

Photo No. 17
Drywell tube conditions below HWL

Photo No. 18
Drywell tube and ladder below HWL

Photo No. 19
Conditions of coating failure on drywell tube

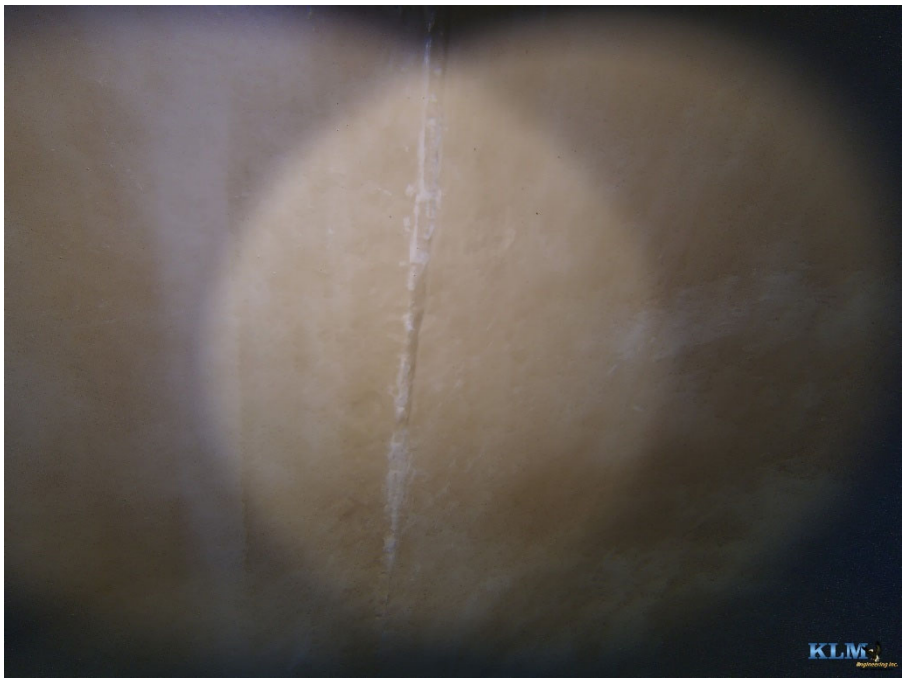

Photo No. 20
Shell coating conditions

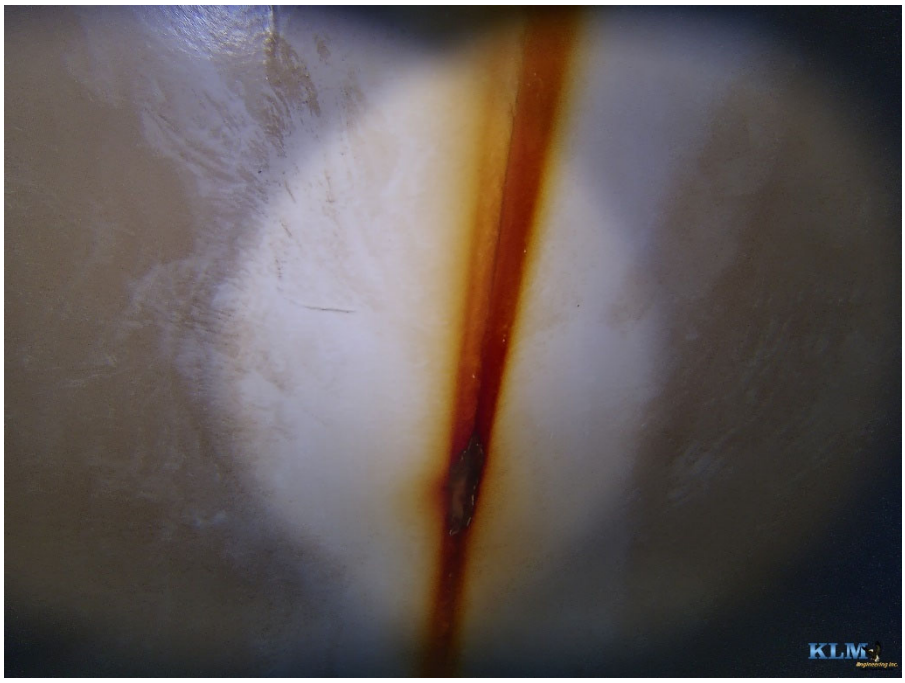

Photo No. 21
Coating failure on shell

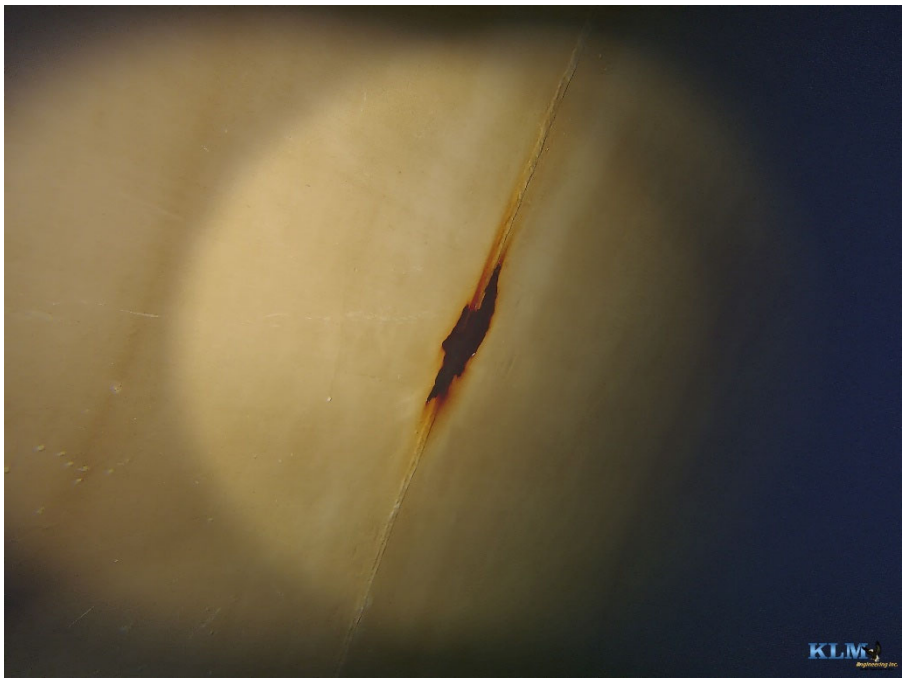

Photo No. 22
Coating failure on shell

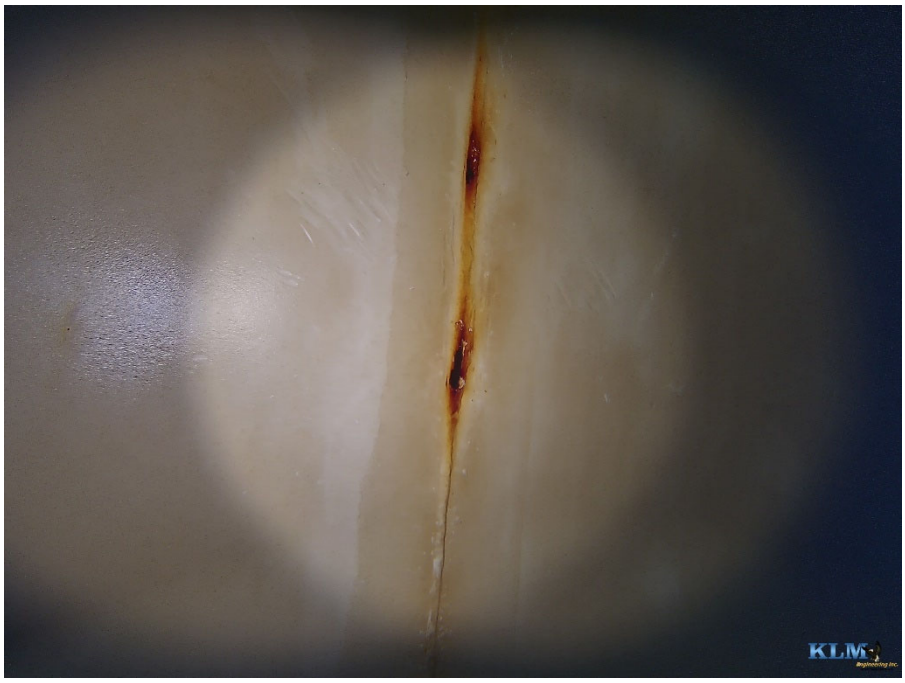

Photo No. 23
Coating failures along weld seam

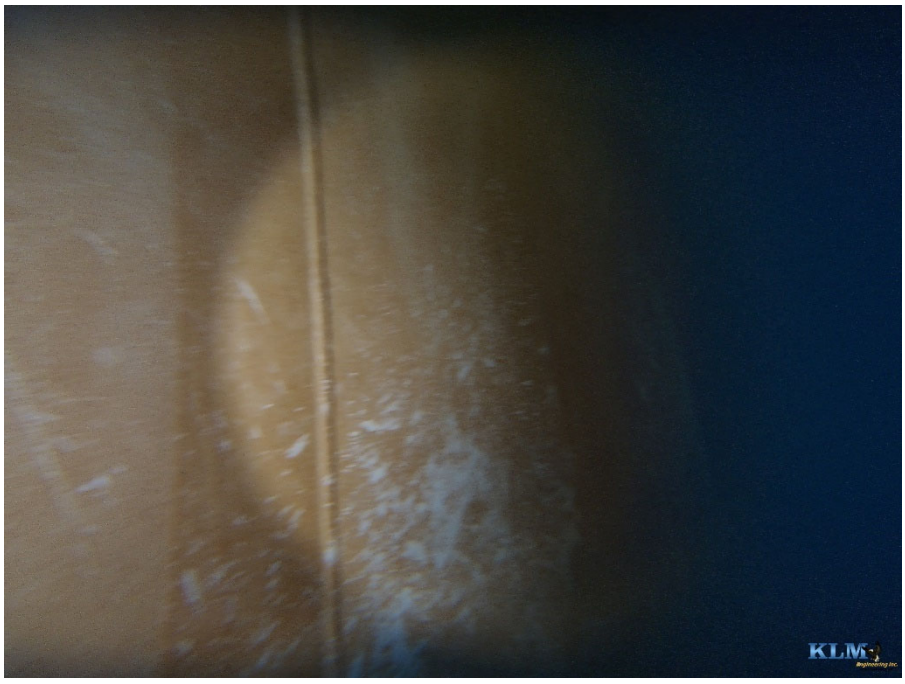

Photo No. 24
Shell conditions

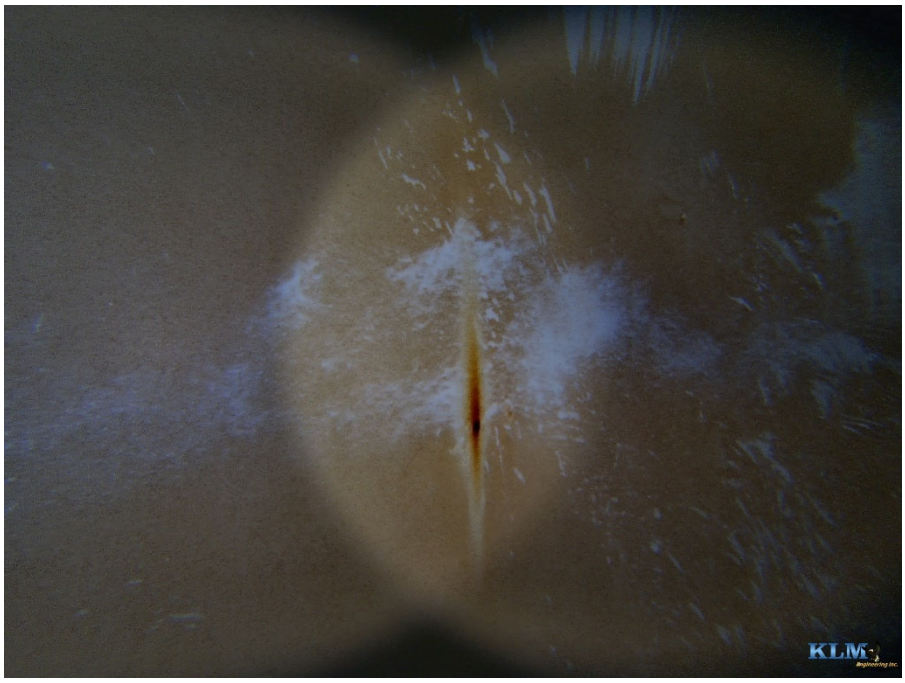

Photo No. 25
Shell conditions

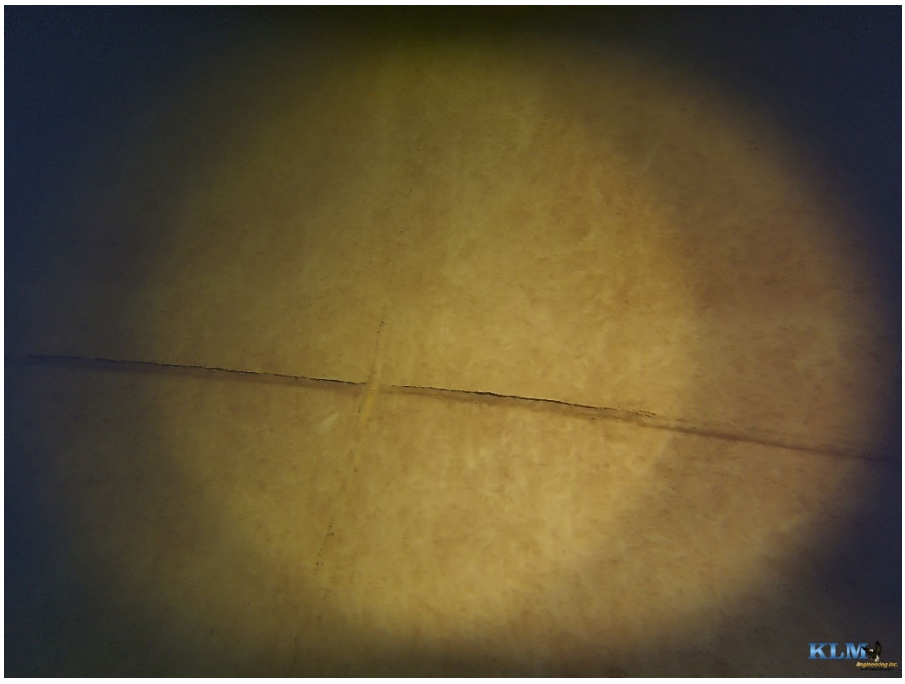

Photo No. 26
Bowl coating conditions

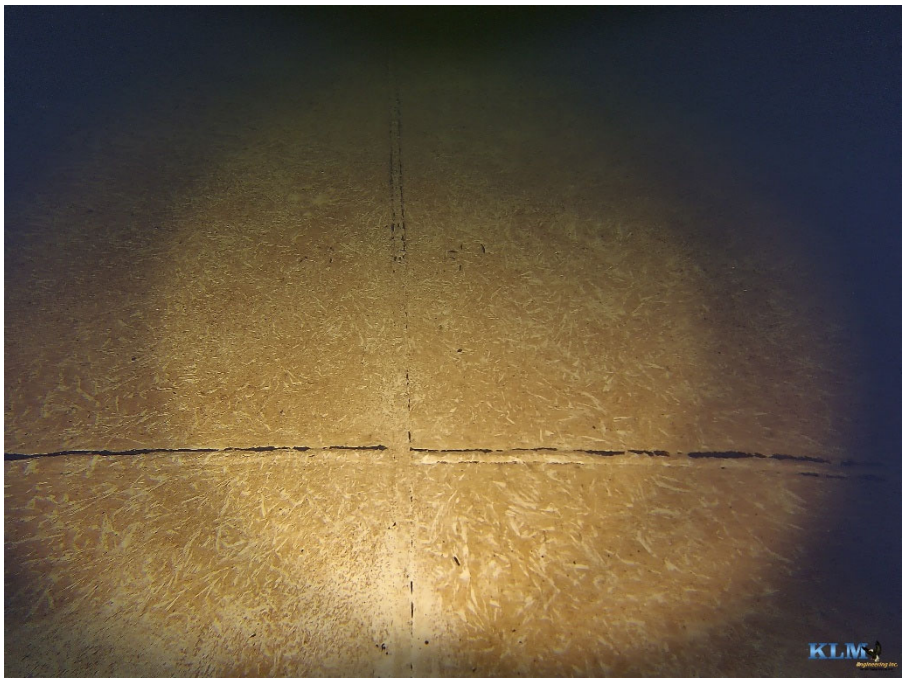

Photo No. 27
Bowl conditions

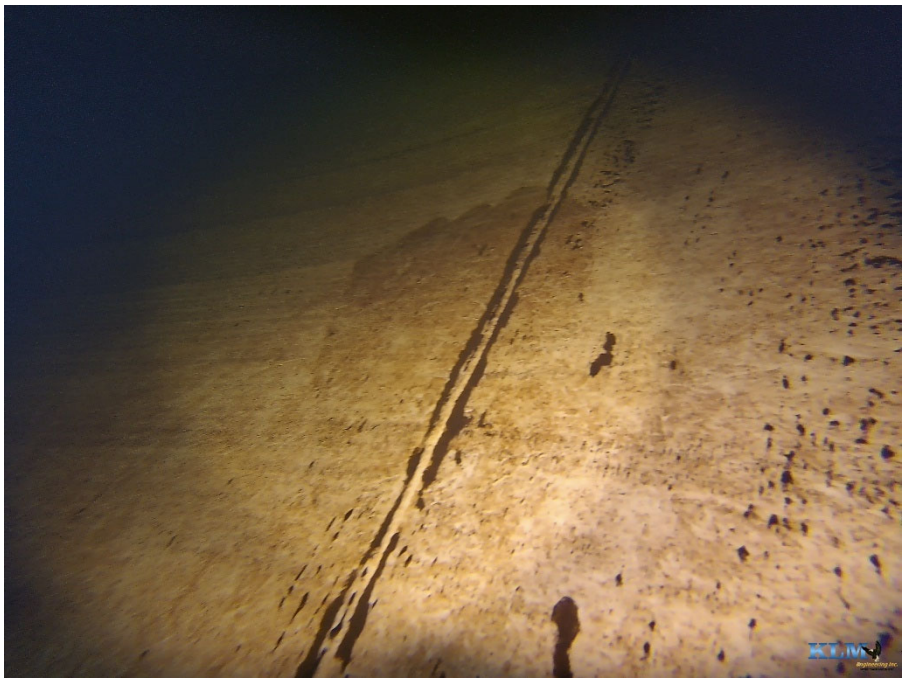

Photo No. 28
Bowl conditions

Photo No. 29
Bowl coating conditions

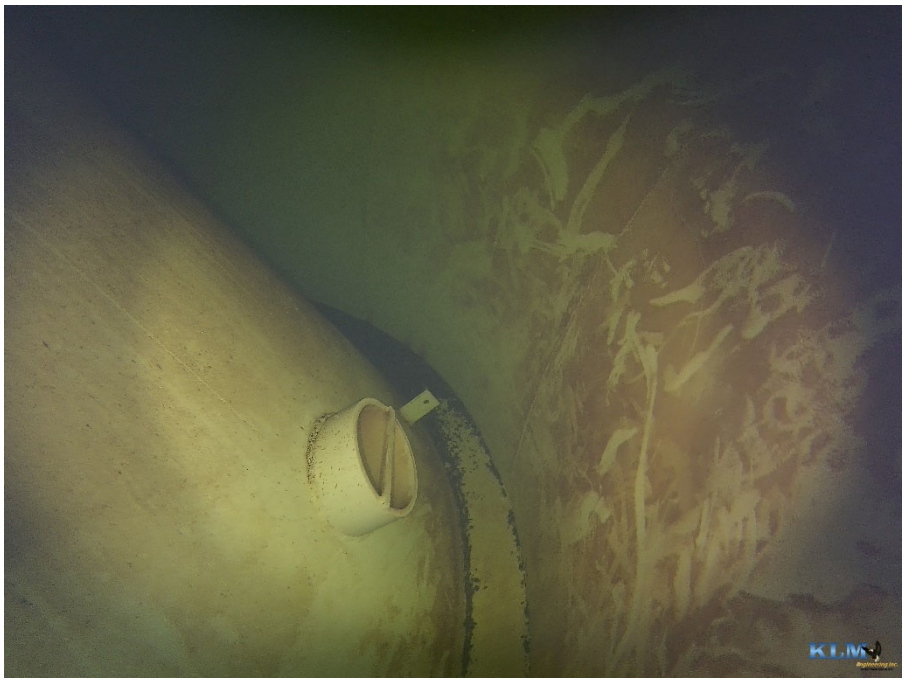

Photo No. 30
Bowl conditions with fill pipe visible

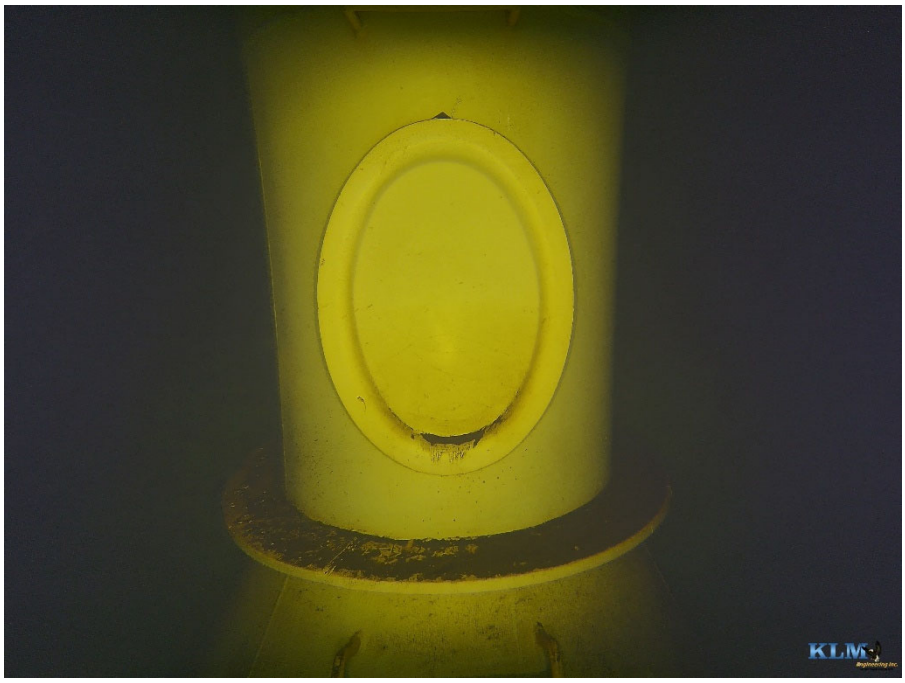

Photo No. 31
Conditions at base of drywell tube

Photo No. 32
Bowl conditions with bowl drain plug and sediment visible

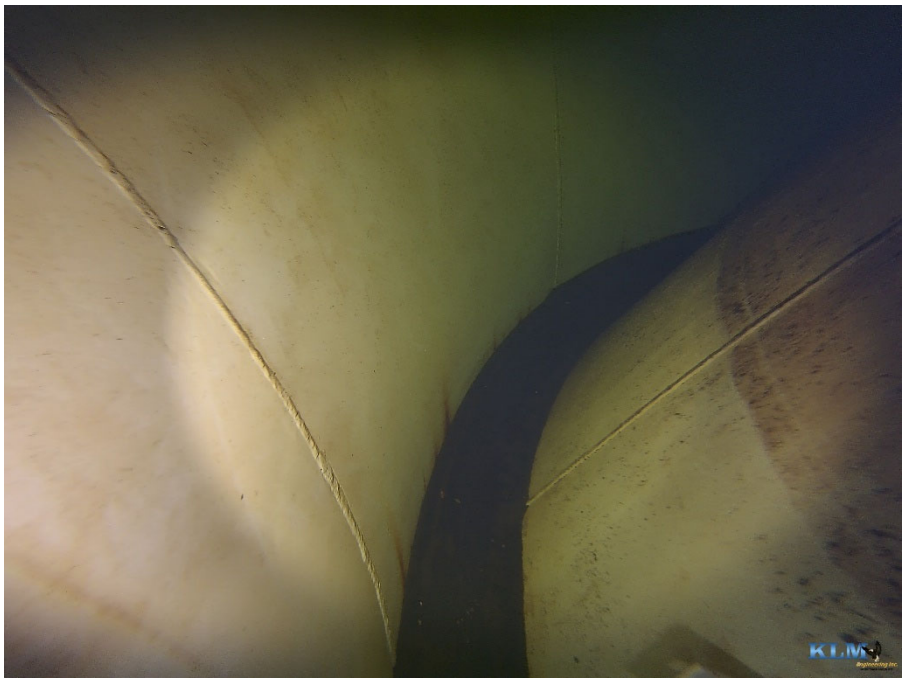

Photo No. 33
Bowl conditions

Photo No. 34
Top of drywell tube conditions

Photo No. 35
Coating conditions of drywell tube interior

Photo No. 36
Coating failures visible in drywell tube

Photo No. 37
Drywell tube interior conditions

Photo No. 38
Drywell tube interior conditions

Photo No. 39
Coating failures within base of drywell tube

Photo No. 40
Bowl coating conditions

Photo No. 41
Overview of bowl conditions

Photo No. 42
Bowl conditions with fill pipe and overflow pipe visible

Photo No. 43
Top landing and bowl conditions

Photo No. 44
Top landing conditions

Photo No. 45
Landing conditions

Photo No. 46
Typical pedestal conditions

Photo No. 47
Underside of top landing conditions

Photo No. 48
Pedestal conditions looking down at bottom landing

Photo No. 49
Bottom landing conditions

Photo No. 50
Underside of bottom landing with overflow pipe and fill pipe penetrations

Photo No. 51
Overview of base cone area

Photo No. 52
Base cone conditions looking up at bottom landing

Photo No. 53
Conditions of base cone with fill pipe and overflow pipe

Photo No. 54
Base cone conditions

Photo No. 55
Roof exterior conditions

Photo No. 56
Dry access manway on roof

Photo No. 57
Roof and aviation light conditions

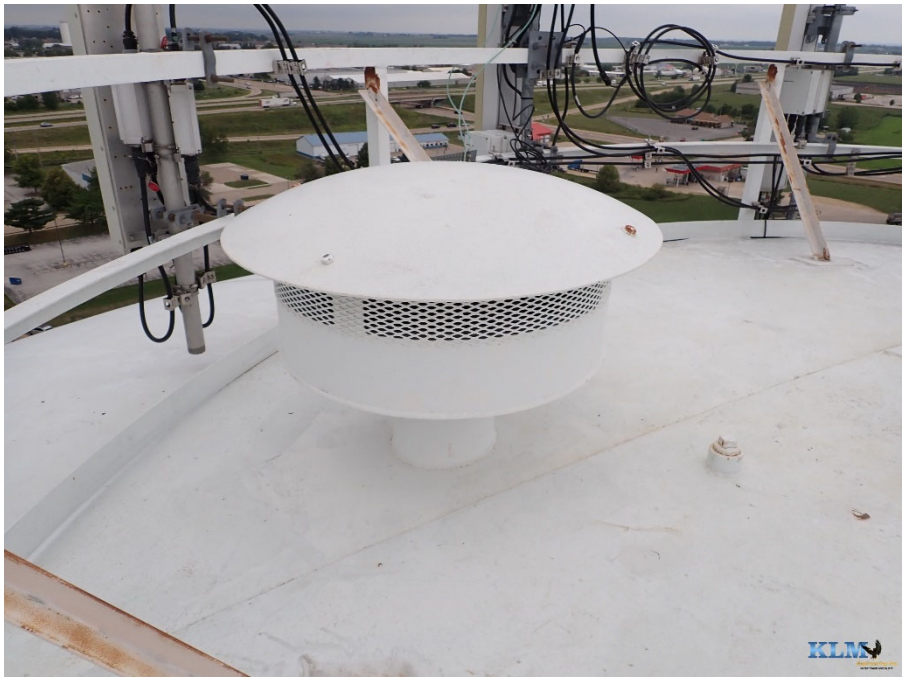

Photo No. 58
Roof and finial vent conditions

Photo No. 59
Roof rigging coupling

Photo No. 60
Roof conditions within handrail

Photo No. 61
Ventilation manway on roof

Photo No. 62
Handrail conditions on roof

Photo No. 63
Exterior roof coating conditions

Photo No. 64
Exterior shell with logo conditions

Photo No. 65
Water compartment conditions

Photo No. 66
Overview of lower torus

Photo No. 67
Overview of lower torus and pedestal

Photo No. 68
Overview of base cone

Photo No. 69
Base cone exterior conditions

Photo No. 70
Overflow pipe outlet conditions

Photo No. 71
Typical conditions of ring foundation

Photo No. 72
Overflow pipe screening conditions

APPENDIX B

INSPECTION AND EVALUATION METHODS

1.0| INSPECTION AND EVALUATION METHODS

Some or all of the following procedures were performed as applicable.

1.1| Methods

1.1.1 The inspection of the base metal and coatings on interior and exterior surfaces included only areas accessible without scaffolding or special rigging. Where possible, the base metal and coating on the interior wet surfaces were examined from either a rubber raft while the tank was being drained, by a Remote Operated Vehicle (ROV) with the tower in service, or with both.

1.1.2 Tank plate thickness was measured at random locations on the liquid holding shell. The overall structural condition of the tank was visually examined.

1.1.3 No structural analysis was done to determine if the tank design complies with the AWWA D100-11 Standard for "Welded Carbon Steel Tanks for Water Storage." However, any observed non-conformance to the AWWA D100-11 standard is noted in this report.

1.1.4 Although compliance with OSHA regulations was not a part of this inspection, any unsafe conditions or violations of current OSHA regulation that were observed are noted in this report.

1.2| Examination and Evaluation Techniques

Some or all of the following procedures were performed as applicable.

1.2.1| Site

The tank site was evaluated for proper drainage conditions affecting access and lead paint abatement during reconditioning.

Also, the following site dimensions were obtained: distance to fence(s), power lines, owner buildings, public property, private property/buildings, school/playgrounds, public parks, and other property.

1.2.2| Foundations

The tank concrete foundation(s) were/was visually examined for cracks, spalling, conditions of grout, indications of distress/settlement, and elevation above grade.

1.2.3| Tank Plate Thickness

Plate thickness measurements were taken using ultrasonic methods (UTM). The readings were taken using a digital readout Elcometer MTG6 Ultrasonic Thickness Gage that has a dual element probe (transducer). The probe's transmitter element sends a short ultrasonic pulse through the material. The pulse gets reflected as an echo from the opposite side of the plate and returns to the probe's receiver element. The round-trip time is directly related to the material's thickness.

1.2.4| Coating Thickness

Interior and exterior coatings, where accessible, were tested in accordance with Steel Structures Painting Council SSPC-PA2-18 "Procedure for Determining Conformance to Dry Coating Thickness Requirements" using PosiTector-6000-F1 Type 2 gages.

1.2.5| Coating Adhesion

Adhesion testing of the coating to the steel, and inner coat adhesion, was performed by ASTM D-3359: Shear Adhesion Test, Measuring Adhesion by Tape Test. In addition, subjective coating adhesion evaluation was performed using a penknife.

1.2.6| Coating Serviceability

The estimated remaining coating life or serviceability evaluation was performed using a wide variety of inspection instruments such as dry film thickness gauge, pen knife, Tooke gauge, adhesion tester(s), 30x microscope and serviceability evaluation experience (minimum experience 10 years).

The instrument inspection was combined with a close visual inspection of all accessible coatings. This was done to detect any holidays (misses), skips, runs, sags, surface containments, overspray, dry spray, poor coating cohesion, inter-coat delamination, loss of adhesion to the substrate, adverse conditions of the steel underneath the coating, or any other defects affecting the intended service.

1.2.7| Coating Lead and Chromium Content Analysis

Samples may have been taken of the various types of coatings present on the interior and exterior surfaces. GPI Laboratories, Inc. of Grand Rapids, Michigan tests these coatings in conformance with ASTM D-3335 Standard Test Methods for Concentrations of Lead and Chromium in Paint.