NEBRASKA WATER ENVIRONMENT ASSOCIATION

The EffluentLine

Volume 55 | Number 1

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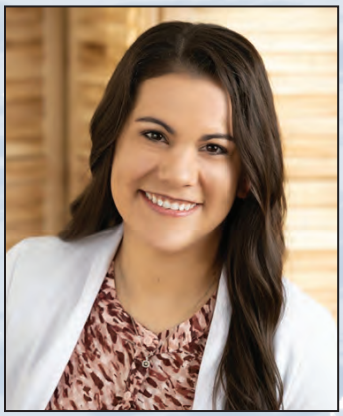

10 Year Member Spotlight *- Dallas Powell*

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Overview

The Nebraska Water Environment Association (NWEA) is a member association of the Water Environment Federation, a not-for-profit technical and educational organization that was founded in 1928. Its mission is to preserve and enhance the global water environment. Federation members are 41,000 water quality specialists from around the world, including environmental, civil and chemical engineers, biologists, government officials, treatment plant managers and operators, laboratory technicians, college professors, students, and equipment manufacturers and distributors.

The Effluent Line is an official publication of the Nebraska Water Environment Association, published by the Public Communications and Outreach Committee (PCOC). The Association is a non-profit corporation in the State of Nebraska dedicated to the improvement of water quality in the State of Nebraska. Editorials, Articles, Web Page content and Outreach Committee opinions are not necessarily official positions or endorsements of the Association, its officers, or committee member employers.

To submit news-articles or organization-related correspondence please go to the "Article Submittal Form" on the website (*www.nebwea.org*) under the **NEWSLETTER** drop down at the top of the main page.

For any other inquires about the newsletter, website, or social media platforms please contact:

Brittni Stephens, PE - PCOC Chair
Nebraska Water Environment Association
2111 S. 67th Street, Suite 200 Omaha, NE 68106
Office: (402) 938-2463 **Cell:** (402) 430-1610
Email: *bstephens@olsson.com*

Save the Dates

Conference Dates	
Great Plains Conference	March 27-28, 2024
Heartland Conference	July 17-18, 2024
Joint Fall Conference	November 6-8, 2024
Register Online at *Nebwea.org*	

Executive Board Meetings	
March 27, 2024	10:00-12:00
July 18, 2024	1:30-3:30
November 5, 2024	3:00-5:00
November 7, 2024	10:00-12:00
November 6, 2024	1:30-3:30

Public Education Committee Volunteer Opportunities	
Central Nebraska STEM Fair (Kearney)	March 27, 2024
Greater Nebraska STEM Fair (Nebraska City)	March 23, 2024
Elkhorn H2O Daze (Norfolk)	March 19-20, 2024
NJAS State STEM Fair (Wesleyan University Lincoln)	April 18, 2024
NE Children's Groundwater Festival (Grand Island)	May 14, 2024
World O! Water (Chalco Hills Recreation Center)	Sept 7, 2024

Where to Find Us

Online	*www.nebwea.org*
LinkedIn	*www.linkedin.com/company/nebraska-water-environment-association*
Facebook	*https://www.facebook.com/NebraskaWEA/*
Twitter / X	*https://twitter.com/NebraskaWEA*

Review of Board and Chairpersons

2024 Executive Board		
President	Brittany Travers	(402) 880-0321
President Elect	Blake Birkel	(402) 937-3680
Vice President	Marc Rosso	(531) 207-3244
Federation Delegate	Scott Aurit	(402) 926-7082
Federation Delegate	Lucas Billesbach	(402) 319-5951
Treasurer	Ryan Hurst	(402) 443-3222
Secretary	Jeremy Walker	(402) 458-5657
Director at Large	Doug Glaze	(308) 324-3902
Director at Large	Darren Jack	(402) 742-2941
Director at Large	Shawn Ovenden	(402) 399-4896
Past President	George Hunt	(402) 554-4842
At Large Member	Scott Seelhoff	(402) 742-2941
At Large Member	Kylie Wilmes	(402) 727-2672
At Large Member	Lee Dunn	(402) 709-3646
2024 Committee Chairpersons		
Arthur Sidney Bedell Award	Mike Milius	(308) 227-2630
Finance and Audit	Mike Milius	(308) 227-2630
Awards	Aaron Dressel	(402) 580-9758
Collection System	Adam Wilmes	(402) 250-3001
Constitution & Bylaws	Jeremy Walker	(402) 458-5657
Diversity, Equity & Inclusion	Garrett Lane	(402) 829-1328
Governmental Affairs	Derek Gardels	(402) 926-7121
Great Plains Waste Management	Daria Sakharova	(412) 580-2314
Industrial/Hazardous Waste	Dillon Devitt	(402) 926-7109
Life Member/Quarter Century	Jeremy Walker	(402) 458-5657
Mfr. & Representatives Committee (MARC)	Lee Dunn	(402) 709-3646
Membership	Jeff Saltzman	(402) 669-6016
Nominating	Lucas Billesbach	(402) 319-5951
NWOC Advisory/Training	Scott Seelhoff	(402) 727-2672
Pretreatment/Industrial Waste	Abhijeet Saraf	(217) 979-6333
Program	Blake Birkel	(402) 937-3680
Public Communications and Outreach	Brittni Stephens	(402) 430-1610
Public Education	Scott Seelhoff	(402) 727-2630
Resource Recovery/Biosolids	Keegan Bell	(402) 444-3503
Safety	Joel Jirak	(402) 458-5657
Scholarship	Dr. George Hunt	(402) 554-4842
Scott Wilber Award	Aaron Gustin	
Student Activities	Dr. George Hunt	(402) 554-4842
Training	Ryan Hurst	(402) 443-3222
William Hatfield Award Chair	Aaron Dressel	(402) 580-9758
Young Professionals	Abhijeet Saraf	(217) 979-6333
5S Award	Jon Harger	(515) 233-8599

PCOC Committee	
Chair - Brittni Stephens	(402) 430-1610
Newsletter	
HDR Graphics	(402) 399-4814
Daria Sakharova	(412) 580-2314
Jake Hansen	(402) 214-5301
Ryan Hurst	(402) 443-3222
Todd Boling	(402) 441-7965
Brian Gongol	(515) 979-2837
Scott Aurit	(402) 926-7082
Blake Birkel	(402) 937-3680
Aaron Dressel	(402) 580-9758
Sarah Espinosa	(515) 979-2837
Jay Holz	
George Hunt	(402) 554-4842
Jim Mahony	(515) 306-6000
Roger Protzman	(402) 844-3897
Jake Rink	
Leah Boudreau	
Marc Rosso	(531) 207-3244
Mike McBride	(402) 471-4244
Mike Milius	(308) 227-2630
Website	
Shawn Ovenden	(402) 399-4896
Social Media	
Edie Spencer	(402) 548-5049

Contributing Photographer
Daryl Kottwitz Photography

2023 New and Upgraded Nebraska Wastewater Operators

Class I ..... Seth H Malcom
Class I ..... Shad D McClain
Class I ..... Matthew T Brauch
Class I ..... Jesse D Ground
Class I ..... Bryan Lopez
Class I ..... Humberto Gonzalez
Class I ..... David P Reyes
Class I ..... Doug C Rienks
Class I ..... Gavin W Hilton
Class I ..... Anthony A Backer

Class II ..... Darren J Kuester Sr
Class II ..... Trent Georgiana
Class II ..... Tory W Edwards
Class II ..... Ralph D De Laune
Class II ..... Rusty A Wyckoff
Class II ..... Scottie A Sherman
Class II ..... Dakota E Dancer
Class II ..... Tyler J Urbanec
Class II ..... John R Dubbs
Class II ..... Nicholas W Turner
Class II ..... Daniel J Wescott
Class II ..... Jay M Ling
Class II ..... Wade A Luther
Class II ..... Charles M Dresch
Class II ..... Zane M Strode
Class II ..... Anthony T Kobus
Class II ..... Clayton J Carson
Class II ..... Trae M Anderson
Class II ..... Marty L Brown
Class II ..... Dustin M Anderson
Class II ..... Dustin J Ross
Class II ..... Jared A Chromy
Class II ..... Jason W Hamilton
Class II ..... Walter E Patras
Class II ..... Matthew R Franklin
Class II ..... James A Gillespie
Class II ..... Zachary R Karr
Class II ..... Zachary J Fergus
Class II ..... Shawn L Herfel
Class II ..... Trevor J Kowalski
Class II ..... Wendell D Russell II
Class II ..... Hayden M Ekberg
Class II ..... Joshua H Reinhard
Class II ..... Tyler M Van Peursem
Class II ..... Hunter M Oliver
Class II ..... Tory K Andersen
Class II ..... Richard K Marshall
Class II ..... Catherine A Quinones
Class II ..... Robert J Hart
Class II ..... Dan K Donaldson
Class II ..... Mason J Kautz
Class II ..... Bryan J Knutzen
Class II ..... Mason A Punteney
Class II ..... Lucas J Barloon
Class II ..... Bradley J Bode
Class II ..... Matt M Mulholland
Class II ..... Dustin J Kinnan
Class II ..... Samuel J Brodrick
Class II ..... Deven B Clark

Class III ..... John M White
Class III ..... Jeffrey L Updike
Class III ..... William J Schmidthuber
Class III ..... Robert J Hall Jr
Class III ..... Matthew P Dworak
Class III ..... Praveenkuma Bharathidasan

Class IV ..... Robert Stiles
Class IV ..... Steven A Greenland
Class IV ..... Derick A Gaspard
Class IV ..... Brandon M Rezac
Class IV ..... Ricardo Vazquez
Class IV ..... Mike McBride

Class L ..... Daniel L Otto
Class L ..... Casey J Hughes
Class L ..... Scott A Armstrong
Class L ..... Brian L Argo
Class L ..... Patrick J Powell
Class L ..... Gunner W Tracy
Class L ..... Cody N Trusty-Solko
Class L ..... Dane Jeffords
Class L ..... Tim Wilke
Class L ..... Marty K Larson
Class L ..... Jonathan W Vesely
Class L ..... Natisha T Winkelman
Class L ..... Gary Vocasek
Class L ..... Brett M Kysar
Class L ..... William C Arneson
Class L ..... Tim Jacoby
Class L ..... Brent M Kasl
Class L ..... Troy K Behnke
Class L ..... Jason D Willard
Class L ..... Zachary B Hansen
Class L ..... Eric J Gosnell
Class L ..... Xavier Z Robb
Class L ..... Jacob F Zavala-Edie
Class L ..... Jesse L Raabe
Class L ..... Austin J Peterson
Class L ..... Albert W Slater
Class L ..... Brandon L Osentowski
Class L ..... Brady M Baker
Class L ..... Nickolas E Sanders
Class L ..... Robert JR Shriner

Class IND 1 ..... Dustin D Dierberger
Class IND 1 ..... Jared F Kuta
Class IND 1 ..... Kasey W Moffett
Class IND 1 ..... John E Perea Jr
Class IND 1 ..... Joseph B Anderson
Class IND 1 ..... Jonathan J Schneider

Class IND 2 ..... Russell W Welch
Class IND 2 ..... Ryan Ravenscroft
Class IND 2 ..... Gary Wahle
Class IND 2 ..... Jason M Case
Class IND 2 ..... Robert J Bergeron
Class IND 2 ..... Stephan F Gallagher
Class IND 2 ..... Michael J Rademacker
Class IND 2 ..... David H Skaanning
Class IND 2 ..... Jamie L Aubuchon

Letter from the President

Welcome to 2024! As we embark on this new year filled with opportunities and challenges, I am honored to serve as your President and guide our association towards continued success and growth.

Allow me to introduce myself to those who may not know me well. I am Brittany Travers, or as Amit dubbed me at the fall conference banquet, Madame President :)! I have been involved with the Nebraska Water Environment Association for almost 13 years, serving on various committees and eventually making my way through the board positions. My full-time job is with Engineered Equipment Solutions (EES) as a manufacturer's representative covering the Nebraska and western Iowa territory. I'm married to my husband Matt and have two very active boys, Hudson (9), and Sullivan (5). I have a passion for environmental stewardship, and I am committed to serving our members and advancing our mission.

The recent Snowball Conference held in Kearney was a success. A special thanks to Rob Pierce for leading the organization of the conference once again. There were approximately 160 attendees and 20 vendors exhibiting. The conference provided a platform for meaningful discussions, knowledge sharing, and networking opportunities.

A free virtual NWEA 201 presentation was held on February 8th, offering 1.5 CEU/PDH credits towards continuing education. The focus of the event was to educate our members and non-members on what NWEA is, what we stand for, opportunities available within NWEA, the benefits of joining the Water Environment Federation (WEF), and to encourage everyone to get involved in the organization. Shout out to the Public Communications and Outreach committee for organizing the webinar and thank you to those that attended!

Looking ahead, here is a lineup of upcoming events:

1. Operator Certification Training, March 11th-13th, Test March 14th, held in Hastings, NE
2. 68th Annual Great Plains Waste Management Conference, March 27th & 28th at the Embassy Suites, La Vista, NE

I encourage you to mark your calendars and participate in these opportunities to learn and connect with your peers.

In our efforts to better serve our members, we are actively working on several initiatives. These include:

1. Updating the Constitution and Bylaws and combining them into one document. Once this has been reviewed by WEF, a copy will be emailed to the membership for comment. We encourage feedback, so please don't hesitate to reach out to any of the board members. Be on the lookout prior to the Great Plains Conference for this information.
2. Grant funds are available and can be used for a multitude of purposes including new initiatives and supporting our membership. The grant application form can be found on the NWEA website or by contacting the Finance & Audit committee. We'd love to hear your ideas!
3. Supporting the transition of NWOD members to full WEF/NWEA members. We have (5) complementary WEF memberships to offer as well as funds available to operators wanting to become a member of WEF but may be encountering a financial hurdle. Reach out to the NWOD or Membership committees for assistance.

In closing, I want to express my gratitude to each and every one of you for your dedication to the Nebraska Water Environment Association. I look forward to a great year ahead!

Best regards,

BRITTANY TRAVERS
NWEA President

Executive Board Members

Federation Delegate - Scott Aurit
HDR
Phone: 402-926-7082
Email: *scott.aurit@hdrinc.com*

Scott graduated from the University of Nebraska with a degree in Biological Systems Engineering in 1999. He is currently serving as the Conveyance Section Manager at HDR while working on the City of Omaha's Combined Sewer Overflow Control Program. His combined sewer overflow program and project management experience includes numerous wastewater conveyance projects and oversight of the implementation of water resource recovery improvements, lift station improvements, tunnel projects, large diameter force main projects, and high-rate treatment facilities. He has successfully lead long term control plan basin studies and assisted in the development and implementation of long term control plans. Scott has designed various water/wastewater projects including conveyance sewers, transmission mains, lift stations, water treatment plants, and other related municipal projects.

Scott has served in various roles and committees in NWEA and WEF over the past 17 years, including NWEA president and WEF delegate-at-large. Scott is an active member in the WEF Collection Systems Committee.

Federation Delegate - Lucas Billesbach
Embris Group
Phone: 402-319-5951
Email: *lucasbillesbach@embrisgroup.com*

Lucas is an owner/Principal at Embris Group having helped form the company in 2022. He has over 15+ years of experience in assisting local governments with their water and engineering challenges. Lucas graduated from the University of Nebraska with a bachelor's degree in civil engineering in 2005 and completed his Master of Business Administration from Creighton University in 2010. He is married to his wife Sarah and together they have three kids (Quinn, Lucy, and Vita). When not bouncing between sporting events, the family enjoys time on the lake and wake surfing. Lucas began with NWEA as chair of the Great Plains committee and continued his service through the board positions completing his term as President in 2021. In addition to his role as a delegate, he continues to assist NWEA on the finance committee, scholarship committee, and the conference planning committees.

President - Brittany Travers
Engineered Equipment Solutions
Phone: 402-880-0321
Email: *Brittany@e-equipmentsolutions.com*

Brittany joined Engineered Equipment Solutions (EES) in early 2011 and is the Regional Sales Manager of the Nebraska and Western Iowa territory. EES is a manufacturer's representative company focusing on water and wastewater process equipment. Brittany earned her Bachelor of Science degree in Industrial Engineering from Iowa State University in 2007. Brittany grew up in Columbus, NE and currently lives in Elkhorn with her husband, Matt, and sons, Hudson and Sullivan. In her free time, she enjoys going to her kid's activities and traveling as much as possible! Brittany started her NWEA journey by joining and eventually chairing the Young Professionals committee. She has also chaired the Public Education committee for numerous years and has been an active member of the Safety and Membership committees. She joined the board in 2016 and is excited and honored to serve as this year's President.

President Elect - Blake Birkel
JEO Consulting Group
Phone: 402-934-3680
Email: *bbirkel@jeo.com*

Blake is a Principal at JEO Consulting Group with more than 17-years of experience

Executive Board Members (Cont.)

working on a variety of drinking water and clean water projects throughout the Midwest. He is a graduate of the University of Nebraska – Lincoln with a Bachelor of Science in Civil Engineering (2006) and Master of Science in Environmental Engineering (2012). He is a registered professional engineer in the states of Nebraska, Iowa, and Kansas. Since joining the NWEA in 2007, he has served on multiple committees for the association including the Great Plains Conference, Membership, Publications, Scott Wilbur Award and Young Professionals. He joined the NWEA Executive Board in 2021.

Blake is a life-long Nebraska resident (born in Columbus) and currently resides in Omaha with his wife (Andrea) and three school-aged children (Hannah, Halle and Mason). He and his family enjoy spending their time together outdoors – swimming/boating in the summer months and skiing the Rocky Mountains in the winter.

Vice President - Marc Rosso
City of Lincoln
Senior Construction Engineer

Marc Rosso currently serves as Treasurer for the NWEA. Marc is a 1990 graduate of the University of Colorado with Bachelors of Science in Civil Engineering. He has 30 years of experience in civil engineering work in many disciplines. Marc has been heavily involved in association work for NWEA, AWWA and APWA since coming to Lincoln in 2005. He was inducted into the NWEA 5S society in 2017. Early in his career in 1998 he presented at WEFTEC in the small systems track on the Hay Springs, NE Wastewater Land Application project. On the water side he serves as the Vice Chair for the Nebraska Section of AWWA and is also a member of the AWWA Membership Engagement and Development Committee.

Past President - George Hunt, Ph.D., PE
Department of Civil and Environmental Engineering
College of Engineering
University of Nebraska-Lincoln
Phone:402-554-4842
Email: *ghunt2@unl.edu*

Dr. Hunt has over 20 years of professional experience in civil engineering both in engineering consulting firms as well as at state and federal agencies including the North Carolina Division of Water Quality and the U.S. Army Corps of Engineers. Most recently, Dr. Hunt was a senior civil engineer at Burns and McDonnell in Omaha, Nebraska and is an assistant profession of practice at the University of Nebraska in the Department of Civil and Environmental Engineering. His research and teaching interests are in the areas of surface water hydrology, hydrodynamic and water quality modeling, and watershed management. He is a licensed professional engineer in the state of Iowa and Nebraska.

Secretary - Jeremy Walker
Olsson
Phone: 402-458-5657
Email: *jwalker@olsson.com*

As a senior engineer for Olsson's Water/Wastewater team, Jeremy leads a wide range of water resource recovery projects. His Olsson tenure began in 2005. He is a 2018 alumnus of WEF's Water Leadership Institute. He received a BS in Civil Engineering from the University of Nebraska in Lincoln and is a registered professional engineer in Nebraska and Iowa.

A lifelong Nebraska resident, Jeremy resides in Lincoln with his wife Melissa and sons Sullivan and Carson.

Treasurer - Ryan Hurst
Wahoo Utilites

Ryan has a bachelor's degree in Water Resource Management and an associate degree in Environmental Science both from Florida Gateway College.

Ryan started his career with the City of Seward (his hometown)

Executive Board Members (Cont.)

as a water operator and spent 8.5 years there acquiring his water and wastewater treatment certifications and working his way up to facilities maintenance supervisor before taking a position in Minden Nebraska as Utilities Superintendent. Ryan spent 4 years with the City of Minden managing Electric Distribution, Water treatment and distribution and Wastewater Collections and Treatment.

In 2019 he took on the role of General Manager for the City of Wahoo Utilities, where he has been responsible for the development, coordination, direction and administration of the utility system including natural gas distribution, electric generation and distribution, water production and distribution and wastewater collection and treatment. Ensures that all utility systems operate in a safe and efficient manner in order to provide efficient service to the community in accordance with state and federal regulations and industry standards. Ryan also currently helps Southeast Community College as an Adjunct Instructor in the Energy Generations Operations program focused on teaching Water & Wastewater treatment electives.

Over the past 15 years Ryan has been extensively involved in statewide and national organizations providing training and networking for professionals in the Utilities industries. Ryan is on the Board of Directors for the Advanced Nuclear Coalition and currently is the Vice-Chair of the Nebraska Section American Water Works Association (AWWA), A director at Large on the Nebraska Water Environmental Associations Executive Board (NWEA). Ryan is also the Chair of the Nebraska Water/Wastewater Agency Response Network (NEWARN). Ryan is a past Chair of the NWEA Young Professionals Committee and served on the Water Environmental Federation Students and Young Professionals committee.

Director at Large - Doug Glaze
City of Lexington
Phone: 308-324-3902
Email: *dglaze@cityoflex.com*

Doug is the Superintendent of the Wastewater Treatment Facility for the City of Lexington, NE. In 1991 Doug graduate of Lexington High School and is a 2000 graduate of the University of Nebraska Medical Center with a B.S. in Medical Technology.

Doug's professional experience includes 6 years on the Laboratory staff at Tri-County Hospital, 6 years as the Laboratory, Safety & Environmental Compliance Manager at Cornhusker Energy Ethanol and 11 years with the City of Lexington in his current position. He is also a 13-year Rescue Chief and 18-year member of the Lexington Volunteer Fire Department with certifications as an EMT, Firefighter I, Hazmat Operations & SCUBA emergency dive and rescue.

Doug is a small-town Nebraska farm boy that married his high school sweetheart and moved back to his hometown to raise their family. Doug and his wife Kim currently live in Lexington where we enjoy remodeling projects, golf, travel, and volunteering for local community activities.

Director at Large - Darren Jack
HDR
Phone: 402-742-2941
Email: *darren.jack@hdrinc.com*

Darren is a Project Manager at HDR with over 20 years of engineering experience for a wide variety of municipal and industrial projects. He has experience in the study, design and construction of pump stations, municipal and industrial wastewater treatment facility studies and designs, water distribution systems, wastewater collection systems and construction management. Darren received his Bachelor's degree in Biological Systems Engineering from the University of Nebraska in 1997 and his Master's degree in Biosystems Engineering from the University of Arizona in 1999. Darren served as the Great Plains Conference chair from 2021 to 2023.

Darren lives in Lincoln with his wife Kim, son Dillon and daughter Ashley. Darren is a Certified Personal Trainer and in his free time enjoys training members at Madonna ProActive.

Executive Board Members (Cont.)

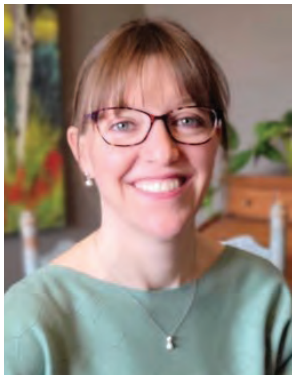
Director-at-Large - Shawn Ovenden
HDR
Phone: 402-399-4896
Email: *shawn.ovenden@hdrinc.com*

Shawn graduated from Iowa State University with a degree in Civil Engineering in 1993 and earned his PE in Nebraska in 2001. His got his start in Palatine, Illinois doing projects in the suburbs of Chicago, moved to Denver, and ultimately landed in Omaha in 2000. His experience includes residential, commercial, and industrial site design on private, public, and federal projects. He has been with HDR for the past 15 years and is currently serving as a Senior Civil Engineer working on various conveyance, site civil, and sewer inspection/rehabilitation projects. Shawn has been a member of the NWEA since 2011 starting out serving as the website developer and administrator and continues to lead this effort. Serving in this position has allowed him to work closely with several committees, help support the conference planning and execution efforts, and work with the executive board. He was recently nominated to join the executive board as a Director-at-Larg and is currently serving as the chair of the Conveyance Systems Committee. He is also a member of the APWA helping with website updates and volunteering at the committee level.

Shawn is married to his beautiful bride Nancy and has two sons, Eric working toward a dual degree in mathematics/computer science and Adam working toward an associates/certification in welding. Shawn enjoys power lifting, kayak fishing, wilderness adventures, and serving the community.

At Large Member - Scott Seelhoff
City of Fremont
Email: *Scott.Seelhoff@fremontne.gov*

Scott Seelhoff is the Assistant Superintendent for the Fremont Wastewater Treatment Plant. He began his water journey in September of 2014 as a Wastewater Operator. In the spring of 2015, he was hired as the Laboratory Technician for the Wastewater Plant. He worked in that position for several years learning laboratory testing and process control within an activated sludge system. In late 2018 he moved into the supervisory role that he has today. While in the industry he began getting involved with the NWOC. There he has been the secretary, vice chair, and currently is the committee chair. He is also the current Public Education committee chair, past Scott Wilber chair, and Training committee member. He really enjoys connecting with operators around the state and connecting with fellow water industry professionals while attending conferences. Outside of the NWEA he enjoys camping and playing golf with his family. He hopes to be a good representative for Wastewater Operators while serving on the NWEA Executive Board.



At Large Member - Kylie Wilmes
Embris Group
Phone: 402-253-4950
Email: *kyliewilmes@embrisgroup.com*

Kylie Wilmes is a Principal at Embris Group with 19 years of experience in civil engineering consulting. From designing sewer separation projects to tackling complex levee and stormwater issues, Kylie enjoys working on projects and being a trusted partner for her clients. Outside of work, you can find Kylie working around the house, spending time with her family (which includes her husband, 4 children, 1 dog, 1 cat, 9 chickens, 2 guinea pigs, 3 koi fish), and making every effort to get outside for a walk, hike, bike ride, or camping trip.

Kylie started out with NWEA as the Membership Committee Chair and later worked with others to start up the DE&I Committee. She joined the NWEA Board because she appreciates the presence of NWEA and WEF as a place for everyone to come together. Kylie hopes to learn more about the needs of the NWEA members, to learn more about the WEF resources and how they can help our members, and to contribute and be a part of this Community.

Executive Board Members (Cont.)

At Large Member - Lee Dunn
Gurney
Phone: 402-709-3646
Email: *lee@bgagurney.com*

Lee joined Gurney and Associates in 2016 as an Outside Sales Engineer. Gurney and Associates is a manufacturer's representative company focusing on water and wastewater processing equipment. Lee's past work experience includes 13 years in the Utility Industry as a power plant electrician, substation technician and substation redesign lead, 26 years in the Electromechanical Sales and Service industry as Branch Manager, Operations Manager, Sales Manager and General Manager, and 3 years as a manager in the Electrical Wholesale Distribution.

Lee has been involved in association work with NOWD, NWEA, NEAWWA and IAWEA since 2016. He is a member of the AWWA and WEF on the national level. He currently serves as a member at Large on the NWEA Executive Board, the Chairman of the AWWA MAC committee, and the Chairman of the NWEA MARC committee. He is also a member of the NWEA Bylaw committee, NWEA Scott Wilber committee, NWEA Maintenance training committee, and the IAWEA Maintenance Training committee. He received the IAWEA 5 W's Maintenance award in 2020.

Lee graduated with a two-year degree in electrical study from Northwest Kansas Technical College, he has multiple college credit hours in Management and Sales courses over his career. He has a master's certification in Biblical Counseling from Southwestern Baptist Theological Seminar, Biblical Study Certification from Midwestern Baptist Theological Seminary/Surgeon College, and he is currently studying for a BA degree in Christian Counseling at the Newburgh Theological Seminary.

Outside of work Lee enjoys traveling with his wife, spending time with his 6 children and 12 grandchildren. He fills his spare time volunteering at church and other organizations. On a part time basis, his does Counseling for couples, individuals, and addiction recovery. Lee is also a licensed Minister doing weddings, and funerals.

A State-of-the-Art Dewatering Facility

The new biosolids dewatering building at Lincoln's Northeast Water Resource Recovery Facility is exceeding performance expectations while expanding the city's biosolids program and allowing for future population growth. The facility had outgrown the liquid-biosolids land application system it had used for 45 years.

The City of Lincoln partnered with Olsson and Hawkins Construction to expand its biosolids handling capacity and diversify options for beneficial reuse. The new facility has been operational since November 2022.

By dewatering biosolids, the city expands its land application economic viability from a few miles to all of Lancaster County. During its first year of operation, the dewatering facility met or surpassed several performance goals, including an impressive 99-percent solids capture rate. (The goal was 95 percent.) In doing so, the facility captured 21 tons of nitrogen, 60 tons of phosphorus, and 6 tons of potassium — enough nutrients to fertilize 300 acres.

Key components of the dewatering process include two progressive cavity pumps, two decanter centrifuges, a screw conveyor, and a polymer feed system. Remaining nutrient-rich biosolids are then loaded by chutes into a truck waiting below.

Other project highlights include:

- **A 300,000-gallon sludge holding tank:** The expanded storage helps the city manage its dewatering schedule.
- **Reduced ventilation and heating costs:** By gaining variances to help classify the facility as a pipe gallery, Olsson engineers eased ventilation requirements from 24 hours a day every day to the 20 to 40 hours a week when the facility is operating or when hazardous materials are present.
- **Struvite mitigation:** By making operational changes to aeration basins and implementing a ferrous chloride feed system, the facility's tendency to generate the problematic mineral has decreased considerably.
- **Dispersion fans:** Powerful fans control odor by drawing a vacuum through the dewatering system and propelling gases as high as 50 feet into the air.

In the end, collaborative planning that focused on longevity, reliability, efficiency, and ease of operation and maintenance came together for a winning formula.

Written by **JEREMY WALKER** (Olsson), **JOEL JIRAK** (Olsson), and **TODD BOLING** (City of Lincoln)

Public Communications and Outreach Committee

Driving Engagement for NWEA

The Public Communications and Outreach Committee (PCOC) plays a pivotal role in fostering engagement, communication, and outreach within the Nebraska Water Environment Association organization. By expanding membership, enhancing efficiency, optimizing communication platforms, and defining success metrics, the committee continues to drive the association towards a future of informed and active participation.

We have so far completed the following tasks to maintain focus on our goals in 2024:

1. Diversify Our Voice

- Increased from 3 to 13 members with operations, regulatory, consultant, and contractor perspectives.
- Thank you to the following participants: Shawn Ovenden, Daria Sakharova, Jake Hansen, Ryan Hurst, Todd B, Brian Gongol, Mike Milius, Scott Aurit, Edie Spencer, Blake Birkel, Aaron Dressel, Sarah Espinosa, Jay Holz, George Hunt, Daryl, Jim Mahony, Roger Protzman, Jake Rink, Leah Boudreau, Marc Rosso, Brittany Travers, Mike McBride
- If you are interested in joining us virtually on the 1st Wednesday of the month from 10-11 am, please notify me at *bstephens@olsson.com*

2. Increase Efficiency of Time Spent by Volunteers

- Created a 2024 Newsletter Production Schedule and Strategy to proactively reach out to authors for on-time submittals to streamline newsletter production.
- Created an online article submittal form on the website.
- If you are interested in contributing to our Effluent Line, below are the remaining publications and deadlines.
    - *Vol55Q2: 6/7/24 Publication, Content Due: 5/10/24*
    - *Vol55Q3: 9/6/24 Publication, Content Due: 8/9/24*
    - *Vol55Q4: 12/6/24 Publication, Content Due: 11/8/24*

3. Optimize Communication Platforms

- Shawn Ovenden does a great job maintaining the NWEA Website and we are looking for ideas how to maximize its capabilities!
- Edie Spencer does a great job maintaining the NWEA Linked In and Facebook – follow us and help spread the word of our industry!

4. Further Define Success Metrics

- The Committee has developed a template to report to the NWEA Board with the intention to fill in statistics to monitor trends to ensure we are being responsive to the memberships' needs.

The Public Communications and Outreach Committee (PCOC) collaborated with the Young Professionals and Membership Committees as well as the President, WEF Delegate, and At-Large Members to develop a tailored "NWEA Membership Opportunities Webcast" hosted on February 8, 2024. The event was free and 1.5 PDH/CEC credits were offered. Topics were focused on student/operator/member engagement and identifying a call to action of committee participation. Congratulations to **Joseph Anderson** for winning the $50 drawing just for participating!

Special thanks to co-presenters Brittany Travers/Scott Aurit, Kylie Wilmes/Jeff Saltzman, and Lee Dunn/Scott Seelhoff.

If you were not able to participate in webcast you can watch the recording at *https://www.nebwea.org/join.php*

Written by **BRITTNI STEPHENS**
Olsson/PCOC Committee Chair

Public Communications and Outreach Committee (Cont.)

Wastewater Training Opportunities

The Training committee of the NWEA is focused on providing certification training to help operators pass the state certification exam and offering training events outside of our conferences for operators and maintenance staff to learn and grow as professionals. Active members consist of the training committee Ryan Hurst (chair) Scott Seelhoff (Vice-Chair), Keith Kontor, Todd Boling, Mike Milius, Lee Dunn, and Mark Simms. Many others help throughout the year.

2023 was a very busy and productive year. We also had a great year for attendance. We had 5 certification training courses. We had our standard 3- located in Hastings, Wahoo, Lincoln. We also tried a new format in Norfolk Mark Sims taught a 4-day training break up between two weeks. 2 days one week 2 the next. This allowed for more time for study between. Also, we had a 1-day refresher day in Kearney in conjunction with the Heartland conference. New in 2023 we had a 2-day Grade III-IV focused training in Grand Island. Thank you to the City of Grand Island for hosting this training at their facility. With it being a first attempt Mark is learning how to gear this to this level of exam. A huge challenge and I can't thank him enough for taking it on. This has been on our radar for many years to try it. Attendance was down slightly this year over all at our certification events this year, but we still had 74 (down from 87 last year) attendees at our certification training sessions this year. Had we not been limited by the venues we may have had even more.

We also had 2 One day trainings in 2023. The Columbus and Omaha training were taught by Lee Dunn. He focused on Maintenance and had great feedback. There were 49 attendees between the two classes. That is the best attendance thus far in those classes! We had to limit the Omaha training. The maintenance focus was even more defined this year and Lee organized many speakers to help with this training. Lee is working towards a February 2024 Pump focused training in Kearney. With the expansion of our Maintenance focus and the fact that many plants have distinguished maintenance personal from just operators we are looking forward to an award that will come out of this sub-committee recognizing individuals nominated by their employer or those members of our industry we want to nominate for what they are doing in training or other support.

Wastewater Training Opportunities (Cont.)

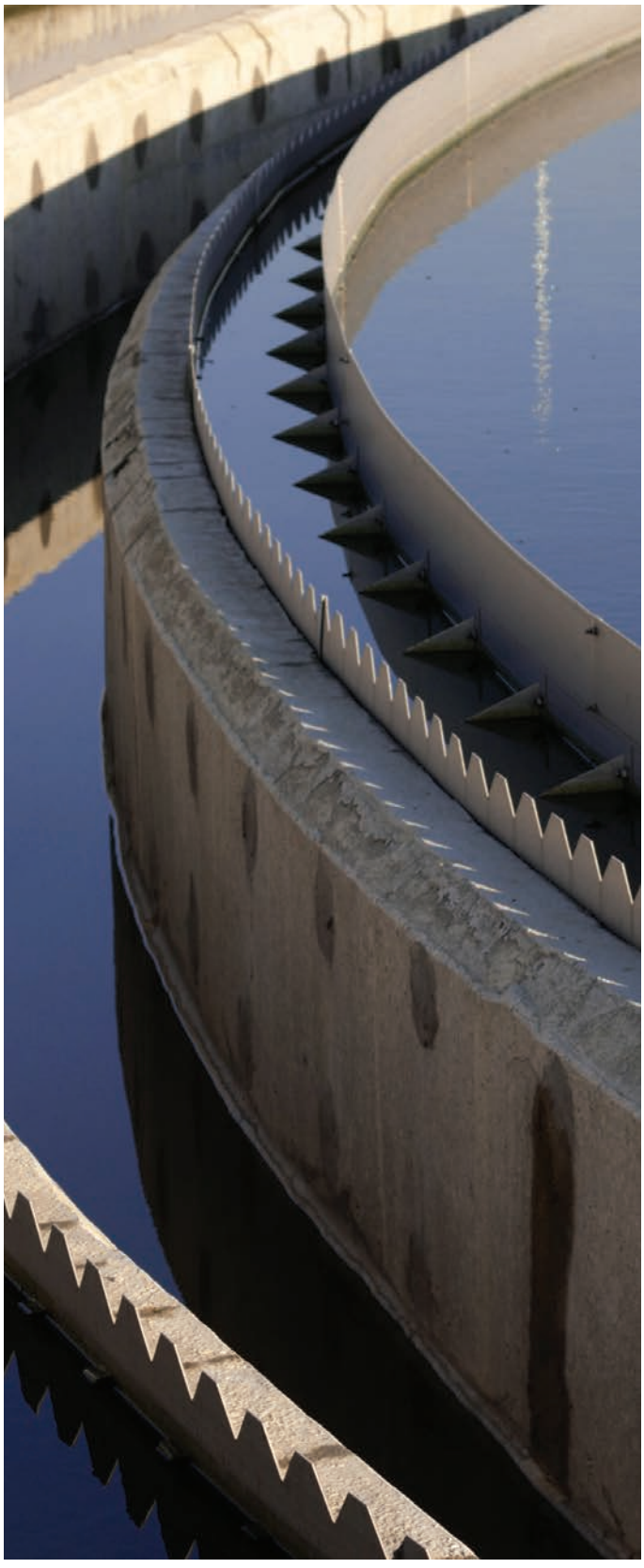
2023 was the fourth year we had a hands-on laboratory analysis workshop in coordination with southeast community college of Milford. This was very well attended with 21 participants. The committee agreed to allow SCC to keep all proceeds again as we did not have any costs. Scott Seelhoff chaired this workshop again and did the Lion share of the work. He put together a great program. We also had great support from lab techs from Grand Island and Columbus and Wahoo.

Not officially part of the training committee but this is the third year of the Southeast Community College (SCC) online classes. These classes are formatted 100% online and offer a more in-depth study and introduction to Water and Wastewater Treatment. They are scheduled with the Fall and Spring semesters at SCC. The next class will be offered starting in January. These are great classes for new operators to really get a good grasp on the treatment processes.

I am very proud of what we have done with the NWEA training for operators in our state. 2023 was such a successful year in my mind. We have continued to add to our training offerings we bring to operators across the state. I must give this credit to those who help me with this committee. So much of this is possible because of all the efforts of everyone on this committee!

Our goal in 2024 is to offer all the same classes as 2023 adding the mentioned pump focused training in Kearney. We do hope to save some costs on flyers by using the postcard method with QR codes with the digital flyers on the website. We would also like to encourage feedback on this committee. If anyone wants to get involved, reach out. My favorite part of chairing this committee over the years is all the operators around the state I have met. I see so many familiar faces at conferences and in my everyday life.

Written by **RYAN HURST**
Training Committee Chair



Second Cohort of Water Leadership Program Graduates Sought

The Environmental Finance Center Network (EFCN), including the Wichita State University Environmental Finance Center, will soon be seeking applicants for the second cohort of the *EFCN Water Leadership Program* (WLP). The WLP program is a free, internet-based leadership development for early to mid-career water professionals. The program is designed to develop and hone participants' leadership, confidence, and management skills through a series of specialized trainings, one-on-one advising, and career-embedded self-assessment.

The EFCN announced the graduation of 32 water sector professionals from their inaugural WLP cohort earlier in the summer of 2023. The initial WLP cohort came from 20 states and represented various aspects of municipal, regional, and state level water sector jobs. Colorado led all states with 4 graduates, followed by Florida and Pennsylvania with 3 graduates each. The WLP is funded by an EPA grant and participation is free for water sector professionals.

The internet-based approach allows WLP participants to learn from recognized water sector leaders throughout the country. Some of the invited expert lecturers included representatives from the Philadelphia Water Department, Washington State Department of Commerce, Thrive New Orleans, Earthjustice, Institute of Public Utilities at Michigan State University, as well as several other organizations and municipalities.

"We're proud of the work both the participants and speakers put into making the first Water Leadership Program a success," said Averi Davis, Program Manager at the *Syracuse University Environmental Finance Center (SU-EFC)*. "The communities and organizations the graduates serve are lucky to have these leaders, and we look forward to seeing what they do in their careers."

A goal of the WLP program is to increase diversity of leaders in the water industry. Half of the participants who received a Certificate of Achievement (50%) identified as women, *compared with just 15% of the country's water workforce*. A *summary report* is available to learn more about the outcomes of the first WLP cohort.

The EFCN will seek applicants in early 2024 for the next WLP cohort. People interested in applying to the next round can subscribe to the *EFCN mailing* list to be notified when applications open or contact the Wichita State Environmental Finance Center (*efc@wichita.edu*).

Disclaimer: This project has been funded wholly or in part by a grant from the United States Environmental Protection Agency under assistance agreement 8403510-0 to the Syracuse University Environmental Finance Center. The contents of this article do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this article.

Student Member Feature

Jascika Maclean is currently in final year as a master's student in Environmental engineering at UNL. She earned her undergraduate degree in Civil Engineering from the Kwame Nkrumah University of Science and Technology in Ghana. Jascika's passion for water and the environment led her towards taking courses in water and wastewater during her junior and senior years. With two years of valuable experience in the consulting industry post-graduation, Jascika embarked on a journey to deepen her expertise by pursuing a master's degree in environmental engineering.

Currently, she serves as a research assistant with Dr. Shannon Bartelt-Hunt and Dr. Snow as her supervisor and co-supervisor respectively. Her focus involves the quantification and identification of neonicotinoid insecticides and strobilurin fungicides in surface water in Mead, Nebraska. Jascika's role encompasses monthly field sampling in Johnson Creek and processing of the water samples in the lab for analysis and quantification of the target pesticides. She showcased her research findings in a poster presentation at the NWEA 2023 Great Plains Conference. Jascika is actively involved in the student chapter of the NWEA/AWWA and she serves as hands on activities chair in the organization.

Jascika was also nominated to be a part of the WEF InFLOW scholars' program in 2023 - an initiative to enhance diversity and inclusion in the water workforce. The goals of the program are to solidify the scholar's interest in working in the water sector; and increase probabilities for employment and long-term success working in water. As part of the program Jascika attended several virtual presentations, workshops, and networking events. She then was given a scholarship to attend WEFTEC in Chicago, Il. Jascika thoroughly enjoyed her time at WEFTEC. She also met some fantastic, committed mentors. The best part was that she and the rest of the scholars, from all over the country, bonded and formed their own friend and professional network. This network has been a great support group for her for professional environmental engineering networking.

Jascika is excited about the opportunities in water and wastewater careers and looks forward to contributing her skills and knowledge to the field upon graduation. Her journey exemplifies a commitment to environmental engineering excellence and a passion for creating a sustainable future.

Written by **JASCIKA MACLEAN**

UNL Career Fair Prep Night

The NWEA/AWWA YP Committee and UNL NWEA student chapter hosted a career fair prep night at UNL on February 13th. The goal of the event was to help civil and environmental engineering students prepare for the upcoming spring career fair and give insights into the internship/job searching process. 15 students attended, ranging from freshman to graduate students. Many students in attendance had never attended the career fair before. The evening began with a presentation on career fair etiquette, resume building, and advice for talking to recruiters. After that, students broke into smaller groups to network with YPs. Students were able to ask questions to YPs about their career paths and experiences with job searching. Thanks to Tessa Yackley, Abby Kigin, Andrew Hansen, and Mirza Billah for organizing this event and volunteering at the event and Sarah Nguyen, and Colleen Ocken for also attending the event.

Written by **ABBY KIGIN**

Portland, OR YP Summit

Young Professionals Cameron Raszler, Andrew Hansen and Abhijeet Saraf, members of the NWEA-NSAWWA Joint YP Committee, had the opportunity to attend the WEF/AWWA YP Summit this year in Portland, OR from February 12-13.

The first day of the 2024 YP Summit took place on February 12 and involved YP Leadership Workshops organized by WEF and AWWA separately. The WEF Leadership workshop was attended by Cameron and Andrew, Abhijeet attended the AWWA Leadership Workshop.

The WEF YP Leadership Workshop had a diverse program including interactive group activities, presentations by former and current YP's, and a panel discussion. Interactive group activities were common throughout the workshop, which encouraged collaboration amongst young professionals at each table. It was quite interesting to hear the logic behind solutions presented by YP's from different geographic areas of the United States and Canada. One presentation by a former YP was particularly impactful, it highlighted some of the common struggles experienced by young professionals and good strategies push through barriers. Finally, a panel of former YP's provide insight on mistakes they might have made in their careers and advice for YP's today given the ever-changing work environment.

The AWWA YP Leadership Workshop involved remarks by the AWWA CEO, David Lafrance followed by a wonderful technical session on impact of Artificial Intelligence on water utility management and production of GPT tools in this regard. Thereafter, Past YP Leaders provided their perspectives on career growth and their professional engagement as YPs in a very engaging panel discussion. This was followed by table topics discussions focusing on involving more YPs in organizations and the event concluded with a workshop for YPs preparing a strategic plan for their state committees.

Both YP Leadership Workshops concluded with a joint social networking and dinner event.

The second day of the 2024 YP Summit began with remarks from the AWWA/WEF national leadership followed by a presentation from Water Research Foundation highlighting the various research projects undertaken by their organization. This was followed by a workforce

leadership development activity which involved roundtable discussions amongst YPs to engage more operators and high school students in state committees. Thereafter, the next speaker session focused on identifying the skill gaps and opportunities for career development within their organizations. A Water Circuit challenge was organized in the Summit where YP teams competed against each other in various water related activities. The final session for the day discussed maintenance of sustainable infrastructure needs and how these needs are linked to affordability and equity.

The YP Summit concluded with a group photo and a networking reception.

Written by **ABHIJEET SARAF, ANDREW HANSEN,** and **CAMERON RASZLER**

Young Professional Member Spotlight

Name: Steve Hanna, PE, CDT

Occupations: Water/Wastewater Engineer/ HDR, Inc.

Current Residence: Omaha, NE

Fun Fact About Steve: Steve's favorite outdoor pastime is to golf and he has one career hole in one.

Steve Hanna is a Water/Wastewater Engineer with HDR, Inc. in Omaha. Steve has been with HDR for six years working mainly on drinking water treatment projects but has been involved in a variety of other projects including wastewater collection, program management, as well as private industry water and wastewater planning projects.

Steve received his undergraduate degree in civil engineering in 2015 from Bradley University in Peoria, IL. As an undergrad, he was involved in the Bradley University chapter of the American Society of Civil Engineers (ASCE) and was the task lead for the environmental design competition held each year at the Great Lakes Student Conference Competition. During undergrad, Steve also worked as an undergraduate research assistant focusing on lab work devoted to a research study investigating the amount of hydrogen that could be extracted by modifying the anaerobic sludge digestion process.

After receiving his undergraduate degree, Steve went on to obtain a master's degree in environmental engineering from the University of Nebraska-Lincoln in 2017. His thesis topic was energy efficiency at small mechanical wastewater treatment plants. Steve's research required data collection from and site visits to over 90 wastewater treatment plants throughout the state of Nebraska. The title of his thesis was "Benchmarking the Energy Intensity of Small Nebraska Wastewater Treatment Plants." Being able to visit all corners of the state and meeting different operators was one of the highlights of putting together his master's thesis.

Steve became involved with the Nebraska Water Environment Association (NWEA) and the Nebraska Section of the American Water Works Association (NSAWWA) by joining the student chapter in 2016 when he was still in grad school. As a student member, he began to learn what NWEA and NSAWWA do and volunteered for the student scholarship fundraising golf outing NWEA hosts every year.

Steve began his professional career with HDR in 2017 and continued his involvement in NWEA by assisting the then Young Professionals Committee Chair, Ryan Hurst, with YP events. The following year, Steve took on the official role as chair of the YP Committee until fall of 2022 when the position was transferred over to current chair Abhijeet Saraf. During his tenure as YP Chair and with the help from many other young and "seasoned" professionals, the YP committee expanded their reach by starting a mentoring program to connect undergraduates with professionals in the water and wastewater industry. In addition to establishing the mentoring program, the main fundraising event for the YP Committee, the annual fall conference poker tournament, went from raising $3,500 at the beginning of his term to over $5,000 at the end of his term with all proceeds being donated to either Water For People or Engineers Without Borders. Steve feels confident in the current YP leadership to continue to grow the event as well as the YP Committee's reach and impact on the association.

Steve continues to be an active member in both NWEA and NSAWWA and is currently participating on the Water For People committee with NSAWWA with plans to take over as chair by the end of this year.

NWEA Member Feature

Name: Brian Clow

Occupation: Professional Engineer at Carollo Engineers

Current Residence: Lenexa, KS

Fun Fact About You: " I have a passion for fishing and look forward to our yearly salmon fishing trips with my brother."

Bio: I have been involved in the wastewater industry for over 35 years. During my career I have designed improvements to wastewater treatment plants, wastewater pumping facilities, and collection systems. In addition to engineering, for years I maintained my wastewater treatment plant operator certification and assisted municipalities with treatment plant commissioning and troubleshooting operational issues. I am a Board-Certified Environmental Engineer, and currently a registered professional engineer in the States of NE, MO, KS, and CA.

What inspired you to work in the water industry?

In my time off I enjoy fishing, hiking, and smoking meat. My passion for fishing and the outdoors has emphasized to me the importance of protecting our waterways. As regulations evolve and the need for clean water increases, the value of our profession, to provide clean water, will only increase. This increasing need to not only sustain our water quality, but to improve it has been one of the main goals for me over the past decades in the water industry.

What does being a member of NWEA mean to you, and what can it mean for others?

Meeting the increasing demand for clean water will require that water professionals, like our NWEA membership, continue to take an active stance in spreading the importance of what we do. The NWEA is in a unique position and moving forward should continue to take a leadership role in educating the public, the sharing of ideas, and providing educational opportunities to our water professionals membership and the public.

10-Year NWEA Member Feature

Name: Dallas Powell

Occupation: Environmental Compliance Manager for Hornady Manufacturing Company

Current Residence: Grand Island, NE

Fun Fact About You: I've visited more foreign countries than I have states in the US.

Bio: I was born and raised in Salina, KS. Right after college, I was hired as a food chemistry technician at Schwan's Research and Development. Along with food nutritional labeling analyses I learned about industrial pretreatment testing. My supervisor mentored me in all the environmental requirements an industry must follow. Eventually I found my way into municipal wastewater treatment and then joined Hornady Manufacturing Company. 10 years ago, I joined the NWEA. Not only does the NWEA provide many networking and educational opportunities, but the association also provides support to all its members.

What do you hope young professionals take into the future of the water industry?

I hope that young professionals look at the vast array of job opportunities available in the water industry. There are so many positions available from Operators to Truck Drivers to Engineers. It truly takes an entire team to keep a village, municipality, or industry running and each member is important.

Tell me about a project that you worked on in which you are proud of.

I was the project lead for upgrading the Hornady Manufacturing Company's pretreatment system. The company had issues with proper treatment of wastewater effluent with their aging atmospheric evaporators and a rental pretreatment system because of the high concentration of chelators. Hornady recently installed a new and automated pretreatment system utilizing ALAR's patented rotary vacuum drum filter technology. The application of this new equipment at the facility not only produces wastewater effluent capable of meeting the stringent water quality discharge limits but also achieves several environmental goals like reducing reliance on natural gas, oil separation for recycling, and production of non-hazardous landfillable solids. This equipment also provides the facility with the capability for future production expansion. As a result of this upgrade and the NWEA nomination, Hornady was the recipient of the 2023 WEF Industrial Water Quality Achievement Award. We are the first industry in Nebraska to win this prestigious award, and I am proud to work for such an innovative company that is dedicated to being good stewards of the environment.

30-Year NWEA Member Feature

Name: Chris Miller, P.E.

Occupation: Professional Engineer

Current Residence: Kearney, Nebraska

Fun Fact About You: My family members are all car enthusiasts and I have a passion for Camaros.

Bio: Chris received his BS in Civil engineering from the University of Nebraska in 1991 and MS in 1993 in Environmental/Sanitary Engineering with emphasis in Ground water modeling. His professional registrations include civil in Iowa and Kansas. He has both his Civil and Environmental registrations in Nebraska. Besides his Professional Engineering, Chris is a Nebraska licensed water operator, licensed well driller, and maintains his 40-hour OSHA certification. Chris has been a member of several professional organizations including 30 years at NWEA and AWWA. Chris currently serves on the Governors Drinking Water Advisory Board, is an AWWA board trustee, and is currently serving as the Vice Chairman on Buffalo County Economic Development Council.

Mr. Millers career as a Civil and Environmental Engineer for water and wastewater waste projects has varied over the years. He is responsible for project management, cost control, and environmental issues on projects. He has prepared numerous studies and has managed the design and construction of a wide array of civil and environmental engineering projects including petroleum remediation. His professional experience includes the development of many innovative solutions for problems challenging many Nebraska communities and other governmental agencies.

What made you become a water professional? Was this career something you always knew you wanted to pursue?

I grew up in an engineering environment and as a young person my father was working with a retried Bureau of Reclamation groundwater engineer on a project. He was working on groundwater mapping and geology for a site. Throughout the process, he took the time to teach me about groundwater even though I was a teenager. What really caught my attention was how he discussed modeling using nails and electricity to show groundwater flow. Looking back, I think this is what started me on the path I ended up today.

Tell me about a project that you worked on which you are proud of.

They say home is where the heart is and Kearney, Nebraska is that for me. The work on the Platte River wellfield is my favorite project as it continues to be a learning lesson and ever evolving. During my graduate program, my Master's Thesis was the groundwater model for the City of Kearney 's primary water supply. My college roommate and fellow master's student used this model to do contaminant transport of nitrates for the wellfield. Immediately after my graduation, the City of Kearney protested a development that wanted to use the Platte River as a diversion for a water storage project directly upstream of the wellfield. My thesis model was used and revised by professionals in the industry for litigation. Building on this, the wellfield model was later used to evaluate induced recharge rates for permitting.

The latest endeavor for the wellfield was working with friends and colleagues in the water industry. We applied for a natural filtration credit for Cryptosporidium using a surrogate microorganism that was similar in character and had large numbers in the source water. After 18 months of testing, the City of Kearney was provided with an approved Demonstration of Performance (DOP) for the filtration credit. It was determined the natural filtration provided was equivalent to a constructed filtration plant. At the time of this demonstration there were very few of these approved in the United States. As part of the DOP, the City constructed the first public water supply UV disinfection facility in Nebraska. Without a doubt, this is one of the proudest projects I have worked on in my career.

30-Year NWEA Member Feature (Cont.)

How has NWEA impacted your career?

Over the years NWEA has provided me with opportunities to network, learn new skills, and develop as a professional. Engineers as a whole tend to lean towards solutions we are familiar with and are tried and true. Using the NWEA network, I was able to overcome some of the fear of trying new and innovative concepts. It encouraged me to reach out to other colleagues that had experiences that they were willing to share with me. Due to these networking opportunities, it led me to work on a Biological Aerated Filter (BAF) for ammonia removal for McCook, Nebraska in 2004. Although it was the first installation in Nebraska, I was comfortable with the process as it was implemented elsewhere in the United States and NWEA members were glad to share their experiences. This experience led me to use my connections to investigate other design systems that I otherwise would not have considered.

Diversity, Equity and Inclusion Committee Update

The DE&I committee will enter its third year, in 2024, looking to revamp its goals and make some indelible changes to NWEA with the help of WEF and a number of new committee members.

Sarah Espinosa of McCarthy Construction did a wonderful job starting up the DE&I committee and is now taking a step down from the Chair position to be more of a guiding force of the committee. Helping out where she can and continuing to provide her experience and diverse opinions on committee goals and solutions. Garrett Lane of Papillion has moved from Co-chair to Chair to oversee the committee meetings and general tasks of the group while Robert Magallon of Jacobs has taken up Co-Chair of the committee to work behind the scenes. The committee has also added 5 new members along with some new roles to our existing members.

Last year we set a number of ambitious goals and look to continue that streak for the foreseeable future. A personal accommodations request was added to the Conference's sign-up sheet, to help alleviate any stress on members with disabilities, nursing mothers, religious affiliations, etc. all to create a more caring environment for conference goers. NWEA's Conference behavior and anti-harassment policy was updated with the help of WEF, as part of a multi-committee effort to ensure our conference attendees feel safe and heard during large social gatherings. The DE&I committee worked closely with conference planners to create small group discussions that will continue under our "Women in Water Series" providing feedback on topics that relate to diverse or inclusive water industry roles.

A new goal we wish to implement this year is to provide demographics on our current membership and provide that feedback to both members and the board as a way to audit our current diversity. This will help create a baseline for our member association and provide us with valuable information to take to our drawing board. Another goal the committee wishes to pursue is to provide more content and info for the newsletters while bringing more awareness to individuality and personal members that wish to share their story. Also, our "Women in Water series" is looking to expand to not just conferences this year. We will be taking things locally, providing afterwork events for these individuals to continue to converse beyond the two times of year we can normally get together. On a larger scale, WEF has created quarterly DE&I calls that we are excited to attend and we look forward to sharing that information with our own member association.

We can't wait to see what the new year holds and look forward to making NWEA even better.

Written by **GARRETT LANE**

The Importance of Training Employees in PRCS

The information included in the following article is provided by the authors and is being provided for information only. The NWEA/ WEF does not have an claim to ownership of the the information and it is he responsibility of the reader to verify the information.

OSHA requires employers to train employees in all exposures they might face in the workplace. This includes all topics for all potential exposures. Some trainings are short and are for awareness only which covers recognizing and avoiding hazards. For other more hazardous topics the training is required to be formal which covers recognizing the hazards and mitigating them. One of the topics that is usually longer than others is Permit-Required Confined Space (PRCS) training. OSHA does not stipulate exactly how long training needs to be, but PRCS has so many requirements within it that it takes a good while to get through all the training. All PRCSs first must meet the definition of being a confined space. A confined space is a space which is large enough and so configured that an employee can bodily enter it; has limited or restricted means for entry and exit; and is not designed for continuous employee occupancy. A PRCS is a confined space that also has one or more of the following characteristics: Contains or has a potential to contain a hazardous atmosphere; Contains a material that has the potential for engulfing an entrant; Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or Contains any other recognized serious safety or health hazard.

There are many requirements to entering a PRCS. Since on average 65% of people who die in a PRCS die from an atmospheric hazard, one of the most important requirements is to check the atmosphere with an atmospheric monitor. The most common type is a 4-gas monitor which is checking for Oxygen, Carbon Monoxide, Hydrogen Sulfide, and Explosive gases. There have been too many fatalities where employees enter a PRCS without checking the atmosphere and are overcome by a hazardous atmosphere. Training needs to include not just the importance of using an atmospheric monitor, but also how to use an atmospheric monitor.

Another requirement within the OSHA PRCS Standard is having an attendant stay outside the space and monitor the safety of the entrants. The attendant has many responsibilities, but one of the most important ones is to remain outside of the space. Upon looking at an attendant conduct their duties, it might appear that their role is not very important, but the opposite is true. The lives of the entrants in many ways are in the hands of the attendant. It is critical that the attendant be properly trained and that an effective Confined Space Entry Plan be in place so that the attendant is never tempted to enter the PRCS to assist the entrants in an emergency. The Confined Space Entry Plan will include the rescue plan which is usually executed by a 3rd party rescue team who may be on-site depending on the level of risk for the entrants. When attendants are not trained or there is no proper rescue plan in place, attendants can be tempted to enter the PRCS with the thought of helping their ailing entrants. This has happened too many times in the past with the result usually being that the attendant gets injured or they end up increasing the number of fatalities in the PRCS. Two-thirds of people who die in confined spaces are what are called would-be rescuers. This includes people who get emotional and want to go in and rescue the entrants. Proper training and proper planning can help prevent most or all of these types of incidents from occurring.

OSHA Standards are minimum standards that all employers who are regulated by OSHA must follow. Many companies choose to write their procedures to be above and beyond OSHA Standards. Employees must always follow the most stringent procedure in place, whether that be OSHA's, their company's, or the General Contractor's who may choose to go above and beyond on a certain project. Whichever procedure ends up being used, one of the most important parts of PRCS work is that everyone involved be trained.

Written by **EDMUNDO ARMENDARIZ**

The Revolution in Pipeline Installations (per *AWWA M55*)

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Deeper pipe burial, less expensive and environmentally friendly backfill, uniform language for contractors and inspectors, simplified installations for smaller pipe, and allowable construction in poor soil conditions as presented in the latest edition of AWWA M55 all benefit the users of HDPE pressure pipe.

AWWA Manual of Water Supply Practices, M55 *PE Pipe – Design and Installation*, was first published in 2006. The manual covers engineering properties, design procedures, underground installation, acceptance testing, and maintenance for solid wall HDPE pipe used in pressure applications. The Second Edition was published in 2020 and contains significant updates that users need to be aware of. For design, these revisions include:

- Change in trench section terminology
- Change in classification and descriptions of soils
- Revision of equation for estimating pipe deflection due to dead and live loads
- New table of E' values, the modulus of passive resistance of supporting soils (use of Uniform Soil Classes)
- Use of composite E' for incorporating effect of weak trench walls
- Use of basic installation and engineered installation

For installation, the changes include:

- Trench width requirements
- Compaction methods and testing
- Use of flowable fill for embedment and backfill
- Use of uncompacted bedding to lay the pipe on

In the interest of uniformity, similar changes were made in 2020 to AWWA manual M23 PVC *Pipe – Design and Installation*.

New information is also provided for PE4710, Seismic Performance, Marine Applications, and Trenchless Construction. Model specifications have been added along with actual case histories of HDPE installations and PE4710 Pipe Data.

TERMINOLOGY

Trench Cross-Section

The new terminology for the trench cross section is shown in Figure 1.

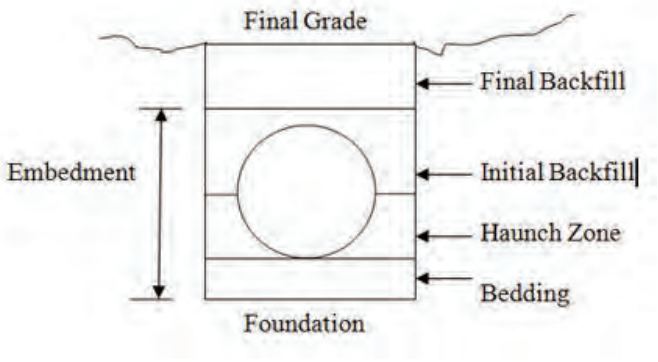

Figure 1 Trench Terminology

- *Foundation* The foundation is the native soil in the bottom of the excavation. If the foundation is unsuitable, remediation will be required to provide a stable trench bottom.
- *Bedding* The bedding is the soil placed in the bottom of the trench on top of the foundation. The bedding serves as a cushion for the pipe
- *Haunch Zone* The haunch zone is from the bottom of the pipe up to the springline. The haunch zone and the initial backfill provide the side support for the pipe that resists deflection.
- *Initial Backfill* The initial backfill extends from the top of the haunch zone to 12 inches (300 mm) above the top of the pipe. The initial backfill combined with the haunch zone act as lateral support for the pipe.
- *Embedment* The embedment includes the bedding, haunch zone, and initial backfill.
- *Final Backfill* The final backfill extends from the top of the initial backfill to the final grade.

Uniform Soil Classes

The other major change in terminology is the use of Uniform Soil Classes, as shown in Table 1. These soil classes have now been adopted for use in ASTM C12 (clay pipe), D2321 (thermoplastic gravity pipe), D2774 (thermoplastic pressure pipe), D3839 (fiberglass pipe), AWWA M23 (pressure PVC pipe), M55 (pressure PE pipe), M45 (fiberglass pipe), and are planned for inclusion in a revised edition of M9 (Concrete Pressure Pipe).

The soil classes, Class I to Class V, are in descending order of stiffness when the soil is compacted. Class I and Class II soils are usually considered cohesionless and are best compacted

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using vibration. Class III and Class IV are usually considered cohesive and are best compacted with pressure, impact, or kneading. Class V soils are considered cohesive but are not recommended for use in pipe installation[2].

Table 1 Soil Classes for Pipe Installation

Class I	**Crushed rock** 100% passing 1-1/2-in sieve, ≤ 25% passing 3/8-in sieve, ≤ 15% passing #4 sieve, ≤ 12% fines	
Class II	**Clean, coarse grained soils** or any soil beginning with one of these symbols (can contain up to 12% fines) (Note 1)	GW GP SW SP
Class III	**Coarse grained soils with fines** **Sandy or gravelly fine grained soils** with ≥ 30% retained on #200 sieve	GM GC SM SC ML CL
Class IV	**Fine-grained soils** with < 30% retained on #200 sieve	ML CL
Class V	**Fine-grained soils, organic soils** high compressibility silts and clays, organic soil	MH CH, OL OH Pt

Notes:

1. Uniform fine sands (SP) (SP-SC) (SP-SM) with more than 50% passing a #100 sieve should be treated as Class III material.
2. Soil classification in accordance with ASTM D 24873 or D 24884.
3. *Fines* are soil particles that pass a #200 sieve.
4. Class I: crushed rock particles should have all fractured faces.
5. Recycled concrete, slag, and shells should be considered Class II.

Soil Compaction

The soil support for the pipe is dependent on the degree of compaction, referred to as percent compaction. Percent compaction is defined by ASTM D 653[5] as the ratio of the field compaction to the laboratory maximum density, expressed as a percent. The field compaction is measured by in-place density tests such as sand cone or nuclear gauge.

For soil classes III, IV, or V, the laboratory maximum density is determined using the standard Proctor compaction test ASTM D 698[6]. For soil classes I or II, the laboratory maximum density is determined using a vibratory compaction test* ASTM D 7382[7] or D 4253[8].

**ASTM D 7382 is a new procedure using a vibratory hammer to obtain a maximum density and is considered more reliable than D 4253.*

Use of the term percent compaction is recommended in ASTM D 653[5]. The percent of the maximum density of the soil is followed by the ASTM test procedure used to determine the maximum density. For example, 95% (D 698) means that the in-place density should be equal to or higher than 95 percent of the maximum density obtained using D 698[6].

ESTIMATING DEFLECTION

Flexible pipe derives its load carrying capacity from the soil-structure interaction of the installation. As illustrated in Figure 2, the pipe tends to deflect due to load, thereby developing passive soil support at the sides of the pipe. At the same time, soil arching over the pipe due to the deflection transfers a portion of the vertical load to the soil at the sides of the pipe. Installed correctly, the strength of the pipe-soil system can be very effective.

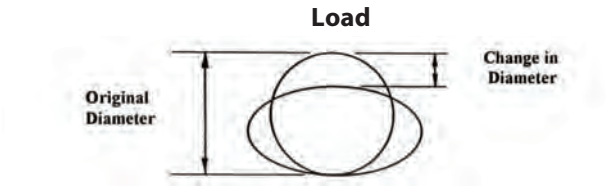

Figure 2 Flexible Pipe Deflection

The deflection of the pipe is the change in vertical diameter divided by the original diameter, stated as a percent. Conceptually, the relationship between load and deflection may be expressed as:

$$\text{Deflection} = \frac{\text{Load}}{\text{PipeStiffness} + \text{SoilStiffness}}$$

(Eq. 1)

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The soil stiffness depends on the soil classification and the soil compaction. The soil stiffness is referred as E', the modulus of soil reaction.

E', Modulus of Soil Reaction

Table 2 is an updated version of the First Edition table and contains some higher values which allows for deeper burial.

Table 2 – E' Values, psi

SOIL GROUP USCS	UNCOMPACTED	COMPACTED	
		Moderate 85%- 90% compaction	High ≥ 95% compaction
CLASS I crushed rock	1000	6000	
CLASS II GW GP SW SP	500	2000	4000
CLASS III GC GM SC SM CL ML (≥30% sand/gravel)	200	1000	2500
CLASS IV CL ML	100	400	1500
CLASS V CH MH OH OL Pt	Do Not Use		

Notes:

1. Soil Classification based on ASTM D2487 (Unified Soil Classification System)
2. Percent compaction based on ASM D4253 or D7382 (vibratory tests) for Class I and II soils
3. Percent compaction based on ASM D698 (Standard Proctor) for Class III and IV soils.
4. Class I crushed rock particles should have all fractured faces
5. Recycled concrete, slag, shells, and coral should be considered Class II
6. Uniform fine sands (SP, SP-SC, SP-SM) with more that 50% passing a #100 sieve should be treated as Class III material.
7. E' values only valid for cover depths of 50 ft or less.

Composite E' (soil stiffness)

While the embedment soil is normally the primary source for the passive resistance, support for the pipe may also be influenced by the trench walls. Very weak or very stiff native trench wall soils can affect the pipe deflection and their stiffness should be combined with the stiffness of the embedment soil to calculate a composite E' to be used for estimating deflection.

The composite E' varies depending on the soil type and the degree of compaction of the embedment material, the native soil stiffness, the pipe diameter, and the trench width. To find the composite E', the E'E of the embedment material and the E'N of the native soil are combined similar to calculating footing settlement on layered soil. The composite E is calculated as follows:

$$E' = Sc\ E'_E \qquad \text{(Eq 2)}$$

Where:

E'= composite modulus of soil reaction, psi
Sc = soil support combining factor
E' E = E'E of the embedment

In the manual, tables of Sc values and E'N are presented to help determine the composite stiffness value. The composite E can be higher or lower than the embedment E, depending on how stiff or weak the trench walls are.

BASIC INSTALLATION AND ENGINEERED INSTALLATION

There are some combinations of pipe selection, external loads, and soil stiffness that may not need design verification for deflection, buckling, and compressive stress. Accordingly, the design and construction may be divided into basic installations and engineered installations.

Basic Installation

Under certain conditions, some installations using pipe with an adequate stiffness will not exceed the specified deflection limits, will have a safety factor of at least two against buckling, and will not exceed the allowable wall compressive stress. These pipe may be used for construction without performing the verification calculations in this chapter and may be installed with minimum soil support. Typically the embedment material is the soil excavated from the trench. The pipe can be laid directly on the trench

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bottom and minimal testing and inspection are required. Basic Installation is frequently suitable for rural transmission and distribution lines.

A basic installation can be used for the following conditions:

- Pipe diameter is 24 inches or less.
- DR is equal to or less than 26.
- Depth of cover is 15 ft or less
- Natural ground water level is below pipe.
- There will be no live load nor surcharge load for cover depths less than 6 feet.
- Final backfill does not need to be compacted.
- Embedment soil stiffness, E′, will be at least 200 psi.
- The foundation and trench walls are stable and have a minimum unconfined compressive strength9 of 5 psi, a N value of at least 5 from the Standard Penetration Test10, or an E′ of at least 400 psi.
- The foundation does not consist of expansive clays, collapsing soils, or landfills.
- The soils in the foundation and used for the embedment do not contain rock particles larger than the maximum particle size as shown in Table 3

Table 3- Maximum Particle Size in Embedment

Pipe Diameter	Maximum Particle Size in Embedment *
Up to 4 inch	½ inch
6 to 8 inch	¾ inch
10 to 16 inch	1 inch
18 inch and greater	1.5 inch

- *For Final Backfill, the maximum particle size is limited to 3 inches per ASTM D2774

An engineered installation should be used when any of these conditions are not met. In some cases where live or surcharge loads may occasionally occur, such as road crossings, the pipeline may consist of a combination of basic installation and engineered installation.

Native materials that are Class III or Class IV soils can provide an embedment E′ ≥ 400 psi if moderately compacted. The embedment soil must be compacted to at least 85% (D698).

Class I or II soils, whether native or imported, can provide an embedment E′ ≥ 400 psi when dumped in place beside the pipe without any compaction. Class V soil is not recommended for embedment.

Engineered Installation

When the basic installation is not appropriate, the pipe design will require the additional checks for deflection, buckling, and compressive stress, as prescribed in the manual. An engineered installation design may need to consider the trench wall support, the effects of ground water, selection of embedment material, increased compaction, time before pipeline is pressurized, live load, and surcharge load. Construction may require imported embedment material, placing a bedding for the pipe, soil testing requirements, and more stringent inspection. Where the pipeline would cross under any kind of pavement, pipeline, cable, or waterway, an engineered installation should be used.

INSTALLATION

Trench Width

Rather than recommended values, the manual states that the excavated trench should have a width based on the excavation equipment used by the contractor, but this width must allow for clearance between the pipe and trench wall (as applicable) for joining the pipe, snaking the pipe, shovel slicing, compacting the embedment, testing the percent compaction, and checking the joints. In poor soils, the width may need to be increased to properly support the pipe. Therefore, if the installation was designed using composite E′, then the pipeline must be constructed using the design trench width.

Bedding for Engineered Installation

A layer of Class I or Class II material should be placed on the trench bottom and left uncompacted. The bedding should be four inches thick for pipe less than 60 inches in diameter and six inches thick for 60 inch and larger pipe. If the bottom of the trench is rock or contains cobbles or boulders, the bedding thickness should be increased at least two inches.

Haunch Compaction for Engineered Installation

A successful installation depends on the correct placement and compaction of soil in the haunch zone of the pipe. The

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first few lifts should be placed so that the soil can be shovel sliced into the haunches. The thickness and compaction of the remaining lifts should be appropriate for the type of material and the compaction requirements. Preferred options to shovel slicing are (1) flowable fill, or (2) compacting Class I or Class II soils with saturation and vibration, as recommended in ASTM F 16682. If flowable fill is used in the haunch zone, it should also be used as the bedding.

Flowable Fill

Flowable fill is a fluid mixture of Portland cement, soil, and water that hardens into a solid mass. ASTM has several standards relating to the mixing, placing, and testing of flowable fill. ASTM refers to flowable fill as controlled low strength material (CLSM). The hardened flowable fill is typically about 2 to 5 times stiffer than compacted soil and thus provides good support for buried pipe. Flowable fill can range from material obtained from a concrete batch plant to a mixture using the native soils excavated from the trench or borrow source. The fresh flowable fill should have a spread of 8 to 12 inches and the hardened flowable fill should have a compressive strength of 40 to 80 psi2.

Many contractors have developed equipment and methods for using the soils excavated from the trench and mixing on site. This provides considerable cost savings compared to ordering from a ready-mix plant. While sandy soils, such as in Florida, are best, soils such as Fat Clays (CH) have been successfully used with the proper processing.

The E' for flowable fill depends on the amount of cementitious material, the aggregate, and the time after placement. Unless it is a high early strength mixture, flowable fill should not be backfilled until the day after placement. Flowable fill gains strength after placement so the stiffness for estimating deflection will depend on when the backfill load is placed over the pipe and the flowable fill

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Quote

"The earth, the air, the land, and the water are not an inheritance from our forefathers but on loan from our children. So we have to handover to them at least as it was handed over to us."

– Gandhi