west virginia department of environmental protection

Division of Water and Waste Management
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0470
Fax: (304) 926-0488

Harold D. Ward, Cabinet Secretary
dep.wv.gov

CONSENT ORDER
ISSUED UNDER THE
ABOVEGROUND STORAGE TANK ACT
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 30

TO: City of New Martinsville
Attn: Mayor Sandy Hunt
191 Main Street
New Martinsville, WV 26155

DATE: December 13, 2021

ORDER NO.: AST-22-001

INTRODUCTION

This Consent Order is issued by the Director of the Division of Water and Waste Management (hereinafter "Director"), under the authority of West Virginia Code, Chapter 22, Article 30, Section 1 et seq. to the City of New Martinsville (hereinafter "New Martinsville").

FINDINGS OF FACT

In support of this Order, the Director hereby finds the following:

1. New Martinsville is the owner/operator of ten (10) Level 1 aboveground storage tanks (ASTs) located at 1 Howard Jeffers Drive, New Martinsville, Wetzel County, West Virginia. This facility operates under WV Identification No. 2014-0005982.

2. On February 28, 2018, West Virginia Department of Environmental Protection (WVDEP) personnel conducted an inspection of the facility. During the inspection, the following violations of WV State Code and WV Legislative Rules were observed and documented:

   a. 47CSR63 Section 5.2.b.3 – New Martinsville failed to perform annual Fit For Service certifications for Level 1 ASTs in intervening years.
   b. 22-30-10.a – New Martinsville failed to provide notice directly to the public water system, county, and municipal emergency response organizations of the type and quantity of fluid stored in regulated ASTs.
   c. 22-30-11 – New Martinsville failed to display signage on or near the AST that includes the following: the AST registration number, the emergency contact number

for the owner or operator of the AST, and the number for the WV Department of Environmental Protection's Spill Reporting Hotline.

As a result of these violations, Notice of Violation (NOV) Nos. 2018-55067, 2018-55068 and 2018-55069 were issued to New Martinsville. An information request for financial responsibility documents was included with the inspection.

3. On October 10, 2018, WVDEP personnel conducted a follow-up inspection of the facility. During the inspection, the following violations of WV State Code and WV Legislative Rules were observed and documented:

   a. 47CSR63 Section 5.2.b.3 – New Martinsville failed to perform annual Fit For Service certifications for Level 1 ASTs in intervening years.
   b. 22-30-10.a – New Martinsville failed to provide notice directly to the public water system, county, and municipal emergency response organizations of the type and quantity of fluid stored in regulated ASTs.
   c. 22-30-11 – New Martinsville failed to display signage on or near the AST that includes the following: the AST registration number, the emergency contact number for the owner or operator of the AST, and the number for the WV Department of Environmental Protection's Spill Reporting Hotline.
   d. 22-30-15.a.1 – New Martinsville failed to furnish information relating to the ASTs, associated equipment, and contents when requested by the Secretary. Specifically, New Martinsville failed to provide the financial responsibility documents that were requested during the previous inspection.
   e. 47CSR63 Section 12.1.a – New Martinsville failed to demonstrate financial responsibility.

   As a result of these violations, Inspection of Violation (IOV) Nos. 2018-55067, 2018-55068, and 2018-55069, and NOV Nos. 2018-55119 and 2018-55120 were issued to New Martinsville.

4. On May 20, 2019, WVDEP personnel conducted a follow-up inspection of the facility. As a result, IOVs were issued which abated NOV Nos. 2018-55067, 2018-55068, 2018-55069, 2018-55119, and 2018-55120.

5. On November 12, 2020, WVDEP personnel conducted an inspection of the facility. During the inspection, the following violations of WV Legislative Rules were observed and documented:

   a. 47CSR63 Section 5.1.a – New Martinsville failed to ensure visual inspections of secondary containment at a minimum of every fourteen (14) days for Level 1 ASTs.
   b. 47CSR63 Section 5.1.b – New Martinsville failed to ensure that a visual maintenance check of the regulated AST and ancillary equipment up to the first point of isolation was performed each month for Level 1 AST systems.
   c. 47CSR63 Section 5.2.b.3 – New Martinsville failed to perform annual Fit For Service certifications for Level 1 ASTs in intervening years.
   d. 47CSR63 Section 10.3 – New Martinsville failed to ensure that regulated AST systems were monitored for leak detection at least once per calendar month.

As a result of these violations, NOV Nos. 2020-55419, 2020-55420, 2020-55421, and 2020-55423 were issued to New Martinsville.

6. On April 23, 2021, WVDEP personnel received email correspondence from New Martinsville which included documents related to compliance with the AST Legislative Rule.

7. On April 27, 2021, WVDEP sent an email to New Martinsville which stated that the provided documentation was insufficient to demonstrate compliance with the AST Legislative Rule.

8. On May 12, 2021, WVDEP personnel conducted a record review for the facility. During the review, the following violations of WV Legislative Rules were observed and documented:

    a. 47CSR63 Section 5.1.a – New Martinsville failed to ensure visual inspections of secondary containment, at a minimum of every fourteen (14) days for Level 1 ASTs.
    b. 47CSR63 Section 5.1.b – New Martinsville failed to ensure that a visual maintenance check of the regulated AST and ancillary equipment up to the first point of isolation was performed each month for Level 1 AST systems.
    c. 47CSR63 Section 5.2.b.3 – New Martinsville failed to perform annual Fit For Service certifications for Level 1 ASTs in intervening years.
    d. 47CSR63 Section 10.3 – New Martinsville failed to ensure that regulated AST systems were monitored for leak detection at least once per calendar month.

    As a result of these violations, IOV Nos. 2020-55419, 2020-55420, 2020-55421 and 2020-55423 were issued to New Martinsville.

9. On October 20, 2021, New Martinsville submitted a proposed Plan of Corrective Action (POCA), which outlined action items and completion dates for how and when New Martinsville would achieve compliance with all pertinent laws and rules. Additional supporting documentation was submitted by New Martinsville on November 5, 2021. Upon subsequent review, WVDEP personnel determined that the proposed POCA was approvable.

10. On November 3, 2021, WVDEP personnel and representatives of New Martinsville met to discuss the terms and conditions of the Order.

11. On December 8, 2021, New Martinsville submitted financial documents to WVDEP. The provided information was used to perform an economic analysis which evaluated New Martinsville's ability to pay a civil administrative penalty.

ORDER FOR COMPLIANCE

Now, therefore, in accordance with Chapter 22, Article 30, Section 1 et seq. of the West Virginia Code, it is hereby agreed between the parties, and ORDERED by the Director:

1. New Martinsville shall immediately take all measures to initiate compliance with all pertinent laws and rules.

2. Upon the effective date of this Order, the aforementioned POCA, dated October 20, 2021, and the additional supporting documentation, submitted November 5, 2021, shall be incorporated into and become part of this Order. Failure to adhere to the approved POCA and schedule is a violation of this Order.

3. Because of New Martinsville's WV State Code and WV Legislative Rule violations, New Martinsville shall be assessed a civil administrative penalty of sixty-nine thousand eight hundred seventy dollars ($69,870) to be paid to the West Virginia Department of Environmental Protection for deposit in the Aboveground Storage Tank Administrative Fund within thirty (30) days of the effective date of this Order. Payments made pursuant to this paragraph are not tax-deductible for purposes of State or federal law. **Payment shall include a reference to the Order No. and shall be mailed to:**

Chief Inspector
Environmental Enforcement - Mail Code #031328
WV-DEP
601 57th Street SE
Charleston, WV 25304

OTHER PROVISIONS

1. New Martinsville hereby waives its right to appeal this Order under the provisions of Chapter 22, Article 30, Section 18 of the Code of West Virginia. Under this Order, New Martinsville agrees to take all actions required by the terms and conditions of this Order and consents to and will not contest the Director's jurisdiction regarding this Order. However, New Martinsville does not admit to any factual and legal determinations made by the Director and reserves all rights and defenses available regarding liability or responsibility in any proceedings regarding New Martinsville other than proceedings, administrative or civil, to enforce this Order.

2. The Director reserves the right to take further action if compliance with the terms and conditions of this Order does not adequately address the violations noted herein and reserves all rights and defenses which he may have pursuant to any legal authority, as well as the right to raise, as a basis for supporting such legal authority or defenses, facts other than those contained in the Findings of Fact.

3. If any event occurs which causes delay in the achievement of the requirements of this Order, New Martinsville shall have the burden of proving that the delay was caused by circumstances beyond its reasonable control which could not have been overcome by due diligence (i.e., force majeure). Force majeure shall not include delays caused or contributed to by the lack of sufficient funding. Within three (3) working days after New Martinsville becomes aware of such a delay, notification shall be provided to the Director/Chief Inspector and shall, within ten (10) working days of initial notification, submit a detailed written explanation of the anticipated length and cause of the delay, the measures taken and/or to be taken to prevent or minimize the delay, and a timetable by

which New Martinsville intends to implement these measures. If the Director agrees that the delay has been or will be caused by circumstances beyond the reasonable control of New Martinsville (i.e., force majeure), the time for performance hereunder shall be extended for a period of time equal to the delay resulting from such circumstances. A force majeure amendment granted by the Director shall be considered a binding extension of this Order and of the requirements herein. The determination of the Director shall be final and not subject to appeal.

4. Compliance with the terms and conditions of this Order shall not in any way be construed as relieving New Martinsville of the obligation to comply with any applicable law, permit, other order, or any other requirement otherwise applicable. Violations of the terms and conditions of this Order may subject New Martinsville to additional penalties and injunctive relief in accordance with the applicable law.

5. The provisions of this Order are severable and should a court or board of competent jurisdiction declare any provisions to be invalid or unenforceable, all other provisions shall remain in full force and effect.

6. This Order is binding on New Martinsville, its successors and assigns.

7. This Order shall terminate upon New Martinsville's notification of full compliance with the "Order for Compliance" and verification of this notification by WVDEP.

Sandy Hunt
Mayor Sandy Hunt
City of New Martinsville

12/15/2021
Date

Public Notice begin:

Date

Public Notice end:

Date

Katheryn Emery, P.E., Acting Director
Division of Water and Waste Management

Date

CITY OF NEW MARTINSVILLE
NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
P.O. BOX 682, 1 HOWARD JEFFERS DRIVE
NEW MARTINSVILLE, WV 26155

PHONE: 304-455-5200 **email: nmhydro@frontier.com** **FAX: 304-455-6066**

October 20, 2021

Chief Inspector
Environmental Enforcement Mail Code 031328
601 57th St. SE
Charleston, WV 25304

Chief Inspector,

This letter is in response to your letter dated September 29, 2021, Reference Identification No. 2014-0005982 Draft Consent Order Number AST-22-001.

First and foremost, I would like to start out by apologizing for the failure that took place on my part. It is my objective to rectify this matter promptly and in a timely manner to get our facility back in compliance and ahead of the curve, so that these failures of compliance are not reoccurring. I would also like to thank the WVDEP for their time and attention to this matter and make known that New Martinsville will do whatever is necessary to comply with the WVDEP.

In regards to 47CSR63 Section 5.1.a - New Martinsville has implemented the use of WVDEP AST Secondary Containment Inspection Checklist to record our visual inspection of secondary containment, at a minimum of every fourteen (14) days for our level 1 AST's.

In regards to 47CSR63 Section 5.1.b - New Martinsville has implemented the use of WVDEP AST Monthly Tank Inspection Checklist to record our visual maintenance check of the regulated AST and ancillary equipment up to the first point of isolation which is to be performed each month.

In regards to 47CSR63 Section 5.2.b.3 - New Martinsville has implemented the use of WVDEP AST Inspection Certification Frequencies Checklist to be sure to perform an annual Fit for Service in intervening years as well as use the checklist to better schedule and track certifications required to stay in compliance.

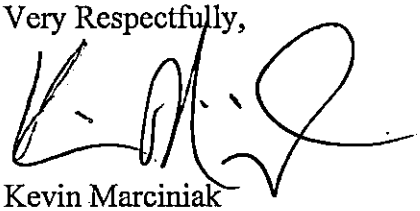
In regards to 47CSR63 Section 10.3 - New Martinsville has implemented the use of WVDEP AST Monthly Tank Inspection Checklist to ensure that regulated AST systems are monitored for leak detection at least once per calendar month.

Moreover, New Martinsville would like the WVDEP to know we monitor each AST, ancillary equipment, and secondary containment, as well as check for leak detection every two (2) hours 365 days a year at our facility, that information is recorded and filed. Moving forward that information contained with-in our logs will be transcribe and show, in a way that is clear, that we are monitoring each AST, ancillary equipment, secondary containment and visually checking for leak detection using the WVDEP checklists.

In closing, it is our intent to show the WVDEP we are making every effort to be with-in compliance. The issues listed in Draft Consent Order Number AST-22-001 are understood and already being corrected as outlined in this letter. Additionally, and in the future, New Martinsville Hydro will explore training opportunities and resources to keep ourselves apprised so that we can stay in compliance indefinitely. Also included with this letter are sample checklists that we will be using to keep in compliance.

Again, I would like to apologize for any and all inconveniences and let you know we will take ALL necessary steps to resolve these issues listed within your letter. Thank you for your time and attention to this matter and we look forward to continuing and building our relationship with the WVDEP.

Very Respectfully,



Kevin Marciniak
NMHHP Plant Manager

cc: Sandy Hunt, Mayor
Kim Whiteman, City Recorder
City Council

AST Inspection Certification Frequencies
(47 CSR 63-5.2)

Enter Date Tank Became Regulated: 8/1/2018

Level 1		Level 2	
PE, API, STI Certification Due*	1/1/2019	PE, API, STI Certification Due*	1/1/2019
Owner Certification Due	1/1/2020	Owner Certification Due	1/1/2020
Owner Certification Due	1/1/2021	Owner Certification Due	1/1/2021
PE, API, STI Certification Due	1/1/2022	Owner Certification Due	1/1/2022
Owner Certification Due	1/1/2023	Owner Certification Due	1/1/2023
Owner Certification Due	1/1/2024	PE, API, STI Certification Due	1/1/2024
PE, API, STI Certification Due	1/1/2025	Owner Certification Due	1/1/2025
Owner Certification Due	1/1/2026	Owner Certification Due	1/1/2026
Owner Certification Due	1/1/2027	Owner Certification Due	1/1/2027
PE, API, STI Certification Due	1/1/2028	Owner Certification Due	1/1/2028
Owner Certification Due	1/1/2029	PE, API, STI Certification Due	1/1/2029
Owner Certification Due	1/1/2030	Owner Certification Due	1/1/2030
PE, API, STI Certification Due	1/1/2031	Owner Certification Due	1/1/2031

Register and label tanks (**RL**) do not require inspection certifications.

A regulated tank means a level 1 or level 2 tank. Your tank could have become regulated at registration or could have become regulated due to a zone update or a change in the registration at a future date. Please enter the date your tank was recognized by the DEP as being regulated.

*This is **NOT** a requirement if the tank was properly inspected and certified pursuant to 47 CSR 62, which was effective until June 1, 2015.

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000824**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection ☐	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)												
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)												
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)												
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)												
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)												
Initials of person conducting inspection (5.1.b.5)												

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000824**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000824**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000824**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000824**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection ☐	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000825**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000826**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection ☐	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000827**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection ☐	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000828**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection ☐	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000829**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection ☐	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000830**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection ☐	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000831**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000832**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection ☐	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KBM	KBM	KBM	KBM	KBM	KBM	KBM	

Date	Comment

AST Monthly Tank Inspection Checklist 47CSR63 5.1.b

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000833**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the tank.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

YEAR: 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date of Inspection	1/1	2/5	3/5	4/2	5/7	6/4	7/2	8/6	9/3	10/1	11/5	12/3
REQUIRED MONTHLY												
Leak Detection: Is the AST system in compliance with the leak detection requirements of 47CSR63 10.3? (5.1.b.1)					Y	Y	Y	Y	Y	Y	Y	
Tank Condition: Is the tank system free of deterioration and maintenance deficiencies, including a visual check for cracks, areas of wear, distortion, corrosion, settlement and deterioration of foundation and supports? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
External Coating: Is the external coating or paint and insulation, if present, free of deterioration? (5.1.b.2)					Y	Y	Y	Y	Y	Y	Y	
Ancillary Equipment: Is the ancillary equipment and appurtenances up to first point of isolation free of leaks, operation malfunctions and deteriorations? (5.1.b.3)					Y	Y	Y	Y	Y	Y	Y	
Overfill equipment: Is the overfill equipment free of operation malfunctions? (5.1.b.4)					Y	Y	Y	Y	Y	Y	Y	
Initials of person conducting inspection (5.1.b.5)					KDM	KDM	KDM	KDM	KDM	KDM	KDM	

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000824**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000824**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000824**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000825**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000825**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000825**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000826**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000826**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000826**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KBM	KBM	KBM	KBM	KBM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000827**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000827**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000827**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000828**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000828**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000828**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000829**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000829**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000829**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000830**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000830**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000830**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000831**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000831**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000831**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000832**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000832**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION **REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2**	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000832**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000833**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	1/1	1/15	1/29	2/12	2/26	3/12	3/26	4/9	4/23
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)									
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)									
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)									
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)									
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)									
Initials of person conducting inspection (5.1.a.4)									

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000833**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	5/7	5/21	6/4	6/18	7/2	7/16	7/30	8/13	8/27
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM	KDM

Date	Comment

AST Secondary Containment Inspection Checklist (47CSR63 5.1.b)

New Martinsville Hannibal Hydroelectric Plant **Tank ID: 052-00000833**

> Put a Yes or No in each box to indicate answer to question. Use NA if the equipment inspection does not apply to the site.
> Take action for any alarms, damaged equipment and non-normal operating conditions; note actions taken at bottom of page

DATE OF INSPECTION REQUIRED EVERY 14 DAYS FOR LEVEL 1 OR MONTHLY FOR LEVEL 2	9/10	9/24	10/8	10/22	11/5	11/19	12/3	12/17	12/31
Hazardous Environmental Conditions: Is the facility free of evidence of an obvious release, spill, overflow or leakage from AST system, including ancillary equipment? (5.1.a.1)	Y	Y	Y	Y	Y				
Deterioration: Is the secondary containment structure free of deterioration? (5.1.a.2)	Y	Y	Y	Y	Y				
Drain valve: Is drain valve secured in the closed position when not in use? (5.1.a.2)	Y	Y	Y	Y	Y				
Liquid accumulation: Is the secondary containment free of liquid accumulation within secondary containment or interstice of double walled tanks? (5.1.a.2)	Y	Y	Y	Y	Y				
Water accumulation: If water accumulation is greater than 10% of secondary containment, has it been removed? (5.1.a.3)	Y	Y	Y	Y	Y				
Initials of person conducting inspection (5.1.a.4)	KDM	KDM	KDM	KDM	KDM				

Date	Comment

ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
Is Fit for Service

AST Facility Name	New Martinsville Hannibal Hydroelectric Plant
Address	1 Howard Jeffers Dr.
City, State, Zip	New Martinsville, WV 26155
Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000824
DEP Issued Tank Label	052-0000824
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

☑ I am the tank owner, operator, or qualified representative of the tank owner or operator, and have performed a tank evaluation on the above AST system. I certify there is no obvious change to the tank system that would cause this tank to become not-fit for service since it was certified by a PE, API or STI inspector on December 11, 2018 (date). This certification meets the requirements set in WV CSR 47-63-5.2.b.3 to certify annual inspections in intervening years between the evaluations required by a PE, API or STI inspector.

In accordance with the WV CSR 47-63-5.2, I have documented all deficiencies and/or changes in the tank system found during the inspection, in writing, and provided my recommendations, including a proposed schedule, for abating the deficiencies and submitted them with this form.

I certify that I have personally examined and/or am familiar with the inspection performed on the AST system listed above, including its associated equipment, leak detection system and secondary containment structure, and that based on my direct knowledge that the AST listed above is **Fit for Service**.

Signature of Certifying Individual

January 1, 2021
Date Signed

P.E. Registration #, STI Certification # or Certification # (if applicable)

Registration/Certification Expiration Date API (if applicable)

ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
Is Fit for Service

AST Facility Name	New Martinsville Hannibal Hydroelectric Plant
Address	1 Howard Jeffers Dr.
City, State, Zip	New Martinsville, WV 26155
Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000825
DEP Issued Tank Label	052-0000825
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

☑ I am the tank owner, operator, or qualified representative of the tank owner or operator, and have performed a tank evaluation on the above AST system. I certify there is no obvious change to the tank system that would cause this tank to become not-fit for service since it was certified by a PE, API or STI inspector on December 11, 2018 (date). This certification meets the requirements set in WV CSR 47-63-5.2.b.3 to certify annual inspections in intervening years between the evaluations required by a PE, API or STI inspector.

In accordance with the WV CSR 47-63-5.2, I have documented all deficiencies and/or changes in the tank system found during the inspection, in writing, and provided my recommendations, including a proposed schedule, for abating the deficiencies and submitted them with this form.

I certify that I have personally examined and/or am familiar with the inspection performed on the AST system listed above, including its associated equipment, leak detection system and secondary containment structure, and that based on my direct knowledge that the AST listed above is **Fit for Service**.

Signature of Certifying Individual

January 1, 2021
Date Signed

P.E. Registration #, STI Certification # or Certification # (if applicable)

Registration/Certification Expiration Date API (if applicable)

ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
Is Fit for Service

AST Facility Name	New Martinsville Hannibal Hydroelectric Plant
Address	1 Howard Jeffers Dr.
City, State, Zip	New Martinsville, WV 26155
Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000826
DEP Issued Tank Label	052-0000826
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

☑ I am the tank owner, operator, or qualified representative of the tank owner or operator, and have performed a tank evaluation on the above AST system. I certify there is no obvious change to the tank system that would cause this tank to become not-fit for service since it was certified by a PE, API or STI inspector on December 11, 2018 (date). This certification meets the requirements set in WV CSR 47-63-5.2.b.3 to certify annual inspections in intervening years between the evaluations required by a PE, API or STI inspector.

In accordance with the WV CSR 47-63-5.2, I have documented all deficiencies and/or changes in the tank system found during the inspection, in writing, and provided my recommendations, including a proposed schedule, for abating the deficiencies and submitted them with this form.

I certify that I have personally examined and/or am familiar with the inspection performed on the AST system listed above, including its associated equipment, leak detection system and secondary containment structure, and that based on my direct knowledge that the AST listed above is **Fit for Service**.

Signature of Certifying Individual

January 1, 2021
Date Signed

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ANNUAL INSPECTION CERTIFICATION
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Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000827
DEP Issued Tank Label	052-0000827
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

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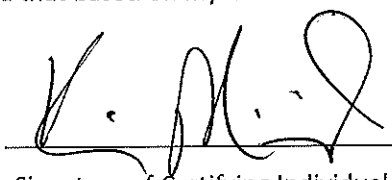

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ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
Is Fit for Service

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City, State, Zip	New Martinsville, WV 26155
Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000828
DEP Issued Tank Label	052-0000828
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

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Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000829
DEP Issued Tank Label	052-0000829
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

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Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000830
DEP Issued Tank Label	052-0000830
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

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Aboveground Storage Tank
Is Fit for Service

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City, State, Zip	New Martinsville, WV 26155
Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000831
DEP Issued Tank Label	052-0000831
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

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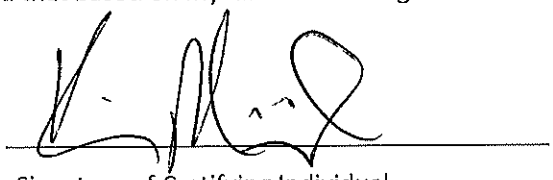

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Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000832
DEP Issued Tank Label	052-0000832
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

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City, State, Zip	New Martinsville, WV 26155
Tank Owner Name	City of New Martinsville
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	Kevin Marciniak NMHHP Plant Manager
Address	1 Howard Jeffers Dr
City, State, Zip	New Martinsville, WV 26155
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Facility's/Owner's Tank ID	052-0000833
DEP Issued Tank Label	052-0000833
DEP Determined Tank Level	Level 1 tank ☑ Level 2 tank ☐

☐ I am a qualified individual as described in WV CSR 47-63-5.2 and I have performed a tank evaluation on the above AST system. I certify the tank system meets applicable standards established by WV CSR 47-63.

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TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Engineering Report – Governor Oil Tank 052-00000824

STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for

NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 11, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

A STI Certified External inspection of the Generator Oil Tank 052-00000824 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2.

CERTIFICATION

The following certification pertains to the inspection of the Governor Oil Tank 052-00000824 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 11, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Lube Oil Tank 052-00000824 and summarizes the results of a STI Certified External inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant	
Location:	New Martinsville, WV 26155	
Tank Number:	052-00000824	
Service:	Governor Oil	
Height:	45 Inches	
Length:	8 feet, 1 inch	
Width:	52 inches	
Capacity:	3,500 gallons	
Configuration:	Rectangular (Single Wall)	
Foundation:	Concrete Pad	
Containment:	Concrete Dike	
Construction:	Shell:	Butt-Weld
	Tank Bottom:	Butt-Weld
	Fixed Roof:	Butt-Weld
Material:	Shell:	Carbon Steel
	Tank Bottom:	Carbon Steel
	Fixed Roof:	Carbon Steel
Built:	Circa 1987	
Age:	Circa 31 years	
Specific Gravity	.88	
Operating Limits:	Minimum Metal Temperature:	-20 F
	Maximum Metal Temperature:	Ambient
	Minimum Pressure:	Atmospheric
	Maximum Pressure:	Product
Seismic Zone:	1	
Construction Code:	ASME	
Inspection Type:	STI Certified External	
Inspector Name:	Dennis J Oberdove	

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank is a single wall design. The secondary containment is a sealed and polished concrete dike 16’9” L X 17’5” W X 3” H. The dike is sufficient in size to contain more than 110% of the tank capacity. The dike was checked and no product or water was present at the time of the inspection. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours.

4.1.2 Foundation: The tank rests on a concrete pad foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system.

4.1.3 Shell: The tank shell is a butt-weld design. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 Tank Top: The tank top is a butt-weld design. A visual inspection was performed on the top welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank top was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank top is structurally sound and in satisfactory condition.

4.1.5 Bottom: The tank bottom is a butt-weld design. A visual inspection was performed on the bottom welds where accessible. No visual discrepancies are present in the evaluated bottom welds. The welds are structurally sound and in satisfactory condition. The tank bottom was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank bottom in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank bottom is structurally sound and in satisfactory condition.

4.1.6 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank does have means of ventilation via a 2" atmospheric vent. The tank is equipped with an electronic level sensor which is monitor screen at all times from the control room is equipped a visual sight glass tube on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.7 Paint/Insulation: Over the course of the inspection the tank and associated piping insulation and or coating were evaluated. The overall condition of the tank is satisfactory.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Shell: None.

4.2.4 Roof: None.

4.2.5 Bottom: None.

4.2.6 Shell Appurtenances: None.

4.2.7 Paint/Insulation: None.

4.3 Compliance Requirements:

4.3.1 Containment: None.

4.3.2 Foundation: None.

4.3.3 Shell: None.

4.3.4 Roof: None.

4.3.5 Bottom: None.

4.3.6 Shell Appurtenances: None.

4.3.7 Paint/Insulation: None.

4.4 Serviceability:

The Governor tank is in compliance with the requirements of STI Standard SP001 for structural integrity. The following schedule should be implemented.

4.4.1 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2023** in accordance with STI Standard SP001.

4.4.2 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	#052-00000824			
Plate Specification :	UNKNOWN			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :	GOVERNOR OIL			
Length:	8	*feet*	1	*inches*
WIDTH:	4	*feet*	6	*inches*
HEIGHT:	3	*feet*	9	*inches*
Volume :	3,500			*gallons*
Specific Gravity :	**G**	0.86		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

FOR VERTICAL TANKS ONLY				
T	Specified minimum tensile strength * (lb/in²)			
Y	Specified minimum yield strength (lb/in²)			
S	Maximum allowable stress, first and second (lb/in²)			
	Maximum allowable stress, for all other (lb/in²)			
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		0	0
		0	0.88Y	0.427T
	All Other	0	0	0

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t_{orig})*	Current Measured Thickness *(inches)* *(t_{act})*	[2,3] Minimum Acceptable Thickness *(inches)* *(t_{min})*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
TOP	3.75	N/A	1	0.594	0.580	0.100	0.00045	>20	2023	2028	N/A
SHELL EAST SIDE	3.75	N/A	1	0.344	0.335	0.100	0.00029	>20	2023	2028	N/A
SHELL NORTH	3.75	N/A	1	0.344	0.333	0.100	0.00035	>20	2023	2028	N/A
SHELL WEST SIDE	3.75	N/A	1	0.344	0.334	0.100	0.00032	>20	2023	2028	N/A
SHELL SOUTH	3.75	N/A	1	0.344	0.335	0.100	0.00029	>20	2023	2038	N/A
BOTTOM	3.75	N/A	1	0.375	0.371	0.100	0.00013	>20	2023	2028	N/A

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

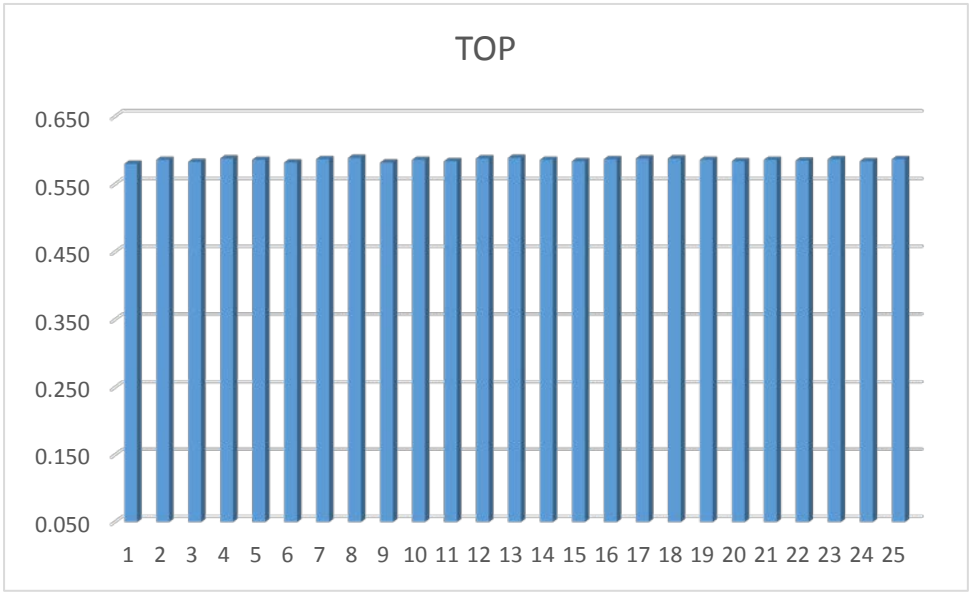
3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

Tank Integrity Services Inc.
Rev. 9807-2

TANK SHELL ULTRASONIC READINGS

TOP		SHELL EAST SIDE		SHELL NORTH		SHELL WEST SIDE		SHELL SOUTH		BOTTOM	
1	0.580	1	0.338	1	0.334	1	0.335	1	0.339	1	0.374
2	0.586	2	0.336	2	0.338	2	0.337	2	0.335	2	0.376
3	0.583	3	0.339	3	0.335	3	0.339	3	0.337	3	0.375
4	0.588	4	0.337	4	0.336	4	0.334	4	0.339	4	0.374
5	0.586	5	0.335	5	0.337	5	0.339	5	0.338	5	0.373
6	0.582	6	0.338	6	0.339	6	0.341	6	0.335	6	0.375
7	0.587	7	0.337	7	0.335	7	0.339	7	0.338	7	0.374
8	0.589	8	0.341	8	0.334	8	0.335	8	0.337	8	0.371
9	0.582	9	0.340	9	0.333	9	0.337	9	0.336	9	0.373
10	0.586	10	0.341	10	0.337	10	0.336	10	0.339	10	0.375
11	0.584	11	0.340	11	0.336	11	0.338	11	0.340	11	0.372
12	0.588	12	0.339	12	0.338	12	0.335	12	0.338	12	0.373
13	0.589	13	0.343	13	0.337	13	0.339	13	0.337	13	0.375
14	0.586	14	0.342	14	0.340	14	0.341	14	0.339	14	0.373
15	0.584	15	0.341	15	0.336	15	0.339	15	0.338	15	0.376
16	0.587	16	0.344	16	0.338	16	0.341	16	0.337	16	0.375
17	0.588	17	0.337	17	0.339	17	0.337	17	0.338	17	0.375
18	0.588	18	0.339	18	0.337	18	0.338	18	0.338	18	0.374
19	0.586	19	0.338	19	0.338	19	0.337	19	0.339	19	0.375
20	0.584	20	0.336	20	0.335	20	0.339	20	0.335	20	0.373
21	0.586	21	0.337	21	0.339	21	0.340	21	0.336	21	0.375
22	0.585	22	0.336	22	0.338	22	0.338	22	0.337	22	0.372
23	0.587	23	0.339	23	0.339	23	0.340	23	0.338	23	0.374
24	0.584	24	0.340	24	0.337	24	0.339	24	0.339	24	0.375
25	0.587	25	0.339	25	0.339	25	0.337	25	0.340	25	0.376
Average	0.586	Average	0.339	Average	0.337	Average	0.338	Average	0.337	Average	0.374
t_{orig}	0.594	t_{orig}	0.344	t_{orig}	0.344	t_{orig}	0.344	t_{orig}	0.344	t_{orig}	0.375

t_{orig} = The original metal thickness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0.450
0.350
0.250
0.150
0.050
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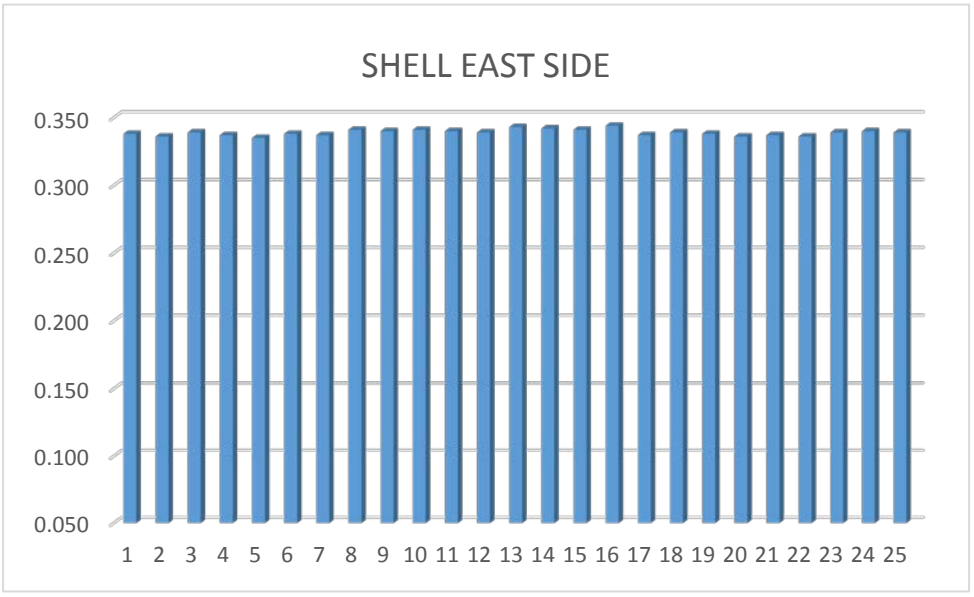
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0.250
0.200
0.150
0.100
0.050
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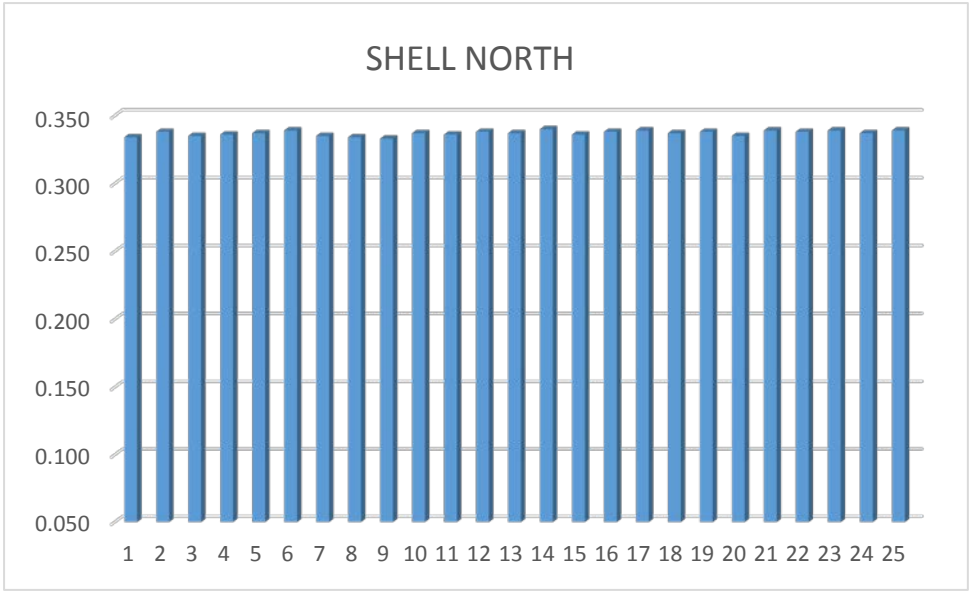
SHELL NORTH
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0.200
0.150
0.100
0.050
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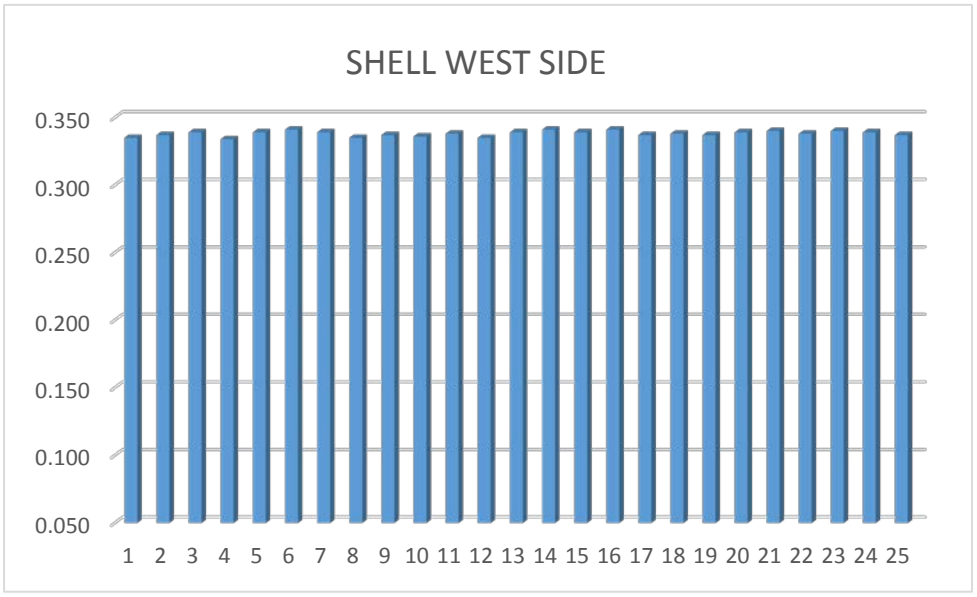
SHELL WEST SIDE
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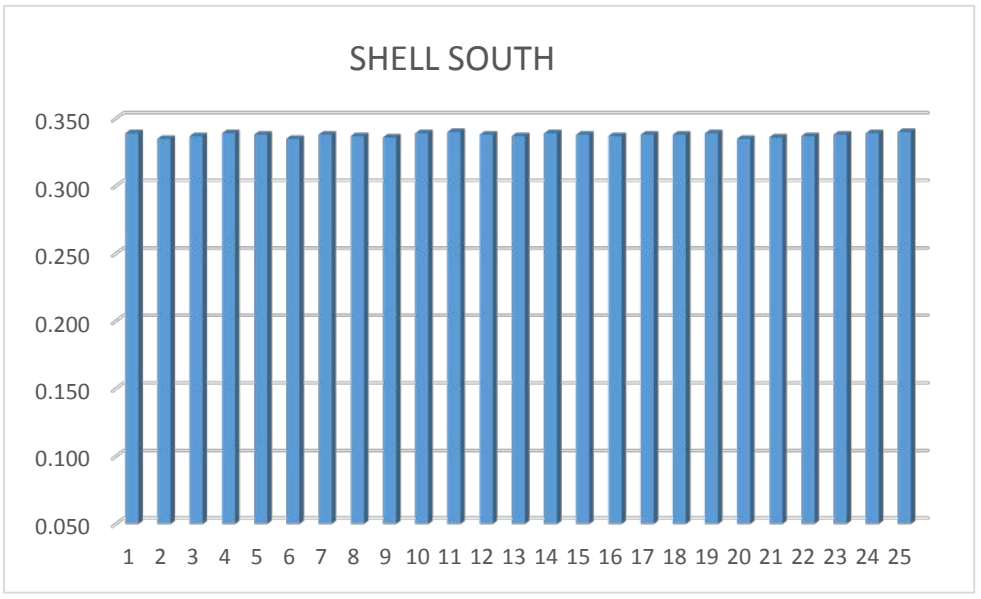
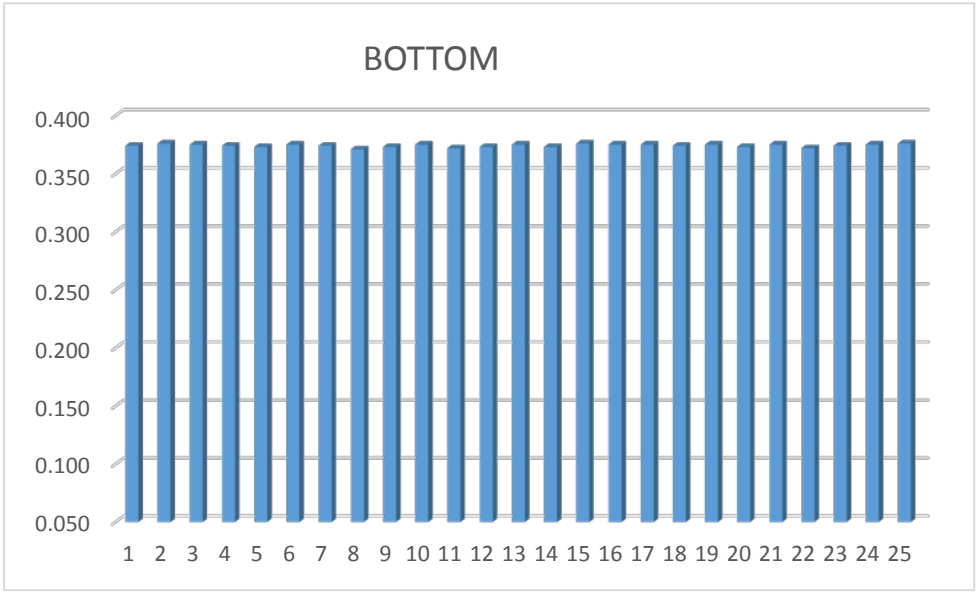
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL SOUTH
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


BOTTOM
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs

Tank Identification & Emergency Contact Numbers

Tank Manufactures Information Plate

Liquid Level Sight Tube

Tank Anchor Bolt and Drain Valve

Foundation – Concrete Pad & Anchor Bolt

One of Four Tank I Beam Tank Supports

Concrete Containment Dike

Tank Ground Strap and Anchor Bolt

1 of Two Tank Inspection & Entry Man-holes 18”

One of Five Lifting Lugs

Tank Fire Control Panel Monitored From Control Room

Tank Fire Control Panel Monitored From Control Room

Tank Fire Control Heat Sensor

Tank Area Han Held Fire Extinguisher

Tank Remote Level Monitor Control Room

Tank Remote Level Monitor Control Room

Tank Remote Fire Monitoring System Control Room

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**	Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**
Address:	**1 HOWARD JEFFERS DR.**	Address:	**1 HOWARD JEFFERS DR.**
City, State Zip Code:	**Martinsville, WV 26155**	City, State Zip Code:	**Martinsville, WV 26155**

Tank ID: **05200000824 GOVERNOR OIL TANK**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal		Vertical	**X** Rectangular
		API		Other: **ASME**					
		Unknown							
Manufacturer:	**REXROTH**			Contents: **OIL**		Construction Date: **1987**		Last Repair / Reconstruction Date:	
Dimensions:	**L-8'1" X W-52" X H-45"**			Capacity: **3,500 GAL**		Last Change of Service Date:			
Construction:		Bare Steel		Cathodically Protected (Check One):		Galvanized		Impressed Current (Date Installed)	
	X	Coated Steel		Concrete		Plastic/Fiberglass		Other:	
		Double Bottom		Double Wall		Lined Date Installed:			
Containment		Earthen Dike		Steel Dike	**X** Concrete		Synthetic Line		Other:
CRDM:			**X**	Date Installed: **1987**		Type: **CONTAINMENT DIKE MONITORING**			
Release Prevention Barrier:			**X**	Date Installed: **1987**		Type: **CONTAINMENT DIKE MONITORING**			

STI Checklist

Tank #: **GOVERNOR OIL 052-00000824** | Inspector: **Dennis Oberdove** | Date: **12/11/2018**

	Item	SAT	Unsat	N/A
	Check Primary tank for the presence of water.			**X**
	Check secondary tank for the presence of water.			**X**
	Check interstice of a double wall tank for the presence of fuel.			**X**
X	Check all pipe connections to the tank for evidence of leakage.	**X**		
X	List any areas of coating deficiencies.	**X**		
	Inspect operating and emergency vents.			**X**
	Type of emergency vent: [ ] Pop-up [ ] Flip-up Size:			**X**
X	Check for proper drainage around the tank.	**X**		
X	Check foundation for signs of settlement, cracking or spalling.	**X**		
	Check cathodic protection if installed.			**X**
X	Conduct ultrasonic wall thickness testing.	**X**		
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.	**X**		
X	What type of weld joints: **X** Butt [ ] Lap	**X**		
	Identify all areas of corrosion. Evaluate.			**X**
	Any area with less than 60% of the wall thickness remaining shall be repaired.			**X**
	Identify all areas of pitting. Evaluate.			**X**
	Any pit with less than 50% of the wall thickness remaining shall be repaired.			**X**
	Inert gas test tank (helium test).			**X**
	List tank manufacture data that is available.			**X**
	Reviewed the onsite SPCC Plan.			**X**
X	Type of construction: [ ] API-650 [ ] API-12F [ ] UL-142 [ ] STIF911 [ ] STIF921	**X**		
X	Type of layout **X** Open dike [ ] Diked with rainshields [ ] Double Wall	**X**		
	UL-2244 type tank such as…Generator tank			**X**
	Vaulted tank			**X**

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000824
DEP Tank Registration Number (if issued)	052-00000824

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/11/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Formal External Inspection Report – Governor Oil Tank 052-00000825

STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for
NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 11, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

An STI Formal External Inspection of the Governor Oil Tank 052-00000825 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2 and Compliance Requirements are listed in section 4.3

CERTIFICATION

The following certification pertains to the inspection of the Governor Oil Tank 052-0000825 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 11, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Governor Oil Tank 052-0000825 and summarizes the results of an STI Formal External Inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

2.8 West Virginia Code:

2.8.1 West Virginia Code 22-30-6 and/or 47CSR 62-3 – Interim Annual Inspection Certification for Above Ground Storage Tanks.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant	
Location:	New Martinsville, WV 26155	
Tank Number:	052-00000825	
Service:	Governor Oil	
Height:	12 Feet, 2.375 Inches	
Diameter:	6 Feet, 6 Inches	
Capacity:	3,000 Gallons	
Configuration:	Vertical (Single-Wall) High Pressure Vessel	
Foundation:	Concrete	
Containment:	Grated Catch Basin & Separator System	
Category:	Category 1	
Construction:	Shell:	Butt-Welded
	Heads:	Butt-Welded
Material:	Shell:	Carbon Steel
	Heads:	Carbon Steel
Built:	1987 estimated	
Age:	31 years estimated	
Specific Gravity	.84	
Operating Limits:	Minimum Metal Temperature:	-20 F
	Maximum Metal Temperature:	650 F
	Minimum Pressure:	782 PSI
	Maximum Pressure:	500 PSI
Seismic Zone:	1	
Construction Code:	ASME SP-1031	
Inspection Type:	STI Formal External	
Inspector Name:	Dennis J Oberdove	

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank is a single double wall design. The secondary containment is a steel catch basin around the tank bottom that drains to the basement to an oil water separator. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours. .

4.1.2 Foundation: The tank rests on a concrete foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system

4.1.3 Tank Shell: The tank shell designed as a high pressure vessel ASME SP-1301. See the attached Woodward Governor Company specification SP-1301. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition. There was an API-510 inspection conducted on this tank November 28, 2016 by Sistersville Tank Works. A new pressure relief valve was installed. The results of that inspection are attached.

4.1.4 Heads: The tank heads are a butt-weld design ASME High Pressure Vessel design. An inspection was performed on the head welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank heads were evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank top is structurally sound and in satisfactory condition. There was an API-510 inspection conducted on this tank November 28, 2016 by Sistersville Tank Works. The results of that inspection are attached.

4.1.5 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank is a high pressure vessel and is equipped with a pressure relief valve. The tank is equipped with a visual sight gauge on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.5 Paint/Insulation: Over the course of the inspection the tank coating was inspected and evaluated. The tank's coating was in satisfactory condition.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Tank Roof, Bottom and Shell: None.

4.2.4 Shell Appurtenances: None

4.2.5 Paint/Insulation: None

4.3 Compliance Requirements:

4.3.1 Containment: None

4.3.2 Foundation: None

4.3.3 Tank Roof, Bottom and Shell: None.

4.3.4 Shell Appurtenances: None.

4.3.5 Paint/Insulation: None.

4.4 Serviceability:

4.4.1 The Governor Oil tank is in compliance with the requirements of STI Standard SP001 for structural integrity and STI-510 High Pressure Vessel. The following schedule should be implemented.

4.4.2 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 12, 2023** in accordance with STI Standard SP001.

4.4.3 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 12, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	GOVERNOR OIL 052-00000825			
Plate Specification :	WOODWARD GOVERNOR COMPANY			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :	ASME SP-1301			
Height :	12	*feet*	0.375	*inches*
Diameter :	6	*feet*	6	*inches*
Volume :	3,000			*gallons*
Specific Gravity :	**G**	HIGH PRESSURE		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

T	Specified minimum tensile strength * (lb/in²)			55,000
Y	Specified minimum yield strength (lb/in²)			21,000
S	Maximum allowable stress, first and second (lb/in²)			23,595
	Maximum allowable stress, for all other (lb/in²)			23,485
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		16,800	23,595
		23,595	0.88Y	0.427T
	All Other	23,485	18,480	23,485

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t orig)*	Current Measured Thickness *(inches)* *(t act)*	[2,3] Minimum Acceptable Thickness *(inches)* *(t min)*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
SHELL COURSE 1	12.03	23,595	1	2.125	2.180	0.100	-0.00177	>20	2023	2028	2028
HEAD TOP	0.00	23,595	1	2.125	2.185	0.100	-0.00194	>20	2023	2028	2028
HEAD BOTTOM	0.00	23,485	1	2.125	2.120	0.100	0.00016	>20	2022	2028	2028

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

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TANK SHELL ULTRASONIC READINGS

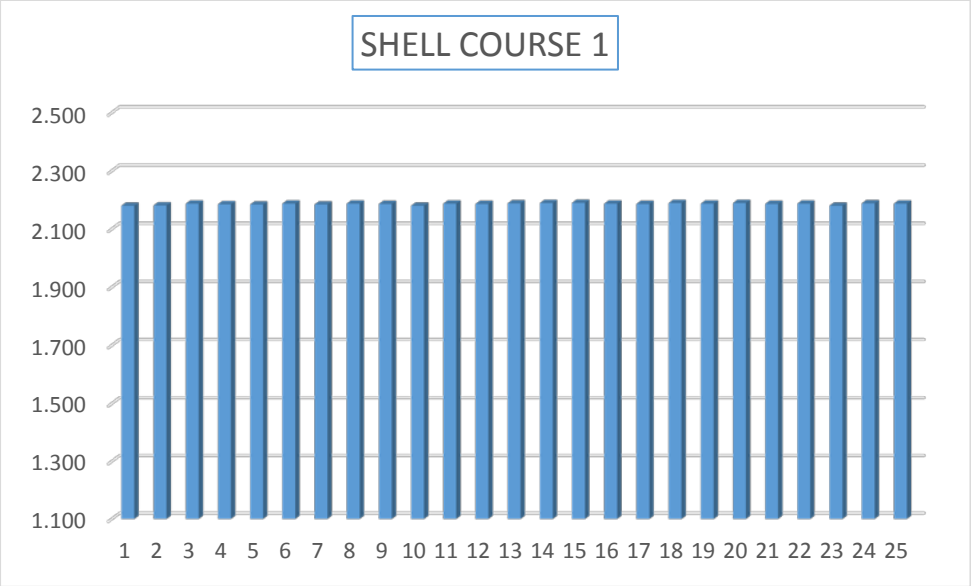
SHELL COURSE 1	
1	2.180
2	2.181
3	2.187
4	2.185
5	2.184
6	2.187
7	2.184
8	2.187
9	2.186
10	2.180
11	2.187
12	2.186
13	2.188
14	2.189
15	2.190
16	2.187
17	2.186
18	2.189
19	2.187
20	2.189
21	2.186
22	2.187
23	2.180
24	2.188
25	2.187
Average	2.186
t_{orig}	2.125

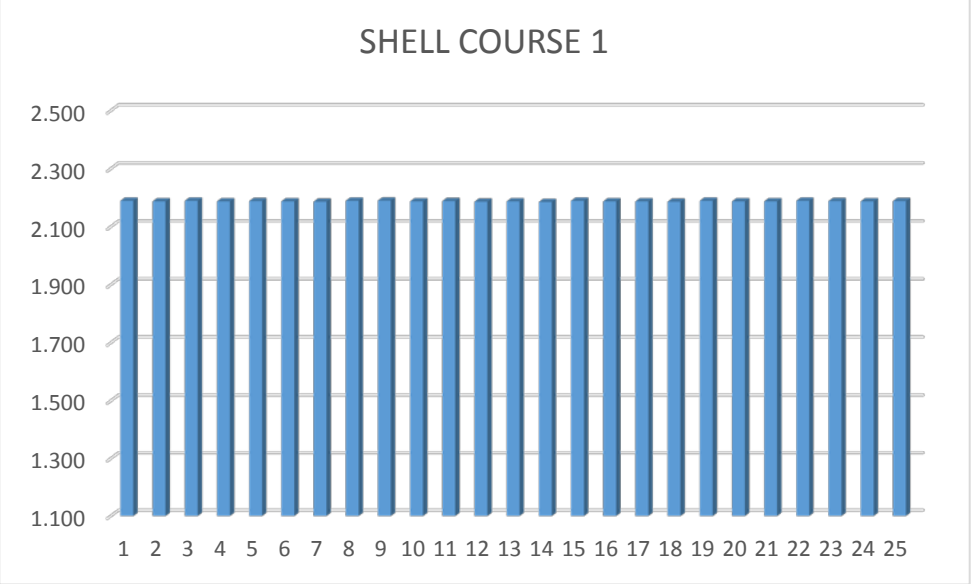
SHELL COURSE 1	
1	2.189
2	2.187
3	2.189
4	2.187
5	2.188
6	2.187
7	2.186
8	2.189
9	2.190
10	2.187
11	2.188
12	2.186
13	2.187
14	2.185
15	2.189
16	2.187
17	2.187
18	2.186
19	2.189
20	2.187
21	2.187
22	2.189
23	2.188
24	2.187
25	2.188
Average	2.188
t_{orig}	2.125

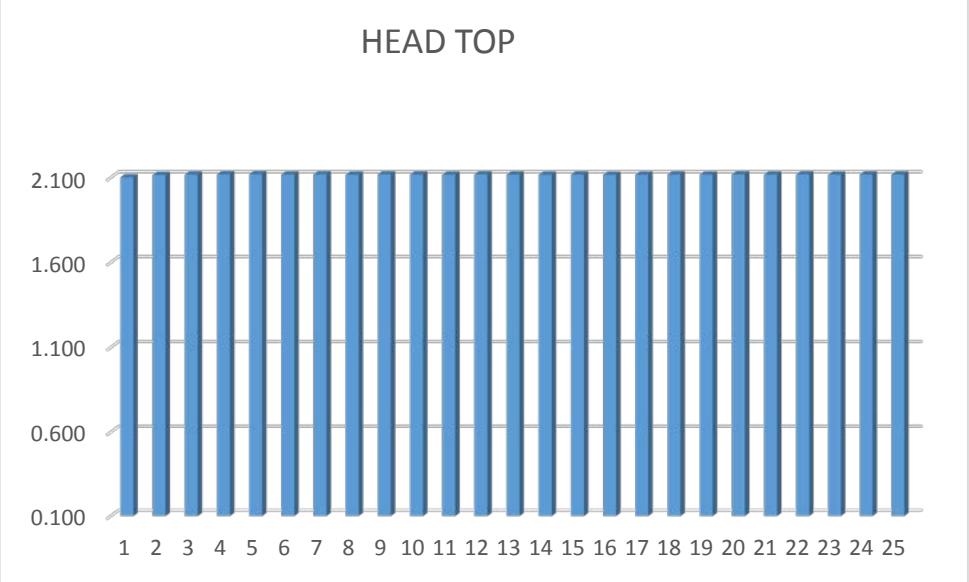
HEAD TOP	
1	2.101
2	2.115
3	2.118
4	2.119
5	2.120
6	2.118
7	2.119
8	2.117
9	2.119
10	2.118
11	2.117
12	2.119
13	2.118
14	2.117
15	2.118
16	2.116
17	2.117
18	2.118
19	2.117
20	2.119
21	2.118
22	2.119
23	2.117
24	2.118
25	2.118
Average	2.117
t_{orig}	2.125

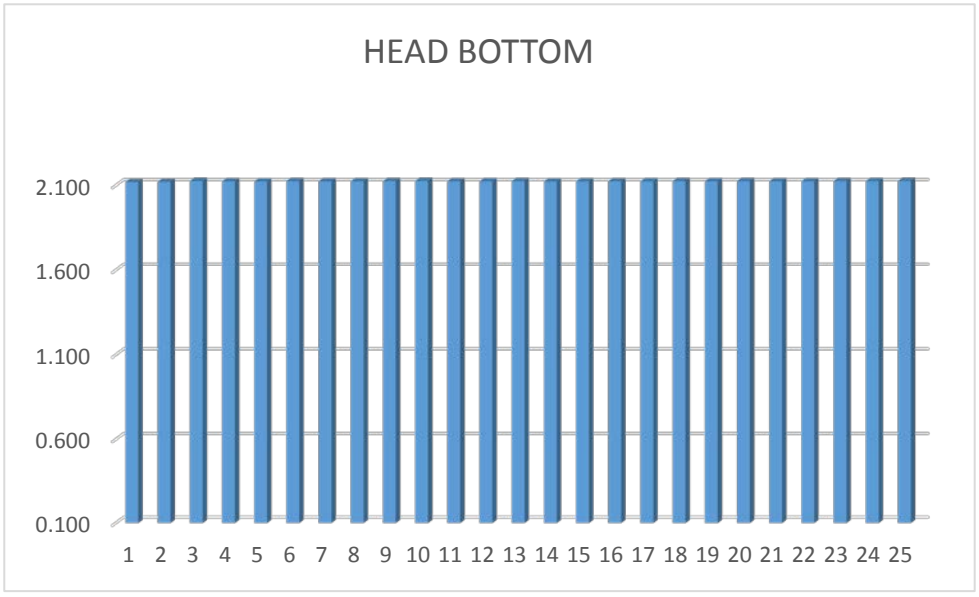
HEAD BOTTOM	
1	2.120
2	2.121
3	2.126
4	2.124
5	2.123
6	2.125
7	2.124
8	2.124
9	2.125
10	2.126
11	2.124
12	2.124
13	2.125
14	2.123
15	2.124
16	2.124
17	2.124
18	2.125
19	2.124
20	2.125
21	2.124
22	2.124
23	2.125
24	2.125
25	2.126
Average	2.124
t_{orig}	2.125

t_{orig} = The original metal thickness


SHELL COURSE 1
2.500
2.300
2.100
1.900
1.700
1.500
1.300
1.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL COURSE 1
2.500
2.300
2.100
1.900
1.700
1.500
1.300
1.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


HEAD TOP
2.100
1.600
1.100
0.600
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

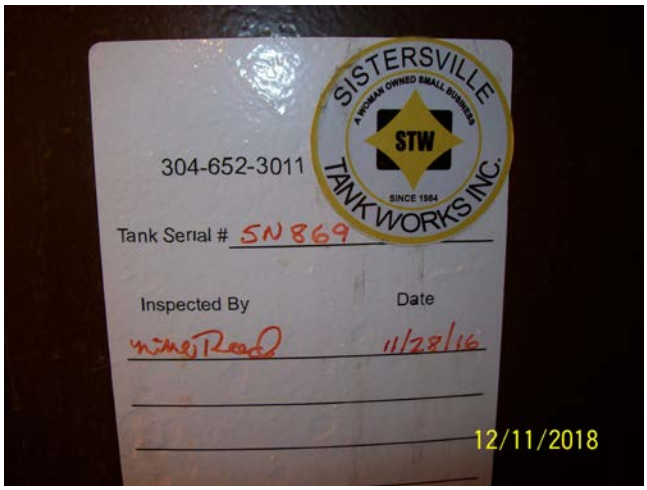

HEAD BOTTOM
2.100
1.600
1.100
0.600
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs

Tank Id & Emergency Contacts

Tank Manufacture Plate



November 28, 2016 Inspection Seal

Tank Inspection Manway

Tank High Pressure Air Exhaust

Tank Pressure Gauge

System Pressure Regulator

Tank Anchor Plates

Tank Anchor Plates

Tank Ground Strap

Shell to Upper Head Butt Weld Design

Shell to Upper Head Butt Weld Design

Tank Level Indicator Gauge

Lifting Lug

Tank Foundation

Lube Room Fire Monitoring In Control Room

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT	Name:	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address:	1 HOWARD JEFFERS DR.	Address:	1 HOWARD JEFFERS DR.
City, State Zip Code:	Martinsville, WV 26155	City, State Zip Code:	Martinsville, WV 26155

Tank ID: **052-00000825 GOVERNOR OIL TANK HIGH PRESSURE**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal	X	Vertical		Rectangular		
	X	API	X	Other:	ASME SPECIFICATION 1301 HIGH PRESSURE VESSEL							
		Unknown										

Manufacturer:	WOODWARD GOVERNOR COMPANY	Contents:	GOVERNOR OIL	Construction Date:	1987
Dimensions:	12'.375" H X 6'6" D	Capacity:	3000 GAL	Last Change of Service Date:	Last Repair / Reconstruction Date:

Construction:		Bare Steel		Cathodically Protected (Check One):			Galvanized		Impressed Current (Date Installed)			
	X	Coated Steel		Concrete			Plastic/Fiberglass			Other:		
		Double Bottom			Double Wall		Lined Date Installed:					
Containment		Earthen Dike		Steel Dike	X	Concrete		Synthetic Line		Other:		

CRDM:	X	Date Installed:	1987	Type:	CATCH BASIN SEPARATOR SYSTEM
Release Prevention Barrier:	X	Date Installed:	1987	Type:	CATCH BASIN SEPARATOR SYSTEM

STI Checklist

Tank #: GOVERNOR OIL #052-00000825	Inspector: Dennis Oberdove	Date: 12/11/2018	SAT	Unsat	N/A

	Check Primary tank for the presence of water.																		X
	Check secondary tank for the presence of water.																		X
	Check interstice of a double wall tank for the presence of fuel.																		X
X	Check all pipe connections to the tank for evidence of leakage.																X		
X	List any areas of coating deficiencies.																X		
	Inspect operating and emergency vents.																		X
	Type of emergency vent:		Pop-up		Flip-up		Size:												X
X	Check for proper drainage around the tank.																X		
X	Check foundation for signs of settlement, cracking or spalling.																X		
	Check cathodic protection if installed.																		X
X	Conduct ultrasonic wall thickness testing.																X		
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.																X		
X	What type of weld joints:	X	Butt		Lap												X		
	Identify all areas of corrosion. Evaluate.																		X
	Any area with less than 60% of the wall thickness remaining shall be repaired.																		X
	Identify all areas of pitting. Evaluate.																		X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.																		X
	Inert gas test tank (helium test).																		X
	List tank manufacture data that is available.																		X
	Reviewed the onsite SPCC Plan.																		X
X	Type of construction:		API-650		API-12F		UL-142	X	ASME SP-1301		STIF921						X		
X	Type of layout	X	Open dike		Diked with rainshields				Double Wall								X		
	UL-2244 type tank such as…Generator tank																		X
	Vaulted tank																		X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000825
DEP Tank Registration Number (if issued)	052-00000825

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/11/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

Appendix E

2016 – API-510 Inspection

Kevin,

The #1 Oil Tank was inspected on 11/28/16 and a new pressure relief valve was installed. We are unable to find the inspection report at this time. Here is a copy of the thickness readings taken that day.

- Rick Hendershot QC Manager

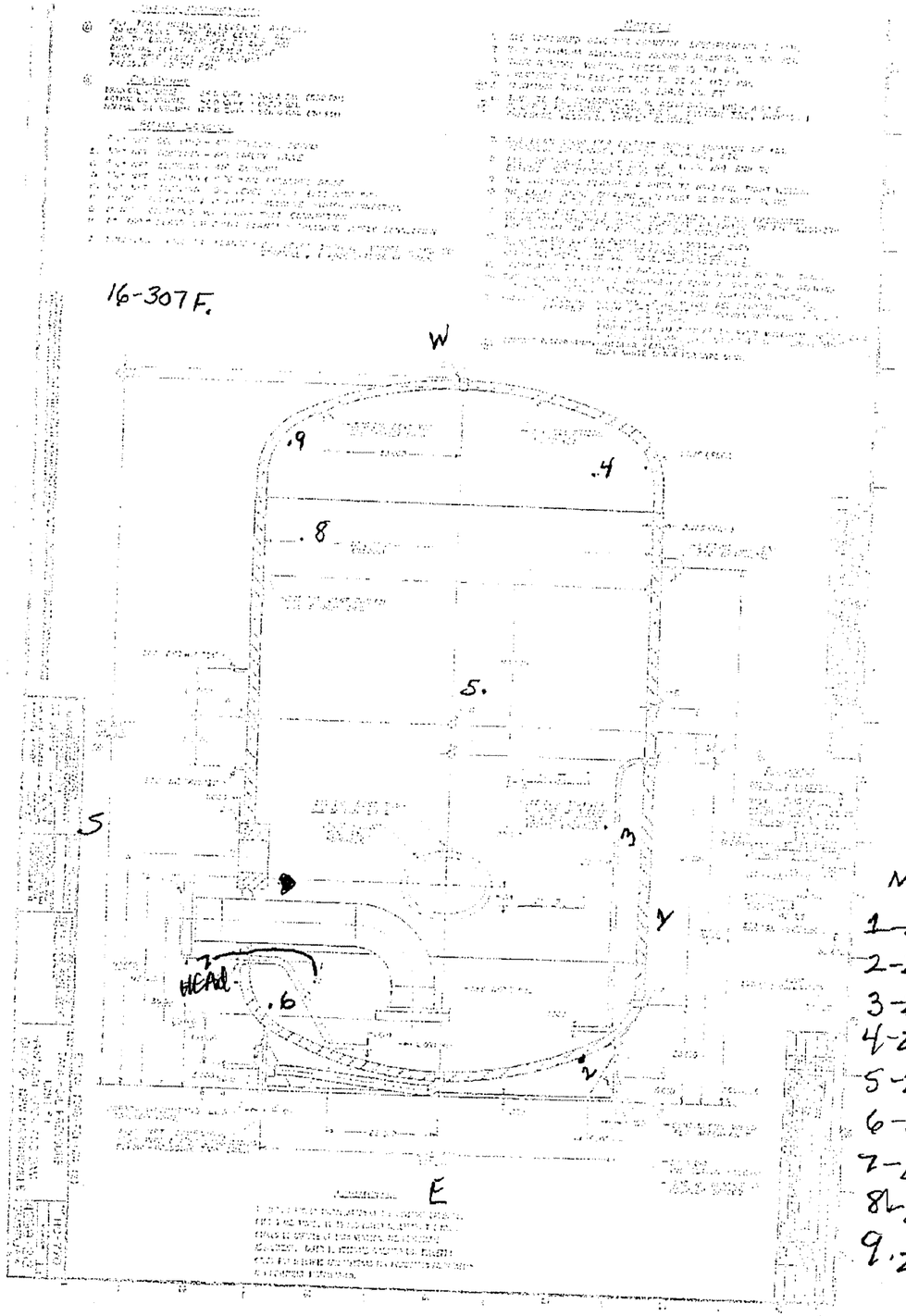
Sistersville Tank Works

1942 McCoy St PO Box 200

Sistersville, WV 26175

Office: 304.652.3011

Fax: 304.652.3031



N

1-2.172
2-2.170
3-2.173
4-2.042
5-2.175
6-2.182
7-2.285
8-2.174
9-2.05

DAILY TIME SHEET

DATE: 11/28/16 JOB NO. 16-307F

	CLASS.	SUPERVISOR	BOILERMAKER FOREMAN	BOILERMAKER JOURNEYMAN	BOILERMAKER JOURNEYMAN	BOILERMAKER JOURNEYMAN	BOILERMAKER JOURNEYMAN	BOILERMAKER JOURNEYMAN	BOILERMAKER JOURNEYMAN	BOILERMAKER JOURNEYMAN	BOILERMAKER JOURNEYMAN	BOILERMAKER JOURNEYMAN							TOTAL HOURS
N.M. Hydro DAM COMPANY	NAME	MIKE REED	Jim Neff	Rodney Rush															
FOREMAN																			
BOILERMAKERS CRAFT																			
DAY SHIFT																			
8:30 A.M. TIME IN																			
2:30 P.M. TIME OUT																			
TOTAL HRS.	REGULAR		5½	5½	5½														16½
	OVER TIME																		
	DOUBLE TIME																		

WORK DESCRIPTION: #1 oil TK. CONTACT: CHUCK STORA

INSTALL VALVE

UT. Readings of TANK. 1 HR TRAVEL

AUTHORIZED SIGNATURE DATE

Mike Reed 11/28/16
FOREMAN SIGNATURE DATE

Sistersville Tank Works, Inc. 1942 McCoy St. Sistersville, WV 26175 Fax: 304-652-3031 Phone: 304-652-3011

FILLING INSTRUCTIONS:

Ⓑ FILL TANK UNTIL OIL LEVEL IS APPROX. 24.125 ABOVE TANK BASE LEVEL. ADD AIR TO BRING PRESSURE TO 500 PSI BRING OIL LEVEL TO 57.750 ABOVE TANK BASE LEVEL AND ADJUST PRESSURE TO 711 PSI.

OIL VOLUME

Ⓑ
DEAD OIL VOLUME: 34.8 CuFt • 260.3 GAL (500 PSI)
ACTIVE OIL VOLUME: 93.0 CuFt • 695.7 GAL
NORMAL OIL VOLUME: 127.8 CuFt • 956.0 GAL (711 PSI)

PIPING LEGEND:

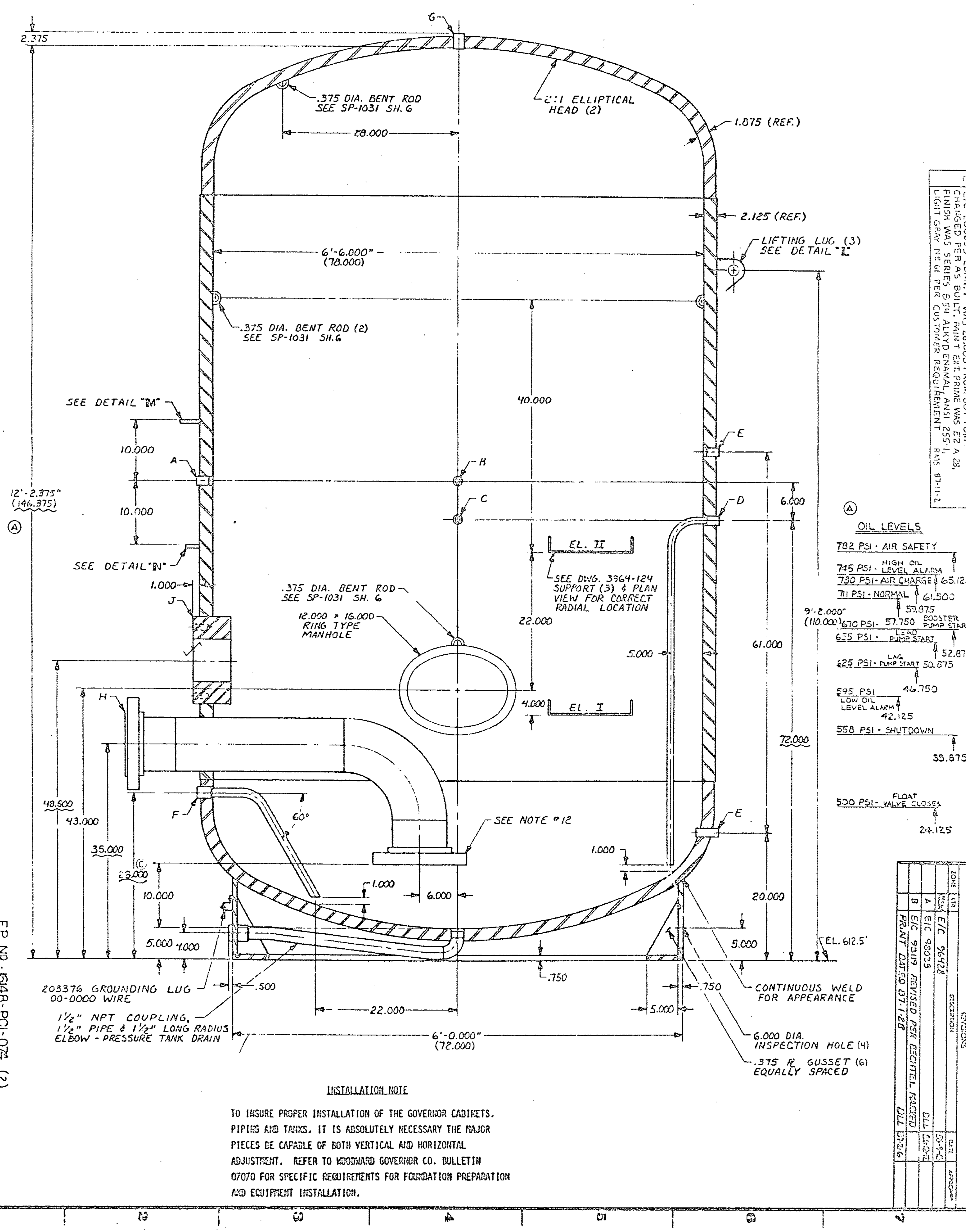
A. 3/4" NPT COUPLING – AIR PRESSURE SUPPLY
B. 3/4" NPT COUPLING – AIR SAFETY VALVE
C. 3/4" NPT COUPLING – AIR BLOWOFF
D. 3/4" NPT COUPLING & PIPE – OIL PRESSURE GAUGE
E. 3/4" NPT COUPLING – OIL LEVEL GAUGE (SEE NOTE #10)
F. 1" NPT COUPLING & 1" PIPE – PRESSURE SWITCH CONNECTION
G. 1" NPT COUPLING W/ PLUG – TEST CONNECTION
H. 8" - 600 # CLASS LAP JOINT FLANGE – PRESSURE SUPPLY CONNECTION
J. 3242-046 14.000 O.D. FLANGE – OIL LEVEL SWITCH, TAPPED HOLES TO STRADDLE ℄ & FACE OUTSIDE OF TANK

NOTES:

1. SEE WOODWARD GOVERNOR COMPANY SPECIFICATION SP-1031.
2. TANK MAXIMUM ALLOWABLE WORKING PRESSURE IS 782 PSI.
3. TANK NORMAL WORKING PRESSURE IS 711 PSI.
4. HYDROSTATIC PRESSURE TEST TO BE AT 1173 PSI.
5. Ⓐ MINIMUM TANK CAPACITY IS 354.8 CU. FT.
6. Ⓐ TANK TO BE CONSTRUCTED IN ACCORDANCE WITH A.S.M.E. BOILER & PRESSURE VESSEL CODE, SECTION VIII, DIVISION 1 PRESSURE VESSELS, LATEST EDITION.
7. SEE PLAN VIEW FOR CORRECT RADIAL LOCATION OF ALL FLANGES, COUPLINGS, PIPES, MANHOLE, ETC.
8. ALL COUPLINGS TO BE 3000 LB. W.O.G. NPT AND TO EXTEND .500 BEYOND O.D. OF TANK.
9. ALL COUPLINGS, FLANGES & PIPES TO HAVE OIL TIGHT WELDS.
10. OIL LEVEL GAUGE COUPLINGS (2) MUST BE ON SAME PLANE & SQUARE WITH O.D. OF TANK.
11. WOODWARD GOVERNOR COMPANY TO FURNISH & TANK FABRICATOR TO INSTALL MANHOLE COVER SUPPORT HARDWARE ON P/L 5200-374 PER SP-1031 SH. 6 AND 203376 GROUNDING LUG.
12. 8"-300# CLASS SLIP ON FLANGE WITH (12) 1.000 DIA HOLES ON 13.000 DIA B.C. MACHINE OFF RAISED FACE FLUSH. KEEP WELD METAL .125 FROM FACE. HOLES TO BE ON ℄.
13. FABRICATOR TO TAKE OUT A NATIONAL BOARD NUMBER FOR THIS TANK.
14. THE FOLLOWING DETAILS ACCOMPANY & FORM A PART OF THIS DRAWING: SP-1031, 203376, 3242-046, 9930-358, 3964-124, 9981-767 Ⓐ
15. PAINT: INTERIOR: (2) COATS OF GE # 1201 RED GLYPTAL
EXTERIOR: PRIME WITH (1) COAT OF SHERWIN WILLIAMS, B69 A 56 Ⓒ ZINC CLAD I PRIMER
FINISH WITH (1) COAT OF SHERWIN WILLIAMS SERIES B62 TILE-CLAD II ENAMAL, AISI STANDARD Nº 61 LIGHT GRAY Ⓒ

Ⓓ SURFACE PREPARATION - INTERIOR & EXTERIOR: NEAR WHITE BLAST PER SSPC-SP10.

C | E/C 200053 CONN. "F" WAS 26.000 FROM BOTTOM. CHANGED PER AS BUILT. PAINT EXT. PRIME WAS E2 A 23, FINISH WAS SERIES B54 ALKYD ENAMAL, ANSI 255-1, LIGHT GRAY Nº 61 PER CUSTOMER REQUIREMENT RMS 87-11-2



INSTALLATION NOTE

TO INSURE PROPER INSTALLATION OF THE GOVERNOR CABINETS, PIPING AND TANKS, IT IS ABSOLUTELY NECESSARY THE MAJOR PIECES BE CAPABLE OF BOTH VERTICAL AND HORIZONTAL ADJUSTMENT. REFER TO WOODWARD GOVERNOR CO. BULLETIN 07070 FOR SPECIFIC REQUIREMENTS FOR FOUNDATION PREPARATION AND EQUIPMENT INSTALLATION.

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	NEW	E/C 96428	86-9-[illegible]	
	A	E/C 98033	DLL 86-12-[illegible]	
	B	E/C 93119 REVISED PER BECHTEL MARKED PRINT DATED 87-1-28	DLL 87-2-6	

WOODWARD GOVERNOR COMPANY
ROCKFORD, ILLINOIS

DATE 86-9-13 | CKD. BY R. REUM 86-9-19
DWG. BY K. STENZEL | APP. BY [illegible] 86-9-26
SCALE 1½" = 1'-0"

FINISHED WT. APPROX. 25,400 LBS.
UNLESS OTHERWISE SPECIFIED SURFACE FINISHES AND GENERAL TOLERANCES ARE TO BE AS SPECIFIED IN SHOP STANDARD 85-112.

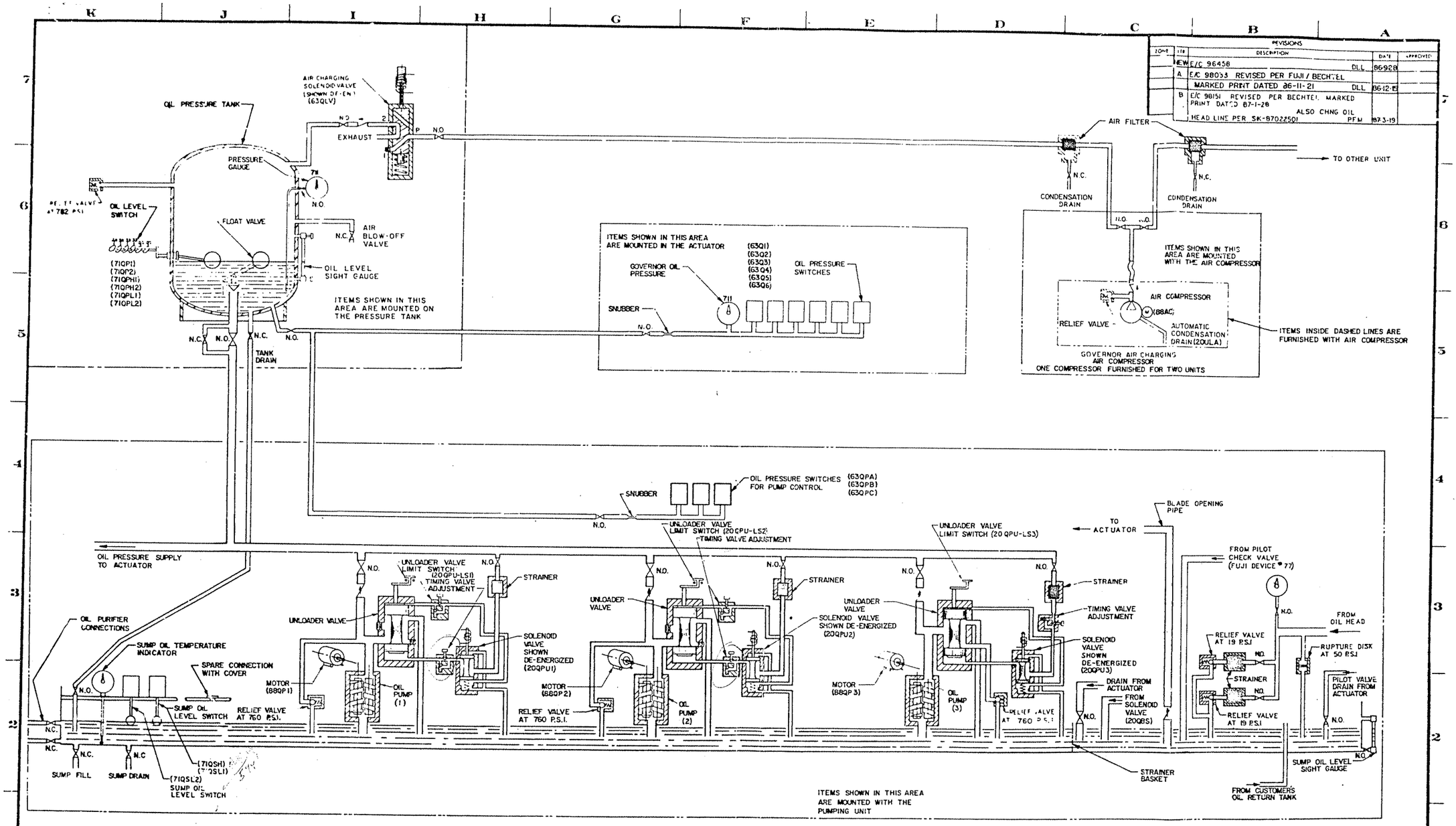
MATERIAL FABRICATED STEEL PER ASME CODE
TREATMENT & FINISH

E.P. Nº - 16148 - PCI - 074 (2)

NAME TANK - OIL PRESSURE UNIT #1
HANNIBAL LOCK AND DAM
CITY OF NEW MARTINSVILLE

REF. HC-770
NUMBER 4299-212
SEE NOTES 11 & 14
SHEET 1 OF 2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	NEW	E/C 96456 DLL	86-9-28	
	A	E/C 98033 REVISED PER FUJI / BECHTEL MARKED PRINT DATED 86-11-21 DLL	86-12-15	
	B	E/C 98151 REVISED PER BECHTEL MARKED PRINT DATED 87-1-28 ALSO CHNG OIL HEAD LINE PER SK-B702Z501 PFM	87-3-19	



E.P. NO. 16148-PCI-080 (2)

WOODWARD GOVERNOR COMPANY, ROCKFORD, ILLINOIS	FINISHED WT.	MATERIAL	NAME: DIAGRAM-HYDRAULIC SCHEMATIC FOR HANNIBAL LOCK & DAM-UNITS 1 & 2 CITY OF NEW MARTINSVILLE, WV
DATE 86-9-28 CHD. BY RWC	UNLESS OTHERWISE SPECIFIED, SURFACE FINISHES AND GENERAL TOLERANCES ARE TO BE AS SPECIFIED IN SHOP STANDARD SS-112.	TREATMENT & FINISH	REF: HC-770 & 771
DWG. BY D. LAMB APP. BY			NUMBER: 9981-756
SCALE NONE			SHEET 2 OF 2

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Formal External Inspection Report – Governor Oil Tank 052-00000826

STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for
NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 11, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

An STI Formal External Inspection of the Governor Oil Tank 052-00000826 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2 and Compliance Requirements are listed in section 4.3

CERTIFICATION

The following certification pertains to the inspection of the Governor Oil Tank 052-00000826 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 11, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Governor Oil Tank 052-00000826 and summarizes the results of an STI Formal External Inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

2.8 West Virginia Code:

2.8.1 West Virginia Code 22-30-6 and/or 47CSR 62-3 – Interim Annual Inspection Certification for Above Ground Storage Tanks.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant	
Location:	New Martinsville, WV 26155	
Tank Number:	052-00000826	
Service:	Governor Oil	
Height:	12 Feet, 2.375 Inches	
Diameter:	6 Feet, 6 Inches	
Capacity:	3,000 Gallons	
Configuration:	Vertical (Single-Wall) High Pressure Vessel	
Foundation:	Concrete	
Containment:	Grated Catch Basin & Separator System	
Category:	Category 1	
Construction:	Shell:	Butt-Welded
	Heads:	Butt-Welded
Material:	Shell:	Carbon Steel
	Heads:	Carbon Steel
Built:	1987 estimated	
Age:	31 years estimated	
Specific Gravity	.84	
Operating Limits:	Minimum Metal Temperature:	-20 F
	Maximum Metal Temperature:	650 F
	Minimum Pressure:	782 PSI
	Maximum Pressure:	500 PSI
Seismic Zone:	1	
Construction Code:	ASME SP-1031	
Inspection Type:	STI Formal External	
Inspector Name:	Dennis J Oberdove	

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank is a single double wall design. The secondary containment is a steel catch basin around the tank bottom that drains to the basement to an oil water separator. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours. .

4.1.2 Foundation: The tank rests on a concrete foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system

4.1.3 Tank Shell: The tank shell designed as a high pressure vessel ASME SP-1301. See the attached Woodward Governor Company specification SP-1301. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 Heads: The tank heads are a butt-weld design ASME High Pressure Vessel design. An inspection was performed on the head welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank heads were evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken on the top and bottom heads. Thickness measurements are listed in the engineering data in Appendix A. The tank heads are structurally sound and in satisfactory condition.

4.1.5 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank is a high pressure vessel and is equipped with a pressure relief valve. The tank is equipped with a visual sight gauge on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.5 Paint/Insulation: Over the course of the inspection the tank coating was inspected and evaluated. The tank's coating was in satisfactory condition.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Tank Roof, Bottom and Shell: None.

4.2.4 Shell Appurtenances: None

4.2.5 Paint/Insulation: None

4.3 Compliance Requirements:

4.3.1 Containment: None

4.3.2 Foundation: None

4.3.3 Tank Roof, Bottom and Shell: None.

4.3.4 Shell Appurtenances: None.

4.3.5 Paint/Insulation: None.

4.4 Serviceability:

4.4.1 The Governor Oil tank is in compliance with the requirements of STI Standard SP001 for structural integrity and STI-510 High Pressure Vessel. The following schedule should be implemented.

4.4.2 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 12, 2023** in accordance with STI Standard SP001..

4.4.3 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 12, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	GOVERNOR OIL 052-00000826			
Plate Specification :	WOODWARD GOVERNOR COMPANY			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :	ASME SP-1301			
Height :	12	*feet*	0.375	*inches*
Diameter :	6	*feet*	6	*inches*
Volume :	3,000			*gallons*
Specific Gravity :	**G**	HIGH PRESSURE		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

T	Specified minimum tensile strength * (lb/in²)			55,000
Y	Specified minimum yield strength (lb/in²)			21,000
S	Maximum allowable stress, first and second (lb/in²)			23,595
	Maximum allowable stress, for all other (lb/in²)			23,485
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		16,800	23,595
		23,595	0.88Y	0.427T
	All Other	23,485	18,480	23,485

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t orig)*	Current Measured Thickness *(inches)* *(t act)*	[2,3] Minimum Acceptable Thickness *(inches)* *(t min)*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
SHELL COURSE 1	12.03	23,595	1	2.225	2.193	0.100	0.00103	>20	2023	2028	2028
HEAD TOP	0.00	23,595	1	2.225	2.199	0.100	0.00084	>20	2023	2028	2028
HEAD BOTTOM	0.00	23,485	1	2.225	2.220	0.100	0.00016	>20	2022	2028	2028

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

NEW MARTINSVILLE HANNIBAL HYDROELECTRIC NEW MARTINSVILLE, WV GOVERNOR OIL TANK #052-00000826 - DECEBER 11, 2018

Tank Integrity Services Inc.
Rev. 9807-2

TANK SHELL ULTRASONIC READINGS

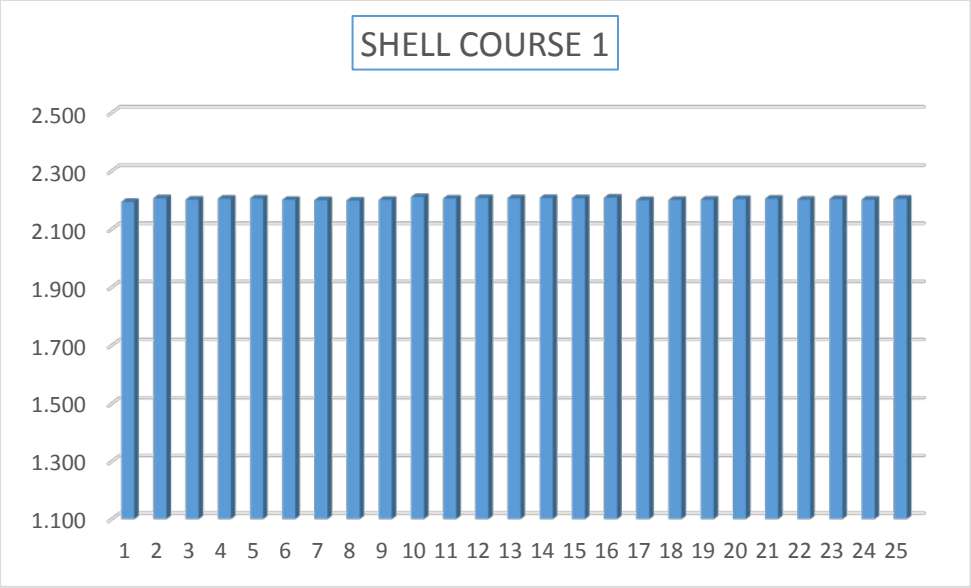
SHELL COURSE 1	
1	2.193
2	2.206
3	2.201
4	2.204
5	2.205
6	2.200
7	2.199
8	2.198
9	2.200
10	2.210
11	2.205
12	2.207
13	2.206
14	2.207
15	2.206
16	2.208
17	2.199
18	2.200
19	2.201
20	2.203
21	2.204
22	2.201
23	2.203
24	2.201
25	2.204
Average	2.203
t_{orig}	2.225

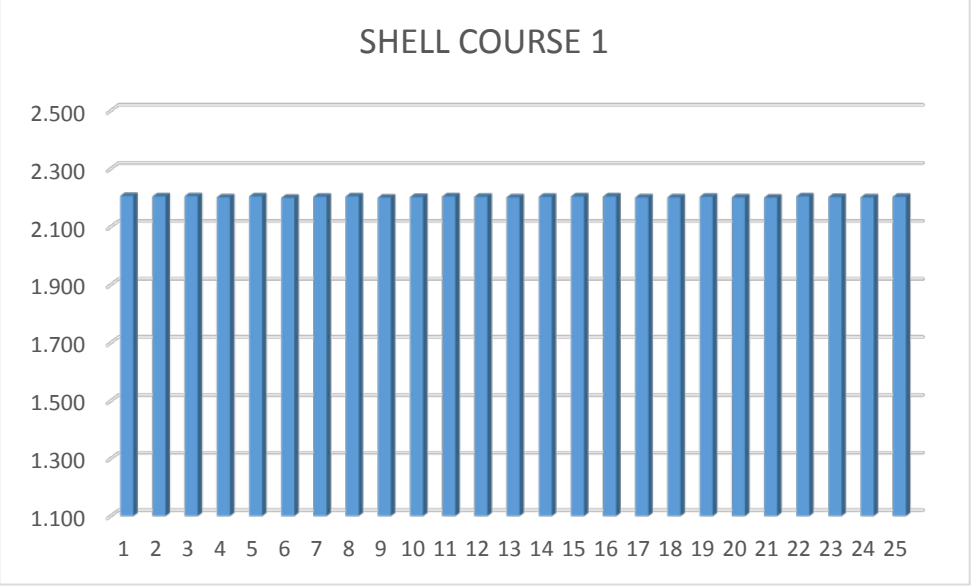
SHELL COURSE 1	
1	2.206
2	2.204
3	2.205
4	2.201
5	2.204
6	2.199
7	2.203
8	2.204
9	2.200
10	2.202
11	2.204
12	2.203
13	2.201
14	2.203
15	2.204
16	2.204
17	2.201
18	2.201
19	2.203
20	2.201
21	2.200
22	2.204
23	2.202
24	2.201
25	2.203
Average	2.203
t_{orig}	2.225

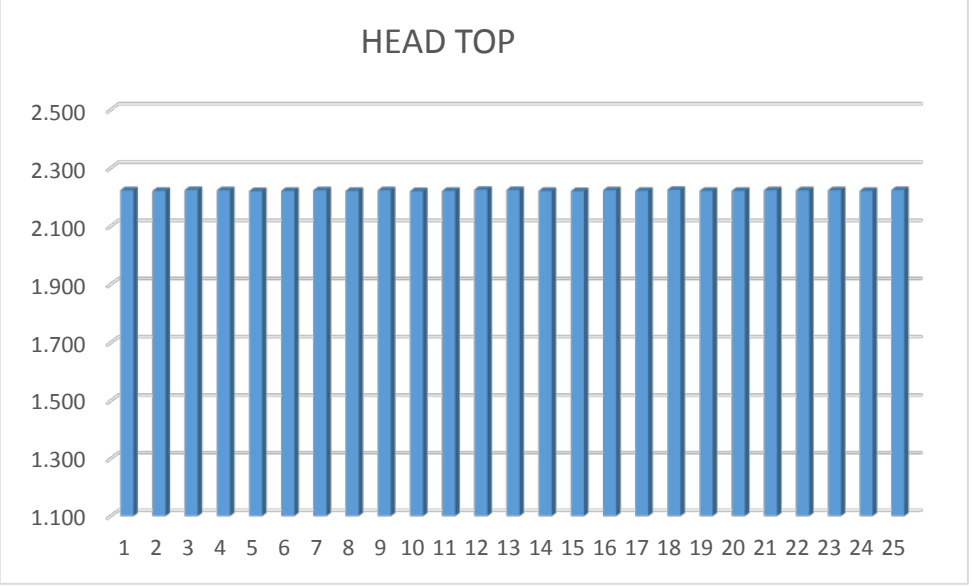
HEAD TOP	
1	2.223
2	2.221
3	2.224
4	2.223
5	2.220
6	2.221
7	2.223
8	2.221
9	2.223
10	2.220
11	2.221
12	2.225
13	2.224
14	2.221
15	2.220
16	2.223
17	2.221
18	2.225
19	2.221
20	2.221
21	2.223
22	2.223
23	2.223
24	2.221
25	2.224
Average	2.222
t_{orig}	2.225

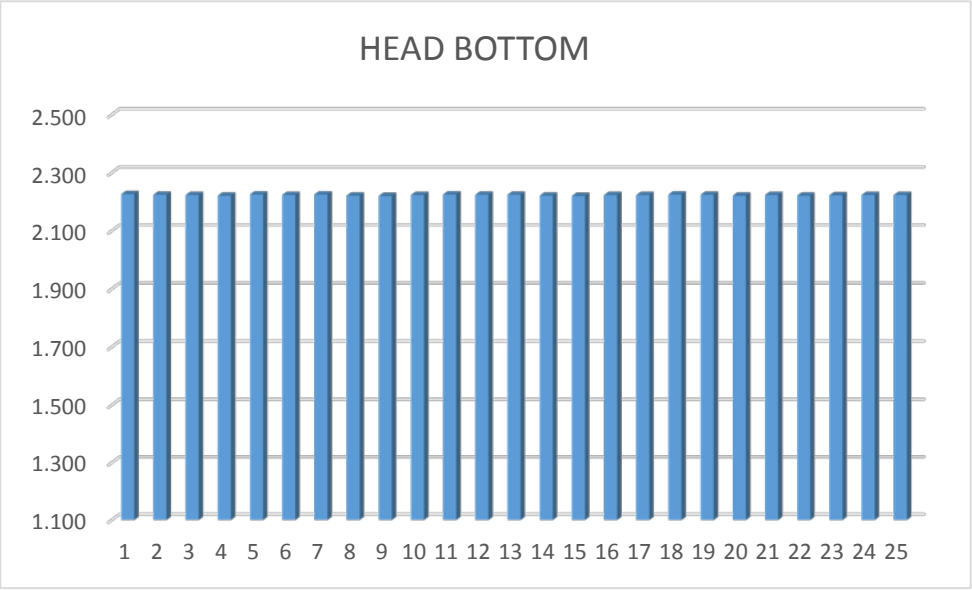
HEAD BOTTOM	
1	2.226
2	2.224
3	2.223
4	2.221
5	2.225
6	2.223
7	2.225
8	2.221
9	2.220
10	2.223
11	2.225
12	2.224
13	2.224
14	2.221
15	2.220
16	2.223
17	2.223
18	2.225
19	2.224
20	2.221
21	2.223
22	2.221
23	2.222
24	2.223
25	2.223
Average	2.223
t_{orig}	2.225

t_{orig} = The original metal thickness


SHELL COURSE 1
2.500
2.300
2.100
1.900
1.700
1.500
1.300
1.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL COURSE 1
2.500
2.300
2.100
1.900
1.700
1.500
1.300
1.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

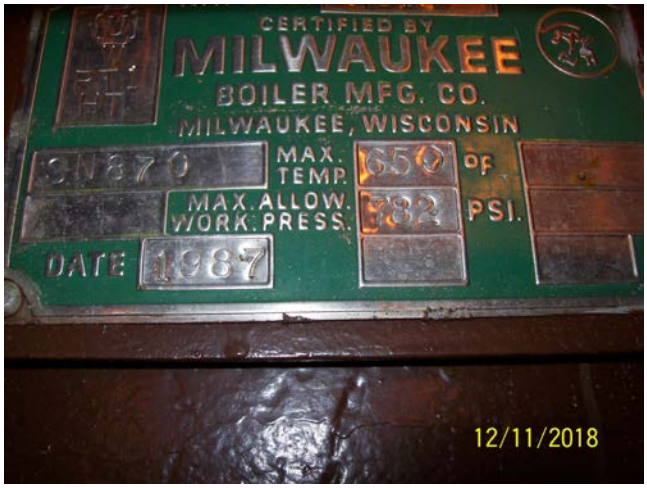

HEAD TOP
2.500
2.300
2.100
1.900
1.700
1.500
1.300
1.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


HEAD BOTTOM
2.500
2.300
2.100
1.900
1.700
1.500
1.300
1.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs

Tank Id & Emergency Contacts



Tank Manufacture Plate

Tank Inspection Manway

Tank High Pressure Air Exhaust

Tank Pressure Gauge

System Pressure Regulator

Tank Anchor Plates

Tank Anchor Plates

Tank Ground Strap

Tank Level Indicator Gauge

Lifting Lug

Tank Foundation

Tank Foundation

Lube Room Fire Monitoring In Control Room

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**	Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**
Address:	**1 HOWARD JEFFERS DR.**	Address:	**1 HOWARD JEFFERS DR.**
City, State Zip Code:	**Martinsville, WV 26155**	City, State Zip Code:	**Martinsville, WV 26155**

Tank ID: **052-00000826 GOVERNOR OIL TANK HIGH PRESSURE**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal	X	Vertical		Rectangular		
		API	X	Other: **ASME SPECIFICATION 1301 HIGH PRESSURE VESSEL**								
		Unknown										

Manufacturer: **WOODWARD GOVERNOR COMPANY**		Contents: **GOVERNOR OIL**		Construction Date: **1987**		Last Repair / Reconstruction Date:						
Dimensions: **12'.375" H X 6'6" D**		Capacity: **3000 GAL**		Last Change of Service Date:								
Construction:		Bare Steel		Cathodically Protected (Check One):		Galvanized		Impressed Current (Date Installed)				
	X	Coated Steel		Concrete		Plastic/Fiberglass		Other:				
		Double Bottom		Double Wall		Lined Date Installed:						
Containment		Earthen Dike		Steel Dike	X	Concrete		Synthetic Line		Other:		
CRDM:	X	Date Installed: **1987**		Type: **CATCH BASIN SEPARATOR SYSTEM**								
Release Prevention Barrier:	X	Date Installed: **1987**		Type: **CATCH BASIN SEPARATOR SYSTEM**								

STI Checklist

Tank #: **GOVERNOR OIL #052-00000826**	Inspector: **Dennis Oberdove**	Date: **12/11/2018**	SAT	Unsat	N/A

	Check Primary tank for the presence of water.																X
	Check secondary tank for the presence of water.																X
	Check interstice of a double wall tank for the presence of fuel.																X
X	Check all pipe connections to the tank for evidence of leakage.														X		
X	List any areas of coating deficiencies.														X		
	Inspect operating and emergency vents.																X
	Type of emergency vent:		Pop-up		Flip-up		Size:										X
X	Check for proper drainage around the tank.														X		
X	Check foundation for signs of settlement, cracking or spalling.														X		
	Check cathodic protection if installed.																X
X	Conduct ultrasonic wall thickness testing.														X		
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.														X		
X	What type of weld joints:	X	Butt		Lap										X		
	Identify all areas of corrosion. Evaluate.																X
	Any area with less than 60% of the wall thickness remaining shall be repaired.																X
	Identify all areas of pitting. Evaluate.																X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.																X
	Inert gas test tank (helium test).																X
	List tank manufacture data that is available.																X
	Reviewed the onsite SPCC Plan.																X
X	Type of construction:		API-650		API-12F		UL-142	X	ASME SP-1301		STIF921				X		
X	Type of layout	X	Open dike		Diked with rainshields				Double Wall						X		
	UL-2244 type tank such as…Generator tank																X
	Vaulted tank																X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000826
DEP Tank Registration Number (if issued)	052-00000826

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/11/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Engineering Report – Lube Oil Tank 052-00000827

STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for

NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 12, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

A STI Certified External inspection of the Lube Oil Tank 052-00000827 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2.

CERTIFICATION

The following certification pertains to the inspection of the Lube Oil Tank 052-00000827 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 12, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Lube Oil Tank 052-00000827 and summarizes the results of a STI Certified External inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant	
Location:	New Martinsville, WV 26155	
Tank Number:	052-00000827	
Service:	Lube Oil	
Height:	6 Feet	
Length:	8 Feet	
Width:	6 Feet	
Capacity:	2,150 gallons	
Configuration:	Rectangular (Single Wall)	
Foundation:	Concrete Pad	
Containment:	Concrete Dike	
Construction:	Shell:	Butt-Weld
	Tank Bottom:	Butt-Weld
	Fixed Roof:	Butt-Weld
Material:	Shell:	Carbon Steel
	Tank Bottom:	Carbon Steel
	Fixed Roof:	Carbon Steel
Built:	Circa 1987	
Age:	Circa 31 years	
Specific Gravity	.88	
Operating Limits:	Minimum Metal Temperature:	-20 F
	Maximum Metal Temperature:	Ambient
	Minimum Pressure:	Atmospheric
	Maximum Pressure:	Product
Seismic Zone:	1	
Construction Code:	ASME	
Inspection Type:	STI Certified External	
Inspector Name:	Dennis J Oberdove	

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank is a single double wall design. The basement is the secondary containment and is concrete with concrete walls with a catch basin and drains going to an oil water separator. The containment is sufficient in size to contain more than 110% of the tank capacity. The containment was checked and is in satisfactory condition. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours.

4.1.2 Foundation: The tank rests on a concrete foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system.

4.1.3 Shell: The tank shell is a butt-weld design. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 4.1.4 Top: The tank top is a butt-weld design. A visual inspection was performed on the top welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank top was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank top is structurally sound and in satisfactory condition.

4.1.5 Bottom: The tank bottom rests on the concrete foundation and was not evaluated.

4.1.6 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank does have means of ventilation via a 2" atmospheric vent. The tank is equipped with an electronic level sensor which is monitor screen at all times from the control room is equipped a visual sight glass tube on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.7 Paint/Insulation: Over the course of the inspection the tank and associated piping insulation and or coating were evaluated. The overall condition of the tank is satisfactory.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Shell: None.

4.2.4 Roof: None.

4.2.5 Bottom: None.

4.2.6 Shell Appurtenances: None.

4.2.7 Paint/Insulation: None.

4.3 Compliance Requirements:

4.3.1 Containment: None.

4.3.2 Foundation: None.

4.3.3 Shell: None.

4.3.4 Roof: None.

4.3.5 Bottom: None.

4.3.6 Shell Appurtenances: None.

4.3.7 Paint/Insulation: None.

4.4 Serviceability:

The Lube Oil tank is in compliance with the requirements of STI Standard SP001 for structural integrity. The following schedule should be implemented.

4.4.1 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2023** in accordance with STI Standard SP001.

4.4.2 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	#052-00000827			
Plate Specification :	UNKNOWN			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :	LUBE OIL			
Length:	8	*feet*	0	*inches*
WIDTH:	6	*feet*	0	*inches*
HEIGHT:	6	*feet*	0	*inches*
Volume :	2,150			*gallons*
Specific Gravity :	**G**	0.86		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

FOR VERTICAL TANKS ONLY				
T	Specified minimum tensile strength * (lb/in²)			
Y	Specified minimum yield strength (lb/in²)			
S	Maximum allowable stress, first and second (lb/in²)			
	Maximum allowable stress, for all other (lb/in²)			
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		0	0
		0	0.88Y	0.427T
	All Other	0	0	0

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t orig)*	Current Measured Thickness *(inches)* *(t act)*	[2,3] Minimum Acceptable Thickness *(inches)* *(t min)*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
TOP	6.00	N/A	1	0.406	0.384	0.100	0.00072	>20	2023	2028	N/A
SHELL EAST SIDE	6.00	N/A	1	0.406	0.384	0.100	0.00071	>20	2023	2028	N/A
SHELL NORTH	6.00	N/A	1	0.375	0.362	0.100	0.00042	>20	2023	2028	N/A
SHELL WEST SIDE	6.00	N/A	1	0.406	0.386	0.100	0.00065	>20	2023	2028	N/A
SHELL SOUTH	6.00	N/A	1	0.375	0.362	0.100	0.00042	>20	2023	2028	N/A

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

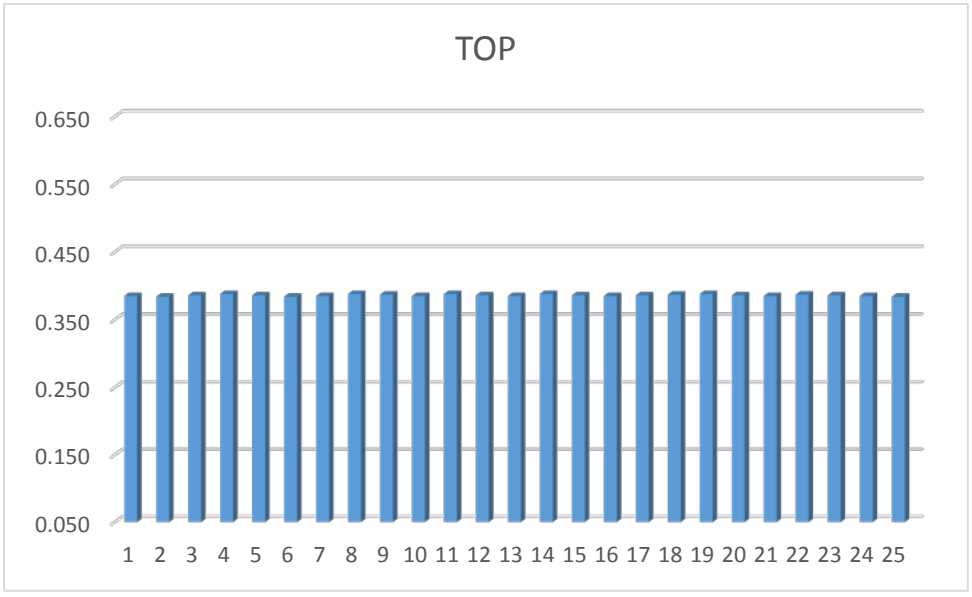
3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

Tank Integrity Services Inc.
Rev. 9807-2

TANK SHELL ULTRASONIC READINGS

TOP		SHELL EAST SIDE		SHELL NORTH		SHELL WEST SIDE		SHELL SOUTH		BOTTOM	
1	0.385	1	0.384	1	0.362	1	0.389	1	0.368	1	0.000
2	0.384	2	0.386	2	0.364	2	0.387	2	0.365	2	0.000
3	0.386	3	0.388	3	0.368	3	0.386	3	0.363	3	0.000
4	0.388	4	0.387	4	0.370	4	0.386	4	0.362	4	0.000
5	0.386	5	0.386	5	0.368	5	0.389	5	0.365	5	0.000
6	0.384	6	0.389	6	0.365	6	0.387	6	0.368	6	0.000
7	0.385	7	0.388	7	0.362	7	0.386	7	0.367	7	0.000
8	0.388	8	0.387	8	0.368	8	0.389	8	0.369	8	0.000
9	0.387	9	0.385	9	0.369	9	0.386	9	0.370	9	0.000
10	0.385	10	0.387	10	0.365	10	0.387	10	0.368	10	0.000
11	0.388	11	0.386	11	0.364	11	0.386	11	0.367	11	0.000
12	0.386	12	0.385	12	0.364	12	0.388	12	0.369	12	0.000
13	0.385	13	0.388	13	0.367	13	0.387	13	0.368	13	0.000
14	0.388	14	0.386	14	0.365	14	0.389	14	0.365	14	0.000
15	0.386	15	0.387	15	0.366	15	0.386	15	0.367	15	0.000
16	0.385	16	0.389	16	0.368	16	0.389	16	0.368	16	0.000
17	0.386	17	0.388	17	0.367	17	0.387	17	0.364	17	0.000
18	0.387	18	0.386	18	0.369	18	0.386	18	0.365	18	0.000
19	0.388	19	0.387	19	0.367	19	0.386	19	0.367	19	0.000
20	0.386	20	0.389	20	0.365	20	0.389	20	0.368	20	0.000
21	0.385	21	0.387	21	0.367	21	0.387	21	0.367	21	0.000
22	0.387	22	0.386	22	0.368	22	0.386	22	0.366	22	0.000
23	0.386	23	0.388	23	0.369	23	0.389	23	0.368	23	0.000
24	0.385	24	0.388	24	0.367	24	0.387	24	0.368	24	0.000
25	0.384	25	0.389	25	0.368	25	0.387	25	0.367	25	0.000
Average	0.386	Average	0.387	Average	0.366	Average	0.387	Average	0.367	Average	0.000
t_{orig}	0.406	t_{orig}	0.406	t_{orig}	0.375	t_{orig}	0.406	t_{orig}	0.375	t_{orig}	0.000

t_{orig} = The original metal thickness


TOP
0.650
0.550
0.450
0.350
0.250
0.150
0.050
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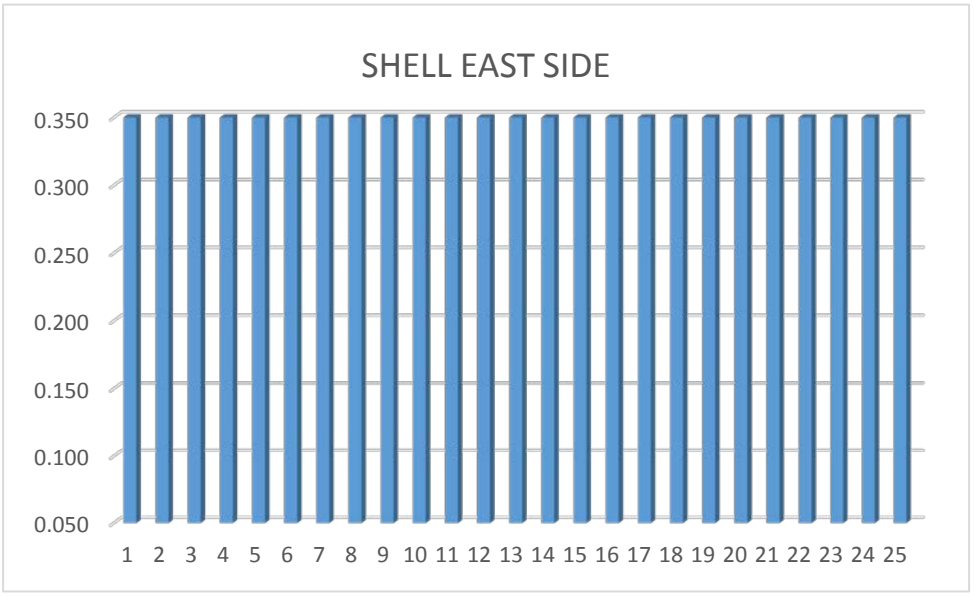
SHELL EAST SIDE
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0.250
0.200
0.150
0.100
0.050
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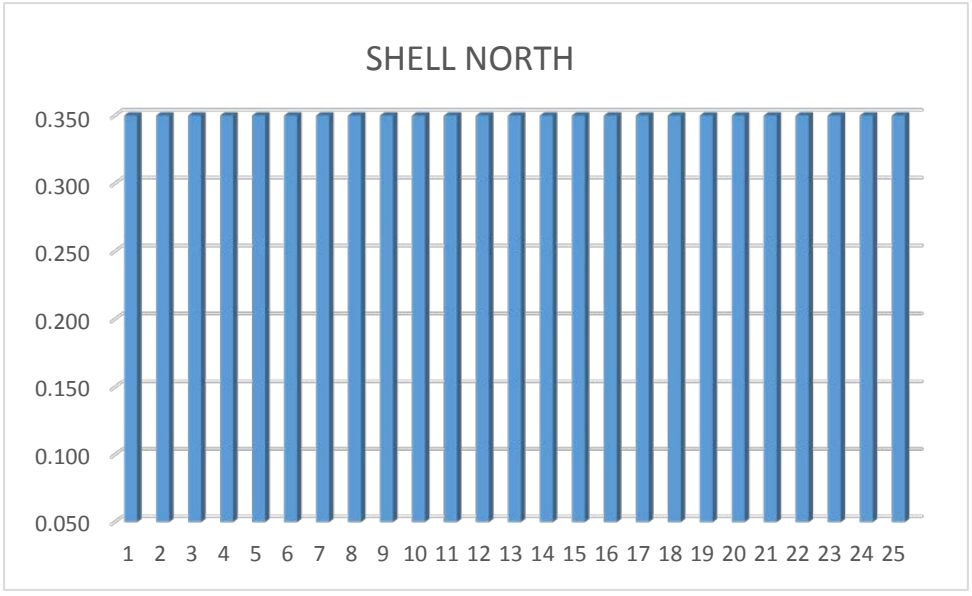
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0.050
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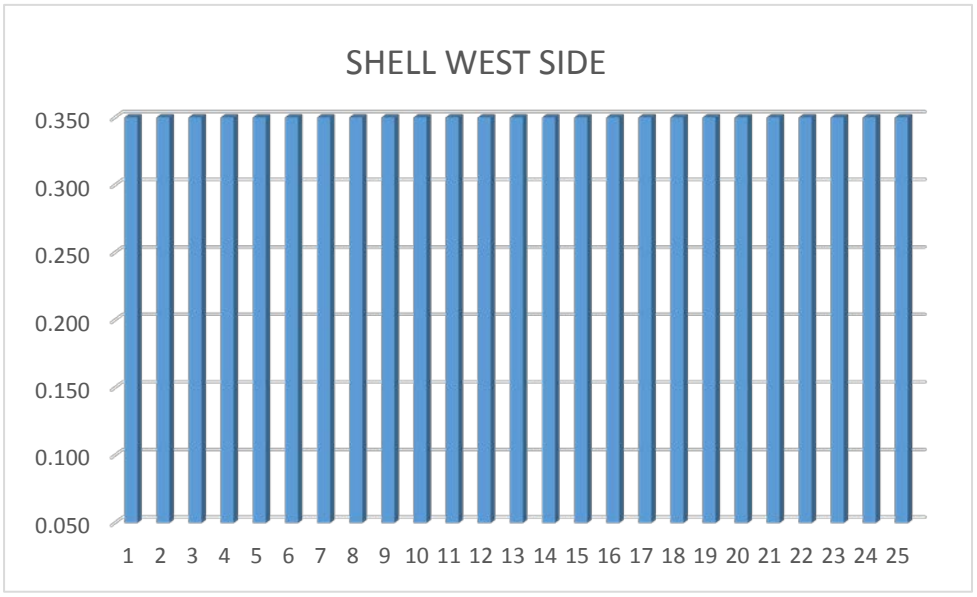
SHELL WEST SIDE
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0.200
0.150
0.100
0.050
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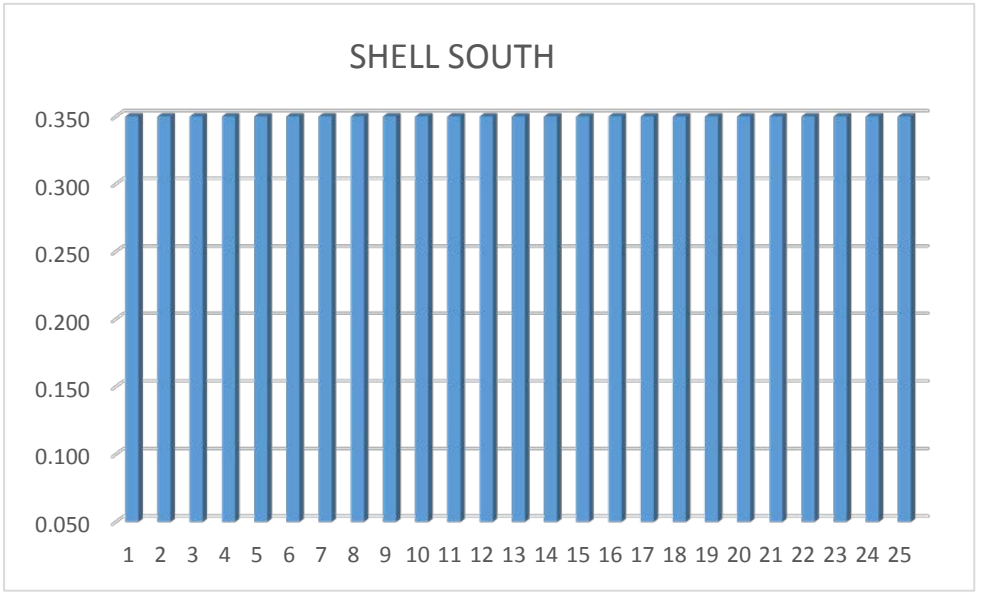
SHELL SOUTH
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0.300
0.250
0.200
0.150
0.100
0.050
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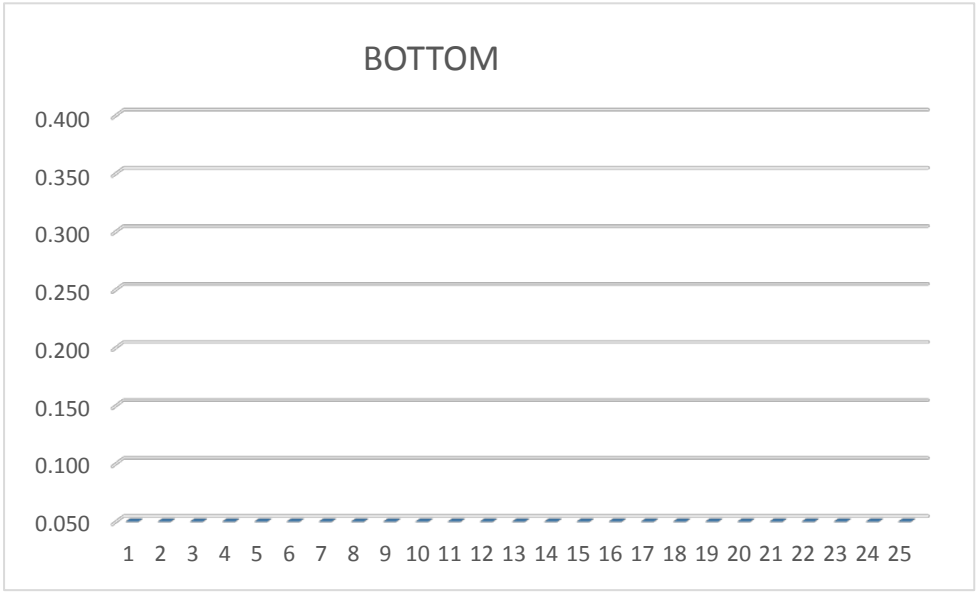

BOTTOM
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs

Tank Identification & Emergency Contact Numbers

Tank Inspection Manways

Liquid Level Sight Tube

Tank Anchor Bolt and Drain Valve

Foundation – Concrete Pad

Ladder To Tank Top Access

Lifting Lug

Tank Inspection Port

Tank Ground Strap

Tank Ground Strap

Tank Temperature Control

Tank Remote Level Monitor Control Room

Tank Remote Level Monitor Control Room

Tank Remote Fire Monitoring System Control Room

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**	Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**
Address:	**1 HOWARD JEFFERS DR.**	Address:	**1 HOWARD JEFFERS DR.**
City, State Zip Code:	**Martinsville, WV 26155**	City, State Zip Code:	**Martinsville, WV 26155**

Tank ID: **052-00000827 LUBE OIL TANK**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal		Vertical	X	Rectangular		
		API		Other: **ASME**								
		Unknown										

Manufacturer: **UNKNOWN**	Contents: **LUBE OIL**	Construction Date: **1987**	Last Repair / Reconstruction Date:		
Dimensions: **L-8' X W-6' X H-6'**	Capacity: **2150 GAL**	Last Change of Service Date:			

Construction:		Bare Steel		Cathodically Protected (Check One):			Galvanized		Impressed Current (Date Installed)			
	X	Coated Steel		Concrete			Plastic/Fiberglass		Other:			
		Double Bottom		Double Wall			Lined Date Installed:					
Containment		Earthen Dike		Steel Dike	X	Concrete		Synthetic Line		Other:		
CRDM:		X	Date Installed: **1987**			Type: **CONTAINMENT SUMP SEPARATOR SYSTEM**						
Release Prevention Barrier:		X	Date Installed: **1987**			Type: **CONTAINMENT SUMP SEPARATOR SYSTEM**						

STI Checklist

Tank #: **LUBE OIL TANK #052-00000827**	Inspector: **Dennis Oberdove**	Date: **12/12/2018**	SAT	Unsat	N/A

	Check Primary tank for the presence of water.																X
	Check secondary tank for the presence of water.																X
	Check interstice of a double wall tank for the presence of fuel.																X
X	Check all pipe connections to the tank for evidence of leakage.														X		
X	List any areas of coating deficiencies.														X		
	Inspect operating and emergency vents.																X
	Type of emergency vent:		Pop-up		Flip-up		Size:										X
X	Check for proper drainage around the tank.														X		
X	Check foundation for signs of settlement, cracking or spalling.														X		
	Check cathodic protection if installed.																X
X	Conduct ultrasonic wall thickness testing.														X		
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.														X		
X	What type of weld joints:	X	Butt		Lap										X		
	Identify all areas of corrosion. Evaluate.																X
	Any area with less than 60% of the wall thickness remaining shall be repaired.																X
	Identify all areas of pitting. Evaluate.																X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.																X
	Inert gas test tank (helium test).																X
	List tank manufacture data that is available.																X
	Reviewed the onsite SPCC Plan.																X
X	Type of construction:		API-650		API-12F		UL-142		STIF911		STIF921				X		
X	Type of layout	X	Open dike		Diked with rainshields				Double Wall						X		
	UL-2244 type tank such as…Generator tank																X
	Vaulted tank																X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000827
DEP Tank Registration Number (if issued)	052-00000827

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/12/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

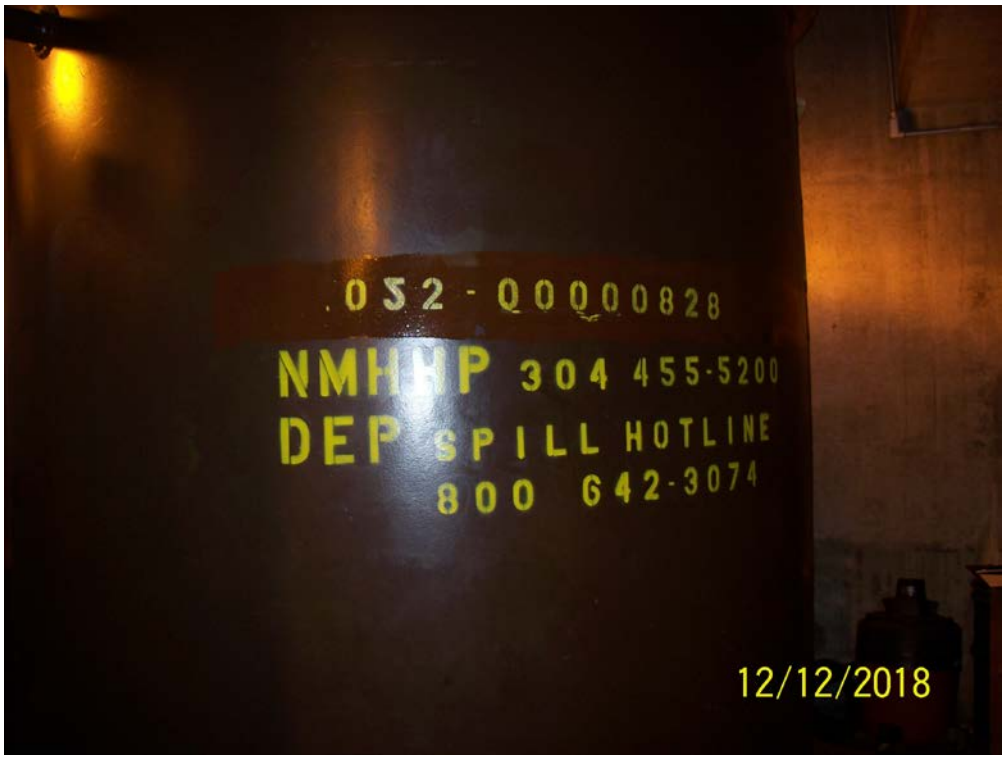
*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Formal External Inspection Report – Lube Oil Tank 052-00000828



STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for
NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 12, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

An STI Formal External Inspection of the Lube Oil Tank 052-0000828 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2 and Compliance Requirements are listed in section 4.3

CERTIFICATION

The following certification pertains to the inspection of theLube Oil Tank 052-0000828 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 12, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Lube Oil Tank 052-0000828 and summarizes the results of an STI Formal External Inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

2.8 West Virginia Code:

2.8.1 West Virginia Code 22-30-6 and/or 47CSR 62-3 – Interim Annual Inspection Certification for Above Ground Storage Tanks.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant		
Location:	New Martinsville, WV 26155		
Tank Number:	052-00000828		
Service:	Lube Oil		
Height:	8 Feet, 1 Inch		
Diameter:	6 Feet, 7 Inches		
Capacity:	2,000 Gallons		
Configuration:	Vertical (Single-Wall)		
Foundation:	Concrete		
Containment:	Concrete Dike		
Category:	Category 1		
Construction:	Shell:	Butt-Welded	
	Heads:	Butt-Welded	
Material:	Shell:	Carbon Steel	
	Heads:	Carbon Steel	
Built:	1987 estimated		
Age:	31 years estimated		
Specific Gravity	.84		
Operating Limits:	Minimum Metal Temperature:	-20 F	
	Maximum Metal Temperature:	200 F	
	Minimum Pressure:	Atmospheric	
	Maximum Pressure:	Product	
Seismic Zone:	1		
Construction Code:	UL-142		
Inspection Type:	STI Formal External		
Inspector Name:	Dennis J Oberdove		

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank sits in a concrete walled room serving as a dike. The dike acts as a form of spill control. Overall, the dike was found to be an acceptable form of spill control. The dike is sufficient in size to contain more than 110% of the tank capacity. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours.

4.1.2 Foundation: The tank rests on a concrete pad foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system

4.1.3 Tank Shell: The tank shell is a butt-weld design. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 Roof: The tank top is a butt-weld design. A visual inspection was performed on the top welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank top was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank top is structurally sound and in satisfactory condition.

4.1.5 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank does have means of ventilation via a 2” atmospheric vent. The tank is equipped with a visual sight gauge on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.5 Paint/Insulation: Over the course of the inspection the tank coating was inspected and evaluated. The tank’s coating was in satisfactory condition.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Tank Roof, Bottom and Shell: None.

4.2.4 Shell Appurtenances: None

4.2.5 Paint/Insulation: None

4.3 Compliance Requirements:

4.3.1 Containment: None

4.3.2 Foundation: None

4.3.3 Tank Roof, Bottom and Shell: None.

4.3.4 Shell Appurtenances: None.

4.3.5 Paint/Insulation: None.

4.4 Serviceability:

4.4.1 The Lube Oil tank is in compliance with the requirements of STI Standard SP001 for structural integrity. The following schedule should be implemented.

4.4.2 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 12, 2023** in accordance with STI Standard SP001..

4.4.3 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 12, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	LUBE OIL			
Plate Specification :	UNKNOWN			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :				
Height :	8	*feet*	1	*inches*
Diameter :	6	*feet*	7	*inches*
Volume :	2,000			*gallons*
Specific Gravity :	**G**	0.84		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

T	Specified minimum tensile strength * (lb/in²)			55,000
Y	Specified minimum yield strength (lb/in²)			21,000
S	Maximum allowable stress, first and second (lb/in²)			23,595
	Maximum allowable stress, for all other (lb/in²)			23,485
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		16,800	23,595
		23,595	0.88Y	0.427T
	All Other	23,485	18,480	23,485

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(^{t} orig)*	Current Measured Thickness *(inches)* *(^{t} act)*	[2,3] Minimum Acceptable Thickness *(inches)* *(^{t} min)*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
SHELL COURSE 1	8.08	23,595	1	0.266	0.256	0.100	0.00032	>20	2023	2028	2028
ROOF	N/A	23,485	1	0.203	0.196	0.100	0.00023	>20	2023	2028	2028

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

NEW MARTINSVILLE HANNIBAL HYDROELECTRIC NEW MARTINSVILLE, WV LUBE OIL TANK #052-00000828 - DECEBER 12, 2018

Tank Integrity Services Inc.
Rev. 9807-2

TANK SHELL ULTRASONIC READINGS

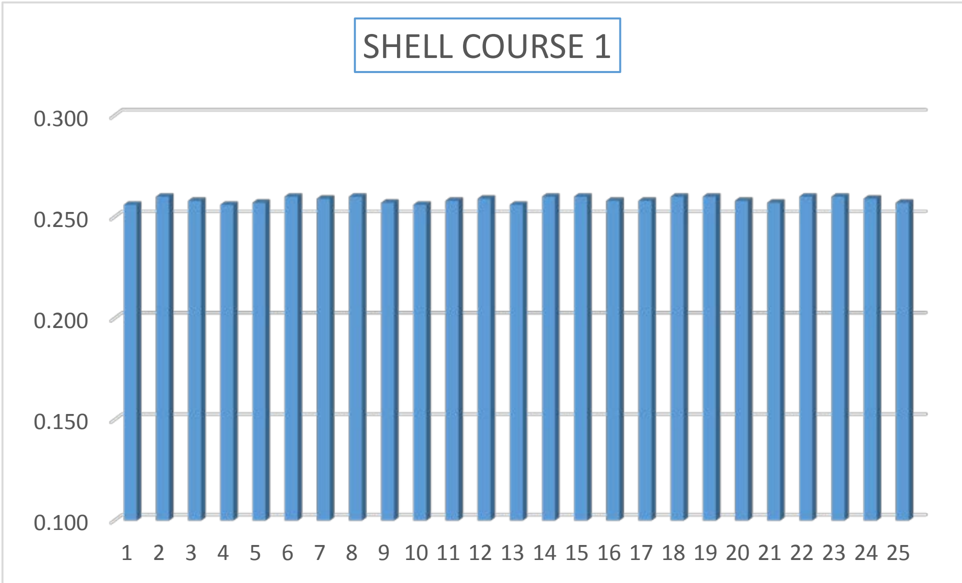
SHELL COURSE 1	
1	0.256
2	0.260
3	0.258
4	0.256
5	0.257
6	0.260
7	0.259
8	0.260
9	0.257
10	0.256
11	0.258
12	0.259
13	0.256
14	0.260
15	0.260
16	0.258
17	0.258
18	0.260
19	0.260
20	0.258
21	0.257
22	0.260
23	0.260
24	0.259
25	0.257
Average	0.258
t_{orig}	0.266

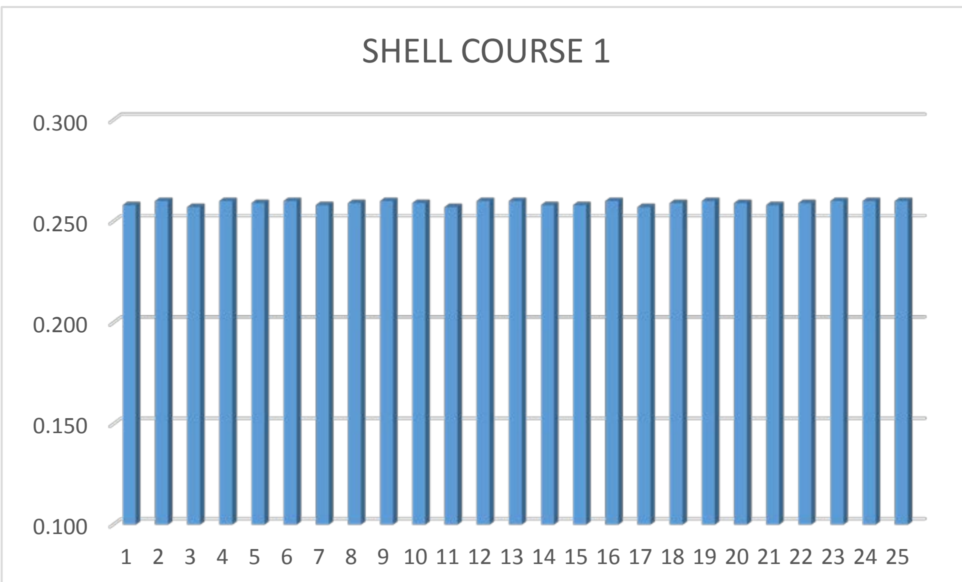
SHELL COURSE 1	
1	0.258
2	0.260
3	0.257
4	0.260
5	0.259
6	0.260
7	0.258
8	0.259
9	0.260
10	0.259
11	0.257
12	0.260
13	0.260
14	0.258
15	0.258
16	0.260
17	0.257
18	0.259
19	0.260
20	0.259
21	0.258
22	0.259
23	0.260
24	0.260
25	0.260
Average	0.259
t_{orig}	0.266

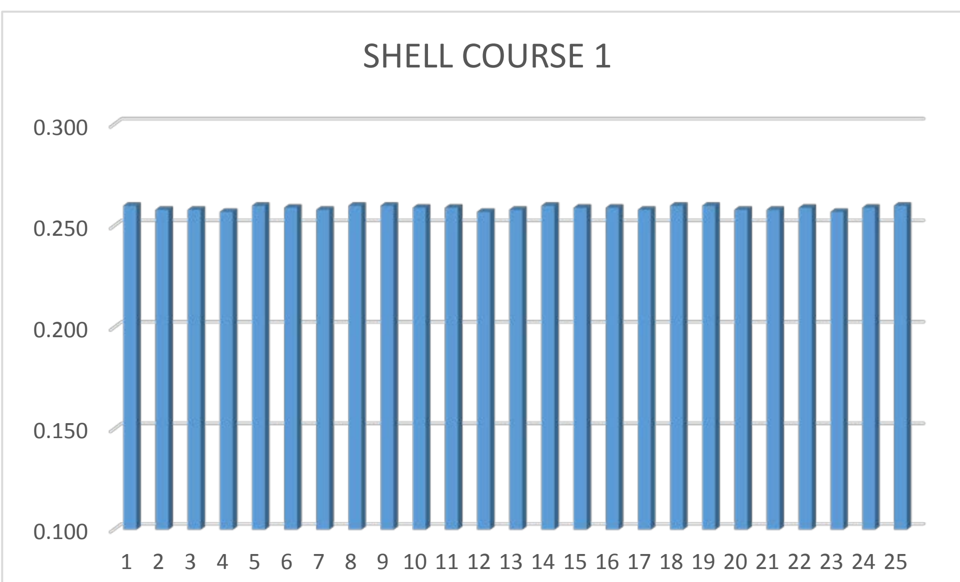
SHELL COURSE 1	
1	0.260
2	0.258
3	0.258
4	0.257
5	0.260
6	0.259
7	0.258
8	0.260
9	0.260
10	0.259
11	0.259
12	0.257
13	0.258
14	0.260
15	0.259
16	0.259
17	0.258
18	0.260
19	0.260
20	0.258
21	0.258
22	0.259
23	0.257
24	0.259
25	0.260
Average	0.259
t_{orig}	0.266

ROOF	
1	0.197
2	0.198
3	0.199
4	0.199
5	0.198
6	0.197
7	0.199
8	0.200
9	0.200
10	0.199
11	0.198
12	0.198
13	0.199
14	0.200
15	0.200
16	0.199
17	0.198
18	0.196
19	0.197
20	0.199
21	0.200
22	0.198
23	0.198
24	0.199
25	0.197
Average	0.198
t_{orig}	0.203

t_{orig} = The original metal thickness


SHELL COURSE 1
0.300
0.250
0.200
0.150
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL COURSE 1
0.300
0.250
0.200
0.150
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25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0.100
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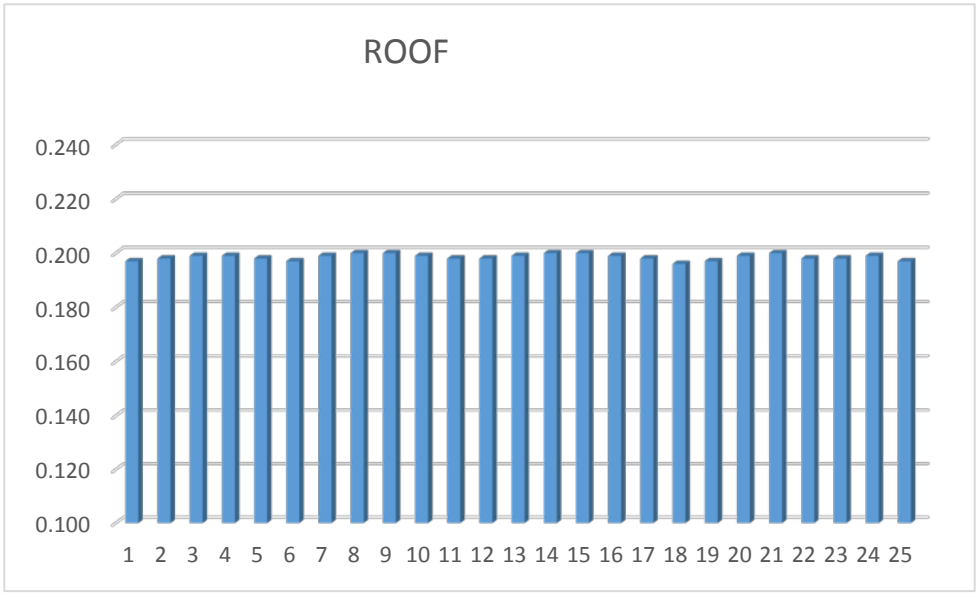

ROOF
0.240
0.220
0.200
0.180
0.160
0.140
0.120
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs

Tank Id & Emergency Contacts

2” Discharge Line

Tank Drain Line

Tank Atmospheric Vent

Tank Ground Strap

24” Manway

Liquid Level Site Glass Tube

Tank Foundation & Ground Rod

Concrete Dike

Shell Butt Weld Design

Tank Base Chime

Tank Roof Welded To Shell

Lifting Lug

Tank Roof

Tank Fill Station

Tank Discharge Station

Discharge & Filling Station Containment

Discharge & Filling Station Containment

Lube Room Fire System

Lube Room Heat Sensor

Lube Tanks Filling Station

Lube Room Fire Protection

Lube Room Fire Monitoring In Control Room

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**	Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**
Address:	**1 HOWARD JEFFERS DR.**	Address:	**1 HOWARD JEFFERS DR.**
City, State Zip Code:	**Martinsville, WV 26155**	City, State Zip Code:	**Martinsville, WV 26155**

Tank ID: **052-00000828 LUBE OIL TANK**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal	X	Vertical		Rectangular
	X	API		Other:					
		Unknown							

Manufacturer:	**UNKNOWN**	Contents:	**LUBE OIL**	Construction Date: **1987**	Last Repair / Reconstruction Date:
Dimensions:	**8'1" H X 6'7" D**	Capacity:	**2000 GAL**	Last Change of Service Date:	

Construction:		Bare Steel		Cathodically Protected (Check One):		Galvanized		Impressed Current (Date Installed)
	X	Coated Steel		Concrete		Plastic/Fiberglass		Other:
		Double Bottom		Double Wall		Lined Date Installed:		
Containment		Earthen Dike		Steel Dike	X	Concrete		Synthetic Line		Other:
CRDM:	X	Date Installed:	**1987**	Type:	**CONCRETE DIKE**			
Release Prevention Barrier:	X	Date Installed:	**1987**	Type:	**CONCRETE DIKE**			

STI Checklist

Tank #: **LUBE OIL TANK #052-00000828** | Inspector: **Dennis Oberdove** | Date: **12/12/2018**

	Item	SAT	Unsat	N/A
	Check Primary tank for the presence of water.			X
	Check secondary tank for the presence of water.			X
	Check interstice of a double wall tank for the presence of fuel.			X
X	Check all pipe connections to the tank for evidence of leakage.	X		
X	List any areas of coating deficiencies.	X		
	Inspect operating and emergency vents.			X
	Type of emergency vent: [ ] Pop-up [ ] Flip-up Size:			X
X	Check for proper drainage around the tank.	X		
X	Check foundation for signs of settlement, cracking or spalling.	X		
	Check cathodic protection if installed.			X
X	Conduct ultrasonic wall thickness testing.	X		
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.	X		
X	What type of weld joints: [X] Butt [ ] Lap	X		
	Identify all areas of corrosion. Evaluate.			X
	Any area with less than 60% of the wall thickness remaining shall be repaired.			X
	Identify all areas of pitting. Evaluate.			X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.			X
	Inert gas test tank (helium test).			X
	List tank manufacture data that is available.			X
	Reviewed the onsite SPCC Plan.			X
X	Type of construction: [ ] API-650 [X] API-12F [ ] UL-142 [ ] STIF911 [ ] STIF921	X		
X	Type of layout [X] Open dike [ ] Diked with rainshields [ ] Double Wall	X		
	UL-2244 type tank such as…Generator tank			X
	Vaulted tank			X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000828
DEP Tank Registration Number (if issued)	052-00000828

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/12/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Engineering Report – Governor Oil Tank 052-00000829

STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for

NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 10, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

A STI Certified External inspection of the Governor Oil Tank 052-00000829 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2.

CERTIFICATION

The following certification pertains to the inspection of the Governor Oil Tank 052-00000829 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 10, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Governor Oil Tank 052-00000829 and summarizes the results of a STI Certified External inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant	
Location:	New Martinsville, WV 26155	
Tank Number:	052-00000829	
Service:	Governor Oil	
Height:	45 Inches	
Length:	8 feet, 1 inch	
Width:	52 inches	
Capacity:	3,500 gallons	
Configuration:	Rectangular (Single Wall)	
Foundation:	Concrete Pad	
Containment:	Concrete Dike	
Construction:	Shell:	Butt-Weld
	Tank Bottom:	Butt-Weld
	Fixed Roof:	Butt-Weld
Material:	Shell:	Carbon Steel
	Tank Bottom:	Carbon Steel
	Fixed Roof:	Carbon Steel
Built:	Circa 1987	
Age:	Circa 31 years	
Specific Gravity	.88	
Operating Limits:	Minimum Metal Temperature:	-20 F
	Maximum Metal Temperature:	Ambient
	Minimum Pressure:	Atmospheric
	Maximum Pressure:	Product
Seismic Zone:	1	
Construction Code:	ASME	
Inspection Type:	STI Certified External	
Inspector Name:	Dennis J Oberdove	

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank is a single double wall design. The secondary containment is a sealed and polished concrete dike 16’ 4” L X 15’5” W X 3” H. The dike is sufficient in size to contain more than 110% of the tank capacity. The dike was checked and no product or water was present at the time of the inspection. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours.

4.1.2 Foundation: The tank rests on a concrete pad foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system.

4.1.3 Shell: The tank shell is a butt-weld design. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 4.1.4 Roof: The tank roof is a butt-weld design. A visual inspection was performed on the roof welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank roof was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank roof is structurally sound and in satisfactory condition.

4.1.5 Bottom: The tank bottom is a butt-weld design. A visual inspection was performed on the bottom welds where accessible. No visual discrepancies are present in the evaluated bottom welds. The welds are structurally sound and in satisfactory condition. The tank bottom was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank bottom in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank bottom is structurally sound and in satisfactory condition.

4.1.6 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank does have means of ventilation via a 2" atmospheric vent. The tank is equipped with an electronic level sensor which is monitor screen at all times from the control room is equipped a visual sight glass tube on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.7 Paint/Insulation: Over the course of the inspection the tank and associated piping insulation and or coating were evaluated. The overall condition of the tank is satisfactory.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Shell: None.

4.2.4 Roof: None.

4.2.5 Bottom: None.

4.2.6 Shell Appurtenances: None.

4.2.7 Paint/Insulation: None.

4.3 Compliance Requirements:

4.3.1 Containment: None.

4.3.2 Foundation: None.

4.3.3 Shell: None.

4.3.4 Roof: None.

4.3.5 Bottom: None.

4.3.6 Shell Appurtenances: None.

4.3.7 Paint/Insulation: None.

4.4 Serviceability:

The Governor tank is in compliance with the requirements of STI Standard SP001 for structural integrity. The following schedule should be implemented.

4.4.1 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 10, 2023** in accordance with STI Standard SP001.

4.4.2 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 10, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	#052-00000829			
Plate Specification :	UNKNOWN			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :	GOVERNOR OIL			
Length:	8	*feet*	1	*inches*
WIDTH:	4	*feet*	6	*inches*
HEIGHT:	3	*feet*	9	*inches*
Volume :	3,500			*gallons*
Specific Gravity :	**G**	0.86		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

FOR VERTICAL TANKS ONLY				
T	Specified minimum tensile strength * (lb/in²)			
Y	Specified minimum yield strength (lb/in²)			
S	Maximum allowable stress, first and second (lb/in²)			
	Maximum allowable stress, for all other (lb/in²)			
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		0	0
		0	0.88Y	0.427T
	All Other	0	0	0

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t_{orig})*	Current Measured Thickness *(inches)* *(t_{act})*	[2,3] Minimum Acceptable Thickness *(inches)* *(t_{min})*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
TOP	3.75	N/A	1	0.594	0.580	0.100	0.00045	>20	2023	2028	N/A
SHELL EAST SIDE	3.75	N/A	1	0.344	0.336	0.100	0.00026	>20	2023	2028	N/A
SHELL NORTH	3.75	N/A	1	0.344	0.328	0.100	0.00052	>20	2023	2028	N/A
SHELL WEST SIDE	3.75	N/A	1	0.344	0.334	0.100	0.00032	>20	2023	2028	N/A
SHELL SOUTH	3.75	N/A	1	0.344	0.335	0.100	0.00029	>20	2023	2028	N/A
BOTTOM	3.75	N/A	1	0.375	0.372	0.100	0.00010	>20	2023	2028	N/A

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

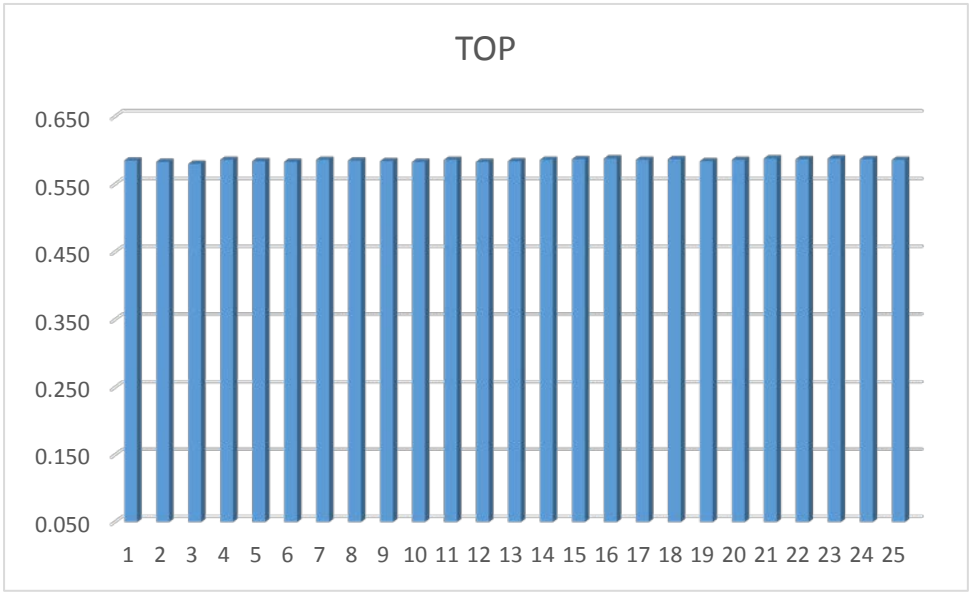
NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT - NEW MARTINSVILLE, WV - GOVERNOR OIL TANK #052-00000829 - 12/10/18

Tank Integrity Services Inc.
Rev. 9807-2

TANK SHELL ULTRASONIC READINGS

TOP		SHELL EAST SIDE		SHELL NORTH		SHELL WEST SIDE		SHELL SOUTH		BOTTOM	
1	0.585	1	0.336	1	0.331	1	0.341	1	0.335	1	0.374
2	0.583	2	0.340	2	0.328	2	0.339	2	0.340	2	0.375
3	0.580	3	0.341	3	0.333	3	0.337	3	0.339	3	0.373
4	0.586	4	0.338	4	0.336	4	0.334	4	0.337	4	0.374
5	0.584	5	0.336	5	0.334	5	0.337	5	0.338	5	0.375
6	0.583	6	0.337	6	0.329	6	0.339	6	0.341	6	0.372
7	0.586	7	0.339	7	0.337	7	0.341	7	0.339	7	0.374
8	0.585	8	0.340	8	0.339	8	0.340	8	0.338	8	0.375
9	0.584	9	0.342	9	0.337	9	0.338	9	0.341	9	0.374
10	0.583	10	0.341	10	0.334	10	0.339	10	0.340	10	0.375
11	0.586	11	0.340	11	0.339	11	0.336	11	0.339	11	0.374
12	0.583	12	0.341	12	0.340	12	0.337	12	0.338	12	0.373
13	0.584	13	0.340	13	0.341	13	0.337	13	0.336	13	0.374
14	0.586	14	0.342	14	0.339	14	0.336	14	0.337	14	0.375
15	0.587	15	0.343	15	0.338	15	0.337	15	0.339	15	0.376
16	0.588	16	0.340	16	0.335	16	0.339	16	0.340	16	0.374
17	0.586	17	0.339	17	0.337	17	0.340	17	0.340	17	0.375
18	0.587	18	0.337	18	0.341	18	0.339	18	0.339	18	0.373
19	0.584	19	0.340	19	0.339	19	0.337	19	0.337	19	0.375
20	0.586	20	0.342	20	0.337	20	0.339	20	0.336	20	0.374
21	0.588	21	0.340	21	0.338	21	0.341	21	0.338	21	0.373
22	0.587	22	0.339	22	0.335	22	0.338	22	0.339	22	0.375
23	0.588	23	0.337	23	0.337	23	0.337	23	0.341	23	0.374
24	0.587	24	0.340	24	0.338	24	0.335	24	0.338	24	0.375
25	0.586	25	0.341	25	0.337	25	0.339	25	0.336	25	0.375
Average	0.585	Average	0.340	Average	0.336	Average	0.338	Average	0.337	Average	0.374
t_{orig}	0.594	t_{orig}	0.344	t_{orig}	0.344	t_{orig}	0.344	t_{orig}	0.344	t_{orig}	0.375

t_{orig} = The original metal thickness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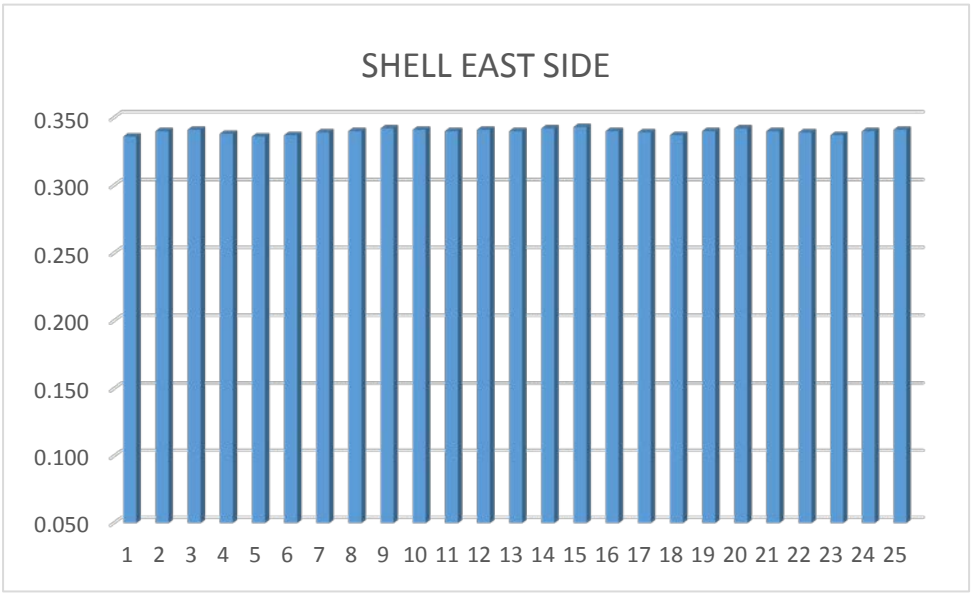
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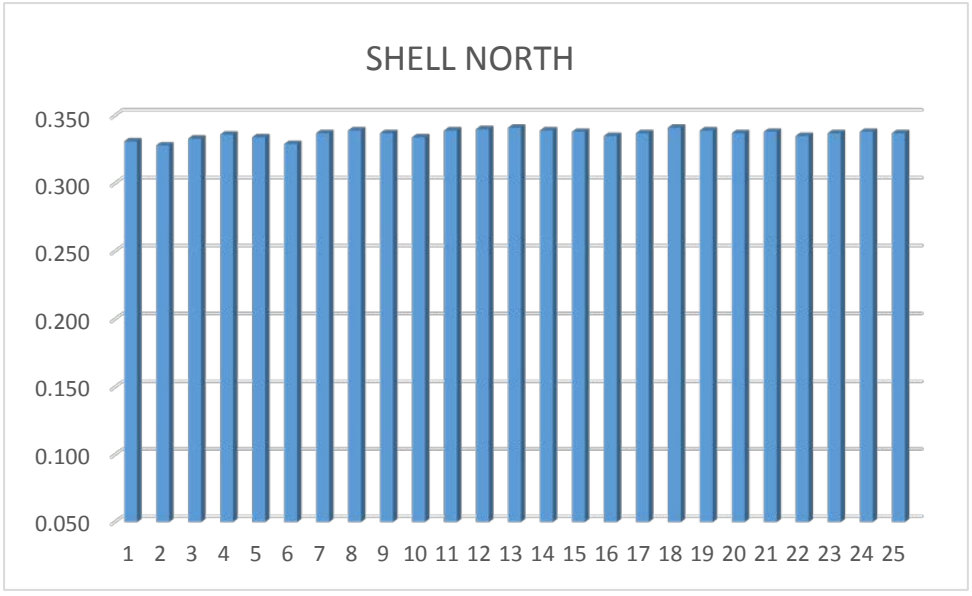
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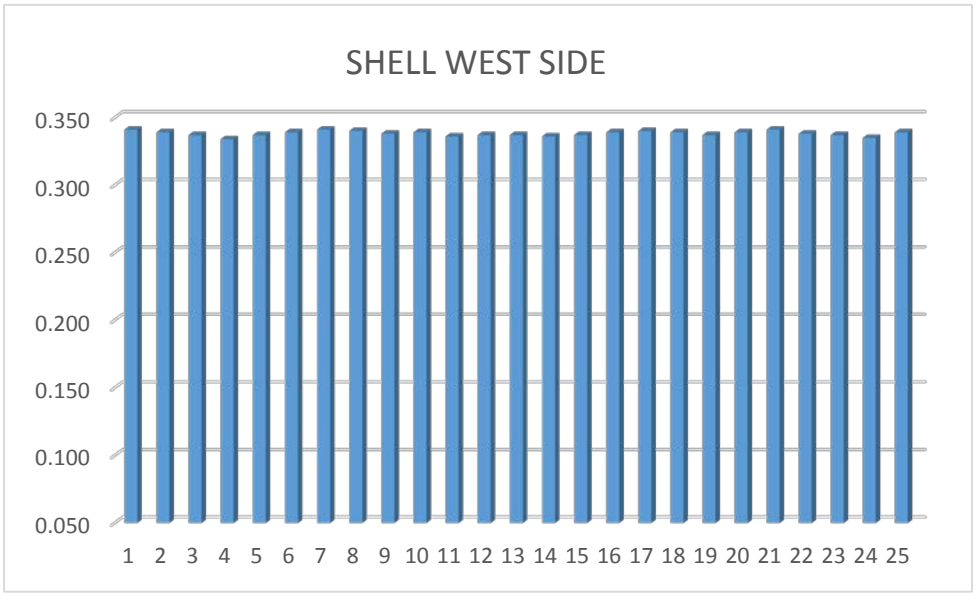
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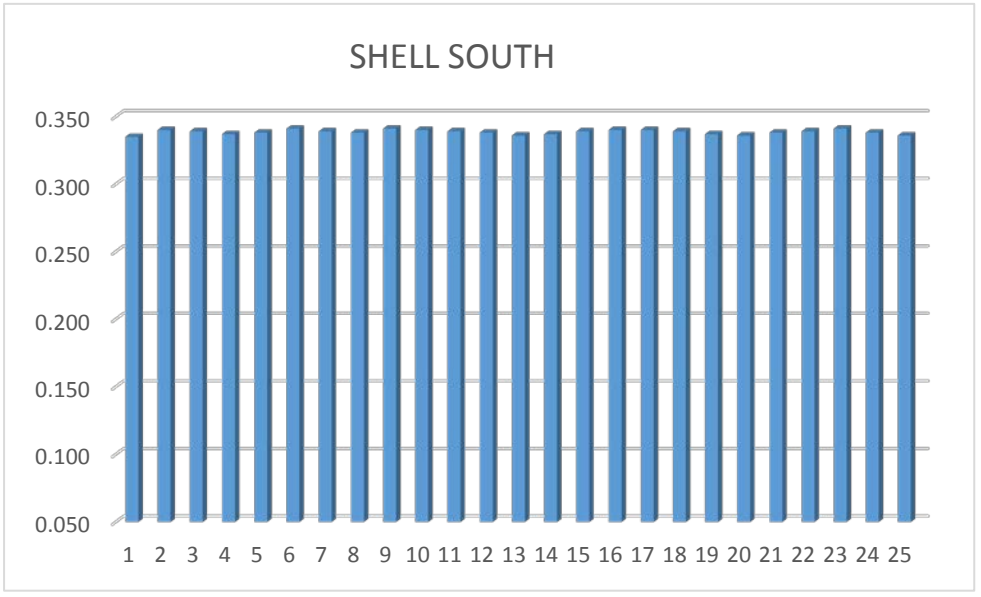
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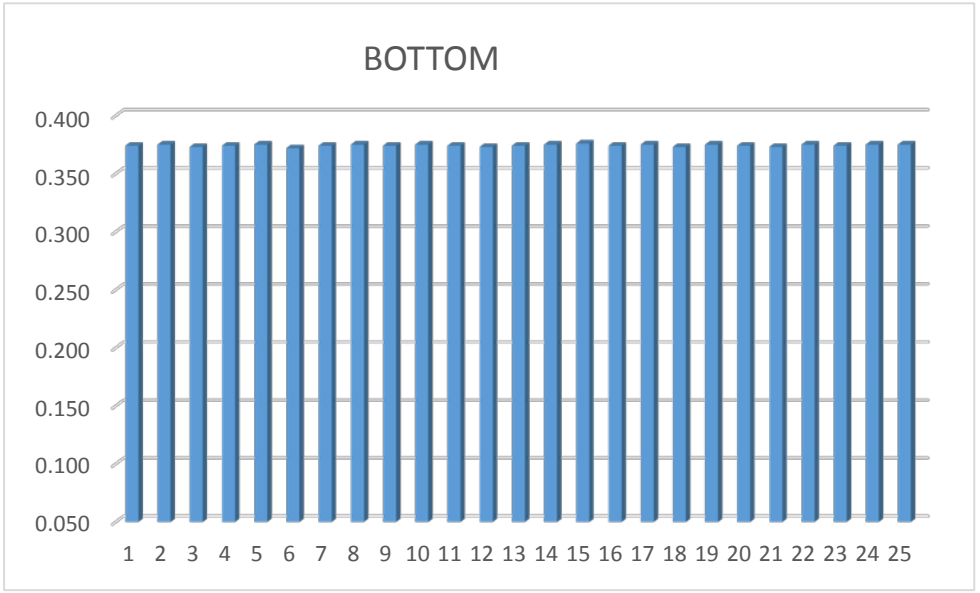
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0.100
0.050
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Appendix B

Photographs

Tank Identification & Emergency Contact Numbers

Tank Manufactures Information Plate

Electric Pump Motors Mounted on Reinforced Tank Top

Liquid Level Sight Tube

Tank Anchor Bolt and Drain Valve

Foundation – Concrete Pad & Anchor Bolt

One of Four Tank I Beam Tank Supports

Concrete Containment Dike

Tank Ground Strap

1 of Two Tank Inspection & Entry Man-holes 18”

One of Five Lifting Lugs

Oil Issue Control Panel

Tank Fill & Vent Piping 3”

Pumps Motor Control Panel

Tank Fire Control Panel Monitored From Control Room

Tank Fire Control Panel Monitored From Control Room

Tank Fire Control Heat Sensor

Tank Area Han Held Fire Extinguisher

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**	Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**
Address:	**1 HOWARD JEFFERS DR.**	Address:	**1 HOWARD JEFFERS DR.**
City, State Zip Code:	**Martinsville, WV 26155**	City, State Zip Code:	**Martinsville, WV 26155**

Tank ID: **052-00000829 GOVERNOR OIL TANK**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal		Vertical	X	Rectangular		
		API		Other: **ASME**								
		Unknown										
Manufacturer: **REXROTH**			Contents: **OIL**			Construction Date: **1987**			Last Repair / Reconstruction Date:			
Dimensions: **L-8'1" X W-52'' X H-45"**			Capacity: **3500 GAL**			Last Change of Service Date:						
Construction:		Bare Steel		Cathodically Protected (Check One):			Galvanized		Impressed Current (Date Installed)			
	X	Coated Steel		Concrete			Plastic/Fiberglass		Other:			
		Double Bottom		Double Wall			Lined Date Installed:					
Containment		Earthen Dike		Steel Dike	X	Concrete		Synthetic Line		Other:		
CRDM:		X	Date Installed: **1987**			Type: **CONTAINMENT DIKE MONITORING**						
Release Prevention Barrier:		X	Date Installed: **1987**			Type: **CONTAINMENT DIKE MONITORING**						

STI Checklist

Tank #: **GOVERNOR OIL 052-00000829**	Inspector: **Dennis Oberdove**	Date: **12/10/2018**	SAT	Unsat	N/A
	Check Primary tank for the presence of water.				X
	Check secondary tank for the presence of water.				X
	Check interstice of a double wall tank for the presence of fuel.				X
X	Check all pipe connections to the tank for evidence of leakage.		X		
X	List any areas of coating deficiencies.		X		
	Inspect operating and emergency vents.				X
	Type of emergency vent:				X
X	Check for proper drainage around the tank.		X		
X	Check foundation for signs of settlement, cracking or spalling.		X		
	Check cathodic protection if installed.				X
X	Conduct ultrasonic wall thickness testing.		X		
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.		X		
X	What type of weld joints: X Butt Lap		X		
	Identify all areas of corrosion. Evaluate.				X
	Any area with less than 60% of the wall thickness remaining shall be repaired.				X
	Identify all areas of pitting. Evaluate.				X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.				X
	Inert gas test tank (helium test).				X
	List tank manufacture data that is available.				X
	Reviewed the onsite SPCC Plan.				X
X	Type of construction: API-650 API-12F UL-142 STIF911 STIF921		X		
X	Type of layout X Open dike Diked with rainshields X Double Wall		X		
	UL-2244 type tank such as…Generator tank				X
	Vaulted tank				X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000829
DEP Tank Registration Number (if issued)	052-00000829

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/10/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Engineering Report – Governor Oil Tank 052-00000830

STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for

NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 11, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

A STI Certified External inspection of the Governor Oil Tank 052-00000830 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2.

CERTIFICATION

The following certification pertains to the inspection of the Governor Oil Tank 052-00000830 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 11, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Governor Oil Tank 052-00000830 and summarizes the results of a STI Certified External inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant	
Location:	New Martinsville, WV 26155	
Tank Number:	052-00000830	
Service:	Governor Oil	
Height:	5 Feet	
Length:	11 feet, 5 inches	
Width:	5 Feet, 9 inches	
Capacity:	2,500 gallons	
Configuration:	Rectangular (Single Wall)	
Foundation:	Concrete Pad	
Containment:	Steel Grate Catch Basin to Separator System in Basement	
Construction:	Shell:	Butt-Weld
	Tank Bottom:	Butt-Weld
	Fixed Roof:	Butt-Weld
Material:	Shell:	Carbon Steel
	Tank Bottom:	Carbon Steel
	Fixed Roof:	Carbon Steel
Built:	Circa 1987	
Age:	Circa 31 years	
Specific Gravity	.88	
Operating Limits:	Minimum Metal Temperature:	-20 F
	Maximum Metal Temperature:	Ambient
	Minimum Pressure:	Atmospheric
	Maximum Pressure:	Product
Seismic Zone:	1	
Construction Code:	ASME	
Inspection Type:	STI Certified External	
Inspector Name:	Dennis J Oberdove	

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank is a single double wall design. The secondary containment is a steel catch basin around the tank bottom that drains to the basement to an oil water separator. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours.

4.1.2 Foundation: The tank rests on a concrete pad foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system.

4.1.3 Shell: The tank shell is a butt-weld design. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 4.1.4 Top: The tank top is a butt-weld design. A visual inspection was performed on the top welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank top was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank top is structurally sound and in satisfactory condition.

4.1.5 Bottom: The tank bottom rests on the concrete foundation and was not evaluated.

4.1.6 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank does have means of ventilation via a 2" atmospheric vent. The tank is equipped with an electronic level sensor which is monitor screen at all times from the control room is equipped a visual sight glass tube on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.7 Paint/Insulation: Over the course of the inspection the tank and associated piping insulation and or coating were evaluated. The overall condition of the tank is satisfactory.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Shell: None.

4.2.4 Roof: None.

4.2.5 Bottom: None.

4.2.6 Shell Appurtenances: None.

4.2.7 Paint/Insulation: None.

4.3 Compliance Requirements:

4.3.1 Containment: None.

4.3.2 Foundation: None.

4.3.3 Shell: None.

4.3.4 Roof: None.

4.3.5 Bottom: None.

4.3.6 Shell Appurtenances: None.

4.3.7 Paint/Insulation: None.

4.4 Serviceability:

The Governor tank is in compliance with the requirements of STI Standard SP001 for structural integrity. The following schedule should be implemented.

4.4.1 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2023** in accordance with STI Standard SP001.

4.4.2 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	#052-00000830			
Plate Specification :	UNKNOWN			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :	GOVERNOR OIL			
Length:	11	*feet*	5	*inches*
WIDTH:	5	*feet*	9	*inches*
HEIGHT:	5	*feet*	0	*inches*
Volume :	2,500			*gallons*
Specific Gravity :	**G**	0.86		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

FOR VERTICAL TANKS ONLY				
T	Specified minimum tensile strength * (lb/in²)			
Y	Specified minimum yield strength (lb/in²)			
S	Maximum allowable stress, first and second (lb/in²)			
	Maximum allowable stress, for all other (lb/in²)			
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		0	0
		0	0.88Y	0.427T
	All Other	0	0	0

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t orig)*	Current Measured Thickness *(inches)* *(t act)*	[2,3] Minimum Acceptable Thickness *(inches)* *(t min)*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
TOP	5.00	N/A	1	0.781	0.767	0.100	0.00046	>20	2023	2028	N/A
SHELL EAST SIDE	5.00	N/A	1	0.516	0.509	0.100	0.00023	>20	2023	2028	N/A
SHELL NORTH	5.00	N/A	1	0.516	0.510	0.100	0.00018	>20	2023	2028	N/A
SHELL WEST SIDE	5.00	N/A	1	0.516	0.510	0.100	0.00019	>20	2023	2028	N/A

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

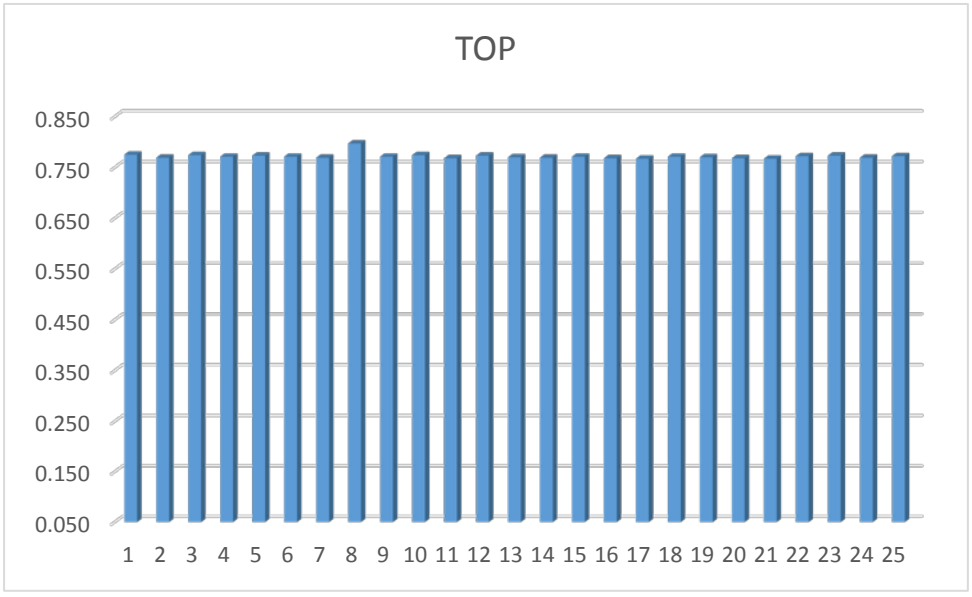
3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

Tank Integrity Services Inc.
Rev. 9807-2

TANK SHELL ULTRASONIC READINGS

TOP		SHELL EAST SIDE		SHELL NORTH		SHELL WEST SIDE		SHELL SOUTH		BOTTOM	
1	0.775	1	0.514	1	0.513	1	0.512	1	0.000	1	0.000
2	0.769	2	0.515	2	0.514	2	0.514	2	0.000	2	0.000
3	0.774	3	0.512	3	0.510	3	0.513	3	0.000	3	0.000
4	0.771	4	0.510	4	0.511	4	0.510	4	0.000	4	0.000
5	0.773	5	0.513	5	0.514	5	0.511	5	0.000	5	0.000
6	0.771	6	0.514	6	0.510	6	0.514	6	0.000	6	0.000
7	0.769	7	0.516	7	0.512	7	0.513	7	0.000	7	0.000
8	0.797	8	0.510	8	0.510	8	0.514	8	0.000	8	0.000
9	0.771	9	0.514	9	0.514	9	0.515	9	0.000	9	0.000
10	0.774	10	0.511	10	0.515	10	0.510	10	0.000	10	0.000
11	0.768	11	0.512	11	0.513	11	0.511	11	0.000	11	0.000
12	0.773	12	0.510	12	0.510	12	0.516	12	0.000	12	0.000
13	0.770	13	0.514	13	0.511	13	0.514	13	0.000	13	0.000
14	0.769	14	0.515	14	0.512	14	0.513	14	0.000	14	0.000
15	0.771	15	0.512	15	0.512	15	0.514	15	0.000	15	0.000
16	0.768	16	0.515	16	0.513	16	0.514	16	0.000	16	0.000
17	0.767	17	0.513	17	0.510	17	0.516	17	0.000	17	0.000
18	0.771	18	0.510	18	0.514	18	0.510	18	0.000	18	0.000
19	0.770	19	0.514	19	0.513	19	0.512	19	0.000	19	0.000
20	0.768	20	0.512	20	0.514	20	0.514	20	0.000	20	0.000
21	0.767	21	0.511	21	0.515	21	0.514	21	0.000	21	0.000
22	0.772	22	0.510	22	0.514	22	0.513	22	0.000	22	0.000
23	0.773	23	0.509	23	0.513	23	0.514	23	0.000	23	0.000
24	0.769	24	0.514	24	0.514	24	0.514	24	0.000	24	0.000
25	0.772	25	0.512	25	0.513	25	0.513	25	0.000	25	0.000
Average	0.772	Average	0.512	Average	0.513	Average	0.513	Average	0.000	Average	0.000
t_{orig}	0.781	t_{orig}	0.516	t_{orig}	0.516	t_{orig}	0.516	t_{orig}	0.516	t_{orig}	0.516

t_{orig} = The original metal thickness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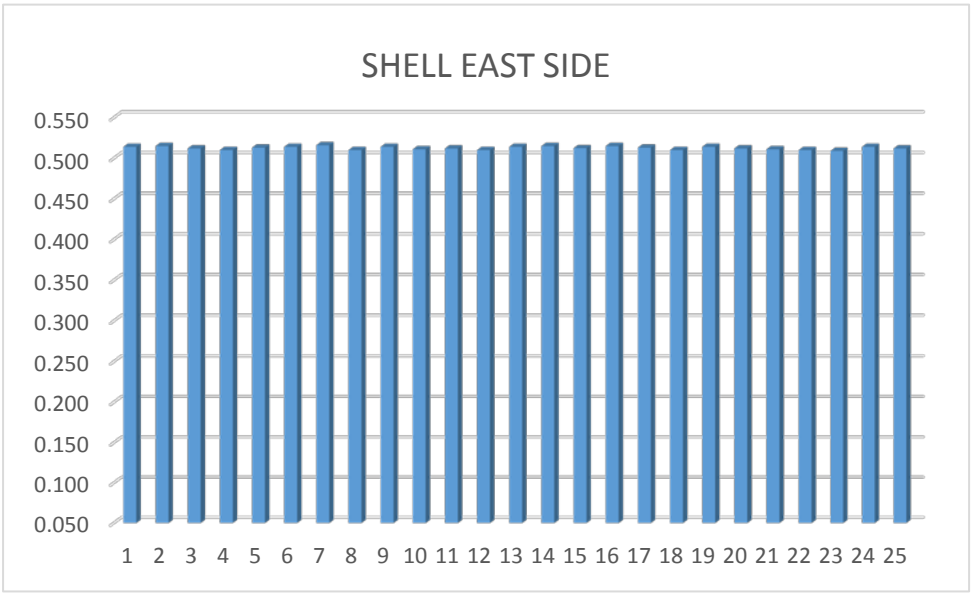
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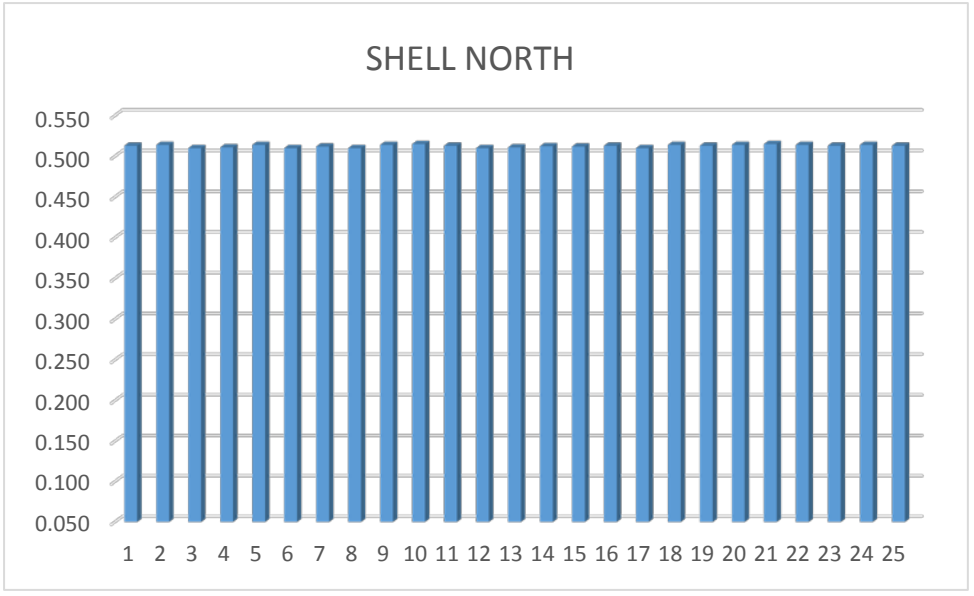
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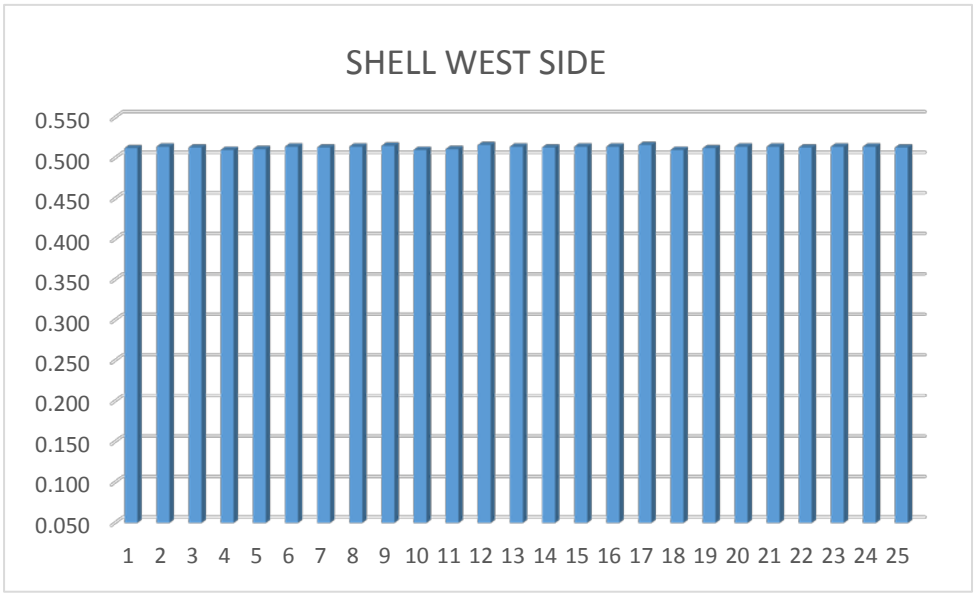
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL WEST SIDE
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0.500
0.450
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0.050
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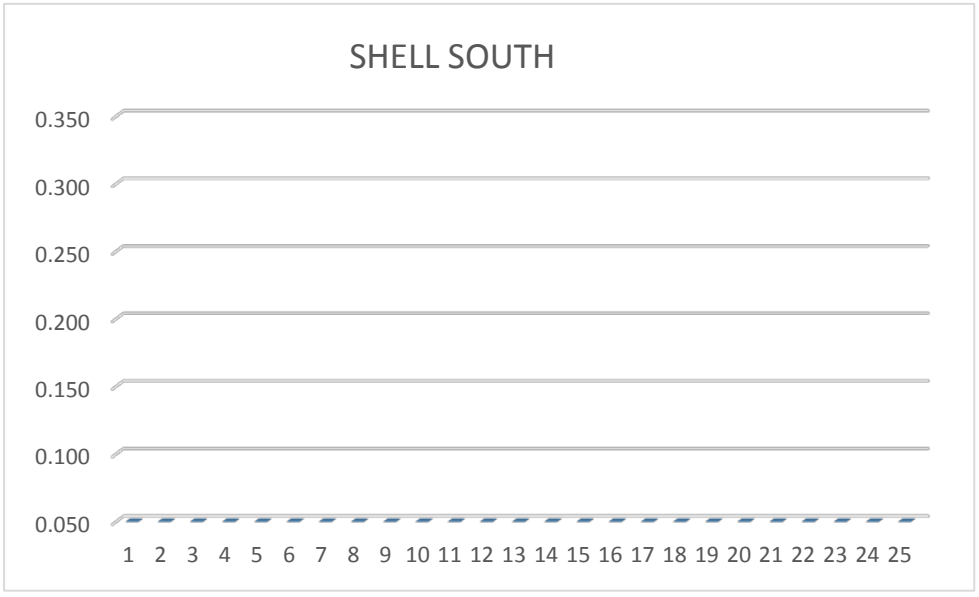
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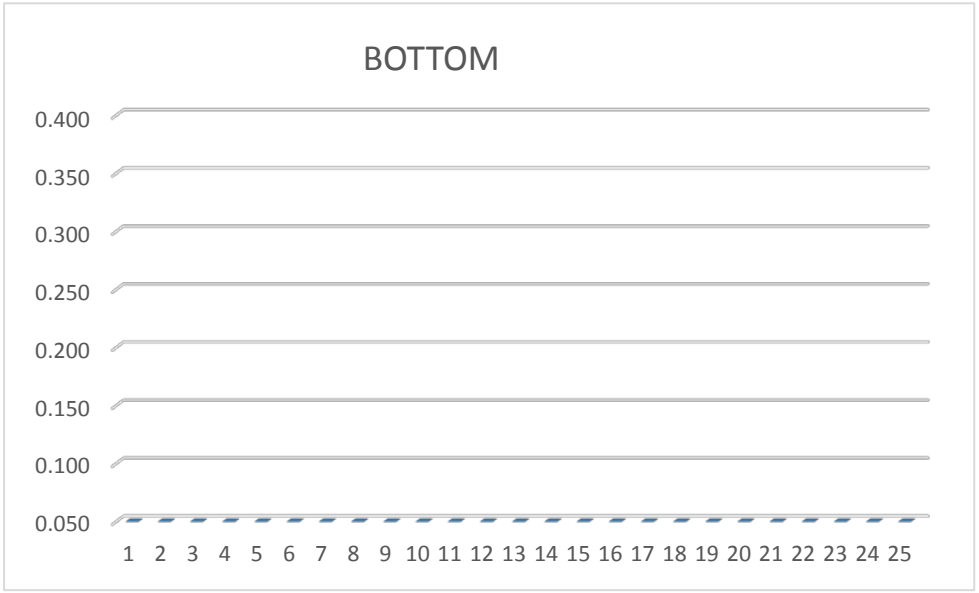
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0.250
0.200
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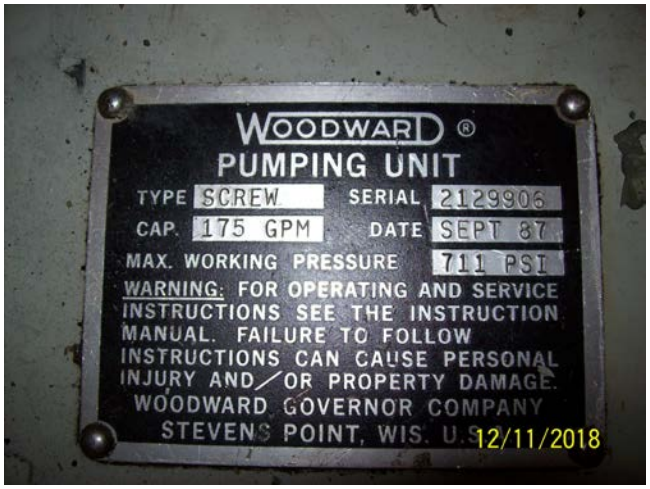
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs

Tank Identification & Emergency Contact Numbers



Tank Manufactures Information Plate

Liquid Level Sight Tube

Tank Anchor Bolt and Drain Valve

Foundation – Concrete Pad & Anchor Bolt

Containment Catch Basin To Basement

Tank Ground Strap and Anchor Bolt

Oil Pump Controllers

Tank Inspection Manway

Tank Fire Control Panel Monitored From Control Room

Tank Fire Control Heat Sensor

Tank Remote Level Monitor Control Room

Tank Remote Level Monitor Control Room

Tank Remote Fire Monitoring System Control Room

Hand Held Fire Extinguisher

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT	Name:	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address:	1 HOWARD JEFFERS DR.	Address:	1 HOWARD JEFFERS DR.
City, State Zip Code:	Martinsville, WV 26155	City, State Zip Code:	Martinsville, WV 26155

Tank ID: **052-00000830 GOVERNOR OIL TANK**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal		Vertical	X	Rectangular		
		API		Other: **ASME**								
		Unknown										

Manufacturer: **WOODWARD**				Contents: **OIL**			Construction Date: **1987**			Last Repair / Reconstruction Date:		
Dimensions: **L-11'5" X W-5'9'' X H-5'**				Capacity: **2500 GAL**			Last Change of Service Date:					
Construction:		Bare Steel		Cathodically Protected (Check One):				Galvanized		Impressed Current (Date Installed)		
	X	Coated Steel		Concrete				Plastic/Fiberglass		Other:		
		Double Bottom		Double Wall				Lined Date Installed:				
Containment		Earthen Dike		Steel Dike		Concrete		Synthetic Line	X	Other: **Catch Basin to Separator**		
CRDM:		X	Date Installed: **1987**				Type: **CONTAINMENT SUMP SEPARATOR SYSTEM**					
Release Prevention Barrier:		X	Date Installed: **1987**				Type: **CONTAINMENT SUMP SEPARATOR SYSTEM**					

STI Checklist

Tank #: **Governor Tank 052-00000830**	Inspector: **Dennis Oberdove**	Date: **12/11/2018**

	Check Primary tank for the presence of water.																		X
	Check secondary tank for the presence of water.																		X
	Check interstice of a double wall tank for the presence of fuel.																		X
X	Check all pipe connections to the tank for evidence of leakage.																	X	
X	List any areas of coating deficiencies.																	X	
	Inspect operating and emergency vents.																		X
	Type of emergency vent:		Pop-up		Flip-up		Size:												X
X	Check for proper drainage around the tank.																	X	
X	Check foundation for signs of settlement, cracking or spalling.																	X	
	Check cathodic protection if installed.																		X
X	Conduct ultrasonic wall thickness testing.																	X	
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.																	X	
X	What type of weld joints:	X	Butt		Lap													X	
	Identify all areas of corrosion. Evaluate.																		X
	Any area with less than 60% of the wall thickness remaining shall be repaired.																		X
	Identify all areas of pitting. Evaluate.																		X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.																		X
	Inert gas test tank (helium test).																		X
	List tank manufacture data that is available.																		X
	Reviewed the onsite SPCC Plan.																		X
X	Type of construction:		API-650		API-12F		UL-142		STIF911		STIF921							X	
X	Type of layout	X	Open dike		Diked with rainshields	X	Double Wall											X	
	UL-2244 type tank such as…Generator tank																		X
	Vaulted tank																		X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000830
DEP Tank Registration Number (if issued)	052-00000830

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/11/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Engineering Report – Governor Oil Tank 052-00000831

STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for

NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 11, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

A STI Certified External inspection of the Governor Oil Tank 052-00000831 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2.

CERTIFICATION

The following certification pertains to the inspection of the Governor Oil Tank 052-00000831 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 11, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Governor Oil Tank 052-00000831 and summarizes the results of a STI Certified External inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant	
Location:	New Martinsville, WV 26155	
Tank Number:	052-00000831	
Service:	Governor Oil	
Height:	5 Feet	
Length:	11 Feet, 5 Inches	
Width:	5 Feet, 9 Inches	
Capacity:	2,500 gallons	
Configuration:	Rectangular (Single Wall)	
Foundation:	Concrete Pad	
Containment:	Steel Grate Catch Basin to Separator System in Basement	
Construction:	Shell:	Butt-Weld
	Tank Bottom:	Butt-Weld
	Fixed Roof:	Butt-Weld
Material:	Shell:	Carbon Steel
	Tank Bottom:	Carbon Steel
	Fixed Roof:	Carbon Steel
Built:	Circa 1987	
Age:	Circa 31 years	
Specific Gravity	.88	
Operating Limits:	Minimum Metal Temperature:	-20 F
	Maximum Metal Temperature:	Ambient
	Minimum Pressure:	Atmospheric
	Maximum Pressure:	Product
Seismic Zone:	1	
Construction Code:	ASME	
Inspection Type:	STI Certified External	
Inspector Name:	Dennis J Oberdove	

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank is a single double wall design. The secondary containment is a steel catch basin around the tank bottom that drains to the basement to an oil water separator. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours.

4.1.2 Foundation: The tank rests on a concrete pad foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system.

4.1.3 Shell: The tank shell is a butt-weld design. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. The back shell was not evaluated was unable get thickness measurements. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 4.1.4 Top: The tank top is a butt-weld design. A visual inspection was performed on the top welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank top was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank top is structurally sound and in satisfactory condition.

4.1.5 Bottom: The tank bottom rests on the concrete pad and was not evaluated.

4.1.6 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank does have means of ventilation via a 2" atmospheric vent. The tank is equipped with an electronic level sensor which is monitor screen at all times from the control room is equipped a visual sight glass tube on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.7 Paint/Insulation: Over the course of the inspection the tank and associated piping insulation and or coating were evaluated. The overall condition of the tank is satisfactory.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Shell: None.

4.2.4 Roof: None.

4.2.5 Bottom: None.

4.2.6 Shell Appurtenances: None.

4.2.7 Paint/Insulation: None.

4.3 Compliance Requirements:

4.3.1 Containment: None.

4.3.2 Foundation: None.

4.3.3 Shell: None.

4.3.4 Roof: None.

4.3.5 Bottom: None.

4.3.6 Shell Appurtenances: None.

4.3.7 Paint/Insulation: None.

4.4 Serviceability:

The Governor tank is in compliance with the requirements of STI Standard SP001 for structural integrity. The following schedule should be implemented.

4.4.1 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2023** in accordance with STI Standard SP001.

4.4.2 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	#052-00000831			
Plate Specification :	UNKNOWN			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :	GOVERNOR OIL			
Length:	11	*feet*	5	*inches*
WIDTH:	5	*feet*	9	*inches*
HEIGHT:	5	*feet*	0	*inches*
Volume :	2,500			*gallons*
Specific Gravity :	**G**	0.86		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

FOR VERTICAL TANKS ONLY				
T	Specified minimum tensile strength * (lb/in²)			
Y	Specified minimum yield strength (lb/in²)			
S	Maximum allowable stress, first and second (lb/in²)			
	Maximum allowable stress, for all other (lb/in²)			
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		0	0
		0	0.88Y	0.427T
	All Other	0	0	0

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t_{orig})*	Current Measured Thickness *(inches)* *(t_{act})*	[2,3] Minimum Acceptable Thickness *(inches)* *(t_{min})*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
TOP	5.00	N/A	1	0.781	0.762	0.100	0.00062	>20	2023	2028	N/A
SHELL EAST SIDE	5.00	N/A	1	0.516	0.511	0.100	0.00016	>20	2023	2028	N/A
SHELL NORTH	5.00	N/A	1	0.516	0.511	0.100	0.00015	>20	2023	2028	N/A
SHELL WEST SIDE	5.00	N/A	1	0.516	0.510	0.100	0.00019	>20	2023	2028	N/A

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

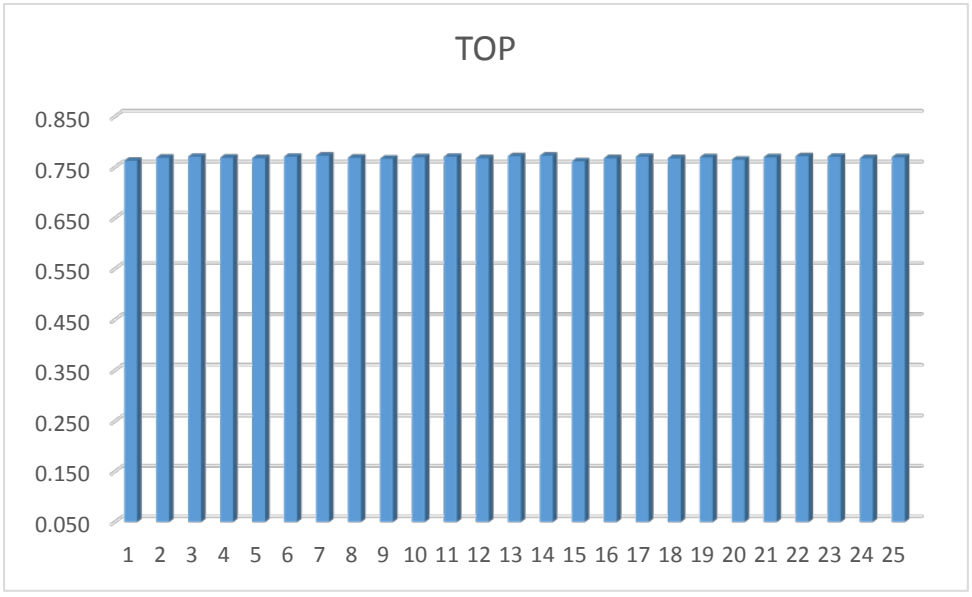
3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

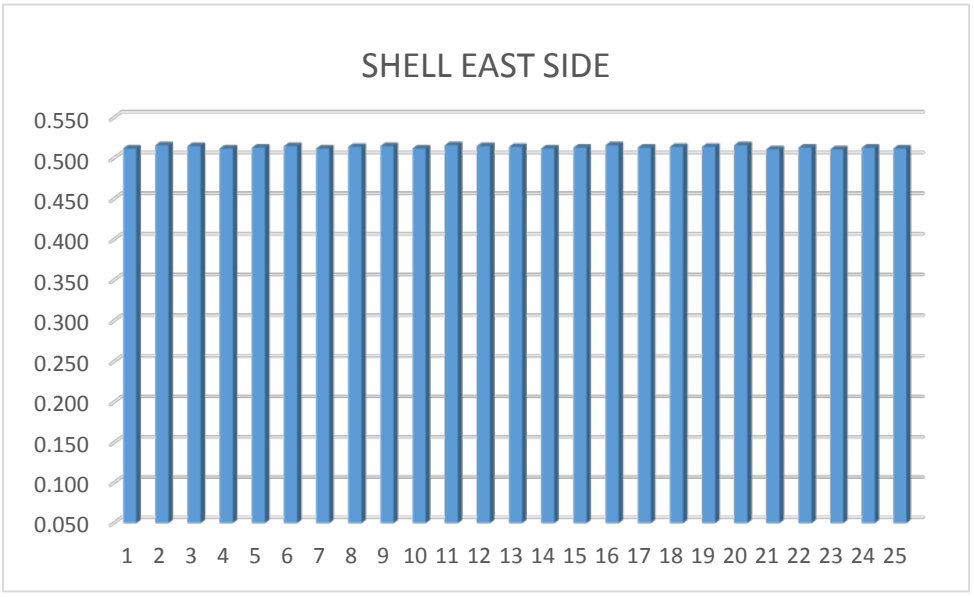
Tank Integrity Services Inc.
Rev. 9807-2

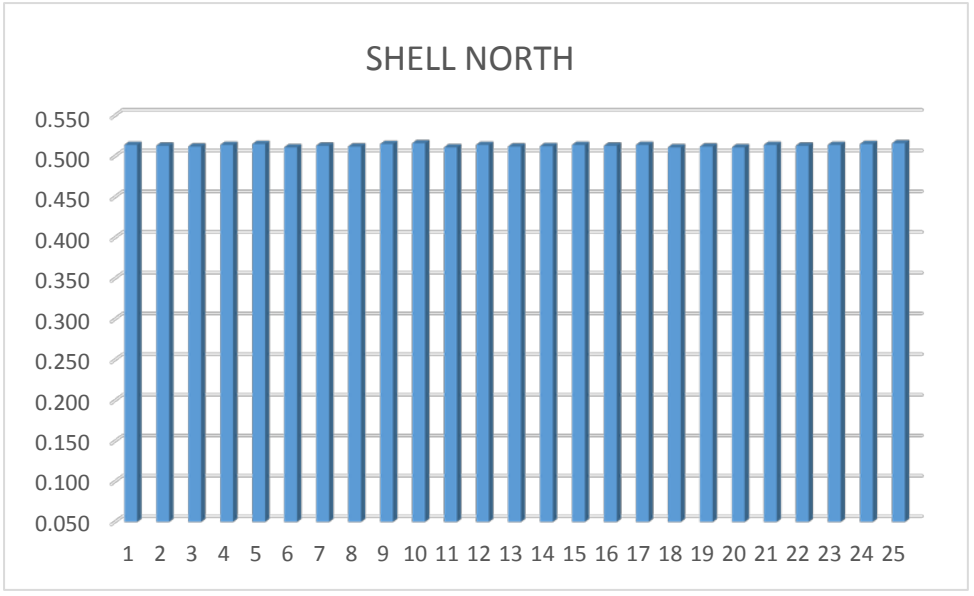
TANK SHELL ULTRASONIC READINGS

TOP		SHELL EAST SIDE		SHELL NORTH		SHELL WEST SIDE		SHELL SOUTH		BOTTOM	
1	0.763	1	0.512	1	0.514	1	0.511	1	0.000	1	0.000
2	0.769	2	0.516	2	0.513	2	0.510	2	0.000	2	0.000
3	0.771	3	0.515	3	0.512	3	0.514	3	0.000	3	0.000
4	0.769	4	0.512	4	0.514	4	0.515	4	0.000	4	0.000
5	0.768	5	0.513	5	0.515	5	0.513	5	0.000	5	0.000
6	0.771	6	0.515	6	0.511	6	0.512	6	0.000	6	0.000
7	0.773	7	0.512	7	0.513	7	0.515	7	0.000	7	0.000
8	0.769	8	0.514	8	0.512	8	0.513	8	0.000	8	0.000
9	0.767	9	0.515	9	0.515	9	0.516	9	0.000	9	0.000
10	0.770	10	0.512	10	0.516	10	0.514	10	0.000	10	0.000
11	0.771	11	0.516	11	0.511	11	0.511	11	0.000	11	0.000
12	0.768	12	0.515	12	0.514	12	0.512	12	0.000	12	0.000
13	0.772	13	0.514	13	0.512	13	0.515	13	0.000	13	0.000
14	0.773	14	0.512	14	0.512	14	0.514	14	0.000	14	0.000
15	0.762	15	0.513	15	0.514	15	0.511	15	0.000	15	0.000
16	0.768	16	0.516	16	0.513	16	0.513	16	0.000	16	0.000
17	0.771	17	0.513	17	0.514	17	0.514	17	0.000	17	0.000
18	0.768	18	0.514	18	0.511	18	0.515	18	0.000	18	0.000
19	0.770	19	0.514	19	0.512	19	0.512	19	0.000	19	0.000
20	0.765	20	0.516	20	0.511	20	0.515	20	0.000	20	0.000
21	0.770	21	0.511	21	0.514	21	0.516	21	0.000	21	0.000
22	0.772	22	0.513	22	0.513	22	0.513	22	0.000	22	0.000
23	0.771	23	0.511	23	0.514	23	0.514	23	0.000	23	0.000
24	0.768	24	0.513	24	0.515	24	0.511	24	0.000	24	0.000
25	0.770	25	0.512	25	0.516	25	0.512	25	0.000	25	0.000
Average	0.769	Average	0.514	Average	0.513	Average	0.513	Average	0.000	Average	0.000
t_{orig}	0.781	t_{orig}	0.516	t_{orig}	0.516	t_{orig}	0.516	t_{orig}	0.516	t_{orig}	0.516

t_{orig} = The original metal thickness


TOP
0.850
0.750
0.650
0.550
0.450
0.350
0.250
0.150
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL EAST SIDE
0.550
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL NORTH
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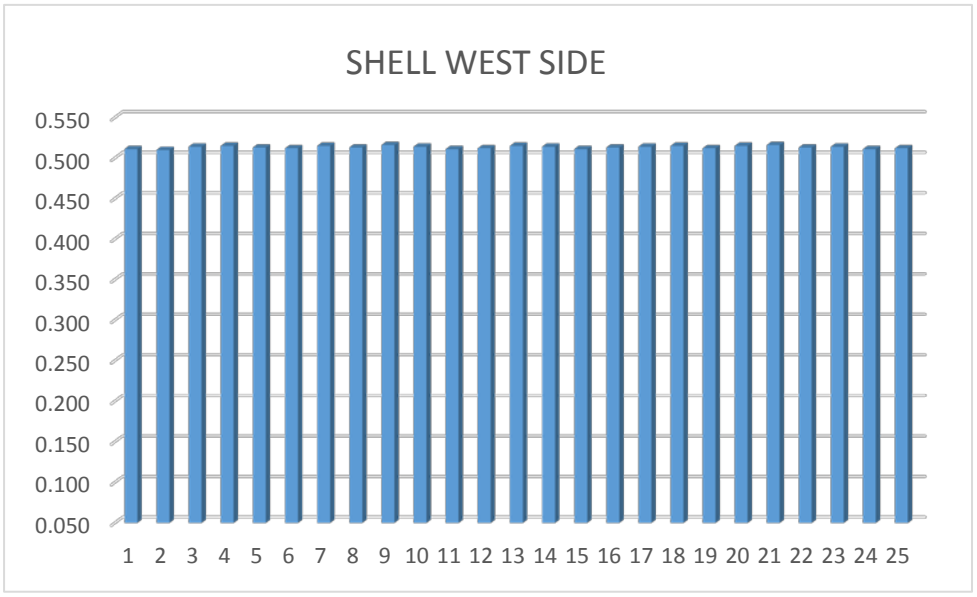
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL WEST SIDE
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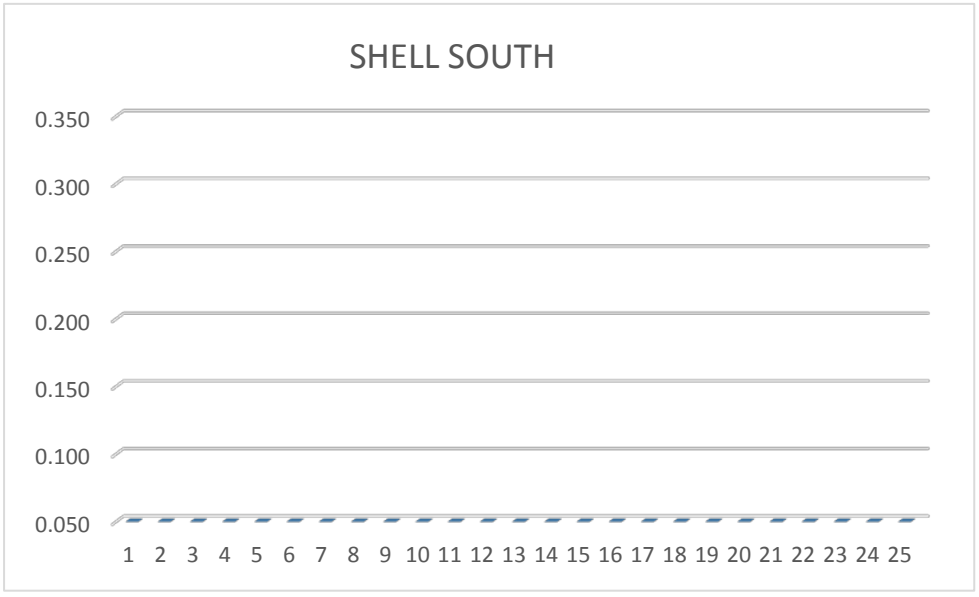
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL SOUTH
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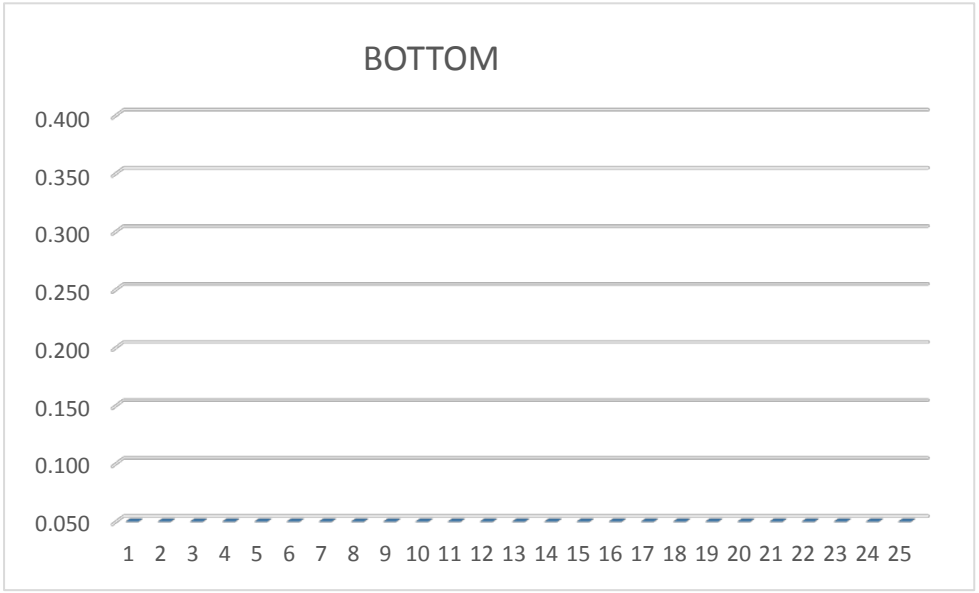
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


BOTTOM
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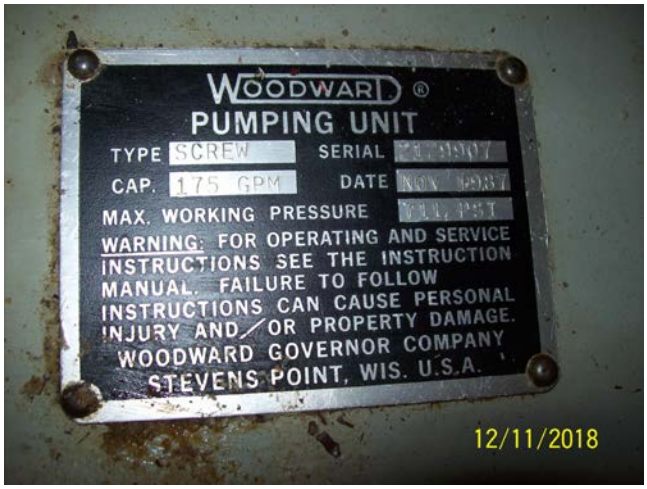
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs

Tank Identification & Emergency Contact Numbers



Tank Manufactures Information Plate

Liquid Level Sight Tube

Tank Anchor Bolt

Foundation – Concrete Pad & Anchor Bolt

Containment Catch Basin To Basement

Tank Ground Strap

Oil Pump Controllers

Tank Inspection Manway

Tank Fire Control Panel Monitored From Control Room

Tank Fire Control Heat Sensor

Tank Remote Level Monitor Control Room

Tank Remote Level Monitor Control Room

Tank Remote Fire Monitoring System Control Room

Hand Held Fire Extinguisher

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**	Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**
Address:	**1 HOWARD JEFFERS DR.**	Address:	**1 HOWARD JEFFERS DR.**
City, State Zip Code:	**Martinsville, WV 26155**	City, State Zip Code:	**Martinsville, WV 26155**

Tank ID: **052-00000831 GOVERNOR OIL TANK**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal		Vertical	X	Rectangular		
		API		Other: **ASME**								
		Unknown										
Manufacturer: **WOODWARD**			Contents: **OIL**			Construction Date: **1987**			Last Repair / Reconstruction Date:			
Dimensions: **L-11'5" X W-5'9'' X H-5'**			Capacity: **2500 GAL**			Last Change of Service Date:						
Construction:		Bare Steel		Cathodically Protected (Check One):			Galvanized		Impressed Current (Date Installed)			
	X	Coated Steel		Concrete			Plastic/Fiberglass		Other:			
		Double Bottom		Double Wall			Lined Date Installed:					
Containment		Earthen Dike		Steel Dike		Concrete		Synthetic Line	X	Other: **Catch Basin to Separator**		
CRDM:		X	Date Installed: **1987**			Type: **2 HOUR WALK THROUGH INSPECTION**						
Release Prevention Barrier:		X	Date Installed: **1987**			Type: **2 HOUR WALK THROUGH INSPECTION**						

STI Checklist

Tank #: **Governor Tank 052-00000831**	Inspector: **Dennis Oberdove**	Date: **12/11/2018**	SAT	Unsat	N/A

	Check Primary tank for the presence of water.															X
	Check secondary tank for the presence of water.															X
	Check interstice of a double wall tank for the presence of fuel.															X
X	Check all pipe connections to the tank for evidence of leakage.														X	
X	List any areas of coating deficiencies.														X	
	Inspect operating and emergency vents.															X
	Type of emergency vent:		Pop-up		Flip-up		Size:									X
X	Check for proper drainage around the tank.														X	
X	Check foundation for signs of settlement, cracking or spalling.														X	
	Check cathodic protection if installed.															X
X	Conduct ultrasonic wall thickness testing.														X	
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.														X	
X	What type of weld joints:	X	Butt		Lap										X	
	Identify all areas of corrosion. Evaluate.															X
	Any area with less than 60% of the wall thickness remaining shall be repaired.															X
	Identify all areas of pitting. Evaluate.															X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.															X
	Inert gas test tank (helium test).															X
	List tank manufacture data that is available.															X
	Reviewed the onsite SPCC Plan.															X
X	Type of construction:		API-650		API-12F		UL-142		STIF911		STIF921				X	
	Type of layout		Open dike		Diked with rainshields				Double Wall							X
	UL-2244 type tank such as…Generator tank															X
	Vaulted tank															X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000831
DEP Tank Registration Number (if issued)	052-00000831

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/11/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Engineering Report – Lube Oil Tank 052-00000832

STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for

NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 12, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

A STI Certified External inspection of the Lube Oil Tank 052-00000832 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2.

CERTIFICATION

The following certification pertains to the inspection of the Lube Oil Tank 052-00000832 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 12, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Lube Oil Tank 052-00000832 and summarizes the results of a STI Certified External inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
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2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

2.5.1 NFPA-30, Flammable and Combustible Liquids Code.
2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant	
Location:	New Martinsville, WV 26155	
Tank Number:	052-00000832	
Service:	Lube Oil	
Height:	6 Feet	
Length:	8 Feet	
Width:	6 Feet	
Capacity:	2,150 gallons	
Configuration:	Rectangular (Single Wall)	
Foundation:	Concrete Pad	
Containment:	Concrete Dike	
Construction:	Shell:	Butt-Weld
	Tank Bottom:	Butt-Weld
	Fixed Roof:	Butt-Weld
Material:	Shell:	Carbon Steel
	Tank Bottom:	Carbon Steel
	Fixed Roof:	Carbon Steel
Built:	Circa 1987	
Age:	Circa 31 years	
Specific Gravity	.88	
Operating Limits:	Minimum Metal Temperature:	-20 F
	Maximum Metal Temperature:	Ambient
	Minimum Pressure:	Atmospheric
	Maximum Pressure:	Product
Seismic Zone:	1	
Construction Code:	ASME	
Inspection Type:	STI Certified External	
Inspector Name:	Dennis J Oberdove	

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank is a single double wall design. The basement is the secondary containment and is concrete with concrete walls with a catch basin and drains going to an oil water separator. The containment is sufficient in size to contain more than 110% of the tank capacity. The containment was checked and is in satisfactory condition. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours.

4.1.2 Foundation: The tank rests on a concrete foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system.

4.1.3 Shell: The tank shell is a butt-weld design. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 4.1.4 Top: The tank top is a butt-weld design. A visual inspection was performed on the top welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank top was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank top is structurally sound and in satisfactory condition.

4.1.5 Bottom: The tank bottom rests on the concrete foundation and was not evaluated.

4.1.6 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank does have means of ventilation via a 2" atmospheric vent. The tank is equipped with an electronic level sensor which is monitor screen at all times from the control room is equipped a visual sight glass tube on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.7 Paint/Insulation: Over the course of the inspection the tank and associated piping insulation and or coating were evaluated. The overall condition of the tank is satisfactory.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Shell: None.

4.2.4 Roof: None.

4.2.5 Bottom: None.

4.2.6 Shell Appurtenances: None.

4.2.7 Paint/Insulation: None.

4.3 Compliance Requirements:

4.3.1 Containment: None.

4.3.2 Foundation: None.

4.3.3 Shell: None.

4.3.4 Roof: None.

4.3.5 Bottom: None.

4.3.6 Shell Appurtenances: None.

4.3.7 Paint/Insulation: None.

4.4 Serviceability:

The Lube Oil tank is in compliance with the requirements of STI Standard SP001 for structural integrity. The following schedule should be implemented.

4.4.1 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2023** in accordance with STI Standard SP001.

4.4.2 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 11, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	#052-00000832			
Plate Specification :	UNKNOWN			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :	LUBE OIL			
Length:	8	*feet*	0	*inches*
WIDTH:	6	*feet*	0	*inches*
HEIGHT:	6	*feet*	0	*inches*
Volume :	2,150			*gallons*
Specific Gravity :	**G**	0.86		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

FOR VERTICAL TANKS ONLY				
T	Specified minimum tensile strength * (lb/in²)			
Y	Specified minimum yield strength (lb/in²)			
S	Maximum allowable stress, first and second (lb/in²)			
	Maximum allowable stress, for all other (lb/in²)			
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		0	0
		0	0.88Y	0.427T
	All Other	0	0	0

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t orig)*	Current Measured Thickness *(inches)* *(t act)*	[2,3] Minimum Acceptable Thickness *(inches)* *(t min)*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
TOP	6.00	N/A	1	0.406	0.387	0.100	0.00062	>20	2023	2028	N/A
SHELL EAST SIDE	6.00	N/A	1	0.406	0.384	0.100	0.00071	>20	2023	2028	N/A
SHELL NORTH	6.00	N/A	1	0.375	0.364	0.100	0.00035	>20	2023	2028	N/A
SHELL WEST SIDE	6.00	N/A	1	0.406	0.384	0.100	0.00071	>20	2023	2028	N/A
SHELL SOUTH	6.00	N/A	1	0.375	0.365	0.100	0.00032	>20	2023	2028	N/A

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

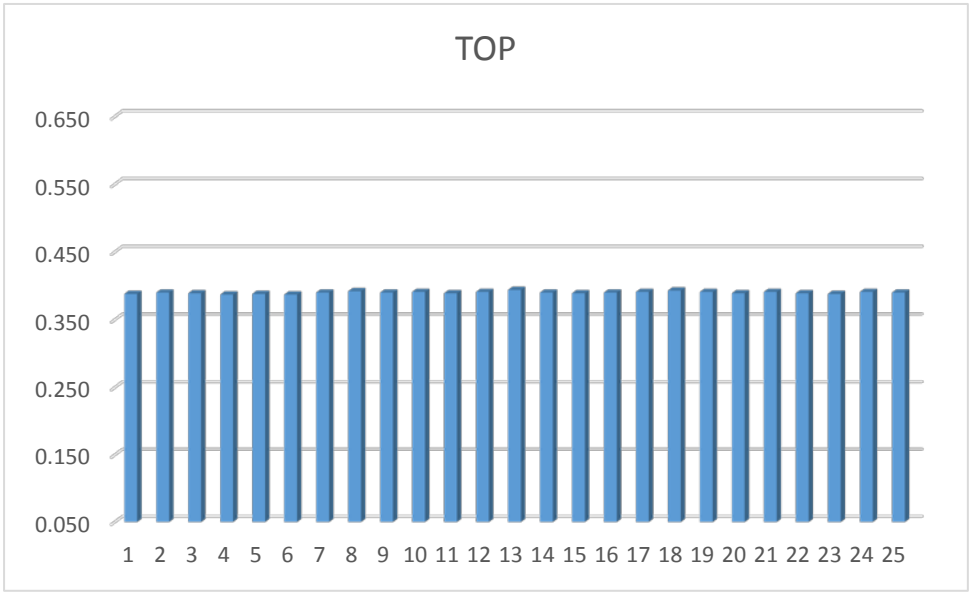
3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

Tank Integrity Services Inc.
Rev. 9807-2

TANK SHELL ULTRASONIC READINGS

TOP		SHELL EAST SIDE		SHELL NORTH		SHELL WEST SIDE		SHELL SOUTH		BOTTOM	
1	0.388	1	0.388	1	0.365	1	0.388	1	0.366	1	0.000
2	0.390	2	0.384	2	0.366	2	0.384	2	0.367	2	0.000
3	0.389	3	0.386	3	0.367	3	0.385	3	0.368	3	0.000
4	0.387	4	0.388	4	0.368	4	0.386	4	0.368	4	0.000
5	0.388	5	0.385	5	0.366	5	0.388	5	0.366	5	0.000
6	0.387	6	0.388	6	0.364	6	0.389	6	0.367	6	0.000
7	0.390	7	0.386	7	0.367	7	0.387	7	0.368	7	0.000
8	0.392	8	0.384	8	0.366	8	0.385	8	0.369	8	0.000
9	0.390	9	0.388	9	0.368	9	0.387	9	0.366	9	0.000
10	0.391	10	0.384	10	0.368	10	0.386	10	0.367	10	0.000
11	0.389	11	0.386	11	0.366	11	0.389	11	0.365	11	0.000
12	0.391	12	0.388	12	.3.67	12	0.388	12	0.368	12	0.000
13	0.394	13	0.387	13	0.365	13	0.386	13	0.367	13	0.000
14	0.390	14	0.386	14	0.366	14	0.387	14	0.365	14	0.000
15	0.389	15	0.384	15	0.367	15	0.388	15	0.368	15	0.000
16	0.390	16	0.388	16	0.368	16	0.386	16	0.366	16	0.000
17	0.391	17	0.388	17	0.367	17	0.389	17	0.367	17	0.000
18	0.393	18	0.386	18	0.365	18	0.386	18	0.368	18	0.000
19	0.391	19	0.385	19	0.368	19	0.387	19	0.368	19	0.000
20	0.389	20	0.384	20	0.367	20	0.388	20	0.368	20	0.000
21	0.391	21	0.386	21	0.368	21	0.389	21	0.366	21	0.000
22	0.389	22	0.387	22	0.367	22	0.387	22	0.365	22	0.000
23	0.388	23	0.386	23	0.365	23	0.386	23	0.367	23	0.000
24	0.391	24	0.385	24	0.366	24	0.389	24	0.368	24	0.000
25	0.390	25	0.388	25	0.368	25	0.387	25	0.368	25	0.000
Average	0.390	Average	0.386	Average	0.367	Average	0.387	Average	0.367	Average	0.000
t_{orig}	0.406	t_{orig}	0.406	t_{orig}	0.375	t_{orig}	0.406	t_{orig}	0.375	t_{orig}	0.000

t_{orig} = The original metal thickness


TOP
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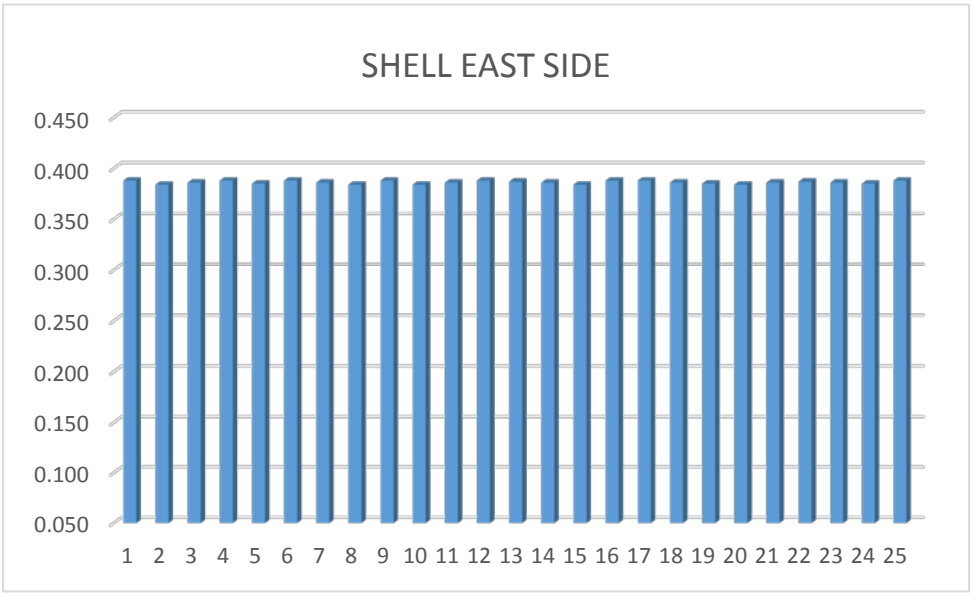
0.550
0.450
0.350
0.250
0.150
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL EAST SIDE
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0.400
0.350
0.300
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0.200
0.150
0.100
0.050
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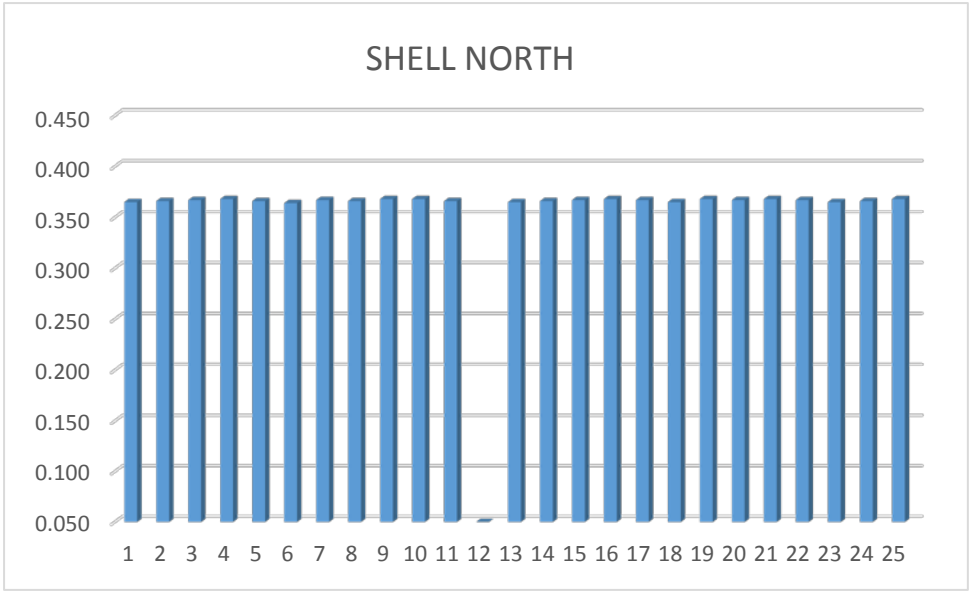
SHELL NORTH
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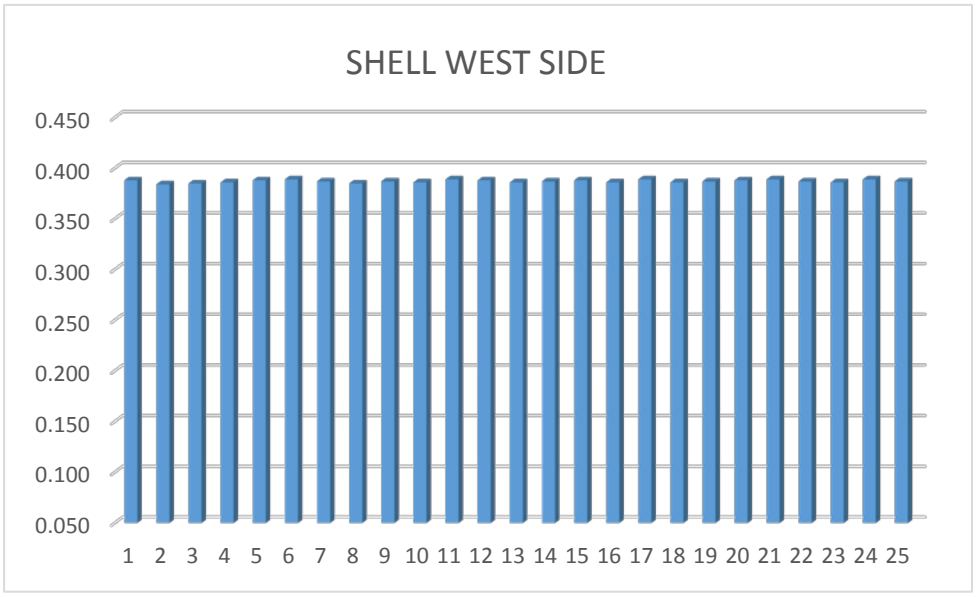
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL WEST SIDE
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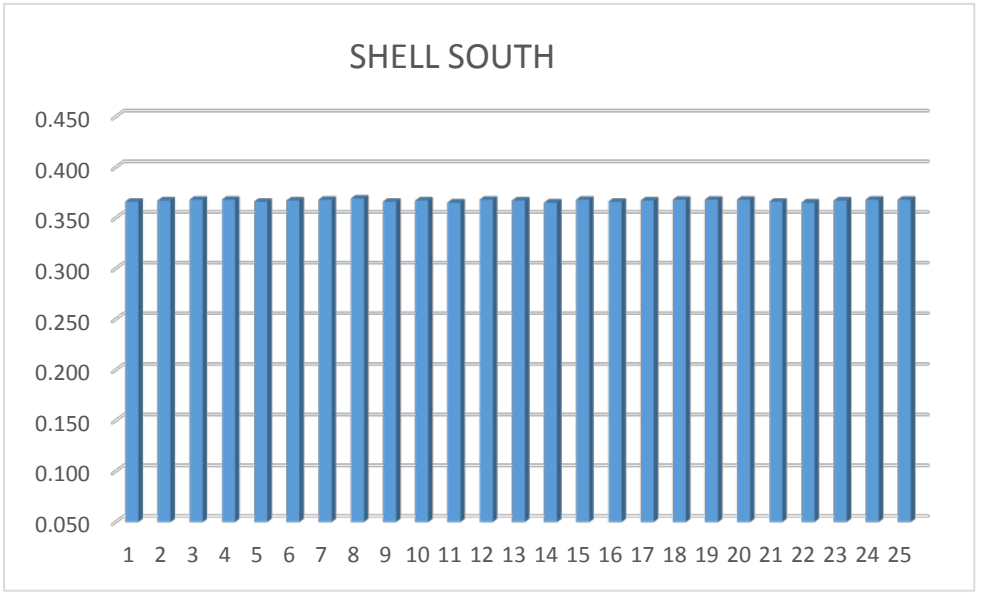
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL SOUTH
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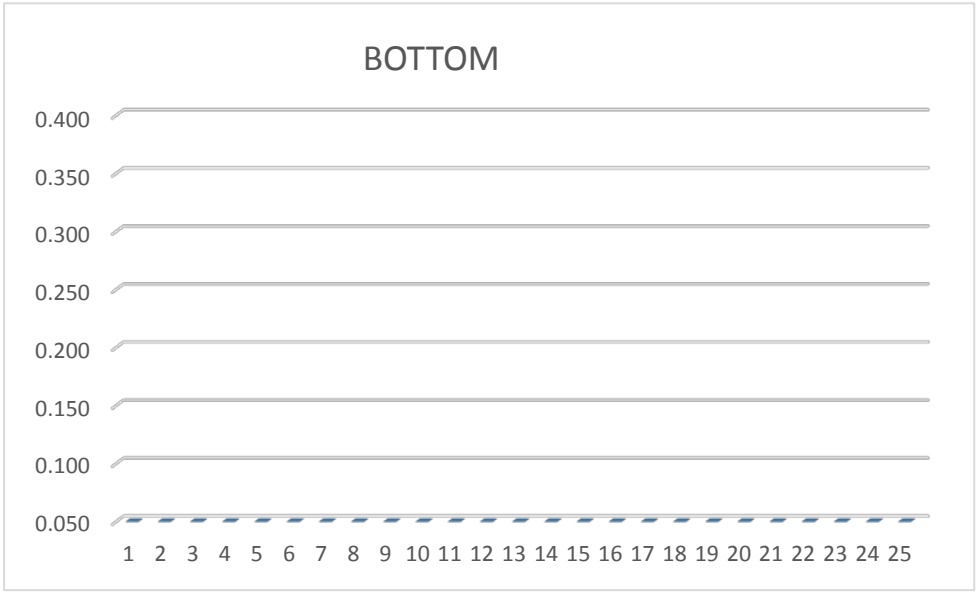
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


BOTTOM
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0.350
0.300
0.250
0.200
0.150
0.100
0.050
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs

Tank Identification & Emergency Contact Numbers

Tank Inspection Manways

Liquid Level Sight Tube

Tank Anchor Bolt

Foundation – Concrete Pad

Ladder Tank Top Access

Lifting Lug

Tank Inspection Port

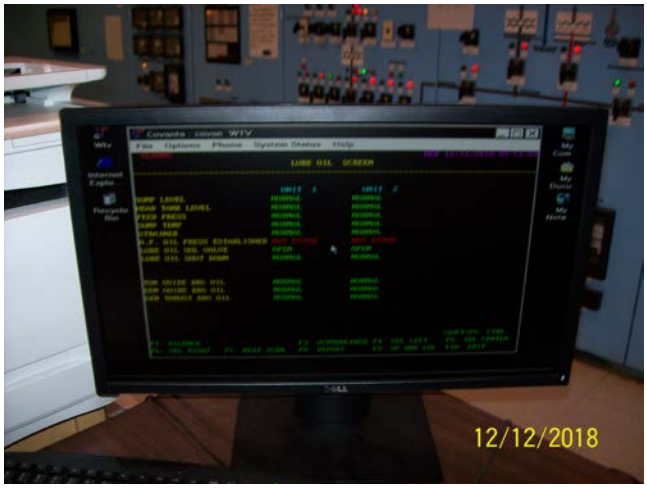
Tank Ground Strap

Tank Ground Bar

Tank Ground Bar

Tank Temperature Control

Tank Remote Level Monitor Control Room



Tank Remote Level Monitor Control Room

Tank Remote Fire Monitoring System Control Room

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**	Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**
Address:	**1 HOWARD JEFFERS DR.**	Address:	**1 HOWARD JEFFERS DR.**
City, State Zip Code:	**Martinsville, WV 26155**	City, State Zip Code:	**Martinsville, WV 26155**

Tank ID: **052-00000832 LUBE OIL TANK**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal		Vertical	X	Rectangular		
		API		Other: **ASME**								
		Unknown										

Manufacturer: **UNKNOWN**	Contents: **LUBE OIL**	Construction Date: **1987**	Last Repair / Reconstruction Date:		
Dimensions: **L-8' X W-6' X H-6'**	Capacity: **2150 GAL**	Last Change of Service Date:			

Construction:		Bare Steel		Cathodically Protected (Check One):			Galvanized		Impressed Current (Date Installed)			
	X	Coated Steel		Concrete			Plastic/Fiberglass		Other:			
		Double Bottom		Double Wall			Lined Date Installed:					
Containment		Earthen Dike		Steel Dike	X	Concrete		Synthetic Line		Other:		
CRDM:		X	Date Installed: **1987**			Type: **CONTAINMENT SUMP SEPARATOR SYSTEM**						
Release Prevention Barrier:		X	Date Installed: **1987**			Type: **CONTAINMENT SEPARATOR SUMP SYSTEM**						

STI Checklist

Tank #: **LUBE OIL TANK #052-0000032**	Inspector: **Dennis Oberdove**	Date: **12/12/2018**	SAT	Unsat	N/A

	Check Primary tank for the presence of water.															X
	Check secondary tank for the presence of water.															X
	Check interstice of a double wall tank for the presence of fuel.															X
X	Check all pipe connections to the tank for evidence of leakage.													X		
X	List any areas of coating deficiencies.													X		
	Inspect operating and emergency vents.															X
	Type of emergency vent:		Pop-up		Flip-up		Size:									X
X	Check for proper drainage around the tank.													X		
X	Check foundation for signs of settlement, cracking or spalling.													X		
	Check cathodic protection if installed.															X
X	Conduct ultrasonic wall thickness testing.													X		
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.													X		
X	What type of weld joints:	X	Butt		Lap									X		
	Identify all areas of corrosion. Evaluate.															X
	Any area with less than 60% of the wall thickness remaining shall be repaired.															X
	Identify all areas of pitting. Evaluate.															X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.															X
	Inert gas test tank (helium test).															X
	List tank manufacture data that is available.															X
	Reviewed the onsite SPCC Plan.															X
X	Type of construction:		API-650		API-12F		UL-142		STIF911		STIF921			X		
X	Type of layout	X	Open dike		Diked with rainshields				Double Wall					X		
	UL-2244 type tank such as…Generator tank															X
	Vaulted tank															X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000832
DEP Tank Registration Number (if issued)	052-00000832

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/12/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

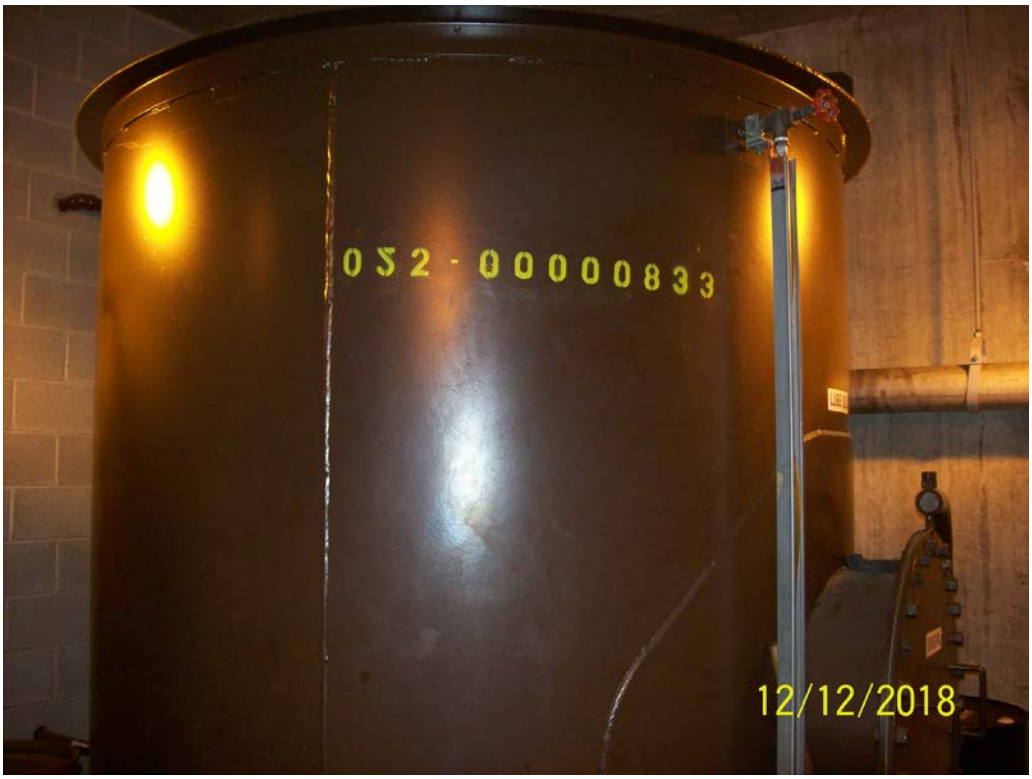
*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

TANK INTEGRITY SERVICES

Compliance Testing of:

- Storage Tanks & Product Lines
- Stage II Vapor Recovery Systems
- Corrosion Protection Testing & Design
- Statistical Inventory Reconciliation (S.I.R)
- Aboveground Storage Tank Inspection

Formal External Inspection Report – Lube Oil Tank 052-00000833



STI Standard SP001 recommends this document containing valuable historical information be retained for the life of the tank.

Prepared for
NEW MARTINSVILLE HANNIBAL HYDROELECTRIC
NEW MARTINSVILLE, WV 26155

Inspection Completed on:
December 12, 2018

Signatures:

Dennis J Oberdove, STI Inspector No: AST 1614

TABLE OF CONTENTS

EXECUTIVE SUMMARY

An STI Formal External Inspection of the Lube Oil Tank 052-00000833 was completed to evaluate the tank's integrity, collect data, and establish a database for future inspections and evaluations. Inspection results are listed in section 4.1. Recommendations are listed in section 4.2 and Compliance Requirements are listed in section 4.3

CERTIFICATION

The following certification pertains to the inspection of the Lube Oil Tank 052-00000833 located at the New Martinsville Hannibal Hydroelectric Plant in New Martinsville, WV on December 12, 2018.

"I certify under penalty of law that this document and all attachments were prepared by me. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Dennis J Oberdove

Dennis J Oberdove, STI Inspector No: AST 1614

1.0 INTRODUCTION

1.1 Purpose:

1.1.1 This report provides an engineering evaluation of the Lube Oil Tank 052-00000833 and summarizes the results of an STI Formal External Inspection meeting the requirements of STI Standard SP001 conducted by *Tank Integrity Services, Inc.*

2.0 REFERENCES

2.1 American Petroleum Institute:

2.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.
2.1.2 API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks.
2.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.
2.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

2.2 American Society of Mechanical Engineers Codes:

2.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non-Destructive Examination.
2.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

2.3 Code of Federal Regulations:

2.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.
2.3.2 29 CFR 1910, Walking-Working Surfaces
2.3.3 29 CFR 1910, Flammable and combustible liquids
2.3.4 40 CFR 112, Pollution Prevention Regulations

2.4 National Association of Corrosion Engineers:

2.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.
2.4.2 NACE Recommended Practice, RP0193-93, External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms.
2.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

2.5 National Fire Protection Association:

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2.5.2 NFPA-70, National Electrical Code.

2.6 Underwriters Laboratories Inc:

2.6.1 UL-142, Steel Aboveground Tanks for Flammable and Combustible Liquids

2.7 Steel Tank Institute:

2.7.1 Steel Tank Institute SP001, Inspection of Aboveground Shop Built Tanks for Flammable and Combustible liquids.

2.8 West Virginia Code:

2.8.1 West Virginia Code 22-30-6 and/or 47CSR 62-3 – Interim Annual Inspection Certification for Above Ground Storage Tanks.

3.0 TANK DESCRIPTION

3.1 Tank Description:

Owner/Operator:	New Martinsville Hannibal Hydroelectric Plant		
Location:	New Martinsville, WV 26155		
Tank Number:	052-00000833		
Service:	Lube Oil		
Height:	8 Feet, 1 Inch		
Diameter:	6 Feet 7 Inches		
Capacity:	2,000 Gallons		
Configuration:	Vertical (Single-Wall)		
Foundation:	Concrete		
Containment:	Concrete Dike		
Category:	Category 1		
Construction:	Shell:	Butt-Welded	
	Heads:	Butt-Welded	
Material:	Shell:	Carbon Steel	
	Heads:	Carbon Steel	
Built:	1987 estimated		
Age:	31 years estimated		
Specific Gravity	.84		
Operating Limits:	Minimum Metal Temperature:		-20 F
	Maximum Metal Temperature:		200 F
	Minimum Pressure:		Atmospheric
	Maximum Pressure:		Product
Seismic Zone:	1		
Construction Code:	UL-142		
Inspection Type:	STI Formal External		
Inspector Name:	Dennis J Oberdove		

4.0 INSPECTION

4.1 Results:

4.1.1 Containment: The tank sits in a concrete walled room serving as a dike. The dike acts as a form of spill control. Overall, the dike was found to be an acceptable form of spill control. The dike is sufficient in size to contain more than 110% of the tank capacity. The secondary containment area is also equipped with an electronic heat sensing and fire protection system which is monitor in the control. There is also a physical walk through inspection on this tank and containment area conducted every two (2) hours.

4.1.2 Foundation: The tank rests on a concrete pad foundation. The foundation was evaluated during the inspection. No cracks or breaks are present in the concrete pad foundation. The foundation is in satisfactory condition and is structurally sound. The tank foundation is level and stable with no movement present in the tank system

4.1.3 Tank Shell: The tank shell is a butt-weld design. A visual inspection was performed on the external shell welds where accessible. No visual discrepancies are present in the accessible external shell welds. The welds are in satisfactory condition and are structurally sound. A visual inspection was performed on the tank shell plates where accessible revealing no structural discrepancies. The tank shell was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken in various locations throughout the tank shell. Thickness measurements are listed in the engineering data in Appendix A. A shell service life evaluation was performed on the tank shell, showing the shell to have > 20 years of remaining life under current conditions. The tank shell is structurally sound and is in satisfactory condition.

4.1.4 Roof: The tank top is a butt-weld design. A visual inspection was performed on the top welds where accessible. No visual discrepancies are present in the evaluated roof welds. The welds are structurally sound and in satisfactory condition. The tank top was evaluated for remaining metal thickness utilizing ultrasonic technology where accessible. Thickness measurements were taken throughout the tank roof in various locations. Thickness measurements are listed in the engineering data in Appendix A. The tank top is structurally sound and in satisfactory condition.

4.1.5 Shell Appurtenances: The tank nozzles were evaluated in accordance with STI SP001 & UL 142. The product piping was evaluated during the inspection. The product lines were in satisfactory condition at the time of inspection. No signs of product leakage were present at the time of inspection. The tank does have means of ventilation via a 2” atmospheric vent. The tank is equipped with a visual sight gauge on the tank. The level monitors were evaluated and are in satisfactory condition.

4.1.5 Paint/Insulation: Over the course of the inspection the tank coating was inspected and evaluated. The tank’s coating was in satisfactory condition.

4.2 Maintenance Recommendations:

4.2.1 Containment: None.

4.2.2 Foundation: None.

4.2.3 Tank Roof, Bottom and Shell: None.

4.2.4 Shell Appurtenances: None

4.2.5 Paint/Insulation: None

4.3 Compliance Requirements:

4.3.1 Containment: None

4.3.2 Foundation: None

4.3.3 Tank Roof, Bottom and Shell: None.

4.3.4 Shell Appurtenances: None.

4.3.5 Paint/Insulation: None.

4.4 Serviceability:

4.4.1 The Lube Oil tank is in compliance with the requirements of STI Standard SP001 for structural integrity. The following schedule should be implemented.

4.4.2 The next visual inspection should be accomplished by a Certified STI Inspector prior to **December 12, 2023** in accordance with STI Standard SP001..

4.4.3 The next ultrasonic thickness measurement inspection should be accomplished by a Certified STI Inspector prior to **December 12, 2028** in accordance with STI Standard SP001.

Appendix A

Engineering Data

1. Field Data
2. UT Charts

TANK INTEGRITY SERVICES INC.

Shell Life Evaluation : Data Result				
Owner/Operator :	NEW MARTINSVILLE HYDROELECTRIC PLANT			
Tank # :	LUBE OIL #052-00000833			
Plate Specification :	UNKNOWN			
Material :	CARBON STEEL			
Manufactured Date :	1987			circa
Tank Specification :				
Height :	8	*feet*	1	*inches*
Diameter :	6	*feet*	7	*inches*
Volume :	2,000			*gallons*
Specific Gravity :	**G**	0.84		
Joint Efficiency :	**E**	1		
Age of Tank :	△	31		*years*

T	Specified minimum tensile strength * (lb/in²)			55,000
Y	Specified minimum yield strength (lb/in²)			21,000
S	Maximum allowable stress, first and second (lb/in²)			23,595
	Maximum allowable stress, for all other (lb/in²)			23,485
			0.80Y	0.429T
Smaller of the two	Bottom and Second Course		16,800	23,595
		23,595	0.88Y	0.427T
	All Other	23,485	18,480	23,485

*Smaller of two specified minimum or 80,000 (lb/in²)

Shell Course #	Product Height *Ft* *(feet)*	Maximum Allowable Stress *(psi)* *S*	Joint Efficiency *E*	Previous Measured Thickness *(inches)* *(t orig)*	Current Measured Thickness *(inches)* *(t act)*	[2,3] Minimum Acceptable Thickness *(inches)* *(t min)*	Corrosion Rate *(in/yr)* *(Cr)*	[1] Remaining Life *(ca.)* *(years)*	Next Visual Inspection *(years)* *(I v)*	Next UT Inspection *(years)* *(1 ut)*	Next OS Inspection *(years)* *(I os)*
SHELL COURSE 1	8.08	23,595	1	0.281	0.276	0.100	0.00016	>20	2023	2028	2028
ROOF	N/A	23,485	1	0.203	0.197	0.100	0.00019	>20	2022	2028	2028

NOTE:

1 The engineering data used to calculate in-service period of operation (Remaining Life) assumes the tank remains in the same service and all corrosion rates remain constant

2 Acceptable thickness in any 100 in2 shall not be less than 0.100 in.

3 UL-142 Section 17.2.1 , 25.1, and 13.2.1 for Horizontal, Vertical and rectangular tanks <50,000 gal and >50,000 gal. API 653 Section 4.3.2.1 , 4.3.4.1 and 4.4.1

Tank Integrity Services Inc.
Rev. 9807-2

TANK SHELL ULTRASONIC READINGS

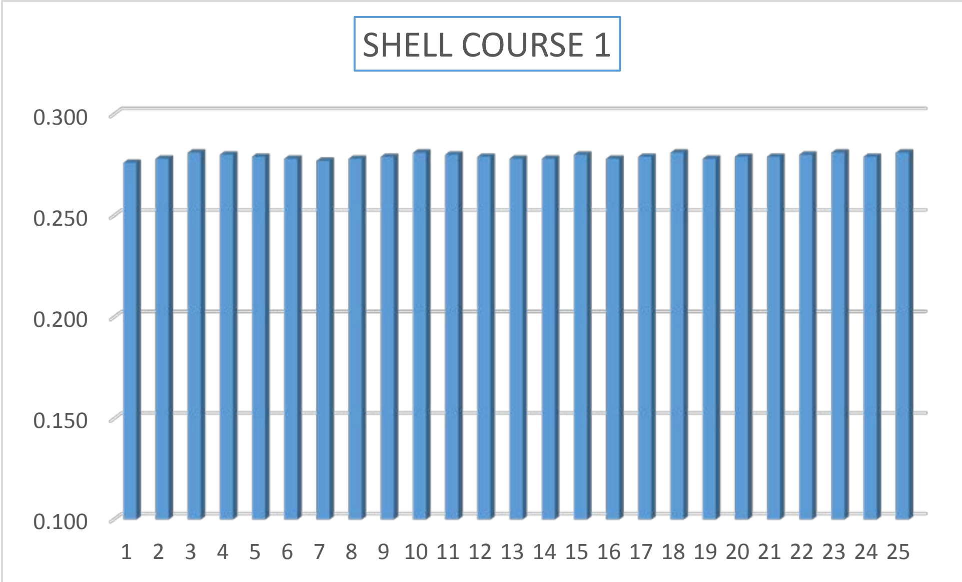
SHELL COURSE 1	
1	0.276
2	0.278
3	0.281
4	0.280
5	0.279
6	0.278
7	0.277
8	0.278
9	0.279
10	0.281
11	0.280
12	0.279
13	0.278
14	0.278
15	0.280
16	0.278
17	0.279
18	0.281
19	0.278
20	0.279
21	0.279
22	0.280
23	0.281
24	0.279
25	0.281
Average	0.279
t_{orig}	0.281

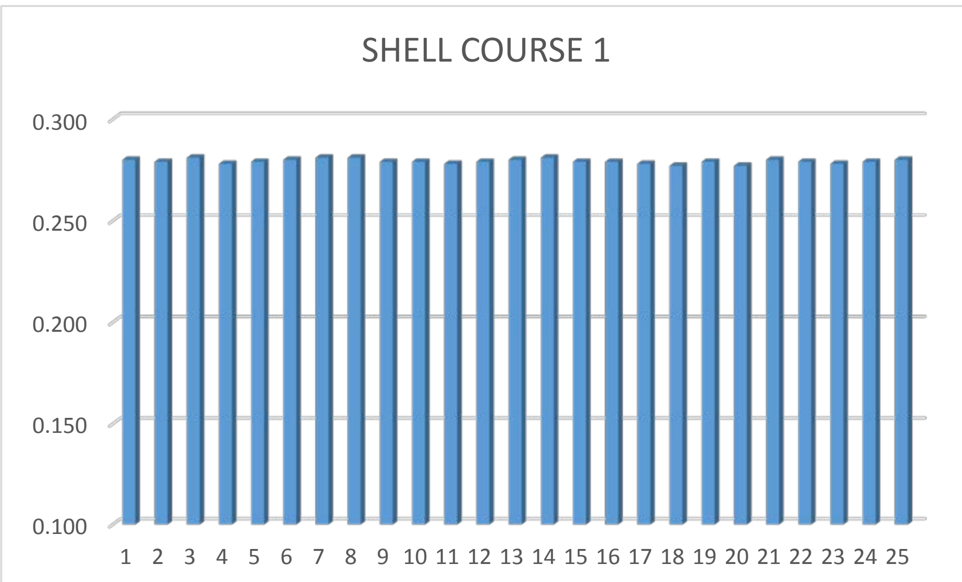
SHELL COURSE 1	
1	0.280
2	0.279
3	0.281
4	0.278
5	0.279
6	0.280
7	0.281
8	0.281
9	0.279
10	0.279
11	0.278
12	0.279
13	0.280
14	0.281
15	0.279
16	0.279
17	0.278
18	0.277
19	0.279
20	0.277
21	0.280
22	0.279
23	0.278
24	0.279
25	0.280
Average	0.279
t_{orig}	0.281

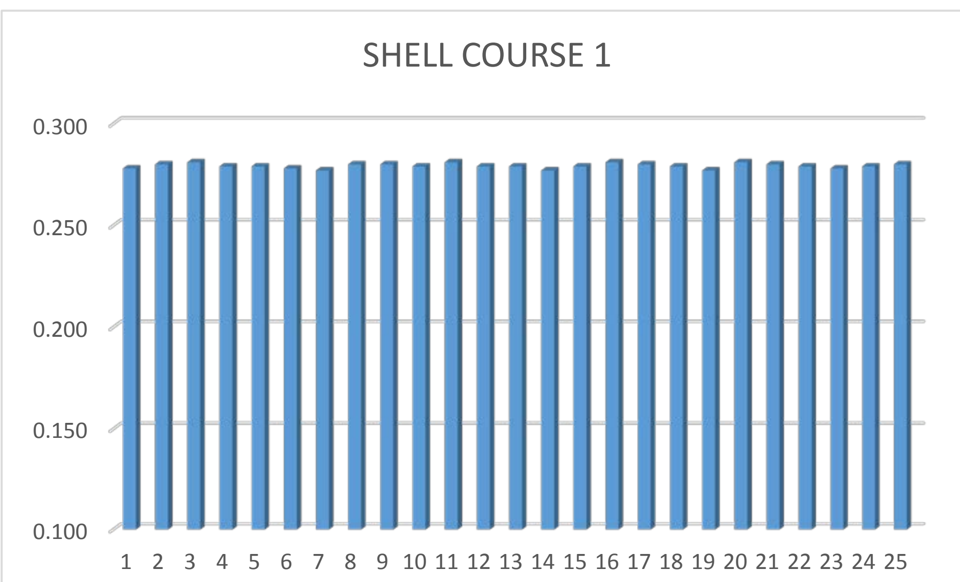
SHELL COURSE 1	
1	0.278
2	0.280
3	0.281
4	0.279
5	0.279
6	0.278
7	0.277
8	0.280
9	0.280
10	0.279
11	0.281
12	0.279
13	0.279
14	0.277
15	0.279
16	0.281
17	0.280
18	0.279
19	0.277
20	0.281
21	0.280
22	0.279
23	0.278
24	0.279
25	0.280
Average	0.279
t_{orig}	0.281

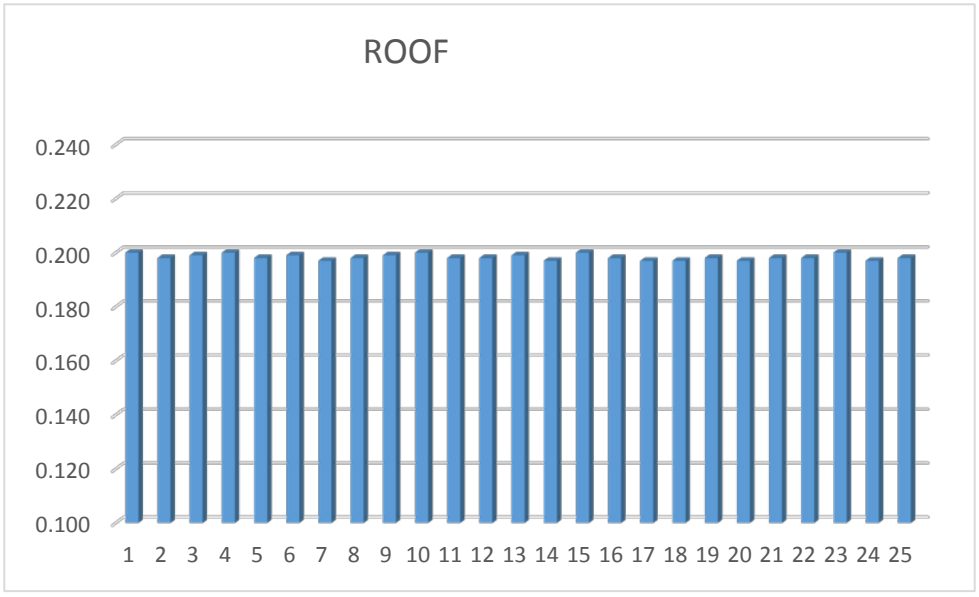
ROOF	
1	0.200
2	0.198
3	0.199
4	0.200
5	0.198
6	0.199
7	0.197
8	0.198
9	0.199
10	0.200
11	0.198
12	0.198
13	0.199
14	0.197
15	0.200
16	0.198
17	0.197
18	0.197
19	0.198
20	0.197
21	0.198
22	0.198
23	0.200
24	0.197
25	0.198
Average	0.198
t_{orig}	0.203

t_{orig} = The original metal thickness


SHELL COURSE 1
0.300
0.250
0.200
0.150
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

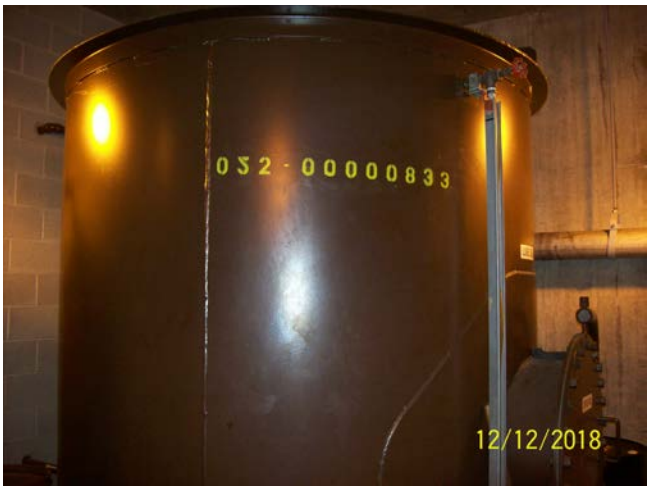

SHELL COURSE 1
0.300
0.250
0.200
0.150
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


SHELL COURSE 1
0.300
0.250
0.200
0.150
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


ROOF
0.240
0.220
0.200
0.180
0.160
0.140
0.120
0.100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Appendix B

Photographs



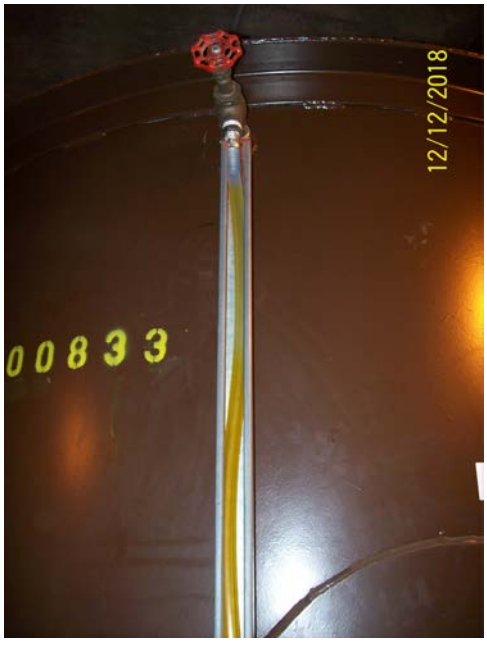
Tank Id

2” Discharge Line & Tank Drain Line

Tank Atmospheric Vent

Tank Ground Strap

24” Manway



Liquid Level Site Glass Tube

Tank Foundation & Tank Bottom Chime

Concrete Dike

Shell Butt Weld Design

Tank Roof Welded To Shell & Lifting Lug

Tank Roof

Tank Fill Station

Tank Discharge Station

Discharge & Filling Station Containment

Discharge & Filling Station Containment

Lube Room Fire System

Lube Room Heat Sensor

Lube Tanks Filling Station

Lube Room Fire Protection

Lube Room Fire Monitoring In Control Room

Appendix C

STI Checklist

STI SP001 AST Record

OWNER INFORMATION		FACILITY INFORMATION	
Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**	Name:	**NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT**
Address:	**1 HOWARD JEFFERS DR.**	Address:	**1 HOWARD JEFFERS DR.**
City, State Zip Code:	**Martinsville, WV 26155**	City, State Zip Code:	**Martinsville, WV 26155**

Tank ID: **052-00000833 LUBE OIL TANK**

SPECIFICATION:

Design:		UL-142		SWRI		Horizontal	X	Vertical		Rectangular
	X	API		Other:						
		Unknown								

Manufacturer:	**UNKNOWN**	Contents:	**LUBE OIL**	Construction Date: **1987**	Last Repair / Reconstruction Date:
Dimensions:	**8'1" H X 6'7" D**	Capacity:	**2000 GAL**	Last Change of Service Date:	

Construction:		Bare Steel		Cathodically Protected (Check One):		Galvanized		Impressed Current (Date Installed)	
	X	Coated Steel		Concrete		Plastic/Fiberglass		Other:	
		Double Bottom		Double Wall		Lined Date Installed:			
Containment		Earthen Dike		Steel Dike	X	Concrete		Synthetic Line	Other:

CRDM:	X	Date Installed:	**1987**	Type:	**CONCRETE DIKE**
Release Prevention Barrier:	X	Date Installed:	**1987**	Type:	**CONCRETE DIKE**

STI Checklist

Tank #: **LUBE OIL TANK #052-00000833** | Inspector: **Dennis Oberdove** | Date: **12/12/2018**

		SAT	Unsat	N/A
	Check Primary tank for the presence of water.			X
	Check secondary tank for the presence of water.			X
	Check interstice of a double wall tank for the presence of fuel.			X
X	Check all pipe connections to the tank for evidence of leakage.	X		
X	List any areas of coating deficiencies.	X		
	Inspect operating and emergency vents.			X
	Type of emergency vent: [ ] Pop-up [ ] Flip-up Size:			X
X	Check for proper drainage around the tank.	X		
X	Check foundation for signs of settlement, cracking or spalling.	X		
	Check cathodic protection if installed.			X
X	Conduct ultrasonic wall thickness testing.	X		
X	Visually inspect the exterior tank wall, nozzles, piping and appurtenances.	X		
X	What type of weld joints: [X] Butt [ ] Lap	X		
	Identify all areas of corrosion. Evaluate.			X
	Any area with less than 60% of the wall thickness remaining shall be repaired.			X
	Identify all areas of pitting. Evaluate.			X
	Any pit with less than 50% of the wall thickness remaining shall be repaired.			X
	Inert gas test tank (helium test).			X
	List tank manufacture data that is available.			X
	Reviewed the onsite SPCC Plan.			X
X	Type of construction: [ ] API-650 [X] API-12F [ ] UL-142 [ ] STIF911 [ ] STIF921	X		
X	Type of layout [X] Open dike [ ] Diked with rainshields [ ] Double Wall	X		
	UL-2244 type tank such as…Generator tank			X
	Vaulted tank			X

Comment on all Unsat Items minimum:

ALL CONDITIONS ARE SATISFACTORY.

Appendix D

DEP Interim Annual Inspection Certification

INTERIM ANNUAL INSPECTION CERTIFICATION
Aboveground Storage Tank
(tank, associated equipment, leak detection system and secondary containment structure, if applicable)
Is Fit for Service

AST Facility Name	NEW MARTINSVILLE HANNIBAL HYDROELECTRIC PLANT
Address	1 HOWARD JEFFERS DR.
City, State, Zip	Martinsville, WV 26155
Tank Owner Name	CITY OF NEW MARTINSVILLE, WV
Telephone Number	304-455-5200
Email Address	nmhydro@frontier.com
Certifying Individual	DENNIS J OBERDOVE
Address	9881 YORK THETA DR.
City, State, Zip	NORTH ROYALTON, OHIO 44133
Telephone Number	440-237-9200
Email Address	OBE@TANKINTEGRITY.COM
Facility's/Owner's Tank ID #	052-00000833
DEP Tank Registration Number (if issued)	052-00000833

I certify that I have personally examined and/or am familiar with the inspection performed on the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, and that I am a person eligible to perform such inspection pursuant to W.Va. Code § 22-30-6 and/or 47 CSR 62-3. As no minimum standards have been adopted by the Act or by legislative rule as of the date of this certification, I certify pursuant to W.Va. Code § 22-30-6(a), based on my direct knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, that the AST listed above, including its associated equipment, leak detection system and secondary containment structure, if applicable, is fit for service and no apparent threat of leakage exists. Deficiencies, if any, found during the inspection of the AST, including its associated equipment, leak detection system and secondary containment structure, if applicable, are described in the attached document(s) along with my recommendations and a schedule for abating said deficiencies.

*Signature of Certifying Individual

12/12/2018
Date Signed

STI INSPECTOR NO: AST-1614

P.E. Registration #, STI Certification # or API Certification # (if applicable)

Registration/Certification Expiration Date (if applicable)

*Please refer to Interpretive Rule §47-62-3 to determine who must certify your tank.

Aboveground Storage Tank Base Penalty Calculation

Pursuant to WV Legislative Rule 47CSR65 Section 6

Responsible Party: City of New Martinsville **Registration/ Permit Number:** 2014-0005982

Enter FOF# and rate each finding as to Potential and Extent.

1)	Potential for Harm Factor	Factor Range	FOF# 5a, 8a	5b, 8b	5c, 8c	5d, 8d									
a)	Length of Time	1 to 3	1	1	1	1									
b)	Actual Exposure and Effects thereon	0 to 3	1	1	2	2									
c)	Potential Seriousness of Contamination	1 to 3	1	1	1	1									
	Average Potential for Harm Factor		1	1	1.3	1.3	No	No	No	No	No	No	No	No	No
2)	**Extent of Deviation Factor**	**Factor Range**													
	Degree of Non-Compliance	1 to 3	1	1	3	1									

Potential for Harm Factors

1a. - Length of time

- Total length of time the violation has occurred will be considered

1b. - Actual Exposure - factors to be considered include but are not limited to: evidence of a release, failure to perform corrosion protection, and adequacy of provisions for detecting and preventing a release

1c. - Potential Seriousness of Contamination - factors to consider include but are not limited to quantity and toxicity of substances (potentially) released, likelihood or fact of transport by way of environmental media (e.g. air, groundwater, and surface water), and existence, size and proximity of receptor populations (e.g. public water intakes, local residents, fish, wildlife) and sensitive environmental media (e.g. surface waters and aquifers.)

Note: Rate as 1 for Minor, 2 for Moderate and 3 for Major. Rate as 0 if it does not apply.

Continue rating Findings of Facts (FOF) here, if necessary. Otherwise, continue on Page 3.

1)	Potential for Harm Factor	Factor Range	FOF#										
a)	Length of Time	1 to 3											
b)	Actual Exposure and Effects thereon	0 to 3											
c)	Potential Seriousness of Contamination	1 to 3											
	Average Potential for Harm Factor		No	No	No	No	No	No	No	No	No	No	No
2)	**Extent of Deviation Factor**	**Factor Range**											
	Degree of Non-Compliance	1 to 3											

		Extent of Deviation from Requirement		
		Major	**Moderate**	**Minor**
Potential for Harm to Human Health or the Environment	**Major**	$8,000 to $10,000	$6,000 to $8,000	$5,000 to $6,000
	Moderate	$4,000 to $5,000	$3,000 to $4,000	$2,000 to $3,000
	Minor	$1,500 to $2,000	$1,000 to $1,500	Up to $1,000

FOF #	Potential for Harm	Extent of Deviation	Penalty	Multiple Factor	Base Penalty
5a, 8a	Minor	Minor	$1,000	1	$1,000
5b, 8b	Minor	Minor	$1,000	10	$10,000
5c, 8c	Moderate	Major	$4,330	10	$43,300
5d, 8d	Moderate	Minor	$2,330	10	$23,300
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
0	FALSE	FALSE	FALSE	1	$0
Total Base Penalty					$77,600

Penalty Adjustment Factors

Penalty Adjustment Factors

6.2.b.1 - Good faith efforts to comply or lack of good faith - 10% decrease to 10% increase

6.2.b.2 - Degree of Willfulness and / or Negligence - 0% to 30% increase

6.2.b.3 - Cooperation with the Secretary - 0% to 10% decrease

6.2.b.4 - History of Non-Compliance - 0% to 100% increase -
based upon review of last three (3) years - Warning = maximum of 5% each, N.O.V. = maximum of 10% each, previous Order = maximum of 25% each

6.2.b.5 - Ability to pay a civil administrative penalty - 0% to 100% decrease

6.2.b.6 - Economic Benefit of non-compliance

6.2.b.7 - Staff Investigative Costs

6.2.b.8 - Other relevant factors determined on a case-by-case basis

Base Penalty Adjustments

Penalty Adjustment Factor	% Increase	% Decrease	Base Penalty Adjustments
6.2.b.1 - Good Faith - Increase			$0
6.2.b.1 - Good Faith - Decrease		10	($7,760)
6.2.b.2 - Willfulness and/or negligence	10		$7,760
6.2.b.3 - Cooperation with the Secretary		10	($7,760)
6.2.b.4 - Compliance/noncompliance history			$0
6.2.b.5 - Ability to Pay an Administrative Penalty			$0
6.2.b.6 - Economic Benefit (flat monetary increase)	$0		$0
6.2.b.7 - Staff Investigative Costs (flat monetary increase)			$0
6.2.b.8 - Additional Other Factors - Increase (flat monetary increase)			$0
6.2.b.8 - Additional Other Factors - Decrease (flat monetary decrease)			$0
Public Notice Cost (flat monetary increase)	$30		$30
Penalty Adjustments			**($7,730)**
Penalty =			**$69,870**

Estimated Economic Benefit Item	Estimated Benefit ($)
Monitoring & Reporting	
Installation & Maintenance of Corrosion or Leak Detection Equipment	
O&M expenses and cost of equipment/materials needed for compliance	
Permit Application or Modification	
Competitive Advantage	
Estimated Economic Benefit	**$0**
Comments: Economic benefit not warranted.	