

Agenda Packet

NORTHEAST NEBRASKA SOLID WASTE COALITION

Wednesday, September 27, 2023
7:00 p.m.

Created 9/22/2023 3:08 PM

Notice of Meeting
Northeast Nebraska Solid Waste Coalition

The Northeast Nebraska Solid Waste Coalition will meet on Wednesday, September 27, 2023 at 7:00 p.m. at the Norfolk City Council Chambers, 309 N 5th Street, Norfolk Nebraska.

The Coalition reserves the right to adjourn into closed session as per Section 84-1410 of the Nebraska Revised Statutes.

An agenda for such meeting, kept continuously current, is available at the office of the City Administrator, City of Norfolk, 309 N 5th St, Norfolk, Nebraska, during normal business hours.

Brianna Duerst
Norfolk City Clerk &
NNSWC Secretary

Publish (September 20, 2023)
1 P.O.P.

NORTHEAST NEBRASKA SOLID WASTE COALITION

AGENDA

September 27, 2023

Call meeting to order

1. (Inform the public about the location of the Open Meetings Act posted in the meeting room and accessible to members of the public.)

Roll call

Approval of agenda

Approval of minutes

2. Approval of the minutes of the March 1, 2023 Coalition meeting.

Unfinished business

Reports of Board of Directors, Officers and Committees

3. Financial statements from February 2023 to August 2023.
4. Report on stakeholder meetings held in Columbus, Fremont and Norfolk for presentation of the draft Master Plan and proposed changes to the Northeast Nebraska Solid Waste Coalition Interlocal Agreement, Bylaws, Host Agreement with Stanton County, and proposed rate resolution.
5. Report on status of the Third Amended and Restated Interlocal Solid Waste Management Agreement for the Northeast Nebraska Solid Waste Coalition.

New business

6. Public hearing to review the FY 2022-2023 General Fund and Closure/Post Closure Fund budgets.
7. Approval of the FY 2022-2023 General Fund and Closure/Post Closure Fund budgets. **Motion**
8. Public hearing to review the FY 2023-2024 General Fund and Closure/Post Closure Fund budgets.
9. Approval of the FY 2023-2024 General Fund and Closure/Post Closure Fund budgets. **Motion**
10. Consideration of Resolution No. 2023-1 extending the Coalition's LARM (League Association of Risk Management) participation up to September 30, 2026 and including a requirement of at least 180-days notice of intent of termination, for which the Coalition receives a 5% premium discount. **Resolution 2023-1**
11. Consideration of approval of the Landfill Master Plan. **Motion**
12. Consideration of approval of an amended Host Agreement with Stanton **Motion**

County, Nebraska providing for the Northeast Nebraska Solid Waste Coalition to operate a landfill located in Section 21, Township 21 North, Range 3 East of the 6th P.M., in Stanton County, Nebraska.

13. Consideration of Resolution No. 2023-2 adopting Amended and Restated Bylaws of the Northeast Nebraska Solid Waste Coalition. **Resolution No. 2023-2**
14. Consideration of Resolution No. 2023-3 adopting landfill rates to go into effect January 1, 2024. **Resolution No. 2023-3**
15. Consideration of approval of Authorization No. 57 with Burns & McDonnell Engineering Company, Inc. for permitting the approximately 25 acre horizontal and 60 feet vertical expansion of the existing NNSWC landfill, which is the preferred expansion alternative identified in the Master Plan, for a fee of \$370,800. **Motion**
16. Consideration of approval of Authorization No. 61 with Burns & McDonnell Engineering Company, Inc. for a fee of \$8900 to prepare application to NDEE for renewal of the Coalition's Title V air permit. **Motion**

Miscellaneous business and discussion

17. Potential closed session to protect the public interest to discuss a possible real estate purchase. **Motion**

Adjournment

STAFF MEMORANDUM
NORTHEAST NEBRASKA SOLID WASTE COALITION
September 27, 2023

Call meeting to order

1. (Inform the public about the location of the Open Meetings Act posted in the meeting room and accessible to members of the public.)

Roll call

Approval of agenda

Approval of minutes

2. Approval of the minutes of the March 1, 2023 Coalition meeting.

See Enclosure 2.

Unfinished business

Reports of Board of Directors, Officers and Committees

3. Financial statements from February 2023 to August 2023.

At the last Coalition Board meeting on March 1, 2023, financial statements for March 2022 to January 2023 were included in the agenda packet. The current agenda packet has financial statements from February 2023 to August 2023.

See Enclosure 3.

4. Report on stakeholder meetings held in Columbus, Fremont and Norfolk for presentation of the draft Master Plan and proposed changes to the Northeast Nebraska Solid Waste Coalition Interlocal Agreement, Bylaws, Host Agreement with Stanton County, and proposed rate resolution.

At the March 1, 2023 NNSWC Board meeting, the Board authorized stakeholder meeting to be held in Columbus, Fremont and Norfolk for presentation of the draft Master Plan and proposed changes to the Northeast Nebraska Solid Waste Coalition Interlocal Agreement, Bylaws, Host Agreement with Stanton County, and proposed rate resolution. These meetings were held from 5 pm to 7 pm in the City Council Chambers on June 13 in Columbus, June 14 in Fremont, and June 16 in Norfolk. Included in the agenda packet is a summary of these meetings prepared by Luke Rodig with Burns & McDonnell, the meeting attendance sheets, and the Master Plan summary presentation handout.

See Enclosure 4.

5. Report on status of the Third Amended and Restated Interlocal Solid Waste Management Agreement for the Northeast Nebraska Solid Waste Coalition.

After the June stakeholder meetings on the Master Plan and proposed agreements, the Third Amended and Restated Interlocal Agreement was distributed to the NNSWC members for approval. All 24 members have approved the Third Amended and Restated Interlocal Agreement which goes into effect October 1, 2023. The Agreement with executed signature pages of all the members is included in the agenda packet.

See Enclosure 5.

New business

6. Public hearing to review the FY 2022-2023 General Fund and Closure/Post Closure Fund budgets.

This public hearing seeks comments on the proposed Coalition budget for the fiscal year ending September 30, 2023.

There have been no changes made from the preliminary budget approved March 1, 2023 for presentation at town hall meetings in Columbus, Fremont and Norfolk. Norfolk and Columbus held their town hall meeting on March 20 and Fremont held their town hall meeting on March 28.

This budget assumes Waste Connections continues operation of the Coalition landfill. A 10% increase to Waste Connections was approved at the April 20, 2022 meeting, which became effective August 1, 2022. Tipping fees remain unchanged at \$24.00 per ton.

Balance forward increases \$1,199,878 going from \$7,172,468 last year to \$8,372,346 this year primarily due to normal operations of the Coalition.

Use fees decrease \$115,512 or 3.76% due to a 4,813 ton decrease in budgeted tonnage for regular waste. With tipping fees at \$24.00 per ton, budgeted use fees are \$2,955,331. Interest income increases \$50,000 due to an increase in budgeted interest rate from 0.15% last year to 1% this year.

Personnel costs increase \$958 or 0.96%. Personnel costs include a 6% cost of living adjustment and normal merit increase. This increase is partially offset by hiring a part-time scale clerk at a lower pay grade than the previous sale clerk. Disposal fees increase \$71,949 or 6.19% due to the increase in fee to Waste Connections. Other professional fees decrease \$28,319 due to a decrease in the fee for groundwater monitoring. This year's capital outlay is \$4,207,200 and

consists of: \$3,831,200 for engineering and construction of cell 6, \$11,000 for installation of deep well pumps, and \$365,000 for vertical and lateral permit modifications.

Also included in the agenda packet is the Closure/Post Closure Care Fund budget. The transfer from the operating fund increases \$94,880 or 24.77% from \$383,120 last year to \$478,000 this year. Total funds available for closure/post closure increase 9.76% from \$10,525,996 last year to \$11,553,716 this year. Approximately half of the increase is due to interest earnings and half is due to current year funding.

See Enclosure 6.

7. Approval of the FY 2022-2023 General Fund and Closure/Post Closure Fund budgets. **Motion**

Staff recommend approval of the FY 2022-2023 General Fund and Closure/Post Closure Fund budgets as discussed in the public hearing item.

8. Public hearing to review the FY 2023-2024 General Fund and Closure/Post Closure Fund budgets.

This public hearing seeks comments on the proposed Coalition budget for the fiscal year ending September 30, 2024. The amended and restated interlocal agreement no longer requires approval of a preliminary budget for presentation at town hall meetings in the three largest communities.

This budget assumes Waste Connections continues operation of the Coalition landfill with no fee increase in FY 23-24 per the agreement approved at the April 20, 2022 meeting. Tipping fees remain unchanged at \$24.00 per ton.

Balance forward decreases \$2,487,480 going from \$8,372,346 last year to \$5,884,866 due to construction of cell 6. Use fees remain unchanged at \$2,955,331. Interest income increases \$111,000 due to an increase in budgeted interest rate from 1% last year to 3% this year.

Personnel costs increase \$5,561 or 5.50%. Personnel costs include a 3.5% cost of living adjustment and normal merit increase. Operating supplies and materials increase \$2,031 due to the addition of a riding lawn mower. Other administration and overhead decreases \$2,461 or 0.95% due to budgeting a computer in the prior year and a decrease in professional fees to update SWPPP, which is partially offset by an increase in insurance premiums. This year's capital outlay is \$1,369,400 and consists of: \$998,600 for engineering and construction of cell 6 and \$370,800 for vertical and lateral permit modifications.

Also included in the agenda packet is the Closure/Post Closure Care Fund budget. The transfer from the operating fund decreases \$442,000 going from \$478,000 last year to \$36,000 this year. In 2020 the Coalition applied for permit modifications to increase the side slopes and change the Area 6 bottom elevation. These permit modifications were approved May 12, 2023 resulting in increased capacity. As staff was reviewing these permit modifications, they discovered an error in landfill capacity being utilized for the closure/post-closure care calculations and corrected this for the 23-24 budget calculations. The landfill capacity utilized for these calculations increased 2,313,992 tons as a result of these changes. The remaining landfill life went from 15 years in last year's budget to 32 years in this year's budget resulting in the large decrease in the annual funding requirement. Interest income increases slightly going from \$400,000 last year to \$401,500 this year. Total funds available for closure/post closure increase 3.64% from \$11,553,716 last year to \$11,973,734 this year.

See Enclosure 8.

9. Approval of the FY 2023-2024 General Fund and Closure/Post Closure Fund budgets. **Motion**

Staff recommend approval of the FY 2023-2024 General Fund and Closure/Post Closure Fund budgets as discussed in the public hearing item.

10. Consideration of Resolution No. 2023-1 extending the Coalition's LARM (League Association of Risk Management) participation up to September 30, 2026 and including a requirement of at least 180-days notice of intent of termination, for which the Coalition receives a 5% premium discount. **Resolution 2023-1**

The approval of Resolution 2023-1 would coincide with the City of Norfolk's participation extension until Sept 30, 2026, which was approved at the July 17, 2023 City Council meeting.

See Enclosure 10.

11. Consideration of approval of the Landfill Master Plan. **Motion**

At the May 21, 2020 Board meeting, the Board approved Authorization No. 52 with Burns & McDonnell for the development of a Master Plan for the Coalition landfill. Burns & McDonnell worked with representatives from Fremont, Norfolk and Columbus on the Master Plan. Burns & McDonnell provided a project update at the June 2, 2021 Coalition Board meeting and answered questions and received input from the Board.

At the March 1, 2023 Coalition Board meeting the Board approved presentation of the draft Master Plan at stakeholder meetings to be held in the three largest Coalition communities of Fremont, Norfolk and Columbus. These public

stakeholder meetings were held on June 13 in Columbus, June 14 in Fremont, and June 15 in Norfolk. A report on these stakeholder meetings is included earlier in this agenda packet along with a summary of the Master Plan presented at the Stakeholder meetings. Staff is not proposing any changes to the draft Master Plan approved at the March 1, 2023 Board meeting for presentation at the stakeholder meetings. This Master Plan is included in the agenda packet and staff recommend approval.

The Master Plan assumes a 1% annual growth in tonnage, which results in utilizing all the existing permitted capacity in 2049 or 54 years after the landfill began operations in 1995. The proposed Master Plan includes a conceptual on-site expansion that represents a 25-acre horizontal expansion and a 60-foot vertical expansion over current permitted levels, which equates to roughly 7.3 million cubic yards of additional air space, or about a 50% expansion of what is currently permitted extending landfill life about 28 years to 2078.

The Master Plan also looks at expanding off site to provide for waste disposal past the expected 2078 fill date. The options evaluated were expanding on land adjacent to the current site with options considered for expanding to the north, east, south and west. This evaluation recommends the south expansion option. This option has the ability to piggyback on the existing landfill and utilize the existing landfill infrastructure. The south option provides estimated available airspace of over 17.5 million cubic yards and almost 47 years of additional landfill life.

The Master Plan also looks at the Coalition's financial projections. These projections assume the same 1% increase in tonnage discussed earlier and a 2.5% inflation factor. These projections indicate the Coalition can maintain it's current rate of \$24 per ton through 2073.

Another portion of the Master Plan is a review of existing Coalition agreements, bylaws and rates. These changes are considered under other items on this agenda.

See Enclosure 11.

12. Consideration of approval of an amended Host Agreement with Stanton County, Nebraska providing for the Northeast Nebraska Solid Waste Coalition to operate a landfill located in Section 21, Township 21 North, Range 3 East of the 6th P.M., in Stanton County, Nebraska. **Motion**

At the March 1, 2023 NNSWC Board meeting, the Board approved a draft amended Host Agreement with Stanton County for presentation at the stakeholder meetings held in Columbus, Fremont, and Norfolk. The current Host Agreement was entered into in 1993 before the current landfill was permitted. Language was changed to reflect that the landfill has been permitted

and in operation since 1995. The original host fee provided for inflation adjustments and the draft agreement reflected the current inflation adjusted fee and provided for future ongoing inflation adjustments. The current agreement provides for a discussion every 3 years of hard surfacing the access road to the landfill. Since these discussions haven't been taking place this provision was eliminated in the draft agreement.

The original agreement provided that only waste generated in the jurisdiction of a Coalition member could be disposed at the landfill. As a practical matter, it's not possible to exclude all non-member waste. Packer trucks coming into the transfer stations often contain mixed loads of waste with the truck's route being both within and outside of a member's jurisdiction. It's not practicable to know the location where the waste on these trucks originated. The Coalition has also allowed waste from the City of Clarkson, which is not a Coalition member, to go into the landfill in order to be a good neighbor. Since it's not practical to know where the waste is actually generated that goes to the transfer stations, the requirement that only waste generated in the jurisdiction of Coalition members was eliminated from the draft agreement.

The Coalition Treasurer sent the draft Host Agreement to Stanton County on May 26 and has since been negotiating terms of the Agreement with Stanton County. Included in the agenda packet is a redline from the draft Host Agreement approved by the NNWSC Board and the Agreement negotiated with Stanton County. All of the changes, except the change to Section 7, were negotiated with the Stanton County Attorney and Stanton County Commissioner Doug Huttman. Those changes are relatively minor and for the most part consist of wording and clarification changes. In Section 4, Stanton County wanted the minimum annual host fee increased from \$85,081 to \$90,000 annually. This won't come into play unless annual tonnage drops below 109,647 tons. Annual tonnage has been above 109,947 tons since 2018, so this will likely not have any affect on the host fee. Stanton County also wanted the CPI adjustments to the host fee to be made every 3 years instead of every 5 years.

When this was taken to the full Board of Commissioners, the Board wanted to keep the requirement that only member waste be disposed of at the landfill per the August 21, 2023 letter from the Stanton County Board of Commissioners included in the agenda packet. As a practical matter this is hard to police, but we can tighten this up. Norfolk staff met to discuss this and suggest that Clarkson's garbage hauler be given notice that in order for Clarkson waste to be disposed of at the landfill, Clarkson will have to become a member. Member transfer stations can notify haulers that they aren't to be bringing in non-member waste. We can require agreements for non-member owned transfer stations (Bud's Sanitation by Newman Grove and Albracht Disposal by Madison) and as part of the agreements prohibit non-member waste being disposed of at the NNSWC landfill.

Staff recommend approval of the revised Host Agreement incorporating Stanton County's changes, which is included in the agenda packet.

See Enclosure 12.

13. Consideration of Resolution No. 2023-2 adopting Amended and Restated Bylaws of the Northeast Nebraska Solid Waste Coalition. **Resolution No. 2023-2**

At the March 1, 2023 NNSWC Board meeting, the Board approved Amended Bylaws for presentation at stakeholder meetings in Columbus, Fremont, and Norfolk. Resolution No. 2023-2 adopts these Amended and Restated Bylaws with a change to Section 1 to specify that the annual meeting of the members of the Coalition shall be held immediately before the first Board meeting of each fiscal year, instead of at a time to be determined by the Board. The redline copy of the Bylaws included in the agenda packet reflects this change as well as specifying in the heading that these Amended Bylaws are adopted on September 27, 2023.

A clean copy of the bylaws is attached to Resolution No. 2023-2.

See Enclosure 13.

14. Consideration of Resolution No. 2023-3 adopting landfill rates to go into effect January 1, 2024. **Resolution No. 2023-3**

At the March 1, 2023 NNSWC Board meeting, the Board approved a draft rate resolution for discussion at the stakeholder meetings in Columbus, Fremont, and Norfolk. Resolution 2023-3 in the agenda packet made some changes to the draft resolution in the March 1 agenda packet.

As requested at the March 1 meeting, language was added at the end to exclude wind turbine blades from the landfill. The resolution number was added along with the appropriate dates. Resolution 2023-3 has a January 1, 2024 effective date to allow time to communicate the changes to landfill customers and for these customers to make any desired changes to their operations.

The rate resolution contemplated non-member waste disposal at the landfill. Stanton County did not agree to changing the Host Agreement to allow non-member waste and the non-member and City of Clarkson "good neighbor" rates are stricken.

As discussed at the March 1 Board meeting, the rate for non-transfer station and non-qualifying waste going direct to the landfill is to be \$10 higher than the highest member-owned transfer station rate in order to discourage this type of waste. This rate is updated to \$88.80 to reflect that the highest member-owned

transfer station rate is now \$78.80.

A redline of the rate resolution comparing the draft resolution to the proposed Resolution No. 2023-3 is included in the agenda packet along with a clean adoption copy.

See Enclosure 14.

15. Consideration of approval of Authorization No. 57 with Burns & McDonnell Engineering Company, Inc. for permitting the approximately 25 acre horizontal and 60 feet vertical expansion of the existing NNSWC landfill, which is the preferred expansion alternative identified in the Master Plan, for a fee of \$370,800. **Motion**

Burns & McDonnell anticipates this permit modification application will be submitted late next fiscal year.

See Enclosure 15.

16. Consideration of approval of Authorization No. 61 with Burns & McDonnell Engineering Company, Inc. for a fee of \$8900 to prepare application to NDEE for renewal of the Coalition's Title V air permit. **Motion**

The landfill is considered a major source facility exceeding emissions thresholds and must renew its Title V air permit with NDEE every 5 years.

See Enclosure 16.

Miscellaneous business and discussion

17. Potential closed session to protect the public interest to discuss a possible real estate purchase. **Motion**

Adjournment

NORTHEAST NEBRASKA SOLID WASTE COALITION

The Northeast Nebraska Solid Waste Coalition Board of Directors in the Columbus City Council Chambers, 1369 25th Avenue, Columbus, Nebraska, on Wednesday March 1, 2023 at 7:00 p.m.

NNSWC Chairman Corey Granquist, Norfolk, called the meeting to order and informed the public about the location of the current copy of the Open Meetings Act posted in the meeting room and accessible to members of the public.

Roll call found the following Board members present: Charlie Bahr, representing Columbus; Mark Jensen, representing Fremont; Corey Granquist representing Norfolk. A quorum of the Board of Directors was present since sixty percent (60%) of the combined population of all Coalition members were represented by members in attendance.

Others present were: NNSWC Treasurer Randy Gates, NNSWC Secretary Brianna Duerst, Norfolk staff: Public Works Director Steve Rames and Solid Waste Supervisor Rob Mercer. Fremont staff: Jody Sanders and Fremont Mayor Joey Spellerberg. Columbus staff: Tara Vasicek and Chuck Silva.

NNSWC Chair Corey Granquist, Norfolk, presided and Brianna Duerst, Norfolk, recorded the proceedings.

Notice of the meeting was given in advance thereof by publication in the Norfolk Daily News, Norfolk, Nebraska, the designated method of giving notice, as shown by affidavit of publication.

Notification of the meeting was provided in advance to all Board members of the Northeast Nebraska Solid Waste Coalition. Availability of the agenda was communicated in the advance notice and in the notice to the Northeast Nebraska Solid Waste Coalition Board members. All proceedings hereafter shown were taken while the convened meeting was open to the attendance of the public.

Agenda

Charlie Bahr, Columbus, moved, seconded by Mark Jensen, Fremont, to approve the agenda as printed. Roll call: All Ayes. Nays: None. Motion carried.

Minutes

April 20, 2022

Charlie Bahr, Columbus, moved, seconded by Corey Granquist, Norfolk, to approve the minutes of the April 20, 2022 Coalition meeting held via teleconference as presented. Roll call: All Ayes. Nays: None. Motion carried.

Reports of Board of Directors, Officers and Committees

Financial Statements

No comments were received regarding the financial statements from March 2022 to January 2023, included in the agenda packet and presented by Treasurer Randy Gates.

New Business

SCS Engineers contract extension

Corey Granquist, Norfolk moved, seconded by Charlie Bahr, Columbus, to approve a five (5) year contract extension with SCS Engineers to perform the required monitoring and reporting services for the NNSWC Landfill located in Stanton County, Nebraska for an estimated \$224,068.00.

Rob Mercer, Norfolk Solid Waste Supervisor, provided information to board members. This existing 5-year contract with SCS expired 12/31/22. SCS proposed an extension with estimated costs of \$224,068. All laboratory analytical fees will be billed directly to NNSWC so there will be no mark up from SCS. Estimated costs include laboratory analytical fees. In 2017, three bids were opened and SCS Engineers were low bid with \$169,701.00, other bids were \$223,229 and \$223,280.

Roll call: All Ayes. Nays: None. Motion carried.

Burns & McDonnell

(Authorization No. 59)

Chairman Granquist requested consideration of Authorization No. 59 with Burns & McDonnell Engineering Company, Inc. to perform Construction Administration Services on Area 6, Phase 1 expansion construction with a cost of \$220,000.00.

Mercer provided information to board members. Burns and McDonnell Engineering will provide a resident project representative to observe and document construction progress during all significant phases of the construction of the project for the estimated 20-week project. Engineer will be available to assist contractors with any issues that may arise, and report to NNSWC. Engineer will obtain all necessary approvals and documentation from the NDEE.

Charlie Bahr, Columbus, moved, seconded by Corey Granquist, Norfolk to approve Authorization No. 59 with Burns and McDonnell Engineering Company, Inc. to perform Construction Administration Services on Area 6, Phase 1 expansion construction with a cost of \$220,000.00. Roll call: All Ayes. Nays: None. Motion carried.

Burns & McDonnell

(Authorization No. 60)

Chairman Granquist requested consideration of Authorization No. 60 with Burns and McDonnell Engineering Company, Inc. to create an updated Storm Water Pollution Prevention Plan (SWPPP) at a cost not to exceed \$7,000.

Mercer provided information to board members. NDEE has changed some requirements, so the SWPPP needs to be updated to comply with the newest requirements of the General Permit for Stormwater Discharges Associated with Industrial Activities.

Corey Granquist, Norfolk, moved, seconded by Mark Jensen, Fremont to approve 60 with Burns and McDonnell Engineering Company, Inc. to create an updated Storm Water Pollution Prevention Plan (SWPPP) at a cost not to exceed \$7,000. Roll call: All Ayes. Nays: None. Motion carried.

Preliminary Budget

(Fiscal Year ending September 30, 2023)

Treasurer Randy Gates reviewed the preliminary budgets with board members. According to the Northeast Nebraska Solid Waste Coalition interlocal agreement, a town hall meeting is held in the

three largest communities each year to review the Coalition's proposed budget and rates. Included in the agenda packet is a proposed budget for the town hall meetings for the fiscal year, ending September 30, 2023. This budget assumes Waste Connections continues operation of the Coalition landfill. A 10% increase to Waste Connections was approved at the April 20, 2022, which became effective August 1, 2022. Tipping fees remain unchanged at \$24.00 per ton. Balance forward increases \$1,199,878 going from \$7,172,468 last year to \$8,372,346 this year primarily due to normal operations of the Coalition. Use fees decrease \$115,512 or 3.76% due to a 4,813 ton decrease in budgeted tonnage for regular waste.

Personnel costs increase \$958 or 0.96%. Personnel costs include a 6% cost of living adjustment and normal merit increase. This increase is partially offset by hiring a part-time scale clerk at a lower pay grade than the previous sale clerk. Disposal fees increase \$71,949 or 6.19% due to the increase in fee to Waste Connections. Other professional fees decrease \$28,319 due to a decrease in the fee for groundwater monitoring. This year's capital outlay is \$4,207,200 and consists of: \$3,831,200 for engineering and construction of cell 6, \$11,000 for installation of deep well pumps, and \$365,000 for vertical and lateral permit modifications.

Also included in the agenda packet is the Closure/Post Closure Care Fund budget. The transfer from the operating fund increases \$94,880 or 24.77% from \$383,120 last year to \$478,000 this year. Total funds available for closure/post closure increase 9.76% from \$10,525,996 last year to \$11,553,716 this year.

Approximately half of the increase is due to interest earnings and half is due to current year funding.

Charlie Bahr, Columbus moved, seconded by Mark Jensen, Fremont, to approve the Coalition's preliminary budget for the fiscal year ending September 30, 2023 for presentation at town hall meetings in the three largest Coalition communities (Columbus, Fremont and Norfolk). Roll call: All Ayes. Nays: None. Motion carried.

J.J. Westhoff Construction Co.
(Area 6, Phase 1 construction)

Chairman Granquist requested consideration of acceptance of the bid of \$3,450,000 from J.J. Westhoff Construction Co. for the construction of a new landfill cell, Area 6, Phase 1.

Mercer provided information to board members. Burns and McDonnell Engineering developed and reached out for bids to construct the next landfill cell, Area 6, Phase 1. Four construction firms attended the Pre-Bid meeting on February 8, 2023. One bid was received per requirements and one bid was received late and was not opened. J.J. Westhoff Construction was the low, responsible bidder with a bid of \$3,450,000 and a completion date of October 1st, 2023, per contract. The bid received was in line with the engineer's opinion of probable construction cost. J.J. Westhoff fully understands the scope of the project and they have the resources, equipment, and experience to complete the project.

Mark Jensen, Fremont moved, seconded by Charlie Bahr, Columbus, to accept the bid of \$3,450,000 from J.J. Westhoff Construction Co. for the construction of a new landfill cell, Area 6, Phase 1. Roll call: All Ayes. Nays: None. Motion carried.

J.J. Westhoff Construction Co.
(Chair to execute agreement)

Chairman Granquist requested consideration of authorizing the NNSWC Chairman to execute the agreement with J.J. Westhoff for construction of Area 6, Phase 1 upon receipt of the required documents from J.J. Westhoff and J.J. Westhoff's execution of the construction agreement.

Charlie Bahr, Columbus, moved, seconded by Mark Jensen, Fremont to authorize the NNSWC Chairman to execute the agreement with J.J. Westhoff for construction of Area 6, Phase 1 upon receipt of the required documents from J.J. Westhoff and J.J. Westhoff's execution of the construction agreement. Roll call: All Ayes. Nays: None. Motion carried.

Landfill Master Plan
(presentation at stakeholder meetings)

Chairman Granquist requested consideration of approval of the draft Landfill Master Plan for presentation at stakeholder meetings to be held in Fremont, Columbus, and Norfolk.

Luke Rodig, Burns McDonnell, presented a summary of the Landfill Master Plan. Rodig said the Master Plan process began in 2020. The plan is now mostly complete, and the project task force and attorneys have worked through the agreements, so the plan is ready to be presented to the public and approved by the board. One of the key components of the plan was looking at onsite expansion on the existing landfill property. The preferred expansion option was a 26-acre horizontal expansion; it also looked at a vertical expansion of approximately 60 feet, which is an efficient way to expand the life of the landfill. With this option, there is a total of 7.3 million cubic yards of additional airspace, which gains 27.7 years of life for the landfill. Also looked at cell construction and closure sequencing and other capital/infrastructure improvements including Leachate bond expansion, storm pond, relocation of scale/entrance infrastructure, new equipment building, future LFG flare system, and land acquisition.

Rodig presented a conceptual off-site expansion of adjacent properties. The preferred option is the property directly south of current site. It has a 118-acre footprint and the existing landfill infrastructure could be utilized, and expands the life of the landfill 46.8 years. Rodig reviewed capital improvements and land acquisition needs comparing no change in waste, a 20% decrease in waste and a 20% increase in waste related to land acquisition, sedimentation basin expansion, leachate pond addition and landfill gas flare (if required).

Jensen asked how difficult land acquisition will be and if other communities are anticipated to join the coalition. Rodig said starting the land acquisition process as soon as possible is the recommended approach. If the land will be available in the near future, best to know ahead of time to be having those conversations as soon as possible. Rob Mercer said there has been interest from other communities in joining the coalition, but noted significant tonnage increases will shorten the life of the landfill.

The coalition bylaws and agreements have been reviewed by the coalition project team, Burns & McDonnell and a third party attorney. Proposed changes to the bylaws and agreements include: language updated throughout to represent the NNSWC Landfill as an existing landfill and not a proposed landfill; language updated throughout to accurately reflect how the NNSWC Landfill has been operating; and updates to Board of Directors representatives' selection.

Charlie Bahr, Columbus, moved, seconded by Mark Jensen, Fremont, to approve the draft Landfill

Master Plan for presentation at stakeholder meetings to be held in Fremont, Columbus and Norfolk.
Roll call: All Ayes. Nays: None. Motion carried.

Proposed Bylaws, Agreements, Rate Resolution
(presentation at stakeholder meetings)

Chairman Granquist requested consideration of approval of proposed changes to the Northeast Nebraska Solid Waste Coalition Interlocal Agreement, Bylaws, Host Agreement with Stanton County, and proposed rate resolution for presentation at stakeholder meetings to be held in Fremont, Columbus, and Norfolk.

Coalition Treasurer Randy Gates provided information to board members. The Master Plan included a review of various Coalition agreements and the Coalition bylaws. The goal of this review is to bring these documents into agreement with how the Coalition is actually operating and eliminate or modify provisions that have become outdated over the last 30 years.

The Stanton County Host Agreement was entered into in 1993 before the current landfill was permitted. Language has been changed to reflect the landfill that has been permitted and in operation since 1995. The original host fee provided for inflation adjustments and the proposed agreement reflects the current inflation adjusted fee and provides for future ongoing inflation adjustments. The current agreement provides for a discussion every 3 years of hard surfacing the access road to the landfill. Since these discussions haven't been taking place, this provision is eliminated in the proposed agreement.

The original agreement provided that the only waste that could be disposed of at the landfill was waste generated in the jurisdiction of a Coalition member. As a practical matter, it's not possible to exclude all non-member waste. The Coalition has allowed waste from the City of Clarkson, that is not a Coalition member, to go into the landfill in order to be a good neighbor. Since it's not practical to know where the waste is actually generated that goes to the transfer stations, the requirement that only waste generated in the jurisdiction of Coalition members is eliminated from the proposed agreement to reflect actual transfer station and landfill operations.

The current interlocal agreement was put in place in 1994 and contains outdated language. It also has a maximum duration of 60 years. The landfill will remain operational for an estimated 54 years under the current permit and much longer with the proposed changes. The Coalition needs to continue in existence for the 30-year post-closure period after the landfill stops accepting waste. The maximum 60-year duration is eliminated in the proposed agreement.

The proposed agreement provides for representatives from Norfolk, Columbus, Fremont, and Maple Creek Township to serve as permanent board members, with a representative selected annually by the other members to represent the non-permanent members. The requirement that the budget be reviewed at town hall meetings in the three largest Coalition communities has also been eliminated.

Changes were made to the bylaws to reflect the changes in the host and interlocal agreements. The Executive Committee, Management Advisory Committee and Finance Committee provisions were removed since these committees aren't being utilized. A provision was added to email a list of claims to Board members before they are paid, and any Board member can object to paying a claim and have it placed on the agenda for the next Board meeting for consideration. The location of Board meetings is specified in the current bylaws as being in Norfolk, but the meetings are actually rotated

between Columbus, Fremont and Norfolk. The proposed bylaws reflect the actual practice of rotating Board meeting locations.

A proposed rate resolution keeps the standard Coalition rate at \$24 per ton and formalizes fees the Coalition is currently charging.

Granquist said he would like to see an exclusion for wind turbine blades. There are currently no members with wind turbines, but that could change in the future. Rodig said that could be addressed in the rate resolution.

Mark Jensen, Fremont, moved, seconded by Charlie Bahr, Columbus, to approve the changes to the Northeast Nebraska Solid Waste Coalition Interlocal Agreement, Bylaws, Host Agreement with Stanton County, and proposed rate resolution with an amendment to provide an exclusion for wind turbine blades for presentation at stakeholder meetings to be held in Fremont, Columbus and Norfolk. Roll call: All Ayes. Nays: None. Motion carried.

There being no further business, Chairman Granquist adjourned the meeting at 8:20 p.m.

Attest:

_____, Chairman
NNSWC

NNSWC Secretary

(S E A L)

Fund 604 NE NEBR SOLID WASTE COAL

GL Number	Description	Balance
*** Assets ***		
Cash		
604-000-113.021	NNSWC PRIMARY ACT-MIDWEST 6709	4,553,566.30
604-000-116.001	U.S. TREASURIES	1,965,459.53
Cash		<u>6,519,025.83</u>
Accounts Receivable		
604-000-121.003	ACCOUNTS RECEIVABLE	75,194.79
Accounts Receivable		<u>75,194.79</u>
Fixed Assets		
604-000-151.001	LAND	1,218,051.00
604-000-151.002	BUILDINGS&IMPROVEMENTS	10,852,287.31
604-000-151.005	FURNITURE & EQUIPMENT	26,154.08
604-000-151.006	CONSTRUCTION IN PROGRESS	49,476.32
Fixed Assets		<u>12,145,968.71</u>
Accum. Depreciation		
604-000-155.001	ACCUMULATED DEPRECIATION	(8,026,887.11)
Accum. Depreciation		<u>(8,026,887.11)</u>
Other Assets		
Other Assets		<u>0.00</u>
Due From Other Funds		
604-000-138.009	DUE FROM DISB. FUND	(1,677.85)
Due From Other Funds		<u>(1,677.85)</u>
Deferred Outflows		
Deferred Outflows		<u>0.00</u>
Total Assets		<u>10,711,624.37</u>
*** Liabilities ***		
Accounts Payable		
604-000-221.001	ACCOUNTS PAYABLE	62,406.82
604-000-222.006	NEBR.WITHHOLDING PAYABLE	458.55
Accounts Payable		<u>62,865.37</u>
Liabilities-ST		
Liabilities-ST		<u>0.00</u>
Liabilities-LT (over 1 year)		
Liabilities-LT (over 1 year)		<u>0.00</u>
Deferred Inflows		
Deferred Inflows		<u>0.00</u>
Total Liabilities		<u>62,865.37</u>
*** Fund Balance ***		
Unassigned		

Fund 604 NE NEBR SOLID WASTE COAL

GL Number	Description	Balance
*** Fund Balance ***		
604-000-295.001	RETAINED EARN.-UNRESERV	12,293,170.50
	Unassigned	<u>12,293,170.50</u>
	Restricted	<u>0.00</u>
	Total Fund Balance	<u>12,293,170.50</u>
	Beginning Fund Balance	12,293,170.50
	Net of Revenues VS Expenditures	(1,644,411.50)
	Ending Fund Balance	10,648,759.00
	Total Liabilities And Fund Balance	10,711,624.37

ACCOUNT DESCRIPTION	2022-23	ACTIVITY FOR	YTD BALANCE	AVAILABLE	% BDGT USED
	AMENDED BUDGET	MONTH 08/31/20 INCREASE (DECR)	08/31/2023 NORMAL (ABNORM)	BALANCE NORMAL (ABNORM)	
Fund 604 - NE NEBR SOLID WASTE COAL					
Dept 000					
PROPRIETARY FUND USE CHARGES					
367.001 USE FEES	2,955,331.00	321,933.49	2,733,202.35	222,128.65	92.48
PROPRIETARY FUND USE CHARGES	2,955,331.00	321,933.49	2,733,202.35	222,128.65	92.48
OTHER REVENUE					
374.004 MISCELLANEOUS	0.00	0.00	25.00	(25.00)	100.00
374.008 LATE CHARGES	0.00	0.12	60.60	(60.60)	100.00
OTHER REVENUE	0.00	0.12	85.60	(85.60)	100.00
OTHER INTEREST INCOME					
388.001 OTHER INTEREST INCOME	67,000.00	62,391.59	204,155.57	(137,155.57)	304.71
OTHER INTEREST INCOME	67,000.00	62,391.59	204,155.57	(137,155.57)	304.71
Net - Dept 000	3,022,331.00	384,325.20	2,937,443.52	84,887.48	
Dept 229 - NE NEBR SOLID WASTE COAL					
PERSONNEL COSTS					
511.000 SALARIES & WAGES	87,370.00	7,539.58	78,762.53	8,607.47	90.15
514.000 PENSION	6,116.00	404.55	4,242.71	1,873.29	69.37
515.000 FICA	6,684.00	576.79	6,025.34	658.66	90.15
516.000 WORKERS' COMPENSATION	877.00	0.00	808.00	69.00	92.13
PERSONNEL COSTS	101,047.00	8,520.92	89,838.58	11,208.42	88.91
OPER. SUP. AND MATERIALS					
524.000 VEHICULAR FUEL & LUBE	2,562.00	93.60	1,394.89	1,167.11	54.45
526.000 MINOR APPARATUS & TOOLS	500.00	325.20	325.20	174.80	65.04
529.000 OTHER OPER. SUP.& MAT	0.00	(35.73)	0.00	0.00	0.00
OPER. SUP. AND MATERIALS	3,062.00	383.07	1,720.09	1,341.91	56.18
OTHER OPERATING COSTS					
532.000 GARBAGE FEES	1,235,036.00	101,973.55	1,005,282.50	229,753.50	81.40
OTHER OPERATING COSTS	1,235,036.00	101,973.55	1,005,282.50	229,753.50	81.40
UTILITIES & MAINTENANCE					
541.000 ELECTRICITY	4,000.00	132.74	2,247.48	1,752.52	56.19
546.000 BLDG, GRND & PLANT MAINT	17,540.00	77.62	7,572.16	9,967.84	43.17
547.000 MACHINERY & VEH. MAINT	750.00	0.00	582.41	167.59	77.65
548.000 OFFICE EQUIP. MAINT.	2,500.00	0.00	0.00	2,500.00	0.00
UTILITIES & MAINTENANCE	24,790.00	210.36	10,402.05	14,387.95	41.96
LEGISLATIVE AFFAIRS					
553.000 TRAVEL AND TRAINING	1,734.00	0.00	1,179.73	554.27	68.04
555.000 DUES AND PUBLICATIONS	650.00	0.00	387.87	262.13	59.67
LEGISLATIVE AFFAIRS	2,384.00	0.00	1,567.60	816.40	65.76
OTHER ADMIN. & OVERHEAD					
561.000 INSURANCE	14,003.00	0.00	15,917.00	(1,914.00)	113.67
562.000 TELEPHONE & TELETYPE	2,650.00	90.07	2,142.07	507.93	80.83
563.000 POSTAGE	1,000.00	10.24	138.10	861.90	13.81
564.000 OFFICE SUPPLIES	6,755.00	0.00	3,948.52	2,806.48	58.45
565.000 LEGAL NOTICES&ADVERTISE	500.00	35.65	133.48	366.52	26.70
568.000 OTHER PROFESSIONAL FEES	234,379.00	14,913.39	219,245.88	15,133.12	93.54
OTHER ADMIN. & OVERHEAD	259,287.00	15,049.35	241,525.05	17,761.95	93.15
GOV. SUBSIDIES & TRANS					
578.000 INTERFUND TRANS. OUT	478,000.00	0.00	459,961.00	18,039.00	96.23
GOV. SUBSIDIES & TRANS	478,000.00	0.00	459,961.00	18,039.00	96.23
CAPITAL OUTLAY					
587.000 INFRA-STRUCTURE	4,207,200.00	925,138.38	2,771,558.15	1,435,641.85	65.88
CAPITAL OUTLAY	4,207,200.00	925,138.38	2,771,558.15	1,435,641.85	65.88
Net - Dept 229 - NE NEBR SOLID WASTE COAL	(6,310,806.00)	(1,051,275.63)	(4,581,855.02)	(1,728,950.98)	

ACCOUNT DESCRIPTION	2022-23	ACTIVITY FOR	YTD BALANCE	AVAILABLE	% BDGT USED
	AMENDED BUDGET	MONTH 08/31/20 INCREASE (DECR)	08/31/2023 NORMAL (ABNORM)	BALANCE NORMAL (ABNORM)	
Fund 604 - NE NEBR SOLID WASTE COAL					
Fund 604 - NE NEBR SOLID WASTE COAL:					
TOTAL REVENUES	3,022,331.00	384,325.20	2,937,443.52	84,887.48	97.19
TOTAL EXPENDITURES	6,310,806.00	1,051,275.63	4,581,855.02	1,728,950.98	72.60
NET OF REVENUES & EXPENDITURES	(3,288,475.00)	(666,950.43)	(1,644,411.50)	(1,644,063.50)	50.01

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FROM 604-000-113.002 TO 604-229-598.000

DB: Cityofnorfolk

TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-113.021 NNSWC PRIMARY ACT-MIDWEST 6709						
Journal CD: Cash Disbursements						
349078	02/06/2023	NORFOLK AIR INC	8682	604-000-221.001		480.00
349079	02/06/2023	SCS ENGINEERS	8683	604-000-221.001	1,229.10	
350018	02/21/2023	CASEY'S MAIL SERVICE LLC	8684	604-000-221.001	13.84	
350019	02/21/2023	FAIRBANKS SCALES INC	8685	604-000-221.001	2,500.75	
350020	02/21/2023	WASTE CONNECTIONS OF NE	8686	604-000-221.001	83,287.18	
351734	03/06/2023	BURNS & MCDONNELL INC	8688	604-000-221.001	63,705.88	
351735	03/06/2023	SCS ENGINEERS	8689	604-000-221.001	2,435.00	
352581	03/20/2023	CASEY'S MAIL SERVICE LLC	8690	604-000-221.001	8.19	
352582	03/20/2023	LEAGUE ASSOCIATION OF RISK MAN	8691	604-000-221.001	16,725.00	
352583	03/20/2023	NE DEPT OF ENVIRONMENT & ENER	8692	604-000-221.001	7,500.00	
352584	03/20/2023	ROB MERCER	8693	604-000-221.001	28.82	
352585	03/20/2023	WASTE CONNECTIONS OF NE	8694	604-000-221.001	79,950.07	
354084	04/03/2023	BAIRD HOLM	8696	604-000-221.001	3,500.00	
355033	04/17/2023	BURNS & MCDONNELL INC	8697	604-000-221.001	25,150.06	
355034	04/17/2023	CAROLINA SOFTWARE	8698	604-000-221.001	166.67	
355035	04/17/2023	CASEY'S MAIL SERVICE LLC	8699	604-000-221.001	7.56	
355036	04/17/2023	FORVIS LLP	8700	604-000-221.001	7,250.00	
355037	04/17/2023	J J WESTHOFF CONSTRUCTION	8701	604-000-221.001	299,034.00	
355038	04/17/2023	NE DEPT OF ENVIRONMENT & ENER	8702	604-000-221.001	33,505.29	
355039	04/17/2023	STANTON CO TREASURER	8703	604-000-221.001	26,888.93	
355040	04/17/2023	WASTE CONNECTIONS OF NE	8704	604-000-221.001	88,465.05	
356655	05/01/2023	SCS ENGINEERS	8706	604-000-221.001	6,212.50	
357602	05/15/2023	BURNS & MCDONNELL INC	8707	604-000-221.001	11,342.62	
357603	05/15/2023	J J WESTHOFF CONSTRUCTION	8708	604-000-221.001	364,959.00	
357604	05/15/2023	WASTE CONNECTIONS OF NE	8709	604-000-221.001	96,033.36	
359432	06/05/2023	CASEY'S MAIL SERVICE LLC	8711	604-000-221.001	25.24	
359433	06/05/2023	NE DEPT OF ENVIRONMENT & ENER	8712	604-000-221.001	654.84	
359434	06/05/2023	SCS ENGINEERS	8713	604-000-221.001	19,397.10	
360415	06/20/2023	CASEY'S MAIL SERVICE LLC	8714	604-000-221.001	25.20	
360416	06/20/2023	J J WESTHOFF CONSTRUCTION	8715	604-000-221.001	400,669.20	
360417	06/20/2023	WASTE CONNECTIONS OF NE	8716	604-000-221.001	94,855.24	
362818	07/17/2023	CAROLINA SOFTWARE	8718	604-000-221.001	166.67	
362819	07/17/2023	NE DEPT OF ENVIRONMENT & ENER	8719	604-000-221.001	42,932.74	
362820	07/17/2023	BURNS & MCDONNELL INC	8720	604-000-221.001	165,585.83	
362821	07/17/2023	STANTON CO TREASURER	8721	604-000-221.001	23,304.51	
362822	07/17/2023	WASTE CONNECTIONS OF NE	8722	604-000-221.001	93,693.11	
362823	07/17/2023	J J WESTHOFF CONSTRUCTION	8723	604-000-221.001	537,319.80	
362824	07/17/2023	CASEY'S MAIL SERVICE LLC	8724	604-000-221.001	9.45	
362825	07/17/2023	FAIRBANKS SCALES INC	8725	604-000-221.001	799.00	
362826	07/17/2023	FREMONT TRIBUNE	8726	604-000-221.001	41.36	
365060	08/07/2023	SCS ENGINEERS	8728	604-000-221.001	842.50	
365927	08/21/2023	CASEY'S MAIL SERVICE LLC	8729	604-000-221.001	10.24	
365928	08/21/2023	J J WESTHOFF CONSTRUCTION	8730	604-000-221.001	877,428.00	
365929	08/21/2023	WASTE CONNECTIONS OF NE	8731	604-000-221.001	101,973.55	
Journal Totals					0.00	3,580,112.45

Journal CR: Cash Receipts

347790	02/01/2023	WASTE CONNECTIONS - FREMONT23-	100393535	604-000-121.003	1,168.34	
347975	02/03/2023	FREMONT, CITY OF23-0101152	100393959	604-000-121.003	55,425.86	
349169	02/07/2023	ASSOCIATED WHOLESALE GROCERS23	100394760	604-000-121.003	259.44	
349170	02/07/2023	ASSOCIATED WHOLESALE GROCERS23	100394761	604-000-121.003	1,072.82	
349187	02/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100394812	604-000-367.001	17.00	
349188	02/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100394813	604-000-367.001	12.00	
349450	02/08/2023	WASTE CONNECTIONS - NORFOLK23-	100395083	604-000-121.003	636.25	
349485	02/09/2023	COLUMBUS, CITY OF22-0100996	100395241	604-000-121.003	56,738.12	
349486	02/09/2023	COLUMBUS, CITY OF23-0101154	100395242	604-000-121.003	52,007.07	
349487	02/09/2023	ASSOCIATED WHOLESALE GROCERS23	100395244	604-000-121.003	309.12	
349576	02/13/2023	JOHNS DISPOSAL INC23-0101157	100395872	604-000-121.003	1,643.43	
349583	02/13/2023	NNSWC LANDFILLNNSWC LANDFILL G	100395893	604-000-367.001	133.00	
349722	02/15/2023	U&I SANITATION23-0101317	100396359	604-000-121.003	322.58	
349723	02/15/2023	BUDS SANITARY SERVICE LLC23-01	100396360	604-000-121.003	15,541.98	
349724	02/15/2023	BUDS SANITARY SERVICE LLC23-01	100396361	604-000-121.003	15,189.74	
349748	02/16/2023	PILGER, VILLAGE OF23-0101310	100396495	604-000-121.003	188.40	
349749	02/16/2023	MIDWEST WIRE SOLUTIONS23-01013	100396496	604-000-121.003	26.16	
349819	02/17/2023	FREMONT, CITY OF23-0101307	100396670	604-000-121.003	57,836.55	
349984	02/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100397278	604-000-367.001	187.00	
350140	02/23/2023	DOERNEMANN CONSTRUCTION23-0101	100397569	604-000-121.003	1,591.78	
350145	02/23/2023	NORFOLK, CITY OF23-0101306	100397579	604-000-121.003	65,105.09	
350391	02/27/2023	COLUMBUS, CITY OF23-0101309	100398331	604-000-121.003	50,676.30	
350392	02/27/2023	OAKLAND, CITY OF23-0101308	100398332	604-000-121.003	1,115.77	
350402	02/27/2023	ALBRACHT DISPOSAL SERVICE23-01	100398342	604-000-121.003	11,347.57	
350526	02/28/2023	NNSWC LANDFILLNNSWC LANDFILL G	100398466	604-000-367.001	49.00	
350527	02/28/2023	NNSWC LANDFILLNNSWC LANDFILL G	100398466	604-000-367.001	25.00	
350528	02/28/2023	NNSWC LANDFILLNNSWC LANDFILL G	100398466	604-000-367.001	12.00	
350529	02/28/2023	NNSWC LANDFILLNNSWC LANDFILL G	100398466	604-000-367.001	12.00	
350650	03/02/2023	NNSWC LANDFILLNNSWC LANDFILL G	100398727	604-000-367.001	33.00	
350651	03/02/2023	NNSWC LANDFILLNNSWC LANDFILL G	100398727	604-000-367.001	27.00	
350779	03/03/2023	WASTE CONNECTIONS - FREMONT23-	100398988	604-000-121.003	332.61	
351685	03/06/2023	NNSWC LANDFILLNNSWC LANDFILL G	100399307	604-000-367.001	159.00	
351778	03/07/2023	ALTER METAL RECYCLING23-010146	100399369	604-000-121.003	0.23	

9/27/2023

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FROM 604-000-113.002 TO 604-229-598.000

DB: Cityofnorfolk

TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-113.021 NNSWC PRIMARY ACT-MIDWEST 6709						
Journal CD: Cash Disbursements						
351779	03/07/2023	ALTER METAL RECYCLING23-010132	100399370	604-000-121.003	0.22	
351780	03/07/2023	ALTER METAL RECYCLING22-010101	100399371	604-000-121.003	22.58	
351791	03/07/2023	NUCOR23-0101463	100399392	604-000-121.003	2,453.11	
351792	03/07/2023	ASSOCIATED WHOLESALE GROCERS23	100399393	604-000-121.003	289.45	
351819	03/07/2023	ASSOCIATED WHOLESALE GROCERS23	100399426	604-000-121.003	307.69	
351930	03/08/2023	WASTE CONNECTIONS - NORFOLK23-	100399608	604-000-121.003	1,105.96	
351966	03/09/2023	ASSOCIATED WHOLESALE GROCERS23	100399702	604-000-121.003	314.88	
351967	03/09/2023	ASSOCIATED WHOLESALE GROCERS23	100399703	604-000-121.003	340.33	
351995	03/10/2023	BUDS SANITARY SERVICE LLC23-01	100399795	604-000-121.003	13,740.56	
352065	03/13/2023	JOHNS DISPOSAL INC23-0101312	100400018	604-000-121.003	2,729.51	
352101	03/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100400116	604-000-367.001	24.00	
352102	03/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100400116	604-000-367.001	805.00	
352103	03/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100400116	604-000-367.001	62.00	
352104	03/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100400117	604-000-367.001	102.00	
352207	03/15/2023	U&I SANITATION23-0101464	100400212	604-000-121.003	654.98	
352323	03/17/2023	FREMONT, CITY OF23-0101454	100400507	604-000-121.003	53,331.90	
352504	03/20/2023	PILGER, VILLAGE OF23-0101457	100400798	604-000-121.003	273.37	
352515	03/20/2023	NNSWC LANDFILLNNSWC LANDFILL G	100400808	604-000-367.001	35.00	
352516	03/20/2023	NNSWC LANDFILLNNSWC LANDFILL G	100400808	604-000-367.001	12.00	
352558	03/21/2023	WASTE CONNECTIONS - FREMONT23-	100400931	604-000-121.003	1,168.34	
352559	03/21/2023	WASTE CONNECTIONS - FREMONT23-	100400932	604-000-121.003	1,331.64	
352690	03/22/2023	NNSWC LANDFILLNNSWC LANDFILL G	100401097	604-000-367.001	314.00	
352691	03/22/2023	NORFOLK, CITY OF23-0101453	100401110	604-000-121.003	57,717.27	
352713	03/23/2023	COLUMBUS, CITY OF23-0101456	100401255	604-000-121.003	48,037.21	
352856	03/27/2023	OAKLAND, CITY OF23-0101455	100401787	604-000-121.003	1,018.33	
352866	03/27/2023	NNSWC LANDFILLNNSWC LANDFILL G	100401803	604-000-367.001	48.00	
352867	03/27/2023	NNSWC LANDFILLNNSWC LANDFILL G	100401803	604-000-367.001	43.00	
352868	03/27/2023	NNSWC LANDFILLNNSWC LANDFILL G	100401803	604-000-367.001	13.00	
353058	03/30/2023	ALBRACHT DISPOSAL SERVICE23-01	100402109	604-000-121.003	9,622.37	
353136	03/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100402354	604-000-367.001	119.00	
353137	03/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100402354	604-000-367.001	72.00	
353138	03/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100402354	604-000-367.001	25.00	
353139	03/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100402354	604-000-367.001	20.00	
354145	04/04/2023	NNSWC LANDFILLNNSWC LANDFILL G	100402985	604-000-367.001	32.00	
354189	04/05/2023	ASSOCIATED WHOLESALE GROCERS23	100403178	604-000-121.003	295.21	
354190	04/05/2023	ASSOCIATED WHOLESALE GROCERS23	100403179	604-000-121.003	439.92	
354368	04/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100403711	604-000-367.001	91.00	
354392	04/07/2023	WASTE CONNECTIONS - NORFOLK23-	100403736	604-000-121.003	1,086.73	
354453	04/10/2023	ASSOCIATED WHOLESALE GROCERS23	100404155	604-000-121.003	206.64	
354496	04/11/2023	ASSOCIATED WHOLESALE GROCERS23	100404326	604-000-121.003	261.36	
354640	04/14/2023	FREMONT, CITY OF23-0101595	100404998	604-000-121.003	73,085.65	
354641	04/14/2023	PILGER, VILLAGE OF23-0101598	100404999	604-000-121.003	395.52	
354642	04/14/2023	MIDWEST WIRE SOLUTIONS23-01016	100405000	604-000-121.003	50.88	
354643	04/14/2023	JOHNS DISPOSAL INC23-0101459	100405001	604-000-121.003	2,826.16	
354717	04/17/2023	ASSOCIATED WHOLESALE GROCERS23	100405476	604-000-121.003	316.80	
354724	04/17/2023	VULCRAFT23-0101599	100405486	604-000-121.003	522.07	
354924	04/18/2023	NNNNSWC LANDFILL GATE FEES	100405689	604-000-367.001	127.00	
354925	04/18/2023	NNNNSWC LANDFILL GATE FEES	100405689	604-000-367.001	29.00	
354926	04/18/2023	NNNNSWC LANDFILL GATE FEES	100405689	604-000-367.001	29.00	
354927	04/18/2023	NNNNSWC LANDFILL GATE FEES	100405689	604-000-367.001	25.00	
354928	04/18/2023	NNNNSWC LANDFILL GATE FEES	100405689	604-000-367.001	16.00	
355069	04/19/2023	NORFOLK, CITY OF23-0101594	100405887	604-000-121.003	70,033.75	
355125	04/20/2023	NNSWC LANDFILLNNSWC LANDFILL G	100406068	604-000-367.001	289.00	
355135	04/20/2023	DEG ENTERPRISES23-0101608	100406093	604-000-121.003	96.72	
355136	04/20/2023	COLUMBUS, CITY OF23-0101597	100406094	604-000-121.003	58,860.59	
355375	04/24/2023	BUDS SANITARY SERVICE LLC23-01	100406617	604-000-121.003	15,134.72	
355395	04/24/2023	WASTE CONNECTIONS - FREMONT23-	100406684	604-000-121.003	1,216.81	
355430	04/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100406773	604-000-367.001	126.00	
355431	04/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100406773	604-000-367.001	100.00	
355432	04/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100406773	604-000-367.001	53.00	
355467	04/26/2023	U&I SANITATION23-0101605	100406864	604-000-121.003	315.60	
355530	04/28/2023	ALBRACHT DISPOSAL SERVICE23-01	100407131	604-000-121.003	12,432.33	
356633	05/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100407609	604-000-367.001	120.00	
356634	05/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100407610	604-000-367.001	137.00	
356759	05/02/2023	NNSWC LANDFILLNNSWC LANDFILL G	100407724	604-000-367.001	61.00	
356894	05/05/2023	NUCOR23-0101803	100408104	604-000-121.003	50,676.21	
356899	05/05/2023	ASSOCIATED WHOLESALE GROCERS23	100408134	604-000-121.003	575.53	
356900	05/05/2023	ASSOCIATED WHOLESALE GROCERS23	100408135	604-000-121.003	509.04	
356901	05/05/2023	ASSOCIATED WHOLESALE GROCERS23	100408136	604-000-121.003	390.48	
357124	05/09/2023	WASTE CONNECTIONS - NORFOLK23-	100408658	604-000-121.003	690.26	
357125	05/09/2023	NUCOR23-0101803	100408659	604-000-121.003	2,772.45	
357181	05/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100408849	604-000-367.001	115.00	
357182	05/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100408852	604-000-367.001	209.00	
357187	05/11/2023	ASSOCIATED WHOLESALE GROCERS23	100408949	604-000-121.003	246.72	
357220	05/11/2023	DAVE HOLLATZ CONSTRUCTION23-01	100408961	604-000-121.003	12.65	
357366	05/15/2023	JOHNS DISPOSAL INC23-0101601	100409609	604-000-121.003	3,879.47	
357367	05/15/2023	PILGER, VILLAGE OF23-0101797	100409610	604-000-121.003	336.96	
357622	05/16/2023	NNSWC LANDFILLNNSWC LANDFILL G	100409701	604-000-367.001	380.00	
357623	05/16/2023	NNSWC LANDFILLNNSWC LANDFILL G	100409701	604-000-367.001	15.00	

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TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-113.021 NNSWC PRIMARY ACT-MIDWEST 6709						
Journal CR: Cash Receipts						
357718	05/16/2023	WASTE CONNECTIONS - FREMONT23-	100409807	604-000-121.003	1,003.51	
357756	05/18/2023	NORFOLK, CITY OF23-0101793	100409982	604-000-121.003	69,484.75	
357809	05/18/2023	COLUMBUS, CITY OF23-0101796	100410050	604-000-121.003	57,736.67	
357865	05/19/2023	ALBRACHT DISPOSAL SERVICE23-01	100410254	604-000-121.003	8,009.13	
357921	05/22/2023	BUDS SANITARY SERVICE LLC23-01	100410625	604-000-121.003	15,169.47	
357973	05/23/2023	NNSWC LANDFILLNNSWC LANDFILL G	100410765	604-000-367.001	259.00	
357974	05/23/2023	NNSWC LANDFILLNNSWC LANDFILL G	100410765	604-000-367.001	107.00	
358086	05/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100411214	604-000-367.001	193.00	
358087	05/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100411214	604-000-367.001	12.00	
358088	05/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100411214	604-000-367.001	29.00	
358259	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412087	604-000-367.001	114.00	
358260	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412087	604-000-367.001	20.00	
358261	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412087	604-000-367.001	12.00	
358262	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412087	604-000-367.001	17.00	
358263	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412087	604-000-367.001	12.00	
358264	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412087	604-000-367.001	45.00	
358425	06/01/2023	U&I SANITATION23-0101804	100412280	604-000-121.003	376.09	
358480	06/02/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412628	604-000-367.001	150.00	
358481	06/02/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412628	604-000-367.001	104.00	
358482	06/02/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412628	604-000-367.001	96.00	
358483	06/02/2023	NNSWC LANDFILLNNSWC LANDFILL G	100412628	604-000-367.001	51.00	
358486	06/02/2023	FREMONT, CITY OF23-0101794	100412631	604-000-121.003	68,854.22	
359588	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100413451	604-000-367.001	62.00	
359589	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100413451	604-000-367.001	12.00	
359590	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100413451	604-000-367.001	18.00	
359591	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100413451	604-000-367.001	18.00	
359592	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100413451	604-000-367.001	12.00	
359593	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL G	100413451	604-000-367.001	13.00	
359688	06/08/2023	ASSOCIATED WHOLESALE GROCERS23	100413592	604-000-121.003	527.06	
359689	06/08/2023	ASSOCIATED WHOLESALE GROCERS23	100413593	604-000-121.003	358.08	
359690	06/08/2023	ASSOCIATED WHOLESALE GROCERS23	100413594	604-000-121.003	292.56	
359710	06/08/2023	ASSOCIATED WHOLESALE GROCERS23	100413671	604-000-121.003	205.44	
359820	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414142	604-000-367.001	352.00	
359821	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414142	604-000-367.001	12.00	
359822	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414142	604-000-367.001	28.00	
359823	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414142	604-000-367.001	81.00	
359824	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414142	604-000-367.001	12.00	
359899	06/13/2023	NUCOR23-0102002	100414266	604-000-121.003	3,476.17	
359900	06/13/2023	WASTE CONNECTIONS - NORFOLK23-	100414267	604-000-121.003	991.47	
359928	06/14/2023	JOHNS DISPOSAL INC23-0101799	100414356	604-000-121.003	2,648.72	
360039	06/15/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414525	604-000-367.001	103.00	
360040	06/15/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414525	604-000-367.001	84.00	
360041	06/15/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414525	604-000-367.001	100.00	
360042	06/15/2023	NNSWC LANDFILLNNSWC LANDFILL G	100414525	604-000-367.001	32.00	
360078	06/16/2023	FREMONT, CITY OF23-0101993	100414675	604-000-121.003	80,572.33	
360079	06/16/2023	U&I SANITATION23-0102003	100414676	604-000-121.003	270.97	
360148	06/19/2023	WASTE CONNECTIONS - FREMONT23-	100414839	604-000-121.003	1,106.80	
360309	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL G	100415055	604-000-367.001	345.00	
360310	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL G	100415055	604-000-367.001	43.00	
360311	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL G	100415055	604-000-367.001	101.00	
360312	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL G	100415055	604-000-367.001	38.00	
360313	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL G	100415055	604-000-367.001	15.00	
360447	06/21/2023	MIDWEST WIRE SOLUTIONS23-01020	100415174	604-000-121.003	25.20	
360448	06/21/2023	BUDS SANITARY SERVICE LLC23-01	100415175	604-000-121.003	17,141.84	
360449	06/21/2023	DAVE HOLLATZ CONSTRUCTION23-01	100415176	604-000-121.003	196.27	
360450	06/21/2023	PILGER, VILLAGE OF23-0101996	100415177	604-000-121.003	362.88	
360466	06/22/2023	NORFOLK, CITY OF23-0101992	100415294	604-000-121.003	83,068.99	
360493	06/22/2023	ALBRACHT DISPOSAL SERVICE23-01	100415383	604-000-121.003	3,967.41	
360494	06/22/2023	COLUMBUS, CITY OF23-0101995	100415384	604-000-121.003	71,237.47	
360582	06/26/2023	OAKLAND, CITY OF23-0101596	100415997	604-000-121.003	1,177.20	
360583	06/26/2023	OAKLAND, CITY OF23-0101795	100415998	604-000-121.003	1,253.78	
360584	06/26/2023	OAKLAND, CITY OF23-0101994	100415999	Multiple	1,591.21	
360778	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL G	100416518	604-000-367.001	451.00	
360779	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL G	100416518	604-000-367.001	13.00	
360780	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL G	100416518	604-000-367.001	161.00	
360781	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL G	100416518	604-000-367.001	115.00	
360782	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL G	100416518	604-000-367.001	12.00	
360783	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL G	100416518	604-000-367.001	16.00	
360865	06/30/2023	ALBRACHT DISPOSAL SERVICE23-01	100416765	604-000-121.003	3,967.41	
362192	07/05/2023	NNSWC LANDFILLNNSWC LANDFILL G	100417321	604-000-367.001	152.00	
362193	07/05/2023	NNSWC LANDFILLNNSWC LANDFILL G	100417321	604-000-367.001	32.00	
362282	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL G	100417457	604-000-367.001	114.00	
362283	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL G	100417457	604-000-367.001	50.00	
362284	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL G	100417457	604-000-367.001	12.00	
362285	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL G	100417457	604-000-367.001	94.00	
362286	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL G	100417457	604-000-367.001	18.00	
362287	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL G	100417457	604-000-367.001	12.00	
362330	07/07/2023	ASSOCIATED WHOLESALE GROCERS23	100417662	604-000-121.003	498.24	
362331	07/07/2023	ASSOCIATED WHOLESALE GROCERS23	100417663	604-000-121.003	310.32	

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TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-113.021 NNSWC PRIMARY ACT-MIDWEST 6709						
Journal CR: Cash Receipts						
362332	07/07/2023	ASSOCIATED WHOLESALE GROCERS23	100417664	604-000-121.003	215.28	
362348	07/07/2023	WASTE CONNECTIONS - NORFOLK23-	100417697	604-000-121.003	971.29	
362404	07/10/2023	ELKHORN RURAL PUBLIC POWER DIS	100417893	604-000-121.003	12.05	
362534	07/13/2023	ASSOCIATED WHOLESALE GROCERS23	100418521	604-000-121.003	489.86	
362535	07/13/2023	PILGER, VILLAGE OF23-0102120	100418522	604-000-121.003	338.90	
362604	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100418775	604-000-367.001	233.00	
362605	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100418775	604-000-367.001	124.00	
362606	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100418775	604-000-367.001	72.00	
362607	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100418775	604-000-367.001	167.00	
362608	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100418775	604-000-367.001	12.00	
362609	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100418775	604-000-367.001	155.00	
362610	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100418775	604-000-367.001	66.00	
362611	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100418775	604-000-367.001	123.00	
362614	07/14/2023	JOHNS DISPOSAL INC23-0101998	100418780	604-000-121.003	3,193.44	
362869	07/17/2023	NNSCW LANDFILLNNSWC LANDFILL G	100419060	604-000-367.001	41.00	
362897	07/17/2023	BUDS SANITARY SERVICE LLC23-01	100419085	604-000-121.003	16,338.34	
362898	07/17/2023	DAVE HOLLATZ CONSTRUCTION23-01	100419086	604-000-121.003	36.98	
362899	07/17/2023	MIDWEST WIRE SOLUTIONS23-01021	100419087	604-000-121.003	29.76	
362951	07/18/2023	NORFOLK, CITY OF23-0102116	100419201	604-000-121.003	78,280.74	
362953	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	248.00	
362954	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	218.00	
362955	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	17.00	
362956	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	25.00	
362957	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	86.00	
362958	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	115.00	
362959	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	12.00	
362960	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	112.00	
362961	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	68.00	
362962	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	115.00	
362963	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419216	604-000-367.001	72.00	
363053	07/19/2023	WASTE CONNECTIONS - FREMONT23-	100419480	604-000-121.003	1,143.71	
363165	07/21/2023	U&I SANITATION23-0102127	100419886	604-000-121.003	290.16	
363186	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419918	604-000-367.001	676.00	
363187	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419918	604-000-367.001	47.00	
363188	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419918	604-000-367.001	51.00	
363189	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419918	604-000-367.001	80.00	
363190	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419918	604-000-367.001	116.00	
363255	07/24/2023	ASSOCIATED WHOLESALE GROCERS23	100420279	604-000-121.003	318.96	
363256	07/24/2023	ASSOCIATED WHOLESALE GROCERS23	100420280	604-000-121.003	298.32	
363262	07/24/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420293	604-000-367.001	439.00	
363263	07/24/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420293	604-000-367.001	113.00	
363264	07/24/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420293	604-000-367.001	96.00	
363265	07/24/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420293	604-000-367.001	239.00	
363415	07/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420418	604-000-367.001	107.00	
363416	07/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420418	604-000-367.001	88.00	
363417	07/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420418	604-000-367.001	12.00	
363585	07/28/2023	FREMONT, CITY OF23-0102117	100421032	604-000-121.003	81,739.61	
363619	07/31/2023	ALBRACHT DISPOSAL SERVICE23-01	100421389	604-000-121.003	12,425.19	
363632	07/31/2023	B-D CONSTRUCTION23-0102131	100421461	604-000-121.003	1,698.97	
363689	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-367.001	235.00	
363690	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-367.001	12.00	
363691	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-367.001	70.00	
363692	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-367.001	68.00	
363693	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-367.001	18.00	
363853	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-367.001	584.00	
363854	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-367.001	237.00	
363855	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-367.001	37.00	
363856	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-367.001	100.00	
363857	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-367.001	12.00	
363858	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-367.001	116.00	
363926	08/04/2023	ASSOCIATED WHOLESALE GROCERS23	100422341	604-000-121.003	369.13	
363927	08/04/2023	ASSOCIATED WHOLESALE GROCERS23	100422342	604-000-121.003	408.96	
363928	08/04/2023	NUCOR23-0102330	100422343	604-000-121.003	47,340.86	
365156	08/08/2023	WASTE CONNECTIONS - NORFOLK23-	100423092	604-000-121.003	759.85	
365273	08/09/2023	ASSOCIATED WHOLESALE GROCERS23	100423323	604-000-121.003	1,124.42	
365281	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-367.001	410.00	
365282	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-367.001	13.00	
365283	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-367.001	123.00	
365284	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-367.001	181.00	
365285	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-367.001	125.00	
365286	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-367.001	87.00	
365287	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-367.001	200.00	
365385	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-367.001	1,542.00	
365386	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-367.001	307.00	
365387	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-367.001	620.00	
365388	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-367.001	331.00	
365389	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-367.001	76.00	
365443	08/11/2023	ASSOCIATED WHOLESALE GROCERS23	100423810	604-000-121.003	550.08	
365477	08/14/2023	JOHNS DISPOSAL INC23-0102122	100424192	604-000-121.003	3,085.75	

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Table with columns: JE #, Date, Description, Reference #, OFFSETTING GL, DEBIT, CREDIT. Contains entries for 'Journal CR: Cash Receipts' and 'Journal Totals'.

Table with columns: JE #, Date, Description, Reference #, OFFSETTING GL, DEBIT, CREDIT. Contains entries for 'Journal GJ: GENERAL JOURNAL' and 'Journal Totals'.

Table with columns: JE #, Date, Description, Reference #, OFFSETTING GL, DEBIT, CREDIT. Contains entry for 'Journal JE: JOURNAL ENTRY WITH DTFD'.

Table with columns: JE #, Date, Description, Reference #, OFFSETTING GL, DEBIT, CREDIT. Contains entries for 'Journal PR: Payroll'.

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FROM 604-000-113.002 TO 604-229-598.000

DB: Cityofnorfolk

TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-113.021 NNSWC PRIMARY ACT-MIDWEST 6709						
Journal PR: Payroll						
354525	04/14/2023	SUMMARY PR 04/14/2023		Multiple		2,736.12
355446	04/28/2023	SUMMARY PR 04/28/2023		Multiple		3,036.51
357197	05/15/2023	SUMMARY PR 05/15/2023		Multiple		2,812.12
358060	05/30/2023	SUMMARY PR 05/30/2023		Multiple		2,976.79
359800	06/15/2023	SUMMARY PR 06/15/2023		Multiple		3,672.73
360642	06/30/2023	SUMMARY PR 06/30/2023		Multiple		3,135.16
362481	07/14/2023	SUMMARY PR 07/14/2023		Multiple		2,935.75
363410	07/28/2023	SUMMARY PR 07/28/2023		Multiple		3,355.19
365340	08/15/2023	SUMMARY PR 08/15/2023		Multiple		3,229.03
366224	08/30/2023	SUMMARY PR 08/30/2023		Multiple		3,075.36
Journal Totals					0.00	42,697.81
Journal PRR: Payroll Remittance Checks						
350219	02/24/2023	SUMMARY PRR 02/24/2023	8687	604-000-223.002		384.57
350220	02/24/2023	SUMMARY PRR 02/24/2023	EFT891	Multiple		1,475.57
352894	03/28/2023	SUMMARY PRR 03/28/2023	8695	604-000-223.002		377.38
352895	03/28/2023	SUMMARY PRR 03/28/2023	EFT900	Multiple		1,429.62
352896	03/28/2023	SUMMARY PRR 03/28/2023	EFT899	604-000-222.006		627.14
355458	04/26/2023	SUMMARY PRR 04/26/2023	8705	604-000-223.002		383.77
355459	04/26/2023	SUMMARY PRR 04/26/2023	EFT908	Multiple		1,442.42
358072	05/25/2023	SUMMARY PRR 05/25/2023	8710	604-000-223.002		386.18
358073	05/25/2023	SUMMARY PRR 05/25/2023	EFT916	Multiple		1,450.29
360654	06/28/2023	SUMMARY PRR 06/28/2023	8717	604-000-223.002		390.97
360655	06/28/2023	SUMMARY PRR 06/28/2023	EFT925	Multiple		1,677.83
360656	06/28/2023	SUMMARY PRR 06/28/2023	EFT924	604-000-222.006		668.17
363446	07/26/2023	SUMMARY PRR 07/26/2023	8727	604-000-223.002		381.37
363447	07/26/2023	SUMMARY PRR 07/26/2023	EFT933	Multiple		1,532.16
366264	08/28/2023	SUMMARY PRR 08/28/2023	8732	604-000-223.002		404.55
366265	08/28/2023	SUMMARY PRR 08/28/2023	EFT941	Multiple		1,576.43
Journal Totals					0.00	14,588.42
Totals for 604-000-113.021					5,018,912.68	6,066,884.94
Balance 02/01/23:			5,601,538.56			
Net Change:			(1,047,972.26)			
Balance 08/31/23:			4,553,566.30			

604-000-116.001 U.S. TREASURIES						
Journal GJ: GENERAL JOURNAL						
350634	02/23/2023	NNSWC INVESTMENT MATURED 2-23-	28733	Multiple		1,493,509.65
354094	03/02/2023	PURCH US TREASURY NOTE 2-29-24	28764	Multiple	1,931,401.92	
354109	03/31/2023	REDEEMED US TREAUSRY 3-31-23	28789	Multiple		1,489,252.41
366565	08/29/2023	US TREASURY DIVIDEND 8-29-23	29012	Multiple	34,057.61	
Journal Totals					1,965,459.53	2,982,762.06
Totals for 604-000-116.001					1,965,459.53	2,982,762.06
Balance 02/01/23:			2,982,762.06			
Net Change:			(1,017,302.53)			
Balance 08/31/23:			1,965,459.53			

604-000-121.003 ACCOUNTS RECEIVABLE						
Journal CR: Cash Receipts						
347790	02/01/2023	WASTE CONNECTIONS - FREMONT23-	100393535	604-000-113.021		1,168.34
347975	02/03/2023	FREMONT, CITY OF23-0101152	100393959	604-000-113.021		55,425.86
349169	02/07/2023	ASSOCIATED WHOLESALE GROCERS23	100394760	604-000-113.021		259.44
349170	02/07/2023	ASSOCIATED WHOLESALE GROCERS23	100394761	604-000-113.021		1,072.82
349450	02/08/2023	WASTE CONNECTIONS - NORFOLK23-	100395083	604-000-113.021		636.25
349485	02/09/2023	COLUMBUS, CITY OF22-0100996	100395241	604-000-113.021		56,738.12
349486	02/09/2023	COLUMBUS, CITY OF23-0101154	100395242	604-000-113.021		52,007.07
349487	02/09/2023	ASSOCIATED WHOLESALE GROCERS23	100395244	604-000-113.021		309.12
349576	02/13/2023	JOHNS DISPOSAL INC23-0101157	100395872	604-000-113.021		1,643.43
349722	02/15/2023	U&I SANITATION23-0101317	100396359	604-000-113.021		322.58
349723	02/15/2023	BUDS SANITARY SERVICE LLC23-01	100396360	604-000-113.021		15,541.98
349724	02/15/2023	BUDS SANITARY SERVICE LLC23-01	100396361	604-000-113.021		15,189.74
349748	02/16/2023	PILGER, VILLAGE OF23-0101310	100396495	604-000-113.021		188.40
349749	02/16/2023	MIDWEST WIRE SOLUTIONS23-01013	100396496	604-000-113.021		26.16
349819	02/17/2023	FREMONT, CITY OF23-0101307	100396670	604-000-113.021		57,836.55
350140	02/23/2023	DOERNEMANN CONSTRUCTION23-0101	100397569	604-000-113.021		1,591.78
350145	02/23/2023	NORFOLK, CITY OF23-0101306	100397579	604-000-113.021		65,105.09
350391	02/27/2023	COLUMBUS, CITY OF23-0101309	100398331	604-000-113.021		50,676.30
350392	02/27/2023	OAKLAND, CITY OF23-0101308	100398332	604-000-113.021		1,115.77
350402	02/27/2023	ALBRACHT DISPOSAL SERVICE23-01	100398342	604-000-113.021		11,347.57
350779	03/03/2023	WASTE CONNECTIONS - FREMONT23-	100398988	604-000-113.021		332.61
351778	03/07/2023	ALTER METAL RECYCLING23-010146	100399369	604-000-113.021		0.23
351779	03/07/2023	ALTER METAL RECYCLING23-010132	100399370	604-000-113.021		0.22
351780	03/07/2023	ALTER METAL RECYCLING22-010101	100399371	604-000-113.021		22.58

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TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-121.003 ACCOUNTS RECEIVABLE						
Journal CR: Cash Receipts						
362534	07/13/2023	ASSOCIATED WHOLESALE GROCERS23	100418521	604-000-113.021		489.86
362535	07/13/2023	PILGER, VILLAGE OF23-0102120	100418522	604-000-113.021		338.90
362614	07/14/2023	JOHNS DISPOSAL INC23-0101998	100418780	604-000-113.021		3,193.44
362897	07/17/2023	BUDS SANITARY SERVICE LLC23-01	100419085	604-000-113.021		16,338.34
362898	07/17/2023	DAVE HOLLATZ CONSTRUCTION23-01	100419086	604-000-113.021		36.98
362899	07/17/2023	MIDWEST WIRE SOLUTIONS23-01021	100419087	604-000-113.021		29.76
362951	07/18/2023	NORFOLK, CITY OF23-0102116	100419201	604-000-113.021		78,280.74
363053	07/19/2023	WASTE CONNECTIONS - FREMONT23-	100419480	604-000-113.021		1,143.71
363165	07/21/2023	U&I SANITATION23-0102127	100419886	604-000-113.021		290.16
363255	07/24/2023	ASSOCIATED WHOLESALE GROCERS23	100420279	604-000-113.021		318.96
363256	07/24/2023	ASSOCIATED WHOLESALE GROCERS23	100420280	604-000-113.021		298.32
363585	07/28/2023	FREMONT, CITY OF23-0102117	100421032	604-000-113.021		81,739.61
363619	07/31/2023	ALBRACHT DISPOSAL SERVICE23-01	100421389	604-000-113.021		12,425.19
363632	07/31/2023	B-D CONSTRUCTION23-0102131	100421461	604-000-113.021		1,698.97
363926	08/04/2023	ASSOCIATED WHOLESALE GROCERS23	100422341	604-000-113.021		369.13
363927	08/04/2023	ASSOCIATED WHOLESALE GROCERS23	100422342	604-000-113.021		408.96
363928	08/04/2023	NUCOR23-0102330	100422343	604-000-113.021		47,340.86
365156	08/08/2023	WASTE CONNECTIONS - NORFOLK23-	100423092	604-000-113.021		759.85
365273	08/09/2023	ASSOCIATED WHOLESALE GROCERS23	100423323	604-000-113.021		1,124.42
365443	08/11/2023	ASSOCIATED WHOLESALE GROCERS23	100423810	604-000-113.021		550.08
365477	08/14/2023	JOHNS DISPOSAL INC23-0102122	100424192	604-000-113.021		3,085.75
365479	08/14/2023	MIDWEST WIRE SOLUTIONS23-01023	100424194	604-000-113.021		26.88
365489	08/14/2023	B-D CONSTRUCTION23-0102334	100424205	604-000-113.021		5,849.09
365601	08/16/2023	NUCOR23-0102330	100424574	604-000-113.021		1,857.60
365895	08/21/2023	WASTE CONNECTIONS - FREMONT23-	100425320	604-000-113.021		1,015.73
366024	08/22/2023	U&I SANITATION23-0102331	100425563	604-000-113.021		510.48
366031	08/22/2023	BUDS SANITARY SERVICE LLC23-01	100425572	604-000-113.021		17,469.66
366037	08/22/2023	PILGER, VILLAGE OF23-0102324	100425578	604-000-113.021		355.68
366140	08/23/2023	NORFOLK, CITY OF23-0102321	100425727	604-000-113.021		76,803.34
366192	08/24/2023	COLUMBUS, CITY OF23-0102119	100425942	604-000-113.021		68,476.61
366193	08/24/2023	COLUMBUS, CITY OF23-0102335	100425943	604-000-113.021		65,828.04
366277	08/28/2023	OAKLAND, CITY OF23-0102118	100426429	604-000-113.021		1,460.72
366278	08/28/2023	OAKLAND, CITY OF23-0102323	100426430	604-000-113.021		1,098.73
366427	08/30/2023	ALBRACHT DISPOSAL SERVICE23-01	100426740	604-000-113.021		13,710.09
Journal Totals					0.00	1,882,467.06
Journal MRB: Misc Receivables Billing						
347969	02/05/2023	SUMMARY MRB 02/05/2023		Multiple	209,908.25	
350649	03/02/2023	SUMMARY MRB 03/02/2023		Multiple	193,365.44	
354117	04/04/2023	SUMMARY MRB 04/04/2023		604-000-367.001	239,819.65	
356800	05/04/2023	SUMMARY MRB 05/04/2023		604-000-367.001	280,746.64	
359577	06/07/2023	SUMMARY MRB 06/07/2023		Multiple	272,871.96	
362267	07/07/2023	SUMMARY MRB 07/07/2023		604-000-367.001	268,140.92	
363847	08/03/2023	SUMMARY MRB 08/03/2023		Multiple	310,261.61	
Journal Totals					1,775,114.47	0.00
Totals for 604-000-121.003					1,775,114.47	1,882,467.06
Balance 02/01/23:			182,547.38			
Net Change:			(107,352.59)			
Balance 08/31/23:			75,194.79			

604-000-138.009 DUE FROM DISB. FUND						
Journal CD: Cash Disbursements						
349088	02/06/2023	U S BANK	14490 (E)	Multiple		1,038.79
351732	03/06/2023	U S BANK	14629 (E)	Multiple		773.22
354032	04/03/2023	U S BANK	14771 (E)	Multiple		1,080.70
356707	05/01/2023	U S BANK	14916 (E)	Multiple		1,206.64
357593	05/19/2023	ONENECK IT SOLUTIONS LLC	15060 (A)	Multiple		2,090.00
359477	06/05/2023	U S BANK	15079 (E)	Multiple		478.25
362061	07/03/2023	U S BANK	15271 (E)	Multiple		904.95
364998	08/07/2023	U S BANK	15388 (E)	Multiple		1,584.25
Journal Totals					0.00	9,156.80
Journal GJ: GENERAL JOURNAL						
351842	02/28/2023	RCRD MONTHLY FUEL EXPENSE	28755	Multiple		72.35
354093	03/08/2023	TRANSFER FR NNSWC TO CITY OF N	28763	Multiple	1,020.67	
354317	03/31/2023	RCRD MONTHLY FUEL EXPENSE	28805	Multiple		66.68
354493	04/11/2023	TRANSFER FR NNSWC TO CITY	28812	Multiple	66.68	
354493	04/11/2023	TRANSFER FR NNSWC TO CITY	28812	Multiple	773.22	
355646	04/17/2023	CRCT ADVANCED AUTO PER RM	28819	Multiple		322.59
355646	04/17/2023	CRCT ADVANCED AUTO PER RM	28819	Multiple		99.90
357052	04/30/2023	RCRD MONTHLY FUEL EXPENSE	28846	Multiple		128.30
358515	05/09/2023	TRANSFER FR NNSWC TO CITY OF N	28848	Multiple	128.30	
358515	05/09/2023	TRANSFER FR NNSWC TO CITY OF N	28848	Multiple	1,503.19	
358529	05/31/2023	CRCT CELLULAR ROUTER FOR NNSWC	28874	Multiple	802.80	
358529	05/31/2023	CRCT CELLULAR ROUTER FOR NNSWC	28874	Multiple		802.80
359851	05/31/2023	RCRD MONTHLY FUEL EXPENSE	28884	Multiple		85.27

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TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-138.009 DUE FROM DISB. FUND						
Journal GJ: GENERAL JOURNAL						
360956	06/09/2023	RECORD MONTHLY FUEL TRANSFER	28897	Multiple	3,381.31	
362394	06/30/2023	RCRD MONTHLY FUEL EXPENSE	28942	Multiple		130.19
362396	07/10/2023	TRANSFER FR NNSWC TO CITY OF N	28944	Multiple	130.19	
362396	07/10/2023	TRANSFER FR NNSWC TO CITY OF N	28944	Multiple	478.25	
363778	07/31/2023	RCRD MONTHLY FUEL EXPENSE	28970	Multiple		68.62
365190	08/07/2023	TRANSFER FR NNSWC TO CITY OF N	28978	Multiple	68.62	
365190	08/07/2023	TRANSFER FR NNSWC TO CITY OF N	28978	Multiple	905.55	
367730	08/31/2023	RCRD MONTHLY FUEL EXPENSE	29025	Multiple		93.60
Journal Totals					9,258.78	1,870.30
Journal JE: JOURNAL ENTRY WITH DTFD						
349703	02/15/2023	TRANSFER FR NNSWC TO CITY	28718	Multiple	743.48	
Journal Totals					743.48	0.00
Totals for 604-000-138.009					10,002.26	11,027.10
Balance 02/01/23:				653.01 CR		
Net Change:				(1,024.84)		
Balance 08/31/23:				1,677.85 CR		

604-000-221.001 ACCOUNTS PAYABLE						
Journal AP: Accounts Payable						
349945	02/14/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2639	604-229-563.000		13.84
349946	02/14/2023	FAIRBANKS SCALES INCSALE REPA	1625468	604-229-546.000		2,500.75
349947	02/14/2023	WASTE CONNECTIONS OF NEDISPOSA	01312023	604-229-532.000		83,287.18
350947	02/16/2023	BOMGAARSBATTERY	23020471399	604-229-547.000		102.48
351043	02/16/2023	CULLIGAN OF COLUMBUSWATER COOL	23015264955	604-229-546.000		98.61
351061	02/16/2023	EAKES OFFICE PRODUCTPAPER	23011800157	Multiple		47.81
351097	02/16/2023	FARMERS UNION COOP SUPPLY COUN	23010010171	604-229-524.000		31.20
351151	02/16/2023	HY VEE COOKIES FOR MEETING	23029537846	604-229-546.000		14.99
351174	02/16/2023	HY VEE INCCOFFEE & WATER FOR M	23020832099	604-229-546.000		18.85
351279	02/16/2023	MENARDS-NORFOLKVINYL FLOORING	23027541244	604-229-546.000		45.67
351555	02/16/2023	STANTON CO PUBLIC POWERNW 21-2	23010932617	604-229-541.000		413.61
350808	02/28/2023	BURNS & MCDONNELL INCPROFESSIO	147043-4	604-229-587.000		63,705.88
350809	02/28/2023	SCS ENGINEERSMONITORING	0458243	604-229-568.000		2,435.00
352477	03/14/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2720	604-229-563.000		8.19
352478	03/14/2023	LEAGUE ASSOCIATION OF RISK MAN	105813	Multiple		16,725.00
352479	03/14/2023	NE DEPT OF ENVIRONMENT & ENER	2000	604-229-568.000		7,500.00
352480	03/14/2023	ROB MERCERMILEAGE	20230223	604-229-553.000		28.82
352481	03/14/2023	WASTE CONNECTIONS OF NEDISPOSA	02282023	604-229-532.000		79,950.07
353392	03/16/2023	AT & TLONG DISTANCE	23039495568	Multiple		0.10
353417	03/16/2023	BOMGAARSTURNBUCKLE, DUCT TAPE	23020979053	604-229-546.000		36.44
353459	03/16/2023	CABELA'S INCSEATCOVER	23021079549	604-229-547.000		37.44
353498	03/16/2023	CULLIGAN OF COLUMBUSVnd: 11963	23020904382	604-229-546.000		66.61
353559	03/16/2023	FARMERS UNION COOP SUPPLY COUN	23020010080	604-229-524.000		48.70
353672	03/16/2023	MENARDS-NORFOLKTOTES	23023120054	604-229-546.000		122.88
353780	03/16/2023	NORFOLK DAILY NEWS02/01/2023-0	23031033258	Multiple		56.47
353823	03/16/2023	NWEACONFERENCE REGISTRATION	23032716573	604-229-553.000		205.00
353887	03/16/2023	SPACE EXPLORATION TECHNOLSTARL	23027298726	604-229-562.000		110.00
353890	03/16/2023	STANTON CO PUBLIC POWERNW 21-2	23020939023	604-229-541.000		372.06
353930	03/16/2023	U.S. PLASTIC CORPORATIONVINYL	23020799424	604-229-546.000		25.00
353973	03/29/2023	BAIRD HOLMPROF SERV	295071	604-229-568.000		3,500.00
354886	04/11/2023	BURNS & MCDONNELL INCPROFESSIO	147043-5	604-229-587.000		25,150.06
354887	04/11/2023	CAROLINA SOFTWARESUPPORT	86562	604-229-568.000		166.67
354888	04/11/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2791	604-229-563.000		7.56
354889	04/11/2023	FORVIS LLPPOF SERV	BK01761153	604-229-568.000		7,250.00
354890	04/11/2023	J J WESTHOFF CONSTRUCTIONAREA	20230406	604-229-587.000		299,034.00
354891	04/11/2023	NE DEPT OF ENVIRONMENT & ENER	38469	604-229-532.000		33,505.29
354892	04/11/2023	STANTON CO TREASURERHOST FEE	APRIL 2023	604-229-568.000		26,888.93
354893	04/11/2023	WASTE CONNECTIONS OF NEDISPOSA	3312023	604-229-532.000		88,465.05
355696	04/18/2023	AMAZONMONITORS	23042052455	Multiple		123.00
355783	04/18/2023	AT & TLONG DISTANCE	23034167322	Multiple		2.30
355901	04/18/2023	CULLIGAN OF COLUMBUSOFT WATER	23036437883	604-229-546.000		66.61
355959	04/18/2023	EMBASSY SUITESLODGING	23040204824	604-229-553.000		359.12
355960	04/18/2023	EREPLACEMENTPARTS.COMSNOWBLOWE	23047860994	604-229-546.000		142.22
355969	04/18/2023	FARMERS UNION COOP SUPPLY COUN	23040010173	604-229-524.000		27.00
356306	04/18/2023	OFFICE DEPOTPAPER	23039360893	Multiple		39.99
356367	04/18/2023	SPACE EXPLORATION TECHNOLSTARL	23031528725	604-229-562.000		90.00
356371	04/18/2023	STANTON CO PUBLIC POWERNW 21-2	23030943745	604-229-541.000		309.66
356373	04/18/2023	SUBWAYFREMONT	23046854944	604-229-553.000		16.23
356391	04/18/2023	U S BANK/MISC TRAVEL EXPSSUMMER	23040675925	604-229-553.000		30.51
356593	04/25/2023	SCS ENGINEERSLANDFILL MONITORI	0463618	604-229-568.000		6,212.50
357382	05/05/2023	BURNS & MCDONNELL INCNNSWC ARE	134526-3	604-229-568.000		674.88
357383	05/05/2023	BURNS & MCDONNELL INCNNSWC ARE	147043-6	604-229-587.000		10,667.74
357384	05/05/2023	J J WESTHOFF CONSTRUCTIONAREA	20230504	604-229-587.000		364,959.00
357385	05/05/2023	WASTE CONNECTIONS OF NEDISPOSA	4302023	604-229-532.000		96,033.36
357480	05/05/2023	ONENECK IT SOLUTIONS LLCDESKTO	INV000037175	Multiple		2,090.00
358789	05/16/2023	CULLIGAN OF COLUMBUSOFT WATER	23046363379	604-229-546.000		77.62

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FROM 604-000-113.002 TO 604-229-598.000

DB: Cityofnorfolk

TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-221.001 ACCOUNTS PAYABLE						
Journal AP: Accounts Payable						
359127	05/16/2023	PEPLINK PEPWAVE LTDPRIMECARE	23051033158	604-229-564.000		49.00
359163	05/16/2023	SPACE EXPLORATION TECHNOLSTARL	23042918722	604-229-562.000		90.00
359166	05/16/2023	STANTON CO PUBLIC POWERNW 21-2	23040949349	604-229-541.000		261.63
359428	05/31/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2868	604-229-563.000		25.24
359429	05/31/2023	NE DEPT OF ENVIRONMENT & ENER	38653	604-229-568.000		654.84
359430	05/31/2023	SCS ENGINEERSLANDFILL MONITORI	0461913	604-229-568.000		2,000.00
359431	05/31/2023	SCS ENGINEERSLANDFILL MONITORI	0466425	604-229-568.000		17,397.10
360301	06/13/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2939	604-229-563.000		25.20
360302	06/13/2023	J J WESTHOFF CONSTRUCTIONAREA	APPLICATION NO	604-229-587.000		400,669.20
360303	06/13/2023	WASTE CONNECTIONS OF NEDISPOSA	5312023	604-229-532.000		94,855.24
361235	06/16/2023	CULLIGAN OF COLUMBUSOFT WATER	23050622193	604-229-546.000		76.37
361405	06/16/2023	INSIGHT PUBLIC SECTOR INCPRI	23060496831	Multiple		553.66
361703	06/16/2023	SPACE EXPLORATION TECHNOLSTARL	23057348722	604-229-562.000		90.00
361710	06/16/2023	STANTON CO PUBLIC POWERNW 21-2	23050955158	604-229-541.000		144.91
361772	06/16/2023	VERIZON WIRELESSCELL PHONES	23058824528	Multiple		40.01
362760	07/11/2023	BURNS & MCDONNELL INCPROF ENG	156357-1	604-229-568.000		4,820.53
362761	07/11/2023	BURNS & MCDONNELL INCLANDFILL	124922-15	604-229-568.000		15,851.21
362762	07/11/2023	BURNS & MCDONNELL INCAREA 6 PH	156356-2	604-229-587.000		44,232.00
362763	07/11/2023	BURNS & MCDONNELL INCAREA 6 PH	156356-1	604-229-587.000		100,682.09
362764	07/11/2023	CAROLINA SOFTWARESUPPORT	87495	604-229-568.000		166.67
362765	07/11/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2995	604-229-563.000		9.45
362766	07/11/2023	FAIRBANKS SCALES INCTEST & INS	1644424	604-229-546.000		799.00
362767	07/11/2023	FREMONT TRIBUNEOPEN HOUSE	1159445	604-229-565.000		41.36
362768	07/11/2023	J J WESTHOFF CONSTRUCTIONAREA	APPLICATION NO	604-229-587.000		537,319.80
362769	07/11/2023	NE DEPT OF ENVIRONMENT & ENER	38711	604-229-532.000		42,932.74
362770	07/11/2023	STANTON CO TREASURERHOST FEE	JULY 2023	604-229-568.000		23,304.51
362771	07/11/2023	WASTE CONNECTIONS OF NEDISPOSA	6302023	604-229-532.000		93,693.11
364013	07/18/2023	AMAZONCAMERA	23064867887	604-229-546.000		112.90
364071	07/18/2023	AT & TLONG DISTANCE	23076860849	Multiple		0.21
364182	07/18/2023	CULLIGAN OF COLUMBUSOFT WATER	23068422461	604-229-546.000		69.37
364258	07/18/2023	FARMERS UNION COOP SUPPLY COSU	23060010350	604-229-524.000		73.80
364272	07/18/2023	FLOOR MAINTENANCEDUST MOPS	23069991187	Multiple		111.74
364273	07/18/2023	FLOOR MAINTENANCEBOWL CLEANSE,	23069991203	604-229-546.000		20.08
364405	07/18/2023	MENARDS-NORFOLKGLASS CLNR, WIP	23067271931	604-229-546.000		24.22
364521	07/18/2023	NI NDA DEVICESCALE REGISTRATIO	23074892758	604-229-555.000		142.87
364543	07/18/2023	NORTH STAR FORMSSCALE TICKETS	23071363182	Multiple		155.90
364598	07/18/2023	SANITAS TECHNOLOGIESSOFTWARE	23062241185	604-229-564.000		395.00
364608	07/18/2023	SPACE EXPLORATION TECHNOLSTARL	23066038726	604-229-562.000		90.00
364611	07/18/2023	STANTON CO PUBLIC POWERNW 21-2	23060961163	604-229-541.000		110.16
364663	07/18/2023	VERIZON WIRELESSCELL PHONES	23061640891	Multiple		40.01
364664	07/18/2023	VERIZON WIRELESSCELL PHONES	23073581379	Multiple		40.01
364666	07/18/2023	VICS ENGINE SERVICE INCMOWER S	23063000019	604-229-546.000		197.98
364906	08/01/2023	SCS ENGINEERSLANDFILL MONITORI	0472415	604-229-568.000		842.50
365855	08/15/2023	CASEY'S MAIL SERVICE LLCPOSTAG	3081	604-229-563.000		10.24
365856	08/15/2023	J J WESTHOFF CONSTRUCTIONAREA	APPLICATION NO	604-229-587.000		877,428.00
365857	08/15/2023	WASTE CONNECTIONS OF NELANDFIL	7312023	604-229-532.000		101,973.55
366650	08/16/2023	AT & TLONG DISTANCE	23084937768	Multiple		0.07
366684	08/16/2023	BOMGAARSSHOVEL	23070158338	Multiple		14.99
366685	08/16/2023	BOMGAARSVnd: 1070 Invoice: 230	23070172162	Multiple		274.48
366784	08/16/2023	CULLIGAN OF COLUMBUSOFT WATER	23075788763	604-229-546.000		77.62
367139	08/16/2023	NORFOLK DAILY NEWS06/01/23-06/	23077182292	Multiple		35.65
367235	08/16/2023	SPACE EXPLORATION TECHNOLSTARL	23077608724	604-229-562.000		90.00
367240	08/16/2023	STANTON CO PUBLIC POWERNW 21-2	23070966525	604-229-541.000		132.74
367365	08/29/2023	BURNS & MCDONNELL INCSWPPP UPD	156357-2	604-229-568.000		423.90
367366	08/29/2023	BURNS & MCDONNELL INCLANDFILL	124922-16	604-229-568.000		2,207.27
367367	08/29/2023	BURNS & MCDONNELL INCAREA 6 PH	156356-3	604-229-587.000		47,710.38
367368	08/29/2023	NE DEPT OF ENVIRONMENT & ENER	38908	604-229-568.000		7,500.00

Journal Totals

0.00 3,644,988.46

Journal CD: Cash Disbursements

349078	02/06/2023	NORFOLK AIR INC	8682	604-000-113.021	480.00	
349079	02/06/2023	SCS ENGINEERS	8683	604-000-113.021	1,229.10	
349088	02/06/2023	U S BANK	14490 (E)	Multiple	1,038.79	
350018	02/21/2023	CASEY'S MAIL SERVICE LLC	8684	604-000-113.021	13.84	
350019	02/21/2023	FAIRBANKS SCALES INC	8685	604-000-113.021	2,500.75	
350020	02/21/2023	WASTE CONNECTIONS OF NE	8686	604-000-113.021	83,287.18	
351732	03/06/2023	U S BANK	14629 (E)	Multiple	773.22	
351734	03/06/2023	BURNS & MCDONNELL INC	8688	604-000-113.021	63,705.88	
351735	03/06/2023	SCS ENGINEERS	8689	604-000-113.021	2,435.00	
352581	03/20/2023	CASEY'S MAIL SERVICE LLC	8690	604-000-113.021	8.19	
352582	03/20/2023	LEAGUE ASSOCIATION OF RISK MAN	8691	604-000-113.021	16,725.00	
352583	03/20/2023	NE DEPT OF ENVIRONMENT & ENER	8692	604-000-113.021	7,500.00	
352584	03/20/2023	ROB MERCER	8693	604-000-113.021	28.82	
352585	03/20/2023	WASTE CONNECTIONS OF NE	8694	604-000-113.021	79,950.07	
354032	04/03/2023	U S BANK	14771 (E)	Multiple	1,080.70	
354084	04/03/2023	BAIRD HOLM	8696	604-000-113.021	3,500.00	
355033	04/17/2023	BURNS & MCDONNELL INC	8697	604-000-113.021	25,150.06	
355034	04/17/2023	CAROLINA SOFTWARE	8698	604-000-113.021	166.67	
355035	04/17/2023	CASEY'S MAIL SERVICE LLC	8699	604-000-113.021	7.56	
355036	04/17/2023	FORVIS LLP	8700	604-000-113.021	7,250.00	

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TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-221.001 ACCOUNTS PAYABLE						
Journal CD: Cash Disbursements						
355037	04/17/2023	J J WESTHOFF CONSTRUCTION	8701	604-000-113.021	299,034.00	
355038	04/17/2023	NE DEPT OF ENVIRONMENT & ENER	8702	604-000-113.021	33,505.29	
355039	04/17/2023	STANTON CO TREASURER	8703	604-000-113.021	26,888.93	
355040	04/17/2023	WASTE CONNECTIONS OF NE	8704	604-000-113.021	88,465.05	
356655	05/01/2023	SCS ENGINEERS	8706	604-000-113.021	6,212.50	
356707	05/01/2023	U S BANK	14916 (E)	Multiple	1,206.64	
357602	05/15/2023	BURNS & MCDONNELL INC	8707	604-000-113.021	11,342.62	
357603	05/15/2023	J J WESTHOFF CONSTRUCTION	8708	604-000-113.021	364,959.00	
357604	05/15/2023	WASTE CONNECTIONS OF NE	8709	604-000-113.021	96,033.36	
357593	05/19/2023	ONENECK IT SOLUTIONS LLC	15060 (A)	Multiple	2,090.00	
359432	06/05/2023	CASEY'S MAIL SERVICE LLC	8711	604-000-113.021	25.24	
359433	06/05/2023	NE DEPT OF ENVIRONMENT & ENER	8712	604-000-113.021	654.84	
359434	06/05/2023	SCS ENGINEERS	8713	604-000-113.021	19,397.10	
359477	06/05/2023	U S BANK	15079 (E)	Multiple	478.25	
360415	06/20/2023	CASEY'S MAIL SERVICE LLC	8714	604-000-113.021	25.20	
360416	06/20/2023	J J WESTHOFF CONSTRUCTION	8715	604-000-113.021	400,669.20	
360417	06/20/2023	WASTE CONNECTIONS OF NE	8716	604-000-113.021	94,855.24	
362061	07/03/2023	U S BANK	15271 (E)	Multiple	904.95	
362818	07/17/2023	CAROLINA SOFTWARE	8718	604-000-113.021	166.67	
362819	07/17/2023	NE DEPT OF ENVIRONMENT & ENER	8719	604-000-113.021	42,932.74	
362820	07/17/2023	BURNS & MCDONNELL INC	8720	604-000-113.021	165,585.83	
362821	07/17/2023	STANTON CO TREASURER	8721	604-000-113.021	23,304.51	
362822	07/17/2023	WASTE CONNECTIONS OF NE	8722	604-000-113.021	93,693.11	
362823	07/17/2023	J J WESTHOFF CONSTRUCTION	8723	604-000-113.021	537,319.80	
362824	07/17/2023	CASEY'S MAIL SERVICE LLC	8724	604-000-113.021	9.45	
362825	07/17/2023	FAIRBANKS SCALES INC	8725	604-000-113.021	799.00	
362826	07/17/2023	FREMONT TRIBUNE	8726	604-000-113.021	41.36	
364998	08/07/2023	U S BANK	15388 (E)	Multiple	1,584.25	
365060	08/07/2023	SCS ENGINEERS	8728	604-000-113.021	842.50	
365927	08/21/2023	CASEY'S MAIL SERVICE LLC	8729	604-000-113.021	10.24	
365928	08/21/2023	J J WESTHOFF CONSTRUCTION	8730	604-000-113.021	877,428.00	
365929	08/21/2023	WASTE CONNECTIONS OF NE	8731	604-000-113.021	101,973.55	
Journal Totals					3,589,269.25	0.00
Journal GJ: GENERAL JOURNAL						
354093	03/08/2023	TRANSFER FR NNSWC TO CITY OF N	28763	Multiple	3,939.72	
354492	03/31/2023	NNSWC TRANSFER ADMIN FEE	28811	Multiple		3,939.72
354493	04/11/2023	TRANSFER FR NNSWC TO CITY	28812	Multiple	3,939.72	
358515	05/09/2023	TRANSFER FR NNSWC TO CITY OF N	28848	Multiple	3,939.72	
359865	05/31/2023	RECORD MONTHLY ADMIN FEES	28896	Multiple		3,939.72
360956	06/09/2023	RECORD MONTHLY TRANSFER	28897	Multiple	3,939.72	
362396	07/10/2023	TRANSFER FR NNSWC TO CITY OF N	28944	Multiple	3,939.72	
365190	08/07/2023	TRANSFER FR NNSWC TO CITY OF N	28978	Multiple	3,939.72	
Journal Totals					23,638.32	7,879.44
Journal JE: JOURNAL ENTRY WITH DTDF						
349703	02/15/2023	TRANSFER FR NNSWC TO CITY	28718	Multiple	3,939.72	
351850	02/28/2023	NNSWC ADMIN FEE	28762	Multiple		3,939.72
357053	04/30/2023	RCRD TRANS FR NNSWC TO CITY FO	28847	Multiple	3,939.72	
362395	06/30/2023	RCRD TRANS FR NNSWC TO CITY FO	28943	Multiple	3,939.72	
363963	07/31/2023	RCRD TRANS FR NNSWC TO CITY FO	28977	Multiple	3,939.72	
367728	08/31/2023	RCRD TRANS FR NNSWC TO CITY FO	29023	Multiple	3,939.72	
Journal Totals					3,939.72	19,698.60
Totals for 604-000-221.001					3,616,847.29	3,672,566.50
Balance 02/01/23:				6,687.61		
Net Change:				55,719.21		
Balance 08/31/23:				62,406.82		

604-000-222.005 FED. WITHHOLDING PAYABLE						
Journal PR: Payroll						
349520	02/15/2023	SUMMARY PR 02/15/2023		Multiple		189.51
350207	02/28/2023	SUMMARY PR 02/28/2023		Multiple		199.10
352022	03/15/2023	SUMMARY PR 03/15/2023		Multiple		182.66
352881	03/30/2023	SUMMARY PR 03/30/2023		Multiple		193.62
354525	04/14/2023	SUMMARY PR 04/14/2023		Multiple		184.03
355446	04/28/2023	SUMMARY PR 04/28/2023		Multiple		203.21
357197	05/15/2023	SUMMARY PR 05/15/2023		Multiple		196.36
358060	05/30/2023	SUMMARY PR 05/30/2023		Multiple		194.99
359800	06/15/2023	SUMMARY PR 06/15/2023		Multiple		245.73
360642	06/30/2023	SUMMARY PR 06/30/2023		Multiple		190.88
362481	07/14/2023	SUMMARY PR 07/14/2023		Multiple		185.40
363410	07/28/2023	SUMMARY PR 07/28/2023		Multiple		203.18
365340	08/15/2023	SUMMARY PR 08/15/2023		Multiple		215.53
366224	08/30/2023	SUMMARY PR 08/30/2023		Multiple		207.32
Journal Totals					0.00	2,791.52
Journal PRR: Payroll Remittance Checks						

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FROM 604-000-113.002 TO 604-229-598.000

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TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-222.005 FED. WITHHOLDING PAYABLE						
Journal PRR: Payroll Remittance Checks						
350220	02/24/2023	SUMMARY PRR 02/24/2023	EFT891	Multiple	388.61	
352895	03/28/2023	SUMMARY PRR 03/28/2023	EFT900	Multiple	376.28	
355459	04/26/2023	SUMMARY PRR 04/26/2023	EFT908	Multiple	387.24	
358073	05/25/2023	SUMMARY PRR 05/25/2023	EFT916	Multiple	391.35	
360655	06/28/2023	SUMMARY PRR 06/28/2023	EFT925	Multiple	436.61	
363447	07/26/2023	SUMMARY PRR 07/26/2023	EFT933	Multiple	388.58	
366265	08/28/2023	SUMMARY PRR 08/28/2023	EFT941	Multiple	422.85	
Journal Totals					2,791.52	0.00
Totals for 604-000-222.005					2,791.52	2,791.52
Balance 02/01/23:					0.00	
Net Change:					0.00	
Balance 08/31/23:					0.00	

604-000-222.006 NEBR.WITHHOLDING PAYABLE						
Journal PR: Payroll						
349520	02/15/2023	SUMMARY PR 02/15/2023		Multiple		111.12
350207	02/28/2023	SUMMARY PR 02/28/2023		Multiple		106.00
352022	03/15/2023	SUMMARY PR 03/15/2023		Multiple		97.71
352881	03/30/2023	SUMMARY PR 03/30/2023		Multiple		106.06
354525	04/14/2023	SUMMARY PR 04/14/2023		Multiple		97.98
355446	04/28/2023	SUMMARY PR 04/28/2023		Multiple		111.29
357197	05/15/2023	SUMMARY PR 05/15/2023		Multiple		104.54
358060	05/30/2023	SUMMARY PR 05/30/2023		Multiple		106.68
359800	06/15/2023	SUMMARY PR 06/15/2023		Multiple		136.98
360642	06/30/2023	SUMMARY PR 06/30/2023		Multiple		110.70
362481	07/14/2023	SUMMARY PR 07/14/2023		Multiple		102.03
363410	07/28/2023	SUMMARY PR 07/28/2023		Multiple		120.97
365340	08/15/2023	SUMMARY PR 08/15/2023		Multiple		121.73
366224	08/30/2023	SUMMARY PR 08/30/2023		Multiple		113.82
Journal Totals					0.00	1,547.61
Journal PRR: Payroll Remittance Checks						
352896	03/28/2023	SUMMARY PRR 03/28/2023	EFT899	604-000-113.021	627.14	
360656	06/28/2023	SUMMARY PRR 06/28/2023	EFT924	604-000-113.021	668.17	
Journal Totals					1,295.31	0.00
Totals for 604-000-222.006					1,295.31	1,547.61
Balance 02/01/23:					206.25	
Net Change:					252.30	
Balance 08/31/23:					458.55	

604-000-222.007 FICA TAX PAYABLE						
Journal PR: Payroll						
349520	02/15/2023	SUMMARY PR 02/15/2023		Multiple		573.08
350207	02/28/2023	SUMMARY PR 02/28/2023		Multiple		513.88
352022	03/15/2023	SUMMARY PR 03/15/2023		Multiple		511.16
352881	03/30/2023	SUMMARY PR 03/30/2023		Multiple		542.18
354525	04/14/2023	SUMMARY PR 04/14/2023		Multiple		500.04
355446	04/28/2023	SUMMARY PR 04/28/2023		Multiple		555.14
357197	05/15/2023	SUMMARY PR 05/15/2023		Multiple		515.76
358060	05/30/2023	SUMMARY PR 05/30/2023		Multiple		543.18
359800	06/15/2023	SUMMARY PR 06/15/2023		Multiple		671.88
360642	06/30/2023	SUMMARY PR 06/30/2023		Multiple		569.34
362481	07/14/2023	SUMMARY PR 07/14/2023		Multiple		534.04
363410	07/28/2023	SUMMARY PR 07/28/2023		Multiple		609.54
365340	08/15/2023	SUMMARY PR 08/15/2023		Multiple		590.84
366224	08/30/2023	SUMMARY PR 08/30/2023		Multiple		562.74
Journal Totals					0.00	7,792.80
Journal PRR: Payroll Remittance Checks						
350220	02/24/2023	SUMMARY PRR 02/24/2023	EFT891	Multiple	1,086.96	
352895	03/28/2023	SUMMARY PRR 03/28/2023	EFT900	Multiple	1,053.34	
355459	04/26/2023	SUMMARY PRR 04/26/2023	EFT908	Multiple	1,055.18	
358073	05/25/2023	SUMMARY PRR 05/25/2023	EFT916	Multiple	1,058.94	
360655	06/28/2023	SUMMARY PRR 06/28/2023	EFT925	Multiple	1,241.22	
363447	07/26/2023	SUMMARY PRR 07/26/2023	EFT933	Multiple	1,143.58	
366265	08/28/2023	SUMMARY PRR 08/28/2023	EFT941	Multiple	1,153.58	
Journal Totals					7,792.80	0.00

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FROM 604-000-113.002 TO 604-229-598.000

DB: Cityofnorfolk

TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-222.007 FICA TAX PAYABLE						
Totals for 604-000-222.007					7,792.80	7,792.80
		Balance 02/01/23:		0.00		
		Net Change:		0.00		
		Balance 08/31/23:		0.00		

604-000-223.002 PAY-TO RETIREMENT PLANS						
Journal PR: Payroll						
349520	02/15/2023	SUMMARY PR 02/15/2023		Multiple		189.49
350207	02/28/2023	SUMMARY PR 02/28/2023		Multiple		195.08
352022	03/15/2023	SUMMARY PR 03/15/2023		Multiple		185.49
352881	03/30/2023	SUMMARY PR 03/30/2023		Multiple		191.89
354525	04/14/2023	SUMMARY PR 04/14/2023		Multiple		186.29
355446	04/28/2023	SUMMARY PR 04/28/2023		Multiple		197.48
357197	05/15/2023	SUMMARY PR 05/15/2023		Multiple		193.49
358060	05/30/2023	SUMMARY PR 05/30/2023		Multiple		192.69
359800	06/15/2023	SUMMARY PR 06/15/2023		Multiple		200.68
360642	06/30/2023	SUMMARY PR 06/30/2023		Multiple		190.29
362481	07/14/2023	SUMMARY PR 07/14/2023		Multiple		187.09
363410	07/28/2023	SUMMARY PR 07/28/2023		Multiple		194.28
365340	08/15/2023	SUMMARY PR 08/15/2023		Multiple		204.67
366224	08/30/2023	SUMMARY PR 08/30/2023		Multiple		199.88
Journal Totals					0.00	2,708.79
Journal PRR: Payroll Remittance Checks						
350219	02/24/2023	SUMMARY PRR 02/24/2023	8687	604-000-113.021	384.57	
352894	03/28/2023	SUMMARY PRR 03/28/2023	8695	604-000-113.021	377.38	
355458	04/26/2023	SUMMARY PRR 04/26/2023	8705	604-000-113.021	383.77	
358072	05/25/2023	SUMMARY PRR 05/25/2023	8710	604-000-113.021	386.18	
360654	06/28/2023	SUMMARY PRR 06/28/2023	8717	604-000-113.021	390.97	
363446	07/26/2023	SUMMARY PRR 07/26/2023	8727	604-000-113.021	381.37	
366264	08/28/2023	SUMMARY PRR 08/28/2023	8732	604-000-113.021	404.55	
Journal Totals					2,708.79	0.00
Totals for 604-000-223.002					2,708.79	2,708.79
		Balance 02/01/23:		0.00		
		Net Change:		0.00		
		Balance 08/31/23:		0.00		

604-000-367.001 USE FEES						
Journal CR: Cash Receipts						
349187	02/07/2023	NNSWC LANDFILLNNSWC LANDFILL G 100394812		604-000-113.021		17.00
349188	02/07/2023	NNSWC LANDFILLNNSWC LANDFILL G 100394813		604-000-113.021		12.00
349583	02/13/2023	NNSWC LANDFILLNNSWC LANDFILL G 100395893		604-000-113.021		133.00
349984	02/21/2023	NNSWC LANDFILLNNSWC LANDFILL G 100397278		604-000-113.021		187.00
350526	02/28/2023	NNSWC LANDFILLNNSWC LANDFILL G 100398466		604-000-113.021		49.00
350527	02/28/2023	NNSWC LANDFILLNNSWC LANDFILL G 100398466		604-000-113.021		25.00
350528	02/28/2023	NNSWC LANDFILLNNSWC LANDFILL G 100398466		604-000-113.021		12.00
350529	02/28/2023	NNSWC LANDFILLNNSWC LANDFILL G 100398466		604-000-113.021		12.00
350650	03/02/2023	NNSWC LANDFILLNNSWC LANDFILL G 100398727		604-000-113.021		33.00
350651	03/02/2023	NNSWC LANDFILLNNSWC LANDFILL G 100398727		604-000-113.021		27.00
351685	03/06/2023	NNSWC LANDFILLNN 100399307		604-000-113.021		159.00
352101	03/14/2023	NNSWC LANDFILLNNSWC LANDFILL G 100400116		604-000-113.021		24.00
352102	03/14/2023	NNSWC LANDFILLNNSWC LANDFILL G 100400116		604-000-113.021		805.00
352103	03/14/2023	NNSWC LANDFILLNNSWC LANDFILL G 100400116		604-000-113.021		62.00
352104	03/14/2023	NNSWC LANDFILLNNSWC LANDFILL G 100400117		604-000-113.021		102.00
352515	03/20/2023	NNSWC LANDFILLNNSWC LANDFILL G 100400808		604-000-113.021		35.00
352516	03/20/2023	NNSWC LANDFILLNNSWC LANDFILL G 100400808		604-000-113.021		12.00
352690	03/22/2023	NNSWC LANDFILLNNSWC LANDFILL G 100401097		604-000-113.021		314.00
352866	03/27/2023	NNSWC LANDFILLNNSWC LANDFILL G 100401803		604-000-113.021		48.00
352867	03/27/2023	NNSWC LANDFILLNNSWC LANDFILL G 100401803		604-000-113.021		43.00
352868	03/27/2023	NNSWC LANDFILLNNSWC LANDFILL G 100401803		604-000-113.021		13.00
353136	03/31/2023	NNSWC LANDFILLNNSWC LANDFILL G 100402354		604-000-113.021		119.00
353137	03/31/2023	NNSWC LANDFILLNNSWC LANDFILL G 100402354		604-000-113.021		72.00
353138	03/31/2023	NNSWC LANDFILLNNSWC LANDFILL G 100402354		604-000-113.021		25.00
353139	03/31/2023	NNSWC LANDFILLNNSWC LANDFILL G 100402354		604-000-113.021		20.00
354145	04/04/2023	NNSWC LANDFILLNNSWC LANDFILL G 100402985		604-000-113.021		32.00
354368	04/07/2023	NNSWC LANDFILLNNSWC LANDFILL G 100403711		604-000-113.021		91.00
354924	04/18/2023	NNNNSWC LANDFILL GATE FEES 100405689		604-000-113.021		127.00
354925	04/18/2023	NNNNSWC LANDFILL GATE FEES 100405689		604-000-113.021		29.00
354926	04/18/2023	NNNNSWC LANDFILL GATE FEES 100405689		604-000-113.021		29.00
354927	04/18/2023	NNNNSWC LANDFILL GATE FEES 100405689		604-000-113.021		25.00
354928	04/18/2023	NNNNSWC LANDFILL GATE FEES 100405689		604-000-113.021		16.00
355125	04/20/2023	NNSWC LANDFILLNNSWC LANDFILL G 100406068		604-000-113.021		289.00
355430	04/25/2023	NNSWC LANDFILLNNSWC LANDFILL G 100406773		604-000-113.021		126.00
355431	04/25/2023	NNSWC LANDFILLNNSWC LANDFILL G 100406773		604-000-113.021		100.00

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FROM 604-000-113.002 TO 604-229-598.000
TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-367.001 USE FEES						
Journal CR: Cash Receipts						
355432	04/25/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100406773	604-000-113.021		53.00
356633	05/01/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100407609	604-000-113.021		120.00
356634	05/01/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100407610	604-000-113.021		137.00
356759	05/02/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100407724	604-000-113.021		61.00
357181	05/10/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100408849	604-000-113.021		115.00
357182	05/10/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100408852	604-000-113.021		209.00
357622	05/16/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100409701	604-000-113.021		380.00
357623	05/16/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100409701	604-000-113.021		15.00
357973	05/23/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100410765	604-000-113.021		259.00
357974	05/23/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100410765	604-000-113.021		107.00
358086	05/25/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100411214	604-000-113.021		193.00
358087	05/25/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100411214	604-000-113.021		12.00
358088	05/25/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100411214	604-000-113.021		29.00
358259	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412087	604-000-113.021		114.00
358260	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412087	604-000-113.021		20.00
358261	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412087	604-000-113.021		12.00
358262	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412087	604-000-113.021		17.00
358263	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412087	604-000-113.021		12.00
358264	05/31/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412087	604-000-113.021		45.00
358480	06/02/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412628	604-000-113.021		150.00
358481	06/02/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412628	604-000-113.021		104.00
358482	06/02/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412628	604-000-113.021		96.00
358483	06/02/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100412628	604-000-113.021		51.00
359588	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100413451	604-000-113.021		62.00
359589	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100413451	604-000-113.021		12.00
359590	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100413451	604-000-113.021		18.00
359591	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100413451	604-000-113.021		18.00
359592	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100413451	604-000-113.021		12.00
359593	06/07/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100413451	604-000-113.021		13.00
359820	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414142	604-000-113.021		352.00
359821	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414142	604-000-113.021		12.00
359822	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414142	604-000-113.021		28.00
359823	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414142	604-000-113.021		81.00
359824	06/12/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414142	604-000-113.021		12.00
360039	06/15/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414525	604-000-113.021		103.00
360040	06/15/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414525	604-000-113.021		84.00
360041	06/15/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414525	604-000-113.021		100.00
360042	06/15/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100414525	604-000-113.021		32.00
360309	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100415055	604-000-113.021		345.00
360310	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100415055	604-000-113.021		43.00
360311	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100415055	604-000-113.021		101.00
360312	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100415055	604-000-113.021		38.00
360313	06/20/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100415055	604-000-113.021		15.00
360778	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100416518	604-000-113.021		451.00
360779	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100416518	604-000-113.021		13.00
360780	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100416518	604-000-113.021		161.00
360781	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100416518	604-000-113.021		115.00
360782	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100416518	604-000-113.021		12.00
360783	06/29/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100416518	604-000-113.021		16.00
362192	07/05/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100417321	604-000-113.021		152.00
362193	07/05/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100417321	604-000-113.021		32.00
362282	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100417457	604-000-113.021		114.00
362283	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100417457	604-000-113.021		50.00
362284	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100417457	604-000-113.021		12.00
362285	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100417457	604-000-113.021		94.00
362286	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100417457	604-000-113.021		18.00
362287	07/06/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100417457	604-000-113.021		12.00
362604	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100418775	604-000-113.021		233.00
362605	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100418775	604-000-113.021		124.00
362606	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100418775	604-000-113.021		72.00
362607	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100418775	604-000-113.021		167.00
362608	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100418775	604-000-113.021		12.00
362609	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100418775	604-000-113.021		155.00
362610	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100418775	604-000-113.021		66.00
362611	07/14/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100418775	604-000-113.021		123.00
362869	07/17/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419060	604-000-113.021		41.00
362953	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		248.00
362954	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		218.00
362955	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		17.00
362956	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		25.00
362957	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		86.00
362958	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		115.00
362959	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		12.00
362960	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		112.00
362961	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		68.00
362962	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		115.00
362963	07/18/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419216	604-000-113.021		72.00
363186	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419918	604-000-113.021		676.00
363187	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL	G 100419918	604-000-113.021		47.00

User: nbeed

FROM 604-000-113.002 TO 604-229-598.000

DB: Cityofnorfolk

TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-367.001 USE FEES						
Journal CR: Cash Receipts						
363188	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419918	604-000-113.021		51.00
363189	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419918	604-000-113.021		80.00
363190	07/21/2023	NNSWC LANDFILLNNSWC LANDFILL G	100419918	604-000-113.021		116.00
363262	07/24/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420293	604-000-113.021		439.00
363263	07/24/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420293	604-000-113.021		113.00
363264	07/24/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420293	604-000-113.021		96.00
363265	07/24/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420293	604-000-113.021		239.00
363415	07/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420418	604-000-113.021		107.00
363416	07/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420418	604-000-113.021		88.00
363417	07/25/2023	NNSWC LANDFILLNNSWC LANDFILL G	100420418	604-000-113.021		12.00
363689	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-113.021		235.00
363690	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-113.021		12.00
363691	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-113.021		70.00
363692	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-113.021		68.00
363693	08/01/2023	NNSWC LANDFILLNNSWC LANDFILL G	100421597	604-000-113.021		18.00
363853	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-113.021		584.00
363854	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-113.021		237.00
363855	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-113.021		37.00
363856	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-113.021		100.00
363857	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-113.021		12.00
363858	08/03/2023	NNSWC LANDFILLNNSWC LANDFILL G	100422096	604-000-113.021		116.00
365281	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-113.021		410.00
365282	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-113.021		13.00
365283	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-113.021		123.00
365284	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-113.021		181.00
365285	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-113.021		125.00
365286	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-113.021		87.00
365287	08/09/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423338	604-000-113.021		200.00
365385	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-113.021		1,542.00
365386	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-113.021		307.00
365387	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-113.021		620.00
365388	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-113.021		331.00
365389	08/10/2023	NNSWC LANDFILLNNSWC LANDFILL G	100423540	604-000-113.021		76.00
365498	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		612.00
365499	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		395.00
365500	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		91.00
365501	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		41.00
365502	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		72.00
365503	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		56.00
365504	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		12.00
365505	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		111.00
365506	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		13.00
365507	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		259.00
365508	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		96.00
365509	08/14/2023	NNSWC LANDFILLNNSWC LANDFILL G	100424225	604-000-113.021		57.00
365685	08/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100425028	604-000-113.021		322.00
365686	08/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100425028	604-000-113.021		21.00
365687	08/18/2023	NNSWC LANDFILLNNSWC LANDFILL G	100425028	604-000-113.021		67.00
366048	08/22/2023	NNSWC LANDFILLNNSWC LANDFILL G	100425605	604-000-113.021		2,449.00
366406	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		659.00
366407	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		370.00
366408	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		74.00
366409	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		19.00
366410	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		239.00
366411	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		24.00
366412	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		57.00
366413	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		40.00
366414	08/30/2023	NNSWC LANDFILLNNSWC LANDFILL G	100426726	604-000-113.021		12.00
Journal Totals					0.00	24,085.00
Journal GJ: GENERAL JOURNAL						
358520	05/17/2023	CRCT RTD CHK KNAPP FR 7-2018	28860	Multiple	25.00	
363767	07/01/2023	W/O BD CHK FR BYRON KNAPP	28961	604-000-111.009	103.00	
Journal Totals					128.00	0.00
Journal MRB: Misc Receivables Billing						
347969	02/05/2023	SUMMARY MRB 02/05/2023		Multiple		209,908.03
350649	03/02/2023	SUMMARY MRB 03/02/2023		Multiple		193,365.21
354117	04/04/2023	SUMMARY MRB 04/04/2023		604-000-121.003		239,819.65
356800	05/04/2023	SUMMARY MRB 05/04/2023		604-000-121.003		280,746.64
359577	06/07/2023	SUMMARY MRB 06/07/2023		Multiple		272,860.19
362267	07/07/2023	SUMMARY MRB 07/07/2023		604-000-121.003		268,140.92
363847	08/03/2023	SUMMARY MRB 08/03/2023		Multiple		310,261.49
Journal Totals					0.00	1,775,102.13

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JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-000-367.001 USE FEES						
Totals for 604-000-367.001					128.00	1,799,187.13
		Balance 02/01/23:		934,143.22		
		Net Change:		1,799,059.13		
		Balance 08/31/23:		2,733,202.35		

604-000-374.004 MISCELLANEOUS						
Journal GJ: GENERAL JOURNAL						
358520	05/17/2023	CRCT RTD CHK KNAPP FR 7-2018	28860	Multiple		25.00
Journal Totals					0.00	25.00
Totals for 604-000-374.004					0.00	25.00
		Balance 02/01/23:		0.00		
		Net Change:		25.00		
		Balance 08/31/23:		25.00		

604-000-374.008 LATE CHARGES						
Journal MRB: Misc Receivables Billing						
347969	02/05/2023	SUMMARY MRB 02/05/2023		Multiple		0.22
350649	03/02/2023	SUMMARY MRB 03/02/2023		Multiple		0.23
359577	06/07/2023	SUMMARY MRB 06/07/2023		Multiple		11.77
363847	08/03/2023	SUMMARY MRB 08/03/2023		Multiple		0.12
Journal Totals					0.00	12.34
Totals for 604-000-374.008					0.00	12.34
		Balance 02/01/23:		48.26		
		Net Change:		12.34		
		Balance 08/31/23:		60.60		

604-000-388.001 OTHER INTEREST INCOME						
Journal GJ: GENERAL JOURNAL						
350632	02/16/2023	SAFEKEEPING FEES WELLS FARGO	28722	Multiple	56.00	
350634	02/23/2023	NNSWC INVESTMENT MATURED 2-23-	28733	Multiple		6,490.35
350647	02/28/2023	ENTER INTEREST AMOUNTS	28748	Multiple		11,820.95
354094	03/02/2023	PURCH US TREASURY NOTE 2-29-24	28764	Multiple	163.04	
354100	03/21/2023	WF SAFEKEEPING FEES	28780	Multiple	54.00	
354109	03/31/2023	REDEEMED US TREASURY 3-31-23	28789	Multiple		10,747.59
354109	03/31/2023	REDEEMED US TREASURY 3-31-23	28789	Multiple		937.50
354116	03/31/2023	ENTER INTEREST AMOUNTS	28796	Multiple		12,474.80
355648	04/18/2023	WELLS FARGO SAFEKEEPING FEES	28823	Multiple	54.00	
355651	04/30/2023	ENTER INTEREST AMOUNTS	28829	Multiple		14,324.16
358527	05/24/2023	WF SAFEKEEPING FEES	28866	Multiple	54.00	
358532	05/31/2023	ENTER INTEREST AMOUNTS	28876	Multiple		15,347.02
360958	06/16/2023	WF SAFEKEEPING FEES	28915	Multiple	54.00	
360967	06/30/2023	ENTER INTEREST AMOUNTS	28930	Multiple		14,220.26
363904	07/20/2023	WELLS FARGO FEES	28975	Multiple	54.00	
363660	07/31/2023	ENTER INTEREST AMOUNTS	28971	Multiple		14,797.95
366459	08/23/2023	WF SAFEKEEPING FEES	29002	Multiple	54.00	
366565	08/29/2023	US TREASURY DIVIDEND 8-29-23	29012	Multiple		49,057.61
366567	08/31/2023	ENTER INTEREST AMOUNTS + JULY	29017	Multiple		13,387.98
Journal Totals					543.04	163,606.17
Totals for 604-000-388.001					543.04	163,606.17
		Balance 02/01/23:		41,092.44		
		Net Change:		163,063.13		
		Balance 08/31/23:		204,155.57		

604-229-511.000 SALARIES & WAGES						
Journal PR: Payroll						
349520	02/15/2023	SUMMARY PR 02/15/2023		Multiple	3,745.77	
350207	02/28/2023	SUMMARY PR 02/28/2023		Multiple	3,358.71	
352022	03/15/2023	SUMMARY PR 03/15/2023		Multiple	3,340.85	
352881	03/30/2023	SUMMARY PR 03/30/2023		Multiple	3,543.65	
354525	04/14/2023	SUMMARY PR 04/14/2023		Multiple	3,268.15	
355446	04/28/2023	SUMMARY PR 04/28/2023		Multiple	3,628.58	
357197	05/15/2023	SUMMARY PR 05/15/2023		Multiple	3,370.90	
358060	05/30/2023	SUMMARY PR 05/30/2023		Multiple	3,550.05	
359800	06/15/2023	SUMMARY PR 06/15/2023		Multiple	4,391.38	
360642	06/30/2023	SUMMARY PR 06/30/2023		Multiple	3,721.41	
362481	07/14/2023	SUMMARY PR 07/14/2023		Multiple	3,490.20	
363410	07/28/2023	SUMMARY PR 07/28/2023		Multiple	3,984.11	

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TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-229-511.000 SALARIES & WAGES						
Journal PR: Payroll						
365340	08/15/2023	SUMMARY PR 08/15/2023		Multiple	3,861.71	
366224	08/30/2023	SUMMARY PR 08/30/2023		Multiple	3,677.87	
Journal Totals					50,933.34	0.00
Totals for 604-229-511.000					50,933.34	0.00
Balance 02/01/23:				27,829.19		
Net Change:				50,933.34		
Balance 08/31/23:				78,762.53		

604-229-514.000 PENSION						
Journal PR: Payroll						
349520	02/15/2023	SUMMARY PR 02/15/2023		Multiple	189.49	
350207	02/28/2023	SUMMARY PR 02/28/2023		Multiple	195.08	
352022	03/15/2023	SUMMARY PR 03/15/2023		Multiple	185.49	
352881	03/30/2023	SUMMARY PR 03/30/2023		Multiple	191.89	
354525	04/14/2023	SUMMARY PR 04/14/2023		Multiple	186.29	
355446	04/28/2023	SUMMARY PR 04/28/2023		Multiple	197.48	
357197	05/15/2023	SUMMARY PR 05/15/2023		Multiple	193.49	
358060	05/30/2023	SUMMARY PR 05/30/2023		Multiple	192.69	
359800	06/15/2023	SUMMARY PR 06/15/2023		Multiple	200.68	
360642	06/30/2023	SUMMARY PR 06/30/2023		Multiple	190.29	
362481	07/14/2023	SUMMARY PR 07/14/2023		Multiple	187.09	
363410	07/28/2023	SUMMARY PR 07/28/2023		Multiple	194.28	
365340	08/15/2023	SUMMARY PR 08/15/2023		Multiple	204.67	
366224	08/30/2023	SUMMARY PR 08/30/2023		Multiple	199.88	
Journal Totals					2,708.79	0.00
Totals for 604-229-514.000					2,708.79	0.00
Balance 02/01/23:				1,533.92		
Net Change:				2,708.79		
Balance 08/31/23:				4,242.71		

604-229-515.000 FICA						
Journal PR: Payroll						
349520	02/15/2023	SUMMARY PR 02/15/2023		Multiple	286.54	
350207	02/28/2023	SUMMARY PR 02/28/2023		Multiple	256.94	
352022	03/15/2023	SUMMARY PR 03/15/2023		Multiple	255.58	
352881	03/30/2023	SUMMARY PR 03/30/2023		Multiple	271.09	
354525	04/14/2023	SUMMARY PR 04/14/2023		Multiple	250.02	
355446	04/28/2023	SUMMARY PR 04/28/2023		Multiple	277.57	
357197	05/15/2023	SUMMARY PR 05/15/2023		Multiple	257.88	
358060	05/30/2023	SUMMARY PR 05/30/2023		Multiple	271.59	
359800	06/15/2023	SUMMARY PR 06/15/2023		Multiple	335.94	
360642	06/30/2023	SUMMARY PR 06/30/2023		Multiple	284.67	
362481	07/14/2023	SUMMARY PR 07/14/2023		Multiple	267.02	
363410	07/28/2023	SUMMARY PR 07/28/2023		Multiple	304.77	
365340	08/15/2023	SUMMARY PR 08/15/2023		Multiple	295.42	
366224	08/30/2023	SUMMARY PR 08/30/2023		Multiple	281.37	
Journal Totals					3,896.40	0.00
Totals for 604-229-515.000					3,896.40	0.00
Balance 02/01/23:				2,128.94		
Net Change:				3,896.40		
Balance 08/31/23:				6,025.34		

604-229-516.000 WORKERS' COMPENSATION						
Journal AP: Accounts Payable						
352478	03/14/2023	LEAGUE ASSOCIATION OF RISK MAN 105813		Multiple	808.00	
Journal Totals					808.00	0.00
Totals for 604-229-516.000					808.00	0.00
Balance 02/01/23:				0.00		
Net Change:				808.00		
Balance 08/31/23:				808.00		

604-229-524.000 VEHICULAR FUEL & LUBE						
Journal AP: Accounts Payable						
351097	02/16/2023	FARMERS UNION COOP SUPPLY COUN 23010010171		604-000-221.001	31.20	
353559	03/16/2023	FARMERS UNION COOP SUPPLY COUN 23020010080		604-000-221.001	48.70	
355969	04/18/2023	FARMERS UNION COOP SUPPLY COUN 23040010173		604-000-221.001	27.00	

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JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-229-524.000 VEHICULAR FUEL & LUBE						
Journal AP: Accounts Payable						
364258	07/18/2023	FARMERS UNION COOP SUPPLY	COSU 23060010350	604-000-221.001	73.80	
Journal Totals					180.70	0.00
Journal GJ: GENERAL JOURNAL						
351842	02/28/2023	RCRD MONTHLY FUEL EXPENSE	28755	Multiple	72.35	
354317	03/31/2023	RCRD MONTHLY FUEL EXPENSE	28805	Multiple	66.68	
357052	04/30/2023	RCRD MONTHLY FUEL EXPENSE	28846	Multiple	128.30	
359851	05/31/2023	RCRD MONTHLY FUEL EXPENSE	28884	Multiple	85.27	
362394	06/30/2023	RCRD MONTHLY FUEL EXPENSE	28942	Multiple	130.19	
363778	07/31/2023	RCRD MONTHLY FUEL EXPENSE	28970	Multiple	68.62	
367730	08/31/2023	RCRD MONTHLY FUEL EXPENSE	29025	Multiple	93.60	
Journal Totals					645.01	0.00
Totals for 604-229-524.000					825.71	0.00
Balance 02/01/23:				569.18		
Net Change:				825.71		
Balance 08/31/23:				1,394.89		

604-229-526.000 MINOR APPARATUS & TOOLS						
Journal AP: Accounts Payable						
366684	08/16/2023	BOMGAARSSHOVEL	23070158338	Multiple	14.99	
366685	08/16/2023	BOMGAARSMINOR APPARATUS & TOOL	23070172162	Multiple	274.48	
Journal Totals					289.47	0.00
Journal GJ: GENERAL JOURNAL						
367782	08/31/2023	RECLASSIFY 35.73	29026	604-229-529.000	35.73	
Journal Totals					35.73	0.00
Totals for 604-229-526.000					325.20	0.00
Balance 02/01/23:				0.00		
Net Change:				325.20		
Balance 08/31/23:				325.20		

604-229-529.000 OTHER OPER. SUP.& MAT						
Journal GJ: GENERAL JOURNAL						
367782	08/31/2023	RECLASSIFY 35.73	29026	604-229-526.000		35.73
Journal Totals					0.00	35.73
Totals for 604-229-529.000					0.00	35.73
Balance 02/01/23:				35.73		
Net Change:				(35.73)		
Balance 08/31/23:				0.00		

604-229-532.000 GARBAGE FEES						
Journal AP: Accounts Payable						
349947	02/14/2023	WASTE CONNECTIONS OF NEDISPOSA	01312023	604-000-221.001	83,287.18	
352481	03/14/2023	WASTE CONNECTIONS OF NEDISPOSA	02282023	604-000-221.001	79,950.07	
354891	04/11/2023	NE DEPT OF ENVIRONMENT & ENER	38469	604-000-221.001	33,505.29	
354893	04/11/2023	WASTE CONNECTIONS OF NEDISPOSA	3312023	604-000-221.001	88,465.05	
357385	05/05/2023	WASTE CONNECTIONS OF NEDISPOSA	4302023	604-000-221.001	96,033.36	
360303	06/13/2023	WASTE CONNECTIONS OF NEDISPOSA	5312023	604-000-221.001	94,855.24	
362769	07/11/2023	NE DEPT OF ENVIRONMENT & ENER	38711	604-000-221.001	42,932.74	
362771	07/11/2023	WASTE CONNECTIONS OF NEDISPOSA	6302023	604-000-221.001	93,693.11	
365857	08/15/2023	WASTE CONNECTIONS OF NELANDFIL	7312023	604-000-221.001	101,973.55	
Journal Totals					714,695.59	0.00
Totals for 604-229-532.000					714,695.59	0.00
Balance 02/01/23:				290,586.91		
Net Change:				714,695.59		
Balance 08/31/23:				1,005,282.50		

604-229-541.000 ELECTRICITY						
Journal AP: Accounts Payable						
351555	02/16/2023	STANTON CO PUBLIC POWERNW	21-2 23010932617	604-000-221.001	413.61	
353890	03/16/2023	STANTON CO PUBLIC POWERNW	21-2 23020939023	604-000-221.001	372.06	
356371	04/18/2023	STANTON CO PUBLIC POWERNW	21-2 23030943745	604-000-221.001	309.66	
359166	05/16/2023	STANTON CO PUBLIC POWERNW	21-2 23040949349	604-000-221.001	261.63	
361710	06/16/2023	STANTON CO PUBLIC POWERNW	21-2 23050955158	604-000-221.001	144.91	
364611	07/18/2023	STANTON CO PUBLIC POWERNW	21-2 23060961163	604-000-221.001	110.16	
367240	08/16/2023	STANTON CO PUBLIC POWERNW	21-2 23070966525	604-000-221.001	132.74	

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JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-229-541.000 ELECTRICITY						
Journal AP: Accounts Payable						
Journal Totals					1,744.77	0.00
Totals for 604-229-541.000					1,744.77	0.00
Balance 02/01/23:				502.71		
Net Change:				1,744.77		
Balance 08/31/23:				2,247.48		

604-229-546.000 BLDG, GRND & PLANT MAINT						
Journal AP: Accounts Payable						
349946	02/14/2023	FAIRBANKS SCALES INCSCALE REPA	1625468	604-000-221.001	2,500.75	
351043	02/16/2023	CULLIGAN OF COLUMBUSWATER COOL	23015264955	604-000-221.001	98.61	
351151	02/16/2023	HY VEE COOKIES FOR MEETING	23029537846	604-000-221.001	14.99	
351174	02/16/2023	HY VEE INCCOFFEE & WATER FOR M	23020832099	604-000-221.001	18.85	
351279	02/16/2023	MENARDS-NORFOLKVINYL FLOORING	23027541244	604-000-221.001	45.67	
353417	03/16/2023	BOMGAARSTURNBUCKLE, DUCT TAPE	23020979053	604-000-221.001	36.44	
353498	03/16/2023	CULLIGAN OF COLUMBUSBLDG, GRND	23020904382	604-000-221.001	66.61	
353672	03/16/2023	MENARDS-NORFOLKTOTES	23023120054	604-000-221.001	122.88	
353930	03/16/2023	U.S. PLASTIC CORPORATIONVINYL	23020799424	604-000-221.001	25.00	
355901	04/18/2023	CULLIGAN OF COLUMBUSOFT WATER	23036437883	604-000-221.001	66.61	
355960	04/18/2023	EREPLACEMENTPARTS.COMSNOWBLOWE	23047860994	604-000-221.001	142.22	
358789	05/16/2023	CULLIGAN OF COLUMBUSOFT WATER	23046363379	604-000-221.001	77.62	
361235	06/16/2023	CULLIGAN OF COLUMBUSOFT WATER	23050622193	604-000-221.001	76.37	
362766	07/11/2023	FAIRBANKS SCALES INCSTEST & INS	1644424	604-000-221.001	799.00	
364013	07/18/2023	AMAZONCAMERA	23064867887	604-000-221.001	112.90	
364182	07/18/2023	CULLIGAN OF COLUMBUSOFT WATER	23068422461	604-000-221.001	69.37	
364272	07/18/2023	FLOOR MAINTENANCEDUST MOPS	23069991187	Multiple	111.74	
364273	07/18/2023	FLOOR MAINTENANCEBOWL CLEANSE,	23069991203	604-000-221.001	20.08	
364405	07/18/2023	MENARDS-NORFOLKGLASS CLNR, WIP	23067271931	604-000-221.001	24.22	
364666	07/18/2023	VICS ENGINE SERVICE INCMOWER S	23063000019	604-000-221.001	197.98	
366784	08/16/2023	CULLIGAN OF COLUMBUSOFT WATER	23075788763	604-000-221.001	77.62	
Journal Totals					4,705.53	0.00
Totals for 604-229-546.000					4,705.53	0.00
Balance 02/01/23:				2,866.63		
Net Change:				4,705.53		
Balance 08/31/23:				7,572.16		

604-229-547.000 MACHINERY & VEH. MAINT						
Journal AP: Accounts Payable						
350947	02/16/2023	BOMGAARSBATTERY	23020471399	604-000-221.001	102.48	
353459	03/16/2023	CABELA'S INCSEATCOVER	23021079549	604-000-221.001	37.44	
Journal Totals					139.92	0.00
Journal GJ: GENERAL JOURNAL						
355646	04/17/2023	CRCT ADVANCED AUTO PER RM	28819	Multiple	322.59	
355646	04/17/2023	CRCT ADVANCED AUTO PER RM	28819	Multiple	99.90	
Journal Totals					422.49	0.00
Totals for 604-229-547.000					562.41	0.00
Balance 02/01/23:				20.00		
Net Change:				562.41		
Balance 08/31/23:				582.41		

604-229-553.000 TRAVEL AND TRAINING						
Journal AP: Accounts Payable						
352480	03/14/2023	ROB MERCERMILEAGE	20230223	604-000-221.001	28.82	
353823	03/16/2023	NWEACONFERENCE REGISTRATION	23032716573	604-000-221.001	205.00	
355959	04/18/2023	EMBASSY SUITESLODGING	23040204824	604-000-221.001	359.12	
356373	04/18/2023	SUBWAYFREMONT	23046854944	604-000-221.001	16.23	
356391	04/18/2023	U S BANK/MISC TRAVEL EXPSUMMER	23040675925	604-000-221.001	30.51	
Journal Totals					639.68	0.00
Totals for 604-229-553.000					639.68	0.00
Balance 02/01/23:				540.05		
Net Change:				639.68		
Balance 08/31/23:				1,179.73		

604-229-555.000 DUES AND PUBLICATIONS						
Journal AP: Accounts Payable						
364521	07/18/2023	NI NDA DEVICESCALE REGISTRATIO	23074892758	604-000-221.001	142.87	

9/27/2023

User: nbeed FROM 604-000-113.002 TO 604-229-598.000
 DB: Cityofnorfolk TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-229-555.000 DUES AND PUBLICATIONS						
Journal AP: Accounts Payable						
Journal Totals					142.87	0.00
Totals for 604-229-555.000					142.87	0.00
Balance 02/01/23:				245.00		
Net Change:				142.87		
Balance 08/31/23:				387.87		

604-229-561.000 INSURANCE						
Journal AP: Accounts Payable						
352478	03/14/2023	LEAGUE ASSOCIATION OF RISK MAN	105813	Multiple	15,917.00	
Journal Totals					15,917.00	0.00
Totals for 604-229-561.000					15,917.00	0.00
Balance 02/01/23:				0.00		
Net Change:				15,917.00		
Balance 08/31/23:				15,917.00		

604-229-562.000 TELEPHONE & TELETYPE						
Journal AP: Accounts Payable						
353392	03/16/2023	AT & TLONG DISTANCE	23039495568	Multiple	0.10	
353887	03/16/2023	SPACE EXPLORATION TECHNOLSTARL	23027298726	604-000-221.001	110.00	
355783	04/18/2023	AT & TLONG DISTANCE	23034167322	Multiple	2.30	
356367	04/18/2023	SPACE EXPLORATION TECHNOLSTARL	23031528725	604-000-221.001	90.00	
359163	05/16/2023	SPACE EXPLORATION TECHNOLSTARL	23042918722	604-000-221.001	90.00	
361703	06/16/2023	SPACE EXPLORATION TECHNOLSTARL	23057348722	604-000-221.001	90.00	
361772	06/16/2023	VERIZON WIRELESSCELL PHONES	23058824528	Multiple	40.01	
364071	07/18/2023	AT & TLONG DISTANCE	23076860849	Multiple	0.21	
364608	07/18/2023	SPACE EXPLORATION TECHNOLSTARL	23066038726	604-000-221.001	90.00	
364663	07/18/2023	VERIZON WIRELESSCELL PHONES	23061640891	Multiple	40.01	
364664	07/18/2023	VERIZON WIRELESSCELL PHONES	23073581379	Multiple	40.01	
366650	08/16/2023	AT & TLONG DISTANCE	23084937768	Multiple	0.07	
367235	08/16/2023	SPACE EXPLORATION TECHNOLSTARL	23077608724	604-000-221.001	90.00	
Journal Totals					682.71	0.00
Journal GJ: GENERAL JOURNAL						
358529	05/31/2023	CRCT CELLULAR ROUTER FOR NNSWC	28874	Multiple	802.80	
Journal Totals					802.80	0.00
Totals for 604-229-562.000					1,485.51	0.00
Balance 02/01/23:				656.56		
Net Change:				1,485.51		
Balance 08/31/23:				2,142.07		

604-229-563.000 POSTAGE						
Journal AP: Accounts Payable						
349945	02/14/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2639	604-000-221.001	13.84	
352477	03/14/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2720	604-000-221.001	8.19	
354888	04/11/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2791	604-000-221.001	7.56	
359428	05/31/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2868	604-000-221.001	25.24	
360301	06/13/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2939	604-000-221.001	25.20	
362765	07/11/2023	CASEY'S MAIL SERVICE LLCPOSTAG	2995	604-000-221.001	9.45	
365855	08/15/2023	CASEY'S MAIL SERVICE LLCPOSTAG	3081	604-000-221.001	10.24	
Journal Totals					99.72	0.00
Totals for 604-229-563.000					99.72	0.00
Balance 02/01/23:				38.38		
Net Change:				99.72		
Balance 08/31/23:				138.10		

604-229-564.000 OFFICE SUPPLIES						
Journal AP: Accounts Payable						
351061	02/16/2023	EAKES OFFICE PRODUCTPAPER	23011800157	Multiple	47.81	
355696	04/18/2023	AMAZONMONITORS	23042052455	Multiple	123.00	
356306	04/18/2023	OFFICE DEPOTPAPER	23039360893	Multiple	39.99	
357480	05/05/2023	ONENECK IT SOLUTIONS LLCDESKTO	INV000037175	Multiple	2,090.00	
359127	05/16/2023	PEPLINK PEPWAVE LTDPRIMECARE	23051033158	604-000-221.001	49.00	
361405	06/16/2023	INSIGHT PUBLIC SECTOR INCPRINT	23060496831	Multiple	553.66	
364543	07/18/2023	NORTH STAR FORMSSCALE TICKETS	23071363182	Multiple	155.90	
364598	07/18/2023	SANITAS TECHNOLOGIESSOFTWARE	23062241185	604-000-221.001	395.00	

User: nbeed FROM 604-000-113.002 TO 604-229-598.000
 DB: Cityofnorfolk TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-229-564.000 OFFICE SUPPLIES						
Journal AP: Accounts Payable						
Journal Totals					3,454.36	0.00
Totals for 604-229-564.000					3,454.36	0.00
Balance 02/01/23:				494.16		
Net Change:				3,454.36		
Balance 08/31/23:				3,948.52		

604-229-565.000 LEGAL NOTICES&ADVERTISE						
Journal AP: Accounts Payable						
353780	03/16/2023	NORFOLK DAILY NEWS02/01/2023-0	23031033258	Multiple	56.47	
362767	07/11/2023	FREMONT TRIBUNEOPEN HOUSE	1159445	604-000-221.001	41.36	
367139	08/16/2023	NORFOLK DAILY NEWS06/01/23-06/	23077182292	Multiple	35.65	
Journal Totals					133.48	0.00
Totals for 604-229-565.000					133.48	0.00
Balance 02/01/23:				0.00		
Net Change:				133.48		
Balance 08/31/23:				133.48		

604-229-568.000 OTHER PROFESSIONAL FEES						
Journal AP: Accounts Payable						
350809	02/28/2023	SCS ENGINEERSMONITORING	0458243	604-000-221.001	2,435.00	
352479	03/14/2023	NE DEPT OF ENVIRONMENT & ENER	2000	604-000-221.001	7,500.00	
353973	03/29/2023	BAIRD HOLMPROF SERV	295071	604-000-221.001	3,500.00	
354887	04/11/2023	CAROLINA SOFTWARESUPPORT	86562	604-000-221.001	166.67	
354889	04/11/2023	FORVIS LLPPROF SERV	BK01761153	604-000-221.001	7,250.00	
354892	04/11/2023	STANTON CO TREASURERHOST FEE	APRIL 2023	604-000-221.001	26,888.93	
356593	04/25/2023	SCS ENGINEERSLANDFILL MONITORI	0463618	604-000-221.001	6,212.50	
357382	05/05/2023	BURNS & MCDONNELL INCNNSWC ARE	134526-3	604-000-221.001	674.88	
359429	05/31/2023	NE DEPT OF ENVIRONMENT & ENER	38653	604-000-221.001	654.84	
359430	05/31/2023	SCS ENGINEERSLANDFILL MONITORI	0461913	604-000-221.001	2,000.00	
359431	05/31/2023	SCS ENGINEERSLANDFILL MONITORI	0466425	604-000-221.001	17,397.10	
362760	07/11/2023	BURNS & MCDONNELL INCPROF ENG	156357-1	604-000-221.001	4,820.53	
362761	07/11/2023	BURNS & MCDONNELL INCLANDFILL	124922-15	604-000-221.001	15,851.21	
362764	07/11/2023	CAROLINA SOFTWARESUPPORT	87495	604-000-221.001	166.67	
362770	07/11/2023	STANTON CO TREASURERHOST FEE	JULY 2023	604-000-221.001	23,304.51	
364906	08/01/2023	SCS ENGINEERSLANDFILL MONITORI	0472415	604-000-221.001	842.50	
367365	08/29/2023	BURNS & MCDONNELL INCSWPPP UPD	156357-2	604-000-221.001	423.90	
367366	08/29/2023	BURNS & MCDONNELL INCLANDFILL	124922-16	604-000-221.001	2,207.27	
367368	08/29/2023	NE DEPT OF ENVIRONMENT & ENER	38908	604-000-221.001	7,500.00	
Journal Totals					129,796.51	0.00
Journal GJ: GENERAL JOURNAL						
354492	03/31/2023	NNSWC TRANSFER ADMIN FEE	28811	Multiple	3,939.72	
359865	05/31/2023	RECORD MONTHLY ADMIN FEES	28896	Multiple	3,939.72	
Journal Totals					7,879.44	0.00
Journal JE: JOURNAL ENTRY WITH DTFD						
351850	02/28/2023	NNSWC ADMIN FEE	28762	Multiple	3,939.72	
357053	04/30/2023	RCRD TRANS FR NNSWC TO CITY FO	28847	Multiple	3,939.72	
362395	06/30/2023	RCRD TRANS FR NNSWC TO CITY FO	28943	Multiple	3,939.72	
363963	07/31/2023	RCRD TRANS FR NNSWC TO CITY FO	28977	Multiple	3,939.72	
367728	08/31/2023	RCRD TRANS FR NNSWC TO CITY FO	29023	Multiple	3,939.72	
Journal Totals					19,698.60	0.00
Totals for 604-229-568.000					157,374.55	0.00
Balance 02/01/23:				61,871.33		
Net Change:				157,374.55		
Balance 08/31/23:				219,245.88		

604-229-578.000 INTERFUND TRANS. OUT						
Journal GJ: GENERAL JOURNAL						
354241	03/21/2023	TRANSFER FR OPERATING TO CLOSU	28804	Multiple	459,961.00	
Journal Totals					459,961.00	0.00
Totals for 604-229-578.000					459,961.00	0.00
Balance 02/01/23:				0.00		
Net Change:				459,961.00		
Balance 08/31/23:				459,961.00		

User: nbeed

FROM 604-000-113.002 TO 604-229-598.000

DB: Cityofnorfolk

TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
604-229-587.000 INFRA-STRUCTURE						
Journal AP: Accounts Payable						
350808	02/28/2023	BURNS & MCDONNELL INC	PROFESSIO 147043-4	604-000-221.001	63,705.88	
354886	04/11/2023	BURNS & MCDONNELL INC	PROFESSIO 147043-5	604-000-221.001	25,150.06	
354890	04/11/2023	J J WESTHOFF CONSTRUCTION	AREA 20230406	604-000-221.001	299,034.00	
357383	05/05/2023	BURNS & MCDONNELL INC	NNSWC ARE 147043-6	604-000-221.001	10,667.74	
357384	05/05/2023	J J WESTHOFF CONSTRUCTION	AREA 20230504	604-000-221.001	364,959.00	
360302	06/13/2023	J J WESTHOFF CONSTRUCTION	AREA APPLICATION NO	604-000-221.001	400,669.20	
362762	07/11/2023	BURNS & MCDONNELL INC	CAREA 6 PH 156356-2	604-000-221.001	44,232.00	
362763	07/11/2023	BURNS & MCDONNELL INC	CAREA 6 PH 156356-1	604-000-221.001	100,682.09	
362768	07/11/2023	J J WESTHOFF CONSTRUCTION	AREA APPLICATION NO	604-000-221.001	537,319.80	
365856	08/15/2023	J J WESTHOFF CONSTRUCTION	AREA APPLICATION NO	604-000-221.001	877,428.00	
367367	08/29/2023	BURNS & MCDONNELL INC	CAREA 6 PH 156356-3	604-000-221.001	47,710.38	
Journal Totals					2,771,558.15	0.00
Totals for 604-229-587.000					2,771,558.15	0.00
Balance 02/01/23:				0.00		
Net Change:				2,771,558.15		
Balance 08/31/23:				2,771,558.15		

Fund 804 NNSWC CLOSURE/POST CLOSU

GL Number	Description	Balance
*** Assets ***		
Cash		
804-000-115.009	NNSWC CLOSURE/POST MIDWEST6720	28,537.74
804-000-116.001	U.S. TREASURIES	9,834,837.46
	Cash	<u>9,863,375.20</u>
Accounts Receivable		
	Accounts Receivable	<u>0.00</u>
Due From Other Funds		
	Due From Other Funds	<u>0.00</u>
	Total Assets	<u>9,863,375.20</u>
*** Liabilities ***		
Other Liabilities		
804-000-225.002	ACCRUED CLOSURE/POST CLO	12,385,710.89
	Other Liabilities	<u>12,385,710.89</u>
	Total Liabilities	<u>12,385,710.89</u>
*** Fund Balance ***		
Unassigned		
804-000-295.001	RETAINED EARN.-UNRESERV	(3,037,896.27)
	Unassigned	<u>(3,037,896.27)</u>
	Total Fund Balance	<u>(3,037,896.27)</u>
	Beginning Fund Balance	(3,037,896.27)
	Net of Revenues VS Expenditures	515,560.58
	Ending Fund Balance	(2,522,335.69)
	Total Liabilities And Fund Balance	9,863,375.20

PERIOD ENDING 08/31/2023

ACCOUNT DESCRIPTION	2022-23 AMENDED BUDGET	ACTIVITY FOR		YTD BALANCE		AVAILABLE		% BDGT USED
		MONTH 08/31/20	(DECR	NORMAL	(ABNORM	NORMAL	(ABNORM	
Dept 000								
Fund 804 - NNSWC CLOSURE/POST CLOSU								
OTHER INTEREST INCOME								
388.001 OTHER INTEREST INCOME	400,000.00	5,996.11		55,599.58		344,400.42		13.90
OTHER INTEREST INCOME	400,000.00	5,996.11		55,599.58		344,400.42		13.90
INTERFUND TRANS. IN								
391.001 INTERFUND OPER.TRANS.IN	478,000.00	0.00		459,961.00		18,039.00		96.23
INTERFUND TRANS. IN	478,000.00	0.00		459,961.00		18,039.00		96.23
<hr/>								
FUND TOTALS								
TOTAL REVENUES	878,000.00	5,996.11		515,560.58		362,439.42		58.72
TOTAL EXPENDITURES	0.00	0.00		0.00		0.00		0.00
NET OF REVENUES & EXPENDITURES	878,000.00	5,996.11		515,560.58		362,439.42		58.72
<hr/>								
Net - Dept 000	878,000.00	5,996.11		515,560.58		362,439.42		

User: nbeed

FROM 804-000-115.002 TO 804-229-537.000

DB: Cityofnorfolk

TRANSACTIONS FROM 02/01/2023 TO 08/31/2023

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
804-000-115.009 NNSWC CLOSURE/POST MIDWEST6720						
Journal GJ: GENERAL JOURNAL						
350648	02/15/2023	US TREASURY NOTE DIVIDEND	28750	804-000-388.001	5,967.50	
350632	02/16/2023	SAFEKEEPING FEES WELLS FARGO	28722	Multiple		35.00
350647	02/28/2023	ENTER INTEREST AMOUNTS	28748	Multiple	105.35	
354100	03/21/2023	WF SAFEKEEPING FEES	28780	Multiple		35.00
354241	03/21/2023	TRANSFER FR OPERATING TO CLOSU	28804	Multiple	459,961.00	
354116	03/31/2023	ENTER INTEREST AMOUNTS	28796	Multiple	504.55	
355645	04/14/2023	PURCHASE TIPS 4-15-26	28820	Multiple		516,946.81
355648	04/18/2023	WELLS FARGO SAFEKEEPING FEES	28823	Multiple		35.00
355652	04/18/2023	DIVIDENDS US TREASURY	28830	Multiple	335.98	
355652	04/18/2023	DIVIDENDS US TREASURY	28830	Multiple	8,369.68	
355652	04/18/2023	DIVIDENDS US TREASURY	28830	Multiple	12,873.85	
355651	04/30/2023	ENTER INTEREST AMOUNTS	28829	Multiple	633.24	
358527	05/24/2023	WF SAFEKEEPING FEES	28866	Multiple		36.00
358532	05/31/2023	ENTER INTEREST AMOUNTS	28876	Multiple	54.12	
360958	06/16/2023	WF SAFEKEEPING FEES	28915	Multiple		36.00
360967	06/30/2023	ENTER INTEREST AMOUNTS	28930	Multiple	52.41	
363904	07/20/2023	WELLS FARGO FEES	28975	Multiple		36.00
363660	07/31/2023	ENTER INTEREST AMOUNTS	28971	Multiple	56.77	
366566	08/16/2023	DIVIDEND TREASURY NOTE	29016	804-000-388.001	5,967.50	
366459	08/23/2023	WF SAFEKEEPING FEES	29002	Multiple		36.00
366567	08/31/2023	ENTER INTEREST AMOUNTS + JULY	29017	Multiple	64.61	
Journal Totals					494,946.56	517,195.81
Totals for 804-000-115.009					494,946.56	517,195.81
Balance 02/01/23:				50,786.99		
Net Change:				(22,249.25)		
Balance 08/31/23:				28,537.74		

804-000-116.001 U.S. TREASURIES						
Journal GJ: GENERAL JOURNAL						
355645	04/14/2023	PURCHASE TIPS 4-15-26	28820	Multiple	516,612.74	
Journal Totals					516,612.74	0.00
Totals for 804-000-116.001					516,612.74	0.00
Balance 02/01/23:				9,318,224.72		
Net Change:				516,612.74		
Balance 08/31/23:				9,834,837.46		

804-000-388.001 OTHER INTEREST INCOME						
Journal GJ: GENERAL JOURNAL						
350648	02/15/2023	US TREASURY NOTE DIVIDEND	28750	804-000-115.009		5,967.50
350632	02/16/2023	SAFEKEEPING FEES WELLS FARGO	28722	Multiple	35.00	
350647	02/28/2023	ENTER INTEREST AMOUNTS	28748	Multiple		105.35
354100	03/21/2023	WF SAFEKEEPING FEES	28780	Multiple	35.00	
354116	03/31/2023	ENTER INTEREST AMOUNTS	28796	Multiple		504.55
355645	04/14/2023	PURCHASE TIPS 4-15-26	28820	Multiple	334.07	
355648	04/18/2023	WELLS FARGO SAFEKEEPING FEES	28823	Multiple	35.00	
355652	04/18/2023	DIVIDENDS US TREASURY	28830	Multiple		12,873.85
355652	04/18/2023	DIVIDENDS US TREASURY	28830	Multiple		8,369.68
355652	04/18/2023	DIVIDENDS US TREASURY	28830	Multiple		335.98
355651	04/30/2023	ENTER INTEREST AMOUNTS	28829	Multiple		633.24
358527	05/24/2023	WF SAFEKEEPING FEES	28866	Multiple	36.00	
358532	05/31/2023	ENTER INTEREST AMOUNTS	28876	Multiple		54.12
360958	06/16/2023	WF SAFEKEEPING FEES	28915	Multiple	36.00	
360967	06/30/2023	ENTER INTEREST AMOUNTS	28930	Multiple		52.41
363904	07/20/2023	WELLS FARGO FEES	28975	Multiple	36.00	
363660	07/31/2023	ENTER INTEREST AMOUNTS	28971	Multiple		56.77
366566	08/16/2023	DIVIDEND TREASURY NOTE	29016	804-000-115.009		5,967.50
366459	08/23/2023	WF SAFEKEEPING FEES	29002	Multiple	36.00	
366567	08/31/2023	ENTER INTEREST AMOUNTS + JULY	29017	Multiple		64.61
Journal Totals					583.07	34,985.56
Totals for 804-000-388.001					583.07	34,985.56
Balance 02/01/23:				21,197.09		
Net Change:				34,402.49		
Balance 08/31/23:				55,599.58		

804-000-391.001 INTERFUND OPER.TRANS.IN						
Journal GJ: GENERAL JOURNAL						
354241	03/21/2023	TRANSFER FR OPERATING TO CLOSU	28804	Multiple		459,961.00
Journal Totals					0.00	459,961.00

JE #	Date	Description	Reference #	OFFSETTING GL	DEBIT	CREDIT
804-000-391.001		INTERFUND OPER.TRANS.IN				
Totals for 804-000-391.001					0.00	459,961.00
		Balance 02/01/23:		0.00		
		Net Change:		459,961.00		
		Balance 08/31/23:		459,961.00		

Meeting Summary



Meeting Subject: NNSWC Landfill Master Plan – Public Open Houses
Meeting Dates: June 13-15, 2023
Start Time: 5:00 PM
End Time: 7:00 PM

Attendees

See attached attendance sheets

June 13th Meeting Summary:

Location: Columbus City Council Chambers, 1369 25th Ave., Columbus, NE

No attendees from the public or other board member representatives other than representatives from City of Norfolk and City of Columbus as documented on the attendance sheets. No discussion to document.

Meeting adjourned at 7:00 PM.

June 14th Meeting Summary:

Location: Fremont City Council Chambers, 400 E Military Ave., Fremont, NE

Presentation items:

1. Luke Rodig w/ Burns & McDonnell presented key concepts of the Landfill Master Plan.
2. Randy Gates w/ City of Norfolk presented proposed changes to the NNSWC bylaws and agreements.

Discussion items:

Dan Weddle, Dodge County representative: asked about financial impacts based on the proposed landfill expansion

- Rodig reviewed financial evaluation slides showing the forecasted reserve balance and noted projects indicate a stable forecast without any member tipping rate increases for at least the next 10+ years based on the assumptions included and projected tonnage rates.

Tyler Ficken, City of Fremont: discussion on expansion options, waste tonnage scenarios (base line, 20% increase, 20% decrease scenarios). Question on vertical expansion and potential operational challenges.

- Rodig response: proposed 60-ft vertical expansion represents a maximum expansion based on slope stability analysis, maintaining operational filling areas, and maximizing the airspace capacity. Other vertical expansion options were evaluated (30-ft, etc.). Litter management is primary challenge as fill progresses upward. The landfill operations does maintain 2 working face areas (upper and lower), lower area is for high wind days. Wind screen cages are also utilized at the working face to capture litter near working face.

Meeting Summary (cont'd)

Pam Hopkins, Dodge County attorney: question about background and why board member selection was proposed to change from all members having board representatives to the proposed five member board.

- Gates response: the representation at coalition board meetings for over the last 10-20 years has been Norfolk, Fremont, Columbus, and the Maple Creek representatives, and very rarely any other board member representatives attended the meetings. When the Landfill was originally sited nearly 30 years ago, there was more interest and attendance. Now that the landfill has been operating, there has not been attendance or participation.

Tom Hamernik, neighboring landowner: raised concern of continued landfill operations at this site. Would like the landfill to be located elsewhere as the locals have dealt with it for 25+ years. Noted litter, traffic, and environmental concerns.

- Rob Mercer response: landfill operations picks litter from neighboring properties on a daily basis.
- Rodig response: the coalition and landfill representatives understand the issues for adjacent landowners. From an environmental perspective, the landfill design and permit includes a composite liner system consisting of 2-ft of low permeable clay liner, as well as a geomembrane liner system, with leachate collection to drain the leachate from the landfill cells to the leachate pond. The site also includes environmental monitoring with groundwater monitoring wells (sampled semi-annually), and landfill gas probes that are tested at least quarterly. Landfill development in a different location would be more impactful to the environment, and increase costs for disposal for the residents across the region.
- Gates response: the low member tipping rates are beneficial for the surrounding communities to keep collection costs down. Discussed the appropriations and host fees that are provided to Stanton County and additional funds provided that are beneficial for surrounding communities.

Meeting adjourned at 7:00 PM.

June 15th Meeting Summary:

Location: Norfolk City Council Chambers, 309 N. 5th St., Norfolk, NE

Presentation items:

- Luke Rodig w/ Burns & McDonnell presented key concepts of the Landfill Master Plan.
- Randy Gates w/ City of Norfolk presented proposed changes to the NNSWC bylaws and agreements.

Discussion items:

Mike Hamernik, neighboring landowner: raised concern of continued landfill operations at this site. Primary issue noted was the litter, and noted a specific recent wind event that caused substantial amount of litter. Questioned if rate increase or reserve funds would be able to

Meeting Summary *(cont'd)*

increase litter control. Asked about future technologies for solid waste management other than landfilling. Concerned with the NE corner expansion proposed.

- Rob Mercer response: landfill operations picks litter from neighboring properties on a daily basis. The surrounding properties were picked up to the extent possible by the next day after the severe wind event. M. Hamernik: litter still gets into the pond and culverts and is not picked up.
- Rodig response: perimeter litter fencing is considered during cell expansion design and construction, more substantive litter fencing options are available and can be evaluated for future capital projects. Operations does utilize wind screen cages, and the landfill has implemented mandatory truck sweep outs before trucks leave the landfill to reduce litter from vehicle traffic. Technologies other than landfilling are still cost prohibitive in the Midwest primarily due to the availability of land and less regulatory incentives. The NNSWC Landfill disposal fee is \$24/ton where other technologies such as waste to energy (incineration) are typically in the \$150-\$200/ton range.
- Steve Rames, City of Norfolk: noted a focus has been on having transfer trailer loads covered properly before leaving the transfer stations and driving to landfill. Additional litter controls for landfill operations can also be looked at. City of Norfolk is looking into new technologies (biochar) and there could be changes in solid waste management in the next ~10 years.

Gary Svitak, Maple Creek representative: discussion on the vertical expansion and horizontal expansion including NE corner expansion (M. Hamernik's concern).

- Rodig / Mercer response: the NE corner expansion would be the last possible expansion on the current property, it would be preferred to expand to the south instead of developing the NE corner expansion.
- Rodig response: expansion to the south could allow for reduced vertical expansion.

Meeting adjourned at 7:00 PM.

Meeting Attendance Sheet



Meeting Subject: NNSWC Landfill Master Plan: Open House
 Meeting Date: June 13, 2023
 Meeting Start Time: 5:00 PM

Name / Title	Organization Name	Phone Number	E-Mail Address
RANDY GATES FINANCE OFFICER	CITY OF NORFOLK	402-844-2011	rgates@norfolkne.gov
Robert mercer Solid Waste Supervisor	City of Norfolk - NNSWC	402-844-2223	rmercerc@norfolkne.gov
Chuck Stiva Public Works Dir. Columbus	City of Columbus	402-910-2111	stiva@columbusne.us
Steven Rames Pub. Works Dir. & City Engineer	Norfolk	402-844-2000	
Tara Vasicek	City of Columbus	402-562-4233	tara.vasicek@columbusne.us
Luke Rodig	Burns & McDonnell	605-940-3569	larodig@burnsmcd.com

Meeting Attendance Sheet



Meeting Subject: NNSWC Landfill Master Plan: Open House
 Meeting Date: June 14, 2023
 Meeting Start Time: 5:00 PM

Name / Title	Organization Name	Phone Number	E-Mail Address
Luke Rodig	Burns & McDonnell	605-610-1793	larodig@burnsmcd.com
Dan W Weddle	Dodge County	402-731-2657	-
Bob Mercer	City of Norfolk		
RAUNDY GATES	CITY OF NORFOLK	402-844-2016	rgates@norfolkne.gov
Steven James	Norfolk	402-844-2000	samese@norfolkne.gov
Pam Hopkins	Dodge County	402-727-2725	dca@dodgecountyne.gov
Mark Jensen	City of Fremont	402-926-9527	jensenmwj@hotmail.com
Tom Hamerik	Local Land owner	402-750-3680	tom@bluebirdhansen.com
Tyler Ficken	City of Fremont	402-727-2630	tyler.ficken@fremontne.gov

Meeting Attendance Sheet



Meeting Subject: NNSWC Landfill Master Plan: Open House
 Meeting Date: June 15, 2023
 Meeting Start Time: 5:00 PM

Name / Title	Organization Name	Phone Number	E-Mail Address
Robert Mercer	Landfill Solid Waste	844-2223	rmercerc@norfolkne.gov
Mike Hammerik	neighboring landowner	402 750 2984	JP8402@gmail.com
Luke Rodig	Burns & McDonnell	605-940-3569	larodig@burnsmcd.com
RANDY GATBS	CITY OF NORFOLK	402-844-2011	rgatbs@norfolkne.gov
Gary Svitek	Maple Creek	402-649-1720	svitekfarm563@gmail.com
Steven Ramos	Norfolk	402-844-2000	

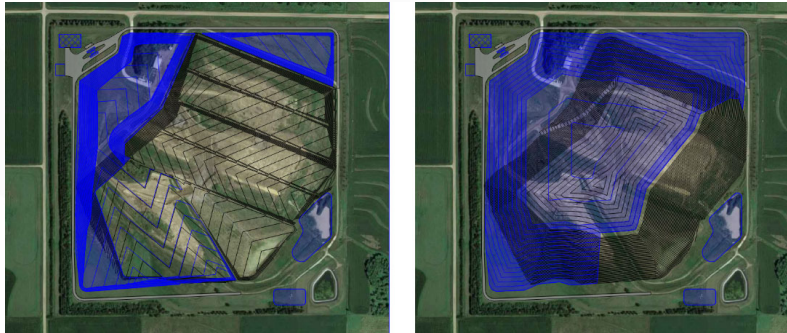


Conceptual Landfill Expansion

- ▶ Preferred Expansion Option
 - Horizontal Expansion: 26-acres
 - Vertical Expansion: 60-feet
 - 7.3M CY of additional airspace (or approx. 27.7 years)
- ▶ Cell Construction / Closure Sequencing
- ▶ Other capital/infrastructure improvements
 - Leachate pond expansion, storm pond, relocation of scale/entrance infrastructure, new equipment building, future LFG flare system (if required), land acquisition

Conceptual Landfill Expansion

- ▶ Preferred Expansion Option
 - Horizontal Expansion: 26-acres
 - Vertical Expansion: 60-feet
 - 7.3M CY of additional airspace (or approx. 27.7 years)



Cell Closure Sequencing

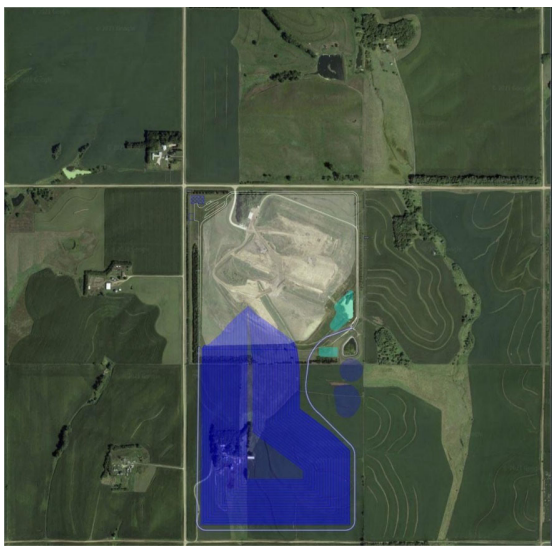
- ▶ Maximizes efficiency of soil handling
- ▶ Based on soil balance analysis
- ▶ Generally sequenced in-line with new cell construction to optimize soil utilization

Closure Area	Area (AC)	No Waste Change	20% Waste Decrease	20% Waste Increase
Area 1-6, PH 1	26.1	2042	2047	2038
Area 6, PH 2	22.8	2060	2067	2054
Area 7	34.1	2074	2084	2067
Area 8	19.2	2078	2088	2070



Conceptual Expansion Off-Site (Adjacent Properties)

- Preferred Option: South
- ▶ 118-acre footprint
 - ▶ Adjacent to existing landfill
 - Utilize existing landfill infrastructure
 - ▶ Maximizes airspace capacity
 - Piggy-back on existing landfill
 - Add. 17,521,000 CY
 - ▶ Add. expansion life: 46.8-ysr



Capital Improvements/Land Acquisition Needs

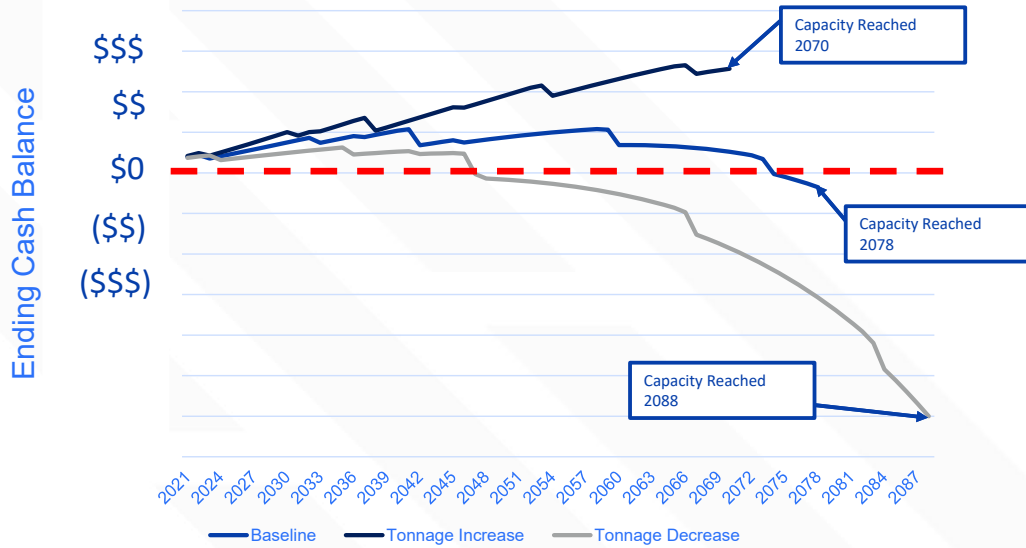
Facility	No Waste Change	20% Waste Decrease	20% Waste Increase
Scales (x2)	2033	2036	2031
Scale House			
Equipment Building			
Asphalt Pavement			
Land Acquisition	2037	2042	2033
Sedimentation Basin Expansion	2042	2047	2038
Leachate Pond Addition			
Landfill Gas Flare (if required)	2046	2048	2044

Financial Evaluation

- ▶ Developed revenue analysis model with capital improvement cost schedules, O&M costs, projected waste revenues, inflation, and other factors
- ▶ Reviewed operational scenarios and incoming waste variations (i.e., no waste change, 20% waste decrease, 20% waste increase) based on potential for changes in Coalition members
- ▶ Results indicate stable financial projections for the baseline tonnage and the increased tonnage scenarios with no tipping rate increases projected in next ~10 years, the results for the waste decrease scenario indicates a tipping rate increase is likely needed within the next ~10 years

Financial Evaluation

NNSWC Revenue Analysis with Expansion



Coalition Agreements/Bylaws Review

- ▶ Coalition Bylaws and Agreements were reviewed by Coalition project team, Burns & McDonnell, and third-party attorney
- ▶ Proposed changes to the bylaws and agreements include:
 - Language updated throughout to represent the NNSWC Landfill as an existing landfill and not a “proposed” landfill
 - Language updated throughout to accurately reflect how the NNSWC Landfill has been operating
 - Updates to Board of Directors representatives' selection

**THIRD AMENDED AND RESTATED
INTERLOCAL
SOLID WASTE MANAGEMENT AGREEMENT
NORTHEAST NEBRASKA SOLID WASTE COALITION
ADOPTED October 1, 2023**

THIS THIRD AMENDED AND RESTATED AGREEMENT (“Third Amended Agreement”) is made and entered into by and among the undersigned political subdivisions comprising the membership of the Northeast Nebraska Solid Waste Coalition (“Coalition”), listed on Exhibit "A" hereto, whose governing bodies approved, by resolution, this Amended Agreement on or before October 1, 2023. It is the intent of the members of the Coalition that this Third Amended Agreement shall supersede all prior agreements.

WITNESSETH:

WHEREAS, the undersigned political subdivisions have previously affiliated as members of the Coalition and endeavor to ratify their membership in the Coalition;

WHEREAS, the members of the Coalition have found it necessary to amend the existing interlocal agreement to provide a mechanism for utilization in allowing additional political subdivisions to join the Coalition together with a need to amend certain provisions of the previously executed interlocal agreement;

WHEREAS, the members of the Coalition are desirous of having a single document which describes the amended agreement of the parties and therefore all prior iterations of the Interlocal Agreement of the Coalition are superseded by this Third Amended Agreement;

WHEREAS, the members of the Coalition for their common good are desirous of adopting this Third Amended Agreement pursuant to the Nebraska Interlocal Cooperation Act, Neb. Rev. Stat. §§13-801, *et seq.*, as the same may from time to time be amended (the “Act”), for the purpose of providing solid waste management to their respective constituencies by the means of building, maintaining, and operating a solid waste disposal facility (“Facility”); and

WHEREAS, the members of the Coalition are in agreement for their joint and mutual benefit and to avoid any unnecessary risks associated with or liability for environmental clean-up as a result of hazardous material contamination to ground water and/or other segments of the environment, as well as any post-closure risks or liability for the same, that any solid waste disposal facility or landfill created, built, and operated as provided herein shall accept only solid wastes from the parties hereto or as approved by the Board of Directors of the Coalition (“Board”), subject to the terms and conditions set forth herein and the By-Laws of the Coalition;

NOW, THEREFORE, in consideration of the foregoing recitals and the terms and conditions hereinafter set forth, the members of the Coalition being parties hereto agree as follows:

1. The purpose of the Coalition is to build, maintain, and operate a solid waste disposal, recycling, and education facility for the citizens who are constituents of the parties hereto, and for certain types of waste from non-parties. Parties who associate with the Coalition may withdraw from the Coalition as set forth in Paragraph 14 of this Third Amended Agreement, and in no event shall such withdrawing party be relieved of liabilities of the Coalition incurred prior to such withdrawing party's notice of withdrawal.

2. The parties hereto agree pursuant to the provisions of the Act, that the Coalition a separate body politic. The Coalition shall function as a local subdivision of government providing for solid waste management, recycling, and disposal, and as a nonprofit agency, which shall be empowered to make all financial and policy decisions affecting the purpose for which it is created.

3. Additional political subdivisions or entities may seek to become parties to this Third Amended Agreement and added as members to the Coalition upon providing to the Chairperson of the Board a letter of application which shall be considered by the Board at the next regular or special Board meeting. The application must identify the total population served by such political subdivision or entity, including any other political subdivisions, entities, or unincorporated areas (hereafter, "Communities") which rely upon the applicant for disposal of solid waste, and identify which, if any, transfer station the applicant intends to utilize, and/or any private haulers that serve the applicant. Upon receiving the approval of two-thirds (2/3) of the Directors and upon the governing body of the political subdivision applying for membership authorizing the execution of this Third Amended Agreement by Resolution and upon the execution of this Third Amended Agreement, including any addendum, amendment or modification thereto, the political subdivision applying for membership shall become a member of the Coalition. Further, the parties agree to comply with the terms of the host Agreement for the Facility entered into with Stanton County dated November 4, 1993, as amended from time to time. Until such time as an applicant becomes a member, the applicant is subject to non-member rates, or denial of the use of the Facility.

4. The parties hereto are hereby authorized and encouraged to establish by separate Interlocal Agreement relationships with other parties hereto to provide for the most economically feasible location and development of their own transfer stations, including but not limited to the transfer station's capitalization, debt service, operation and maintenance, and related capital and operating reserve costs required to transport their waste to the solid waste disposal facility, whether by the political subdivision(s) involved, or through private haulers that serve the parties.

5. Subject to Paragraph 17, the Coalition shall continue in existence and operation for the active life of the Facility and post-closure; it is the intent of the parties that the Coalition shall terminate on or as soon as practicable after the post-closure timeframe established by the rules of the Nebraska Department of Environment and Energy ("NDEE"), or its successor agency.

6. The Coalition shall be governed by the Board, which shall be made up of representatives as set forth below. Each Director shall be appointed by Resolution of the applicable governing body, and each such applicable governing body may name an alternate person to act and vote in the absence of the governing body's named representative. The Coalition shall have, through the exercise of a majority vote of its Board, those responsibilities and powers set forth in the Act, as well as the power to issue bonds and notes pursuant to Neb. Rev. Stat. §13-808, *et. seq.*, and the power to enter into service agreements pursuant to Neb. Rev. Stat. §§13-2024.

(A) A single representative from each of the three (3) largest municipalities which are parties to this Third Amended Agreement;

(B) A single representative, which shall rotate annually, for all other members which are a party to this Third Amended Agreement excluding representatives in a) and c) of this Section.

(C) A representative from the township where the solid waste disposal facility is located, currently Maple Creek Township.

7. Powers and responsibilities of the Board shall include, but not be limited to the following:

(A) Set budgets and rates ("user fees") and to provide for a system of budgeting, accounting, auditing and reporting of all Coalition funds and transactions, for a depository, and for the bonding of employees and officials or the provision of equivalent insurance coverage provided by the Coalition;

(B) Establish solid waste disposal facility use rules and regulations for the Coalition facility, including those prohibiting various types of wastes;

(C) Establish goals and/or mandates regarding waste reduction, reuse, and recycling;

(D) Contract for the design, development, construction, operation, and maintenance of a publicly owned solid waste disposal facility with public or private entities as allowed by Nebraska law;

(E) Manage and review solid waste disposal facility operations;

- (F) Organize efforts to keep the general public informed of desired solid waste facility operations and procedures, and making the public aware of potential problems and concerns;
- (G) Address questions and concerns of the general public;
- (H) Make application for any permits or licenses required by regulating agencies;
- (I) See that the solid waste disposal facility operating personnel are kept abreast of latest developments and concerns regarding the solid waste disposal facility;
- (J) Employ such personnel as are needed to carry out the objectives of the Coalition set forth herein, fix their compensation, benefits, enact personnel rules and regulations, and terminate their employment;
- (K) Adopt By-Laws regarding the organization and operation of the Coalition;
- (L) Make application for and receive grants related to the solid waste management purposes for which the Coalition was formed;
- (M) Borrow funds as necessary;
- (N) To contract with and compensate consultants for professional services including, but not limited to, architects, engineers, planners, lawyers, accountants, rate specialists, and others found necessary or useful and convenient to the stated purposes of the Coalition;
- (O) To sue and be sued;
- (P) To purchase, plan, develop, construct, equip, maintain, and improve facilities and systems for use in solid waste management and lease or acquire land in fee by gift, grant, purchase or condemnation, as necessary for the construction and operation of such a facility or system;
- (Q) To acquire, hold, use and dispose of the reserves derived from the operation of solid waste management facilities and systems and other moneys of the Coalition;
- (R) To acquire, hold, use and dispose of other personal property for the purposes of the Coalition; and

(S) To make or cause to be made studies and surveys necessary or useful and convenient to carrying out the functions of the Coalition.

8. The Coalition shall be funded by the revenues derived from the rates ("user fees") set by the Board for solid waste disposed at Coalition facilities in accordance with the provisions set forth by the Board. NO PROPERTY TAX SHALL BE LEVIED FOR ANY COST RELATED TO THE CREATION, BUILDING, OR OPERATION OF THE SOLID WASTE DISPOSAL FACILITY provided, however, that (1) in the event that funds derived from "user fees" are insufficient to service debt of the Coalition, then and in that event the individual members of the Coalition shall be assessed (which assessment may be provided for in any service agreement with each such member) on a per-capita basis on the basis of the entire population served by the members of the Coalition as determined by the most recent decennial census which assessment shall be paid by revenues derived from local property taxes or other local revenue sources; and (2) in the event of a request from the Board for the members' assistance in meeting state or federal financial assurance requirements of Coalition for closure, post-closure care or for corrective action, then and in that event the members shall participate in the Local Government Financial Test, the Local Government Guarantee, a State-Approved Mechanism, or in any combination of these financial assurance mechanisms as requested by the Board, on a per-capita basis on the basis of the entire population of the members of the Coalition as determined by the most recent decennial census. The rates charged by the Coalition shall be uniform for all members for disposal costs at the gate of said facility based on the tonnage or volume of waste. Rates charged by the parties hereto to their constituents for collection and transfer to the solid waste disposal facility shall be the function and responsibility of each of the said parties hereto. The Coalition is hereby empowered and authorized to establish classes of user fees for the following:

- (A) Members that send qualifying waste directly to the Facility;
- (B) Member transfer stations that send waste to the Facility;
- (C) Non-member transfer stations that send waste to the Facility;
- (D) Non-transfer station and non-qualifying waste to Facility;
- (E) City of Clarkson;
- (F) Minimum charges;
- (G) Landfill Inspection Fee;
- (H) Administrative Fee;
- (H) Equipment Use Fee or special waste fee; and

(l) Non-typical waste

9. The parties hereto agree to:

(A) pass appropriate ordinances or resolutions requiring their citizens to manage their solid wastes in compliance with the policies of the Coalition, and require any Community served by such member to do the same;

(B) where legally required by law to do so, to require the disposal of said wastes only through a transfer station approved by Coalition; and

(C) incorporate the rates for solid waste disposal as set annually by the Coalition Board of Directors into any rate charged to their respective constituents and Communities served.

10. The Coalition shall set the standards of and for the solid waste it shall accept from transfer stations and at the solid waste disposal facility. Said standards shall be in compliance with applicable permits, rules and regulations of state and federal agencies with jurisdiction over the solid waste disposal facility.

11. The parties hereto agree that the solid waste disposal rates and classes shall be approved by the Board, and shall be calculated to fund capital, debt service, operating, closure, post-closure, financial assurance, reserve funds, self-funded insurance costs, and other costs which may arise from the operation, management, design, expansion, or replacement of the Facility.

12. Any party to this Third Amended Agreement which does not agree with the rates established by the Board which apply to such party shall be allowed to challenge the reasonableness of said rate at a meeting before the Board within thirty (30) days after the Board adopts annual rates as provided herein. The Board's decision as to such challenge shall be final.

13. The parties hereto further agree to comply with the Coalition's permits, and shall cooperate with the Coalition's efforts to obtain and maintain necessary permits for the solid waste facility. Transfer station operators shall be required to keep exacting records of the tonnage and volume of waste they initially receive, what is diverted, reused or recycled, what is excluded as hazardous material, what is excluded as required by the Coalition, and the tonnage or volume approved for transfer to the solid waste disposal facility on not less than a monthly basis.

14. The parties hereto shall remain parties to this Third Amended Agreement, except as provided in Paragraph 1 of this Third Amended Agreement, for the duration of the amortization schedule of all revenue bond issues and until the required post-closure

care and any required corrective action has been completed. In the event any party hereto desires to withdraw from this Third Amended Agreement, said party shall forfeit any future opportunities for self-insurance reimbursement from the funds established for this purpose, but shall remain responsible for any assessments or any financial assurance mechanism participation as requested, directed or agreed under the provisions this Third Amended Agreement. Any member seeking to withdraw from membership in the Coalition shall file with the Board a certified copy of the resolution of the member's governing body approving withdrawal. The withdrawal shall be effective upon such filing.

15. Any refund of post-closure self-funded insurance funds shall be redistributed to the parties hereto at the time of such refund on a per-capita basis (using the most recent decennial census) weighted by Coalition membership years.

16. Any party to this Third Amended Agreement shall have the right to conduct an inspection of the solid waste disposal facility with not less than one (1) day's advance written notice to the Chairperson of the Board.

17. The Coalition may be dissolved only by the adoption of resolutions approving such action by the governing body of each member, provided that the Coalition may not be dissolved until all outstanding bonds, notes, service agreements or other contractual or regulatory obligations and legal claims shall have been satisfied in full. Upon dissolution of the Coalition, each member shall become the owner of a fractional undivided interest in all remaining assets of the Coalition. Each member's undivided fractional interest in such assets shall be determined in accordance with that fraction which is produced, based upon the most recent decennial census, by dividing the population of each member by the entire population of all members of the Coalition.

18. The title to all property, personal or real, owned by the Coalition shall be held in the name of the Coalition. All conveyances of real property owned or held in the name of the Coalition shall be authorized by resolution of the Board and executed by the Chairperson or Vice Chairperson on behalf of the Coalition.

19. Each party to this Third Amended Agreement shall execute duplicate copies of this Third Amended Agreement and provide one executed copy to the Board. The parties agree that the separately executed copies of this Third Amended Agreement shall constitute the Interlocal Agreement of the Coalition, shall be given full force and effect, and shall supersede all prior iterations of the Coalition's Interlocal Agreement.


20. Each member shall provide to the Coalition a certified copy of the resolution of the governing body of the member approving this Third Amended Agreement and a certified copy of the resolution appointing said members representative to the board of directors, said resolutions being effective upon their filing with the Coalition.

21. This Third Amended Agreement may be amended upon approving resolutions adopted by the governing bodies of sixty percent (60%) of the population based upon the most recent decennial census, of the members at the time of the proposed amendment. A certified copy of each approving resolution shall be submitted to and kept on file with the Board.


IN WITNESS WHEREOF, the parties hereto have executed the foregoing Third Amended Agreement in duplicate this ____ day of _____, 2023.

CITY OF BATTLE CREEK, NEBRASKA,
A Municipal Corporation,

ATTEST:



City Clerk



Mayor 6-12-2023

(SEAL)

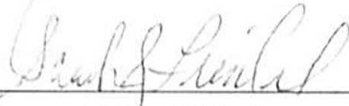


BURT COUNTY, NEBRASKA, a Political
Subdivision of the State of Nebraska



Chairman, County Board

ATTEST:



County Clerk

Sarah J. Freidel, Burt County Clerk

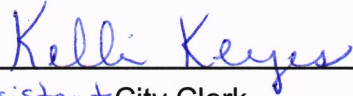


CITY OF COLUMBUS, NEBRASKA, a
Municipal Corporation,

ATTEST:



Mayor 6-19-2023



Assistant City Clerk

(SEAL)



APPROVED AS TO FORM

By 

City Attorney

VILLAGE OF CRAIG, NEBRASKA, a Municipal Corporation,

ATTEST:

Megan Martin
Village Clerk

[Signature]
Chairperson 8-10-2023

(SEAL)

VILLAGE OF CRESTON, NEBRASKA, a
Municipal Corporation,

ATTEST:

Paul Bachman
Village Clerk

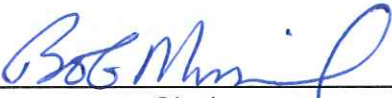
Chad Smith
Chairperson 8-28-2023

(SEAL)



DODGE COUNTY, NEBRASKA, a Political
Subdivision of the State of Nebraska

ATTEST:

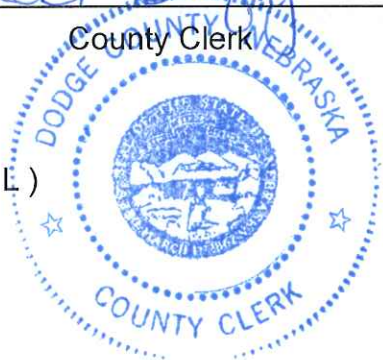


Chairperson 7-28-2023



County Clerk

(SEAL)



VILLAGE OF DUNCAN, NEBRASKA, a
Municipal Corporation,

ATTEST:

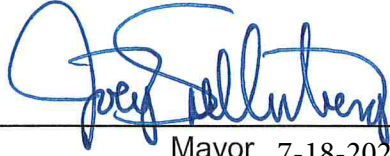
Chuck Wagoner
Chairperson 7-12-2023

Melana Evans
Village Clerk

(SEAL)

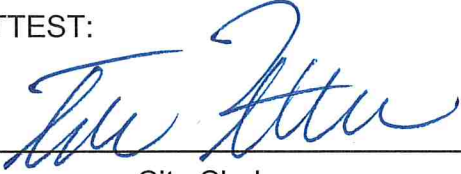


CITY OF FREMONT, NEBRASKA, a
Municipal Corporation,



Mayor 7-18-2022

ATTEST:

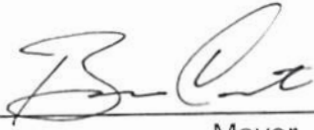


City Clerk

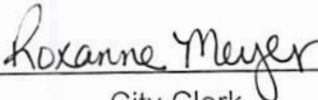


CITY OF HOOPER, NEBRASKA,
Municipal Corporation,

ATTEST:



Mayor 7-11-2023



City Clerk



VILLAGE OF HOSKINS, NEBRASKA, a
Municipal Corporation,

ATTEST:

Diane Doffin
Village Clerk

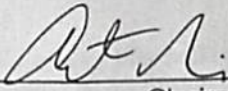
[Signature]
Chairperson 6-05-2023

(SEAL)



VILLAGE OF INGLEWOOD, NEBRASKA, a
Municipal Corporation,

ATTEST:



Chairperson 7-11-2023



Village Clerk

(SEAL)



MADISON COUNTY, NEBRASKA, a Political
Subdivision of the State of Nebraska

ATTEST:

Andrew M. Dues
County Clerk

Josephine
Chairperson 6-06-2023

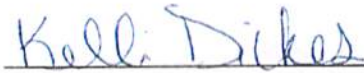


CITY OF MADISON, NEBRASKA,
A Municipal Corporation,

ATTEST:



Mayor 6-15-2023



City Clerk

(SEAL)

VILLAGE OF MEADOW GROVE, NEBRASKA,
a Municipal Corporation,

ATTEST:

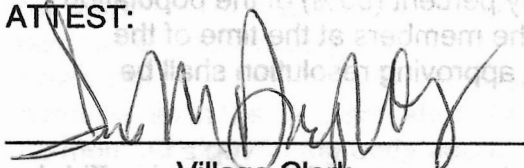

Chairperson 6-13-2023


Village Clerk

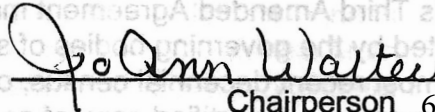


VILLAGE OF NICKERSON, NEBRASKA, a
Municipal Corporation,

ATTEST:



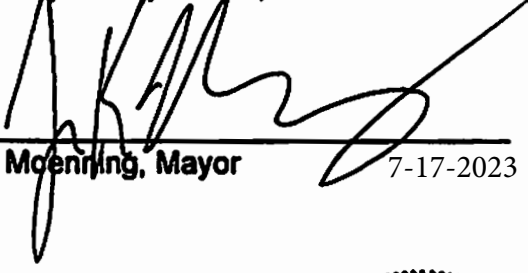
Village Clerk



Chairperson 6-12-2023

(SEAL)

CITY OF NORFOLK, NEBRASKA,
A Municipal Corporation,



Josh Moenring, Mayor

7-17-2023

ATTEST:



Brianna Duerst, City Clerk

(SEAL)

Approved as to form: 

Danielle Myers-Noelle, City Attorney



CITY OF OAKLAND, NEBRASKA, a
Municipal Corporation,

ATTEST:

Karla Eisenmenger
City Clerk

Don Jacobs
Mayor 6-19-2023

(SEAL)



VILLAGE OF PILGER, NEBRASKA, a Municipal Corporation,

ATTEST:


Chairperson 6-12-2023

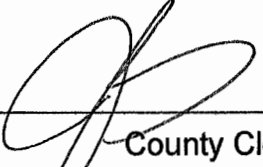

Village Clerk

(SEAL)



PLATTE COUNTY, NEBRASKA, a Political
Subdivision of the State of Nebraska

ATTEST:



County Clerk





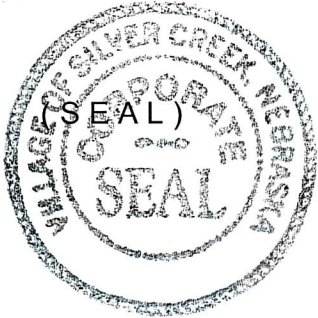
Chairperson 9-12-2023

VILLAGE OF SILVER CREEK, NEBRASKA, a
Municipal Corporation,

ATTEST:

Jennifer Gymanek
Village Clerk

Amy Bryson Chmn
Chairperson 9-18-2023

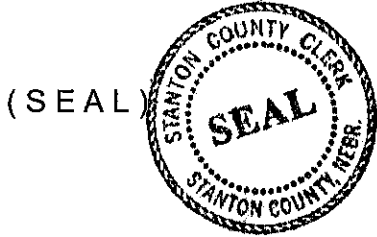


STANTON COUNTY, NEBRASKA, a Political
Subdivision of the State of Nebraska

ATTEST:

Oliver Hunt
Chairperson 9-18-2023

Wanda Hellmann
County Clerk



CITY OF STANTON, NEBRASKA, a
Municipal Corporation,

ATTEST:

Nancy Morfeld
City Clerk

[Signature]
Mayor 6-13-2023



VILLAGE OF UEHLING, NEBRASKA, a
Municipal Corporation,

ATTEST:

Brenda Wittgenburg
Village Clerk

Steve Kiste
Chairperson 8-14-2023

(SEAL)



VILLAGE OF WINSLOW, NEBRASKA, a
Municipal Corporation,

ATTEST:



Village Clerk



Chairperson 8-09-2023

(SEAL)

EXHIBIT "A"

MEMBERS OF THE
NORTHEAST NEBRASKA SOLID WASTE COALITION

- (1) City of Battle Creek, Nebraska
- (2) Burt County, Nebraska
- (3) City of Columbus, Nebraska
- (4) Village of Craig, Nebraska
- (5) Village of Creston, Nebraska
- (6) Dodge County, Nebraska
- (7) Village of Duncan, Nebraska
- (8) City of Fremont, Nebraska
- (9) City of Hooper, Nebraska
- (10) Village of Hoskins, Nebraska
- (11) Village of Inglewood, Nebraska
- (12) City of Madison, Nebraska
- (13) Madison County, Nebraska
- (14) Village of Meadow Grove, Nebraska
- (15) Village of Nickerson, Nebraska
- (16) City of Norfolk, Nebraska
- (17) City of Oakland, Nebraska
- (18) Village of Pilger, Nebraska
- (19) Platte County, Nebraska
- (20) Village of Silver Creek, Nebraska
- (21) City of Stanton, Nebraska
- (22) Stanton County, Nebraska
- (23) Village of Uehling, Nebraska
- (24) Village of Winslow, Nebraska

FUND REVENUE DETAIL

FUND CODE: 604

Code	Description	2019-2020 Actual Revenues	2020-2021 Actual Revenues	2021-2022 Estimated Revenues	2021-2022 Budget	2022-2023 Budget	Dollar Increase (Decrease)	Percent Increase (Decrease)
	Balance Brought Forward	<u>5,376,814</u>	<u>6,386,566</u>	<u>7,293,467</u>	<u>7,172,468</u>	<u>8,372,346</u>	<u>1,199,878</u>	<u>16.73%</u>
	Charges for Services							
36701	Use Fees	<u>2,873,100</u>	<u>2,916,026</u>	<u>2,939,169</u>	<u>3,070,843</u>	<u>2,955,331</u>	<u>(115,512)</u>	<u>(3.76%)</u>
	Total Charges for Services	<u>2,873,100</u>	<u>2,916,026</u>	<u>2,939,169</u>	<u>3,070,843</u>	<u>2,955,331</u>	<u>(115,512)</u>	<u>(3.76%)</u>
	Rent & Other Revenue							
37408	Late Charges	<u>98</u>	<u>90</u>	<u>6</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
	Total Rent & Other Revenue	<u>98</u>	<u>90</u>	<u>6</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
	Interest Income							
38801	Other Interest Income	<u>44,167</u>	<u>50,746</u>	<u>54,378</u>	<u>17,000</u>	<u>67,000</u>	<u>50,000</u>	<u>294.12%</u>
	Total Interest Income	<u>44,167</u>	<u>50,746</u>	<u>54,378</u>	<u>17,000</u>	<u>67,000</u>	<u>50,000</u>	<u>294.12%</u>
	Total Revenue	<u>2,917,365</u>	<u>2,966,862</u>	<u>2,993,553</u>	<u>3,087,843</u>	<u>3,022,331</u>	<u>(65,512)</u>	<u>(2.12%)</u>
	Total Funds Available	<u>8,294,179</u>	<u>9,353,428</u>	<u>10,287,020</u>	<u>10,260,311</u>	<u>11,394,677</u>	<u>1,134,366</u>	<u>11.06%</u>

NE NEBR SOLID WASTE COALITION

GENERAL FUND

FUND BUDGET CALCULATION

FUND CODE: 604

Code	Description					Amount
	BALANCE BROUGHT FORWARD					8,372,346
	Estimated balance as of October 1, 2022.					
	Total Restricted					-
	Unrestricted Balance					8,372,346
	CHARGES FOR SERVICES					
36701	Use Fees	123,044	Ton	@	\$24.00	2,953,056
	Special Wastes	175	Ton	@	\$13.00	2,275
	TOTAL CHARGES FOR SERVICES					<u>2,955,331</u>
	INTEREST INCOME					
38001	Other Interest Income					67,000
	Estimate of interest to be earned.					<u>67,000</u>
	TOTAL INTEREST INCOME					67,000
	TOTAL FUNDS AVAILABLE					11,394,677

DEPARTMENT EXPENDITURE DETAIL

DEPARTMENT CODE: 229

Code	Description	2019-2020 Actual Expenditures	2020-2021 Actual Expenditures	2021-2022 Estimated Expenditures	2021-2022 Budget	2022-2023 Budget	Dollar Increase (Decrease)	Percent Increase (Decrease)
Personnel Costs								
11	Salaries & Wages	79,065	80,878	82,203	86,575	87,370	795	0.92%
14	Pension	4,178	4,464	4,531	6,060	6,116	56	0.92%
15	FICA	6,048	6,187	6,289	6,623	6,684	61	0.92%
16	Worker's Compensation	791	842	808	831	877	46	5.54%
	Total Personnel Costs	<u>90,082</u>	<u>92,371</u>	<u>93,830</u>	<u>100,089</u>	<u>101,047</u>	<u>958</u>	<u>0.96%</u>
Operating Supplies and Materials								
24	Vehicular Fuel & Lube	732	892	1,446	1,750	2,562	812	46.40%
26	Minor Apparatus & Tools	-	-	136	500	500	-	-
	Total Operating Supplies & Mat.	<u>732</u>	<u>892</u>	<u>1,583</u>	<u>2,250</u>	<u>3,062</u>	<u>812</u>	<u>36.09%</u>
Other Operating Costs								
31	Rent	766	739	-	-	-	-	-
32	Disposal Fees	1,118,232	1,097,095	1,143,567	1,163,087	1,235,036	71,949	6.19%
	Total Other Operating Costs	<u>1,118,998</u>	<u>1,097,834</u>	<u>1,143,567</u>	<u>1,163,087</u>	<u>1,235,036</u>	<u>71,949</u>	<u>6.19%</u>
Utilities & Maintenance								
41	Electricity	2,390	2,558	2,235	4,000	4,000	-	-
46	Bldg., Ground, & Plant Maintenance	8,193	6,790	5,617	17,540	17,540	-	-
47	Machinery & Vehicle Maintenance	166	522	3,074	750	750	-	-
48	Office Equipment Maintenance	3,071	4,476	-	2,500	2,500	-	-
	Total Utilities & Maintenance	<u>13,821</u>	<u>14,345</u>	<u>10,926</u>	<u>24,790</u>	<u>24,790</u>	<u>-</u>	<u>-</u>
Legislative Affairs								
53	Travel & Training	764	178	344	1,724	1,734	10	0.58%
55	Dues & Publications	223	760	351	650	650	-	-
	Total Legislative Affairs	<u>987</u>	<u>939</u>	<u>695</u>	<u>2,374</u>	<u>2,384</u>	<u>10</u>	<u>0.42%</u>

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DEPARTMENT EXPENDITURE DETAIL

DEPARTMENT CODE: 229

Code	Description	2019-2020 Actual Expenditures	2020-2021 Actual Expenditures	2021-2022 Estimated Expenditures	2021-2022 Budget	2022-2023 Budget	Dollar Increase (Decrease)	Percent Increase (Decrease)
	Other Admin. & Overhead							
61	Insurance	12,158	11,887	13,753	13,313	14,003	690	5.18%
62	Telephone & Teletype	420	440	1,594	2,650	2,650	-	-
63	Postage	123	128	219	1,000	1,000	-	-
64	Office Supplies	1,410	3,222	646	3,105	6,755	3,650	117.55%
65	Legal Notices & Advertising	29	690	905	500	500	-	-
68	Other Professional Fees	256,386	436,067	246,534	262,698	234,379	(28,319)	(10.78%)
	Total Other Admin. & Overhead	<u>270,526</u>	<u>452,433</u>	<u>263,651</u>	<u>283,266</u>	<u>259,287</u>	<u>(23,979)</u>	<u>(8.47%)</u>
	Gov't Subsidies & Transfers							
78	Intrafund Oper. Transfer Out	358,291	362,528	393,013	383,120	478,000	94,880	24.77%
	Total Gov't Subsidies & Trans.	<u>358,291</u>	<u>362,528</u>	<u>393,013</u>	<u>383,120</u>	<u>478,000</u>	<u>94,880</u>	<u>24.77%</u>
	Capital Outlay							
87	Infrastructure	54,176	38,620	7,409	520,000	4,207,200	3,687,200	709.08%
	Total Capital Outlay	<u>54,176</u>	<u>38,620</u>	<u>7,409</u>	<u>520,000</u>	<u>4,207,200</u>	<u>3,687,200</u>	<u>709.08%</u>
	Total Expenditures	1,907,614	2,059,961	1,914,674	2,478,976	6,310,806	3,831,830	154.57%
	Ending Balance	<u>6,386,566</u>	<u>7,293,467</u>	<u>8,372,346</u>	<u>7,781,335</u>	<u>5,083,871</u>	<u>(2,697,464)</u>	<u>(34.67%)</u>
	Total Funds Accounted For	<u>8,294,179</u>	<u>9,353,428</u>	<u>10,287,020</u>	<u>10,260,311</u>	<u>11,394,677</u>	<u>1,134,366</u>	<u>11.06%</u>

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DEPARTMENT EXPENDITURE DETAIL

DEPARTMENT CODE: 229

Code	Description	Amount	Code	Description	Amount	Code	Description	Amount
10	PERSONNEL COSTS		30	OTHER OPERATING COSTS			Portable gas monitor	2,000
11	SALARIES & WAGES		32	DISPOSAL FEES			Vactor rental	650
	Average Monthly Salary			FY 21/22 Actual			Well Pumps	5,000
	\$ 5,885 x 12	70,620		Norfolk	34442		Janitorial Supplies	500
	Health Insurance Stipend			Fremont	34934		HVAC Repairs	1,000
	\$1,000 per Mo. x 12	12,000		Columbus	29781		Water Level Meter	850
	Overtime Avg. Hr.			Oakland	648		Plumbing Repairs	200
	\$ 45.67 x 104	4,750		Pilger	206		Scale Service	6,000
	TOTAL SALARIES	87,370		Newman Grove	7,799		TOTAL BLDG,GRND MAINT	17,540
				Other est.	8,269			
14	PENSION			Total	116,079	47	MACHINERY & VEHICLE MAINT.	
	\$ 87,370 x 7.00%	6,116		% Projected Incr 6%	123,044		Miscellaneous	750
	TOTAL PENSION	6,116		Operating contract			TOTAL MACH. & VEHICLE MAINT.	750
15	FICA			4.4 Variable Base		48	OFFICE EQUIP.MAINT.	
	\$87,370 x 7.65%	6,684		\$528,000 Fixed Base			Security System	2000
	TOTAL FICA	6,684		Adjustment 10%			Computer & Telephone	500
16	WORKER'S COMPENSATION			Variable Fee \$4.40	541,394		TOT.OFF.EQUIP.MAINT.	2,500
	Avg. Mo. \$73.06 x 12	877		Fixed Fee	528,000		TOTAL UTIL.& MAINT.	24,790
	TOTAL WORKER'S COMP.	877		\$/ton State Fee @ \$1.25	153,805			
	TOT. PERS. COSTS	101,047		Special Waste Handling		50	LEGISLATIVE AFFAIRS	
				175 ton x \$10.50	1,838	53	TRAVEL & TRAINING	
20	OPER. SUP. AND MATERIALS			Hazardous Wastes			NESWANA Conferenc 2	
24	VEHICULAR FUEL & LUBE			Test, Ship, Dispose	10,000		Mileage 400 @ \$0.59	234
	Unleaded 700 x \$3.66	2,562		TOTAL DISPOSAL FEES	1,235,036		Hotel 5 @ \$125.00	625
	TOTAL VEHIC. FUEL&LUBE	2,562		TOT. OTH OPER COSTS	1,235,036		Meals 5 @ 35	175
26	MINOR APPARATUS & TOOLS		40	UTILITIES AND MAINTENANCE			Registration	700
	Miscellaneous Supplies	500	41	ELECTRICITY			TOTAL TRAVEL & TRAINING	1,734
	TOTAL MINOR APP & TOOLS	500		TOTAL ELECTRICITY	4,000	55	DUES & PUBLICATIONS	
	TOTAL OPER. SUP. & MAT.	3,062			4,000		SWANA dues for 2 employees	400
				46	BLDG,GRND&PLANT MAINT		Dept of Ag. Scale Register	175
					Building	500	Water & Recycling News	75
					Water Filtration		TOTAL DUES & PUBLICATIONS	650
					12 x \$70.00	840	TOTAL LEG. AFFAIRS	2,384

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DEPARTMENT EXPENDITURE DETAIL

DEPARTMENT CODE: 229

Code Description	Amount	Code Description	Amount	Code Description	Amount
60 OTHER ADMIN. & OVERHEAD		Norfolk Administrative Services (CPI Adjusted)			
61 INSURANCE			46,967	TOTAL RESTRICTED	-
Property and General Liability	14,003	Groundwater Monitoring (CPI Adjusted)		UNRESTRICTED BALANCE	5,083,871
TOTAL INSURANCE	14,003	and GGR Extension with SCS	17,350	TOTAL FUND ACCT. FOR	11,394,677
62 TELEPHONE & TELETYPE		Groundwater pass thru analytical	10,577		
Telephone	600	Audit Fees	7,250		
Internet Equipment for Update	550	Attorney	5,000		
Internet 12 @	125 1,500	Drug Screen 1 x \$ 35	35		
TOTAL TELE.&TELETYPE	2,650	Emission Inventory & GHG Report	4,000		
63 POSTAGE	1,000	Emission Inventory fee	1,350		
TOTAL POSTAGE	1,000	Update SWPPP	7,000		
64 OFFICE SUPPLIES		Legislative Activities	20,000		
Printing & copying	200	TOTAL OTHER PROF.FEES	234,379		
Software	500	TOTAL OTH.ADMIN&OV.	259,287		
Scale Printer and spare	500	70 GOV'T SUBSIDIES & TRANSFERS			
Computer and 1/2 of a spare	3,150	78 INTERFUND OPER. TRANSFER OUT			
Sanitas Software	400	Financial Assurance Fund	478,000		
Computer Supplies	600	TOTAL INTERFUND OP. TRAN.	478,000		
Miscellaneous Materials	550	TOTAL GOV'T SUBSIDIES & TRANSFERS	478,000		
Weight tickets		80 CAPITAL OUTLAY			
9 Case x \$	95 855	87 INFRASTRUCTURE			
TOT. OFFICE SUPPLIES	6,755	Design and Bid Service, Area 6 Ph. 1	161,200		
65 LEGAL NOTICES&ADVERTISE		Engineering CQA	220,000		
TOTAL LEG. NOT.& ADVER.	500	Construction of Cell 6-A	3,450,000		
68 OTHER PROFESSIONAL FEES		Installation of deep well pumps	11,000		
Stanton Co. Host Fee	102,600	Vertical/Lateral Permit Modifications	365,000		
Clarkson VFD Donation	750	TOTAL INFRASTRUCTURE	4,207,200		
School District In-Lieu-of-tax fee	4,000	TOT. CAPITAL OUTLAY	4,207,200		
NDEE Annual Operating Fee	7,500	TOT. EXP.	6,310,806		
		ENDING BALANCE	5,083,871		

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DIVISION PERSONNEL ROSTER

DIVISION CODE: 229

Name	Position	Date of Hire	Grade & Step 10/1 /22	Monthly Wage	Merit Increase D a t e	Merit Grade /Step	Monthly New Wage	Monthly Ave. Wage
Kingsley, Deborah	Scale Clerk	10/26/95	10 H	4,277	5 -1	10 H	4,277	4,277
Renner, Galen	Scale Clerk	09/15/21	10 B	1,576	3 -1	10 C	1,652	<u>1,608</u>
Total							5,885	5,885

NE NEBR SOLID WASTE COALITION

GENERAL FUND

FUND REVENUE DETAIL

FUND CODE: 804

Code	Description	2019-2020 Actual Revenues	2020-2021 Actual Revenues	2021-2022 Estimated Revenues	2021-2022 Budget	2022-2023 Budget	Dollar Increase (Decrease)	Percent Increase (Decrease)
	Balance Brought Forward	8,461,285	9,157,348	9,858,776	9,828,876	10,675,716	846,840	8.62%
	Other Interest Income							
38801	Other Interest Income	337,772	338,900	423,927	314,000	400,000	86,000	27.39%
	Total Other Interest Income	337,772	338,900	423,927	314,000	400,000	86,000	27.39%
	Non-Revenue Receipts							
39101	Interfund Operating Transfers In	358,291	362,528	393,013	383,120	478,000	94,880	24.77%
	Total Non-Revenue Receipts	358,291	362,528	393,013	383,120	478,000	94,880	24.77%
	Total Revenue	696,063	701,428	816,940	697,120	878,000	180,880	25.95%
	Total Funds Available	9,157,348	9,858,776	10,675,716	10,525,996	11,553,716	1,027,720	9.76%

NE NEBR SOLID WASTE COALITION

CLOSURE/POST CLOSURE CARE FUND

FUND REVENUE BUDGET CALCULATION

FUND CODE: 804

Code	Description	
	BALANCE BROUGHT FORWARD	10,675,716
	Estimate of fund balance on October 1, 2022.	
38801	OTHER INTEREST INCOME	400,000
39101	INTERFUND OPERATING TRANSFERS IN	478,000

NE NEBR SOLID WASTE COALITION

CLOSURE/POST CLOSURE CARE FUND

DIVISION EXPENDITURE DETAIL

DIVISION CODE: 804

<u>Code</u>	<u>Description</u>	<u>2019-2020 Actual Expenditures</u>	<u>2020-2021 Actual Expenditures</u>	<u>2021-2022 Estimated Expenditures</u>	<u>2021-2022 Budget</u>	<u>2022-2023 Budget</u>	<u>Dollar Increase (Decrease)</u>	<u>Percent Increase (Decrease)</u>
	Total Expenditures	-	-	-	-	-	-	-
	Ending Balance	9,157,348	9,858,776	10,675,716	10,525,996	11,553,716	1,027,720	9.76%
	Total Funds Accounted For	9,157,348	9,858,776	10,675,716	10,525,996	11,553,716	1,027,720	9.76%

NE NEBR SOLID WASTE COALITION

CLOSURE/POST CLOSURE CARE FUND

DIVISION EXPENDITURE BUDGET CALCULATION

DIVISION CODE: 804

Code Description	Amount
ENDING BALANCE	11,553,716

NE NEBR SOLID WASTE COALITION

CLOSURE/POST CLOSURE CARE FUND

FUND REVENUE DETAIL

FUND CODE: 604

Code	Description	2020-2021 Actual Revenues	2021-2022 Actual Revenues	2022-2023 Estimated Revenues	2022-2023 Budget	2023-2024 Budget	Dollar Increase (Decrease)	Percent Increase (Decrease)
	Balance Brought Forward	6,386,566	7,293,467	8,372,347	8,372,346	5,884,866	(2,487,480)	(29.71%)
	Charges for Services							
36701	Use Fees	2,916,026	2,939,169	2,944,896	2,955,331	2,955,331	-	-
	Total Charges for Services	2,916,026	2,939,169	2,944,896	2,955,331	2,955,331	-	-
	Rent & Other Revenue							
37404	Miscellaneous	-	-	25	-	-	-	-
37408	Late Charges	90	6	61	-	-	-	-
	Total Rent & Other Revenue	90	6	86	-	-	-	-
	Interest Income							
38801	Other Interest Income	50,746	54,378	165,764	67,000	178,000	111,000	165.67%
	Total Interest Income	50,746	54,378	165,764	67,000	178,000	111,000	165.67%
	Total Revenue	2,966,862	2,993,553	3,110,746	3,022,331	3,133,331	111,000	3.67%
	Total Funds Available	9,353,428	10,287,020	11,483,093	11,394,677	9,018,197	(2,376,480)	(20.86%)

NE NEBR SOLID WASTE COALITION

GENERAL FUND

FUND BUDGET CALCULATION

FUND CODE: 604

Code	Description					Amount
	BALANCE BROUGHT FORWARD					5,884,866
	Estimated balance as of October 1, 2023.					
	Total Restricted					-
	Unrestricted Balance					5,884,866
	CHARGES FOR SERVICES					
36701	Use Fees	123,044	Ton	@	\$24.00	2,953,056
	Special Wastes	175	Ton	@	\$13.00	2,275
	TOTAL CHARGES FOR SERVICES					<u>2,955,331</u>
	INTEREST INCOME					
38001	Other Interest Income					178,000
	Estimate of interest to be earned.					<u>178,000</u>
	TOTAL INTEREST INCOME					<u>178,000</u>
	TOTAL FUNDS AVAILABLE					9,018,197

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DEPARTMENT EXPENDITURE DETAIL

DEPARTMENT CODE: 229

Code	Description	2020-2021 Actual Expenditures	2021-2022 Actual Expenditures	2022-2023 Estimated Expenditures	2022-2023 Budget	2023-2024 Budget	Dollar Increase (Decrease)	Percent Increase (Decrease)
Personnel Costs								
11	Salaries & Wages	80,878	82,203	85,466	87,370	92,281	4,911	5.62%
14	Pension	4,464	4,531	4,606	6,116	6,460	344	5.62%
15	FICA	6,187	6,289	6,538	6,684	7,059	375	5.61%
16	Worker's Compensation	842	808	808	877	808	(69)	(7.87%)
	Total Personnel Costs	<u>92,371</u>	<u>93,830</u>	<u>97,418</u>	<u>101,047</u>	<u>106,608</u>	<u>5,561</u>	<u>5.50%</u>
Operating Supplies and Materials								
24	Vehicular Fuel & Lube	892	1,446	1,561	2,562	2,093	(469)	(18.31%)
26	Minor Apparatus & Tools	-	136	200	500	3,000	2,500	500.00%
29	Other Operation Supplies & Materials	-	-	-	-	-	-	-
	Total Operating Supplies & Mat.	<u>892</u>	<u>1,583</u>	<u>1,761</u>	<u>3,062</u>	<u>5,093</u>	<u>2,031</u>	<u>66.33%</u>
Other Operating Costs								
31	Rent	739	-	-	-	-	-	-
32	Disposal Fees	1,097,095	1,143,567	1,238,970	1,235,036	1,235,036	-	-
	Total Other Operating Costs	<u>1,097,834</u>	<u>1,143,567</u>	<u>1,238,970</u>	<u>1,235,036</u>	<u>1,235,036</u>	<u>-</u>	<u>-</u>
Utilities & Maintenance								
41	Electricity	2,558	2,235	2,537	4,000	4,000	-	-
46	Bldg., Ground, & Plant Maintenance	6,790	5,617	8,993	17,540	17,540	-	-
47	Machinery & Vehicle Maintenance	522	3,074	698	750	1,000	250	33.33%
48	Office Equipment Maintenance	4,476	-	500	2,500	2,500	-	-
	Total Utilities & Maintenance	<u>14,345</u>	<u>10,926</u>	<u>12,728</u>	<u>24,790</u>	<u>25,040</u>	<u>250</u>	<u>1.01%</u>
Legislative Affairs								
53	Travel & Training	178	344	1,180	1,734	1,526	(208)	(12.00%)
55	Dues & Publications	760	351	388	650	575	(75)	(11.54%)
	Total Legislative Affairs	<u>939</u>	<u>695</u>	<u>1,568</u>	<u>2,384</u>	<u>2,101</u>	<u>(283)</u>	<u>(11.87%)</u>

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DEPARTMENT EXPENDITURE DETAIL

DEPARTMENT CODE: 229

Code	Description	2020-2021 Actual Expenditures	2021-2022 Actual Expenditures	2022-2023 Estimated Expenditures	2022-2023 Budget	2023-2024 Budget	Dollar Increase (Decrease)	Percent Increase (Decrease)
	Other Admin. & Overhead							
61	Insurance	11,887	13,753	15,917	14,003	17,717	3,714	26.52%
62	Telephone & Teletype	440	1,594	2,052	2,650	2,650	-	-
63	Postage	128	219	152	1,000	1,000	-	-
64	Office Supplies	3,222	646	3,949	6,755	3,105	(3,650)	(54.03%)
65	Legal Notices & Advertising	690	905	98	500	500	-	-
68	Other Professional Fees	436,067	246,534	263,654	234,379	231,854	(2,525)	(1.08%)
	Total Other Admin. & Overhead	<u>452,433</u>	<u>263,651</u>	<u>285,822</u>	<u>259,287</u>	<u>256,826</u>	<u>(2,461)</u>	<u>(0.95%)</u>
	Gov't Subsidies & Transfers							
78	Intrafund Oper. Transfer Out	362,528	393,013	459,961	478,000	36,000	(442,000)	(92.47%)
	Total Gov't Subsidies & Trans.	<u>362,528</u>	<u>393,013</u>	<u>459,961</u>	<u>478,000</u>	<u>36,000</u>	<u>(442,000)</u>	<u>(92.47%)</u>
	Capital Outlay							
87	Infrastructure	38,620	7,409	3,500,000	4,207,200	1,369,400	(2,837,800)	(67.45%)
	Total Capital Outlay	<u>38,620</u>	<u>7,409</u>	<u>3,500,000</u>	<u>4,207,200</u>	<u>1,369,400</u>	<u>(2,837,800)</u>	<u>(67.45%)</u>
	Total Expenditures	2,059,961	1,914,673	5,598,227	6,310,806	3,036,104	(3,274,702)	(51.89%)
	Ending Balance	<u>7,293,467</u>	<u>8,372,347</u>	<u>5,884,866</u>	<u>5,083,871</u>	<u>5,982,093</u>	<u>898,222</u>	<u>17.67%</u>
	Total Funds Accounted For	<u><u>9,353,428</u></u>	<u><u>10,287,020</u></u>	<u><u>11,483,093</u></u>	<u><u>11,394,677</u></u>	<u><u>9,018,197</u></u>	<u><u>(2,376,480)</u></u>	<u><u>(20.86%)</u></u>

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DEPARTMENT EXPENDITURE DETAIL

DEPARTMENT CODE: 229

Code Description	Amount	Code Description	Amount	Code Description	Amount
10 PERSONNEL COSTS		30 OTHER OPERATING COSTS		Vactor rental	650
11 SALARIES & WAGES		32 DISPOSAL FEES		Well Pumps	5,000
Average Monthly Salary		FY 21/22 Actual		Janitorial Supplies	500
\$ 6,283 x	12	Norfolk	34442	HVAC Repairs	1,000
Health Insurance Stipend		Fremont	34934	Water Level Meter	850
\$1,000 per Mo. x	12	Columbus	29781	Plumbing Repairs	200
Overtime Avg. Hr.		Oakland	648	Scale Service	6,000
\$ 46.97 x	104	Pilger	206	<u>TOTAL BLDG,GRND MAINT</u>	<u>17,540</u>
<u>TOTAL SALARIES</u>	<u>92,281</u>	Newman Grove	7,799		
		Other est.	8,269	47 MACHINERY & VEHICLE MAINT.	
14 PENSION		Total	116,079	Miscellaneous	1,000
\$ 92,281 x	7.00%	% Projected Incr	6% 123,044	<u>TOTAL MACH. & VEHICLE MAINT.</u>	<u>1,000</u>
<u>TOTAL PENSION</u>	<u>6,460</u>	Operating contract			
		4.4 Variable Base		48 OFFICE EQUIP.MAINT.	
15 FICA		\$528,000 Fixed Base		Security System	2,000
\$92,281 x	7.65%	Adjustment	10%	Computer & Telephone	500
<u>TOTAL FICA</u>	<u>7,059</u>	Variable Fee	\$4.40	<u>TOT.OFF.EQUIP.MAINT.</u>	<u>2,500</u>
		Fixed Fee	528,000	TOTAL UTIL.& MAINT.	25,040
16 WORKER'S COMPENSATION		\$/ton State Fee @	\$1.25		
Avg. Mo. \$67.33 x	12	Special Waste Handling		50 LEGISLATIVE AFFAIRS	
<u>TOTAL WORKER'S COMP.</u>	<u>808</u>	175 ton x	\$10.50	53 TRAVEL & TRAINING	
TOT. PERS. COSTS	106,608	Hazardous Wastes		NESWANA Conferenc 2	
		Test, Ship, Dispose	10,000	Mileage 400 @	\$0.0655 26
20 OPER. SUP. AND MATERIALS		<u>TOTAL DISPOSAL FEES</u>	<u>1,235,036</u>	Hotel 5 @	\$125 625
24 VEHICULAR FUEL & LUBE		TOT. OTH OPER COSTS	1,235,036	Meals 5 @	\$35 175
Unleaded 700 x	\$2.99			Registration	700
<u>TOTAL VEHIC. FUEL&LUBE</u>	<u>2,093</u>	40 UTILITIES AND MAINTENANCE		<u>TOTAL TRAVEL & TRAINING</u>	<u>1,526</u>
		41 ELECTRICITY			
26 MINOR APPARATUS & TOOLS		TOTAL ELECTRICITY	4,000	55 DUES & PUBLICATIONS	
Riding Lawn Mower	2,500		4,000	SWANA dues for 2 employees	400
Miscellaneous Supplies	500	46 BLDG,GRND&PLANT MAINT		Dept of Ag. Scale Register	175
<u>TOTAL MINOR APP & TOOLS</u>	<u>3,000</u>	Building	500	<u>TOTAL DUES & PUBLICATIONS</u>	<u>575</u>
TOTAL OPER. SUP. & MAT.	5,093	Water Filtration		TOTAL LEG. AFFAIRS	2,101
		12 x	\$70.00		
		Portable gas monitor	2,000		

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DEPARTMENT EXPENDITURE DETAIL

DEPARTMENT CODE: 229

Code	Description	Amount	Code	Description	Amount	Code	Description	Amount
60	OTHER ADMIN. & OVERHEAD			Norfolk Administrative Services (CPI Adjusted)				
61	INSURANCE				49,437		ENDING BALANCE	5,982,093
	Property and General Liability	17,717		Groundwater Monitoring (CPI Adjusted)			TOTAL RESTRICTED	0
	TOTAL INSURANCE	17,717		and GGR Extension with SCS	17,350			
				Groundwater pass thru analytical	10,577			
62	TELEPHONE & TELETYPE			Audit Fees	7,500		UNRESTRICTED BALANCE	5,982,093
	Telephone	600		Attorney	5,000			
	Internet Equipment for Update	550		Drug Screen 1 x \$ 35	35		TOTAL FUND ACCT. FOR	9,018,197
	Internet 12 @	125 1,500		Emission Inventory & GHG Report	4,000			
	TOTAL TELE.&TELETYPE	2,650		Emission Inventory fee	1,350			
				Update SWPPP	1,755			
63	POSTAGE	1,000		Legislative Activities	20,000			
	TOTAL POSTAGE	1,000		TOTAL OTHER PROF.FEES	231,854			
				TOTAL OTH.ADMIN&OV.	256,826			
64	OFFICE SUPPLIES		70	GOV'T SUBSIDIES & TRANSFERS				
	Printing & copying	200	78	INTERFUND OPER. TRANSFER OUT				
	Software	500		Financial Assurance Fund	36,000			
	Sanitas Software	400		TOTAL INTERFUND OP. TRAN.	36,000			
	Computer Supplies	600		TOTAL GOV'T SUBSIDIES & TRANSFERS	36,000			
	Miscellaneous Materials	550						
	Weight tickets							
	9 Case x \$	95 855						
	TOT. OFFICE SUPPLIES	3,105	80	CAPITAL OUTLAY				
			87	INFRASTRUCTURE				
65	LEGAL NOTICES&ADVERTISE			Engineering CQA	28,000			
		500		Construction of Cell 6-A	970,600			
	TOTAL LEG. NOT.& ADVER.	500		Vertical/Lateral Permit Modifications	370,800			
				TOTAL INFRASTRUCTURE	1,369,400			
68	OTHER PROFESSIONAL FEES			TOT. CAPITAL OUTLAY	1,369,400			
	Stanton Co. Host Fee	102,600						
	Clarkson VFD Donation	750		TOT. EXP.	3,036,104			
	School District In-Lieu-of-tax fee	4,000						
	NDEE Annual Operating Fee	7,500						

NE NEBR SOLID WASTE COALITION

GENERAL FUND

DIVISION PERSONNEL ROSTER

DIVISION CODE: 229

Name	Position	Date of Hire	Grade & Step 10/1 /23	Monthly Wage	Merit Increase D a t e	Merit Grade /Step	Monthly New Wage	Monthly Ave. Wage
Kingsley, Deborah	Scale Clerk	10/26/95	10 H	4,427	5 -1	10 H	4,427	4,427
Renner, Galen	Scale Clerk	09/15/21	10 D	1,800	3 -1	10 E	1,935	<u>1,856</u>
Total							6,283	6,283

NE NEBR SOLID WASTE COALITION

GENERAL FUND

FUND REVENUE DETAIL

FUND CODE: 804

Code	Description	2020-2021 Actual Revenues	2021-2022 Actual Revenues	2022-2023 Estimated Revenues	2022-2023 Budget	2023-2024 Budget	Dollar Increase (Decrease)	Percent Increase (Decrease)
	Balance Brought Forward	9,157,348	9,858,776	10,675,716	10,675,716	11,536,234	860,518	8.06%
	Other Interest Income							
38801	Other Interest Income	338,900	423,927	400,557	400,000	401,500	1,500	0.38%
	Total Other Interest Income	338,900	423,927	400,557	400,000	401,500	1,500	0.38%
	Non-Revenue Receipts							
39101	Interfund Operating Transfers In	362,528	393,013	459,961	478,000	36,000	(442,000)	(92.47%)
	Total Non-Revenue Receipts	362,528	393,013	459,961	478,000	36,000	(442,000)	(92.47%)
	Total Revenue	701,428	816,940	860,518	878,000	437,500	(440,500)	(50.17%)
	Total Funds Available	9,858,776	10,675,716	11,536,234	11,553,716	11,973,734	420,018	3.64%

NE NEBR SOLID WASTE COALITION

CLOSURE/POST CLOSURE CARE FUND

FUND REVENUE BUDGET CALCULATION

FUND CODE: 804

Code	Description	
	BALANCE BROUGHT FORWARD Estimate of fund balance on October 1, 2023.	11,536,234
38801	OTHER INTEREST INCOME	401,500
39101	INTERFUND OPERATING TRANSFERS IN	36,000

NE NEBR SOLID WASTE COALITION

CLOSURE/POST CLOSURE CARE FUND

DIVISION EXPENDITURE DETAIL

DIVISION CODE: 804

<u>Code</u>	<u>Description</u>	<u>2020-2021 Actual Expenditures</u>	<u>2021-2022 Actual Expenditures</u>	<u>2022-2023 Estimated Expenditures</u>	<u>2022-2023 Budget</u>	<u>2023-2024 Budget</u>	<u>Dollar Increase (Decrease)</u>	<u>Percent Increase (Decrease)</u>
	Total Expenditures	-	-	-	-	-	-	-
	Ending Balance	9,858,776	10,675,716	11,536,234	11,553,716	11,973,734	420,018	3.64%
	Total Funds Accounted For	9,858,776	10,675,716	11,536,234	11,553,716	11,973,734	420,018	3.64%

NE NEBR SOLID WASTE COALITION

CLOSURE/POST CLOSURE CARE FUND

DIVISION EXPENDITURE BUDGET CALCULATION

DIVISION CODE: 804

Code Description	Amount
ENDING BALANCE	11,973,734

NE NEBR SOLID WASTE COALITION

CLOSURE/POST CLOSURE CARE FUND

RESOLUTION NO. 2023 - 1

WHEREAS, Northeast Nebraska Solid Waste Coalition is a member of the League Association of Risk Management (LARM); and

WHEREAS, Section 8.10 of the Interlocal Agreement for the Establishment and Operation of the League Association of Risk Management provides that a member may voluntarily terminate its participation in LARM by written notice of termination given to LARM and the Director of Insurance at least 90 days prior to the termination date and that members may agree to provide the termination notice more than 90 days in advance of termination in order to realize reduced excess coverage costs, stability of contribution rates and efficiency in operation of LARM; and

WHEREAS, the Northeast Nebraska Solid Waste Coalition has, by Resolution No. 2021-1, committed to LARM participation until September 30, 2024; and

WHEREAS, the Board of Directors of LARM has adopted a plan to provide a five percent (5%) participation discount for members upon extending the member's existing commitment for participation in LARM to a date of termination no sooner than September 30, 2026; and

WHEREAS, the Northeast Nebraska Solid Waste Coalition is desirous of earning available participation discounts.

NOW, THEREFORE, the Board of the Northeast Nebraska Solid Waste Coalition, in consideration of the foregoing recitals, hereby adopts the following Resolution:

BE IT RESOLVED by the Board of the Northeast Nebraska Solid Waste Coalition agrees to:

- (1) Extend its termination date for participation in LARM from September 30, 2024 to September 30, 2026; and
- (2) Provide at least 180 days written notice of any intent not to extend LARM membership beyond the September 30, 2026 termination date.

PASSED AND APPROVED this _____ day of _____, 2023.

ATTEST

Coalition Secretary

Chairman

(SEAL)

Approved as to form: _____
Coalition Attorney



Proposal For: NE Nebraska Solid Waste Coalition

Effective Date: 10/1/2023

COVERAGE	LIMITS AND APPLICABLE DEDUCTIBLES	CONTRIBUTION
Worker's Compensation	Statutory Limits \$500,000 Employer Liability	\$850
General Liability	\$5,000,000/\$5,000,000 Per Occurrence/Aggregate \$0 Deductible	\$11,034
Errors & Omissions	\$5,000,000/\$5,000,000 Per Occurrence/Aggregate \$2,500 Deductible	\$1,402
Auto Liability	\$5,000,000 Combined Single Limit \$0 Deductible	\$1,410
Auto Physical Damage	3 x Vehicles \$ Varies on Deductible	\$203
Commercial Property	\$1,151,649 \$1,000 Deductible	\$4,600
TOTAL ANNUAL CONTRIBUTION:		\$19,499

Contribution Credit Options

	180 Day Notice, 3 Year Commitment	180 Day Notice, 2 Year Commitment	180 Day Notice Only	90 Day Notice, 3 Year Commitment	90 Day Notice, 2 Year Commitment	90 Day Notice Only
Commitment Discount:	5%	4%	2%	2%	1%	0%
Property & Liability:	\$17,717	\$17,903	\$18,276	\$18,276	\$18,463	\$18,649
Workers' Compensation:	\$808	\$816	\$833	\$833	\$842	\$850
Total Contribution:	\$18,524	\$18,719	\$19,109	\$19,109	\$19,304	\$19,499

NNSWC Landfill Master Plan



Northeast Nebraska Solid Waste Coalition

**Landfill Master Plan
Project No. 124922**

**Revision 0
4/15/2022**

NNSWC Landfill Master Plan

prepared for

**Northeast Nebraska Solid Waste Coalition
Landfill Master Plan
Stanton County, Nebraska**

Project No. 124922

**Revision 0
4/15/2022**

prepared by

**Burns & McDonnell Engineering Company, Inc.
Sioux Falls, South Dakota**

EXECUTIVE SUMMARY

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) developed the Northeast Nebraska Solid Waste Coalition (NNSWC, Coalition) Landfill Master Plan (Plan) for the NNSWC Regional Sanitary Landfill (Landfill) to provide the Coalition with short-term and long-term plans for optimum development and optimization of the Landfill. The Plan includes details regarding Landfill infrastructure planning and expansion strategy that will maximize the use of the property in a financially and operationally sound manner.

ES. 1 Alternatives and Efficiencies for Landfill Operations

Members of Burns & McDonnell visited the Landfill to conduct an on-site operational review of the Landfill. The purpose of the operation review was to identify key issues and potential opportunities to improve Landfill operations.

Additionally, a desktop evaluation was conducted to explore the potential for the Coalition to implement waste shredding or waste bailing operations. Based on the results of the desktop evaluation, it is recommended that the Coalition proceed with current Landfill operations.

The benefits and impacts of changes to waste acceptance amounts were also explored. A planning level financial model was created to evaluate the impacts of changes in waste receipts. The financial model was developed by evaluating the following scenarios:

- **Baseline Scenario:** Waste received by the Landfill will remain unchanged, “no waste change”
- **Scenario #1:** Assumes a 20-percent waste increase to the overall waste stream
- **Scenario #2:** Assumes a 20-percent waste decrease to the overall waste stream

From the analysis, the Baseline Scenario generally has a positive ending balance throughout the Landfill’s life but experiences a cash deficit near the end of the Landfill’s life. Scenario #1 experiences a positive ending cash balance throughout the Landfill’s life. The results of Scenario # 2 indicated that Coalition would have a negative cash ending balance much sooner in the Landfill’s life.

ES. 2 Landfill Expansion Development

Several Landfill expansion options were identified and evaluated to increase the disposal capacity of the Landfill within the current property boundary. Multiple conceptual expansion alternatives were then presented to the Project Task Force (PTF). The Preferred Expansion Alternative by the PTF was further refined to develop the following conceptual plans and documents:

- A conceptual base grading plan for the planned Landfill lateral expansion
- A conceptual final grading plan for the entire Landfill at closure, including the vertical expansion
- Conceptual stormwater, leachate, and landfill gas conveyance plans
- Preliminary Landfill stability calculations for the lateral and vertical expansion
- Volume calculations to determine airspace allocated for waste and soil balance requirements

Further, for optimum development of the Preferred Expansion Alternative for the Landfill, the following support facilities were evaluated:

- Dedicated space for scales, scale house, equipment building facilities, and customer convenience drop-off area
- Meeting space for employees and educational facilities
- Need for a landfill gas collection system and flare station
- Future off-site soil borrow and stockpile location.

Construction costs for the Preferred Expansion Alternative and support facilities were determined and incorporated into financial models developed for this Plan.

ES. 3 Cell Closure and End of Use Plans

Landfill area closure sequencing options were reviewed and evaluated based on the Preferred Expansion Alternative previously developed. A closure phasing plan was also developed, and the closure costs were incorporated into financial models developed for this Plan. Furthermore, alternative final cover systems were evaluated with the construction costs compared against the current permitted final cover profile. It was determined that an alternative earthen cover system at the Landfill has the potential to reduce final cover construction costs. Finally, incentives for a solar power project were investigated, and the feasibility of processing landfill gas to renewable natural gas was evaluated. The results of these analyzes indicated that these projects have the potential to be financially beneficial for the NNSWC. It is recommended that the Landfill re-analyze these options in the future as the feasibility and cost will vary based on the demand for the product produced and the cost of implementation.

ES. 4 Preliminary Expansion Plans

As part of this Plan, a preliminary review of several off-site expansion options was conducted based on NDEE and Stanton County solid waste guidelines, restrictions, and general construction feasibility. Based on the available data and preliminary analysis conducted, the proposed off-site landfill expansion options

were ranked to determine the preferred expansion option. Based on the preliminary analysis, the preferred expansion option was the South Off-Site Expansion Options.

ES. 5 Bylaws and Agreement Review

The NNSWC bylaws and agreement continue to be evaluated by the NNSWC Project Task Force (PTF) and Baird Holm, the Coalition's legal council. The final updated agreement and bylaws documents will be presented to the NNSWC Board at a later date.

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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
2020 Permit Modification	NNSWC Landfill 2020 Permit Modification
2021\$	2021 Dollars
2021 Tier 2 Report	2021 Tier 2 Landfill Gas Sampling & Emissions Rate Report
ACAP	Alternative Cover Assessment Program
ADC	Alternative Daily Cover
AUF	Airspace Utilization Factor
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CL	Low Plasticity Clay
CH	High Plasticity Clay
COVID-19	Coronavirus Disease 2019
CRD	Community Refuse Disposal, Inc.
CY	Cubic Yards
EPA	Environmental Protection Agency
ET	Evapotranspiration
FTE	Full Time Equivalent
gpm	Gallons per Minute
H	Horizontal
Landfill	NNSWC Regional Sanitary Landfill
lbs	Pounds
lb/cy	Pounds per Cubic Yard
LFG	Landfill Gas

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
Mg/yr	Megagram per Year
MSW	Municipal Solid Waste
NDEE	Nebraska Department of Environment and Energy
NE	Nebraska
NMOC	Non-Methane Organic Compounds
NNSWC/Coalition	Northeast Nebraska Solid Waste Coalition
NSPS	New Source Performance Standards
O&M	Operation and Maintenance
Plan	NNSWC Landfill Master Plan
PTF	Project Task Force
RFI	Request for Information
RNG	Renewable Natural Gas
V	Vertical
WCI	Waste Connections, Inc.

1.0 INTRODUCTION AND PROJECT APPROACH

The Northeast Nebraska Solid Waste Coalition (NNSWC, Coalition) retained the services of Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to develop and prepare a Landfill Master Plan (Plan) for the NNSWC Regional Sanitary Landfill (Landfill). This section outlines the approach to complete the analysis and includes a description of the Plan's report organization.

1.1 Project Purpose

The purpose of this Plan is to provide the Coalition with short-term and long-term plans for optimum development and optimization of the Landfill. The Plan includes details regarding Landfill infrastructure planning and expansion strategy that will maximize the use of the property in a financially and operationally sound manner.

It should be noted that this document is intended for planning purposes and should be reviewed on a periodic basis by the Coalition to determine if updates are needed. As with any planning document, implementation often requires modification to adapt to unforeseen changes in waste received, operation methods, etc.

1.2 Project Team

The project team was comprised of representatives from the NNSWC Project Task Force (PTF) representatives and Burns & McDonnell. Members of the NNSWC PTF included:

- Steven Rames
- Rob Mercer
- Randy Gates
- Chuck Sliva
- Brian Newton
- Tyler Ficken

Key Burns & McDonnell representatives included:

- Luke Rodig
- Robert Craggs
- Scott Martin
- Pedro Ruiz Fabian
- Fred Doran

1.3 Project Approach

A series of key tasks were developed that served as a starting point for the Plan. The following tasks were used to collect information about the Landfill's current solid waste system and recommend any necessary changes and future updates with the subsequent project tasks.

1.3.1 Issue Data Request

A detailed data request was submitted to the Coalition to collect historic and background information on operations and practices. The data request served to provide a basis of understanding for the operational and financial considerations to be addressed. The information requested included the following:

- Contact information for representatives of the PTF
- Equipment and fleet inventory
- Organizational charts and personnel rosters
- Operational and productivity data for the Landfill
 - Landfill tonnage and soils usage logs
 - General types of waste disposed at the Landfill
- Detailed financial reports and budgets
- Landfill policies and agreements

1.3.2 Kick-Off Meeting & Project Task Force

Burns & McDonnell met with Coalition representatives on July 29, 2020, to initiate the project. The purpose of the kick-off meeting was to discuss the project scope, key issues to be addressed, key findings from previous engagements, and confirm the timing associated with the various project tasks.

Additionally, the project kick-off meeting served to establish a Project Task Force (PTF). The responsibilities of the PTF included participation in the project meetings and workshops, facilitating data collection, providing feedback on preliminary findings, providing critical direction on key recommendations and potential program changes, and providing support to the project team throughout the project. The PTF was comprised of representatives from diverse roles and different communities within the NNSWC. A complete picture of the solid waste system was developed by involving a variety of individuals from different communities with a wide range of responsibilities. Due to safety concerns related to the coronavirus disease 2019 (COVID-19) pandemic, most subsequent project meetings were held virtually. As the Coalition proceeds with recommendations from the Plan, full participation from the PTF members is expected to increase buy-in from other stakeholders and facilitate implementation of the recommendations.

1.3.3 Conduct Field Observations

On-site observations of key operating practices were conducted on October 12 and 13, 2020. A Burns & McDonnell representative observed the Landfill in general, waste filling operations, and scale operations to obtain a proper understanding of the challenges faced, productivity levels achieved, successes, and areas in need of improvement. The representative also conducted interviews with key managers and staff for each operation. The field observations served to gain a critical understanding of the Landfill's solid waste system.

1.4 Report Organization

This Plan is organized into seven sections, plus an executive summary. The key findings and recommendations are provided in their respective sections as well as in the executive summary. A summary of the Plan's sections is listed below:

- Executive Summary
- Section 1.0 – Introduction and Project Approach
- Section 2.0 – Background: provides a consolidation of existing site information related to the site's physical conditions and Landfill operations
- Section 3.0 – Alternatives and Efficiencies for Landfill Operations: provides an operational review of the Landfill and evaluates the benefits and impact of accepting additional waste from outside the Coalition or restricting the amount of waste accepted
- Section 4.0 – Landfill Expansion Development: focuses on lateral and vertical expansion options to maximize the disposal capacity of the Landfill and evaluates the necessary support facilities for optimum development at the existing Landfill site
- Section 5.0 – Cell Closure and Post-Closure Plans: provides cell closure sequencing plans with alternative cover options considered and an evaluation of the end of use plans for the existing Landfill
- Section 6.0 – Preliminary Off-Site Expansion Plans: discusses preliminary options for Landfill expansion in 60+ years outside the current site property
- Section 7.0 – Bylaws and Agreement Review: provides a summary of the review of the current Landfill bylaws and agreements and recommendations to the Coalition and NNSWC's legal council for consideration

2.0 BACKGROUND

2.1 Existing Site Information

The NNSWC, an affiliation of Nebraska cities, counties, towns, and villages, manages Municipal Solid Waste (MSW) in the Northeast region of Nebraska. The current 160-acre Landfill is located in the Northwest 1/4 of Section 21, Township 21 North, Range 3 East in rural Stanton County, Nebraska. The site itself is mostly grassland and has been partly used for row crops on the northwest corner. No major utilities traversed the site. The primary land use of the surrounding area is agriculture. The site is in a rural setting with a population density of less than 0.1 people per acre. Three residences are within ¼ mile of the site. The nearest town is Clarkson, NE with a population of 631. Additionally, the nearest body of water is Maple Creek which runs ¼ mile to the east and 30 feet below the site; it is not reasonable to assume that the creek would ever flood the Landfill property.

A scale and scale house that weigh and record loads into the facility are located near the entrance to the site. A maintenance building and yard are located close to the Landfill operations area on the northern section of the site. An electric service line runs along the north side of the site and provides the site with electricity. Water is supplied by a single well located near the Landfill entrance that is designed to pump 20 to 50 gallons per minute (gpm). A 7,000-gallon underground holding tank stores sanitary wastewater and maintenance facility wastewater on-site. The tank is periodically unloaded, and its contents taken to a wastewater treatment facility for disposal. On the north side of the site an existing tree line provides screening to the entrance of the facility. A 10-foot screening berm also runs along portions of the western and northern sides of the site between the Landfill and the road. Around the entirety of the site there is a 8-foot woven wire and barbed wire fence.

The Landfill currently has five active disposal cell areas. Area 5 is the most recent area constructed, with construction completed on November 11th, 2016. Area 6, the southernmost area, has been permitted but has not yet been constructed. Pending approval of the NNSWC Landfill 2020 Permit Modification (2020 Permit Modification) consisting of expanding the Landfill capacity by increasing the exterior side slopes, the total gross volume of the Landfill is 10,863,820 cubic yards (CY) with a total waste capacity of 10,241,655 CY.

2.2 Site Physical Conditions

Groundwater at the Landfill is monitored by a system of monitoring wells to detect any potential leachate or landfill gas contamination. Additionally, the Landfill has a composite liner and leachate collection system to provide protection of groundwater resources. The Landfill bottom liner is constructed and

installed to control migration of waste or waste constituents out of the Landfill into the adjacent subsurface soil, groundwater, or surface water at any time during the active-life of the Landfill and during the post-closure care period. The bottom liner consists of two components; the upper component is a flexible membrane liner (FML) that is installed in direct and uniform contact with the lower component of the composite liner, and the lower component consists of at least two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. Maximum annual leachate generation is estimated to be approximately 792,900 gallons. The existing leachate pond is designed to be able to hold over 3,366,000 gallons of leachate, considerably greater than annual leachate generation.

A permitted surface water drainage system is active at the Landfill to control the surface water from areas around the Landfill and surface water run-off from the Landfill. The surface water drainage system consists of open channels, sedimentation basins, terrace channels, side slope terrace channels, and letdown structures. Site drainage from outside the waste boundary area is kept out of the Landfill by open channels outside the Landfill perimeter road. Temporary berms are placed around the working face of the Landfill to prevent surface water run-off from areas of the Landfill that do not have intermediate cover.

2.3 Site Landfill Operations Overview

Community Refuse Disposal, Inc. (CRD), a Nebraska corporation owned by Waste Connections, Inc. (WCI), is contracted by the NNSWC for specific portions of the operation of the Landfill facility. The facility is open from 7:00 a.m. to 4:00 p.m. Monday through Friday and 7:00 a.m. to 12:00 p.m. on Saturday, and is closed on Sundays and on all major U.S. holidays. The workforce at the site is composed of two experienced heavy equipment operators, one laborer, and a site manager contracted through WCI. NNSWC employees at the Landfill consist of one full-time and one part-time scale clerk. The facility has several pieces of heavy-duty equipment including a compactor, excavator, articulated dump truck, and a bulldozer. The site accepts mostly MSW, as well as special non-hazardous industrial waste approved by the Nebraska Department of Environment and Energy (NDEE).

The site gate remains locked when the operating personnel are not on site. Security cameras also monitor the site and record all incidences of unauthorized access. All trucks are required to be weighed and a record of the time, weight, and vehicle number are kept by the scale clerk personnel. After being weighed, the trucks can proceed to the active disposal areas.

Detailed discussion of the Landfill operations is included in Section 3.1 below.

3.0 ALTERNATIVES AND EFFICIENCIES FOR LANDFILL OPERATIONS

3.1 Landfill Operational Review

A site visit to the Landfill was conducted on October 12 and 13, 2020 to observe operational activities. Based on discussions with staff, the site operations observed reflect a normal weekday operating period for the Landfill. General tasks observed during the site visit included tipping area preparation, waste load inspection, waste placement and compaction, placement of alternative daily cover, and general observations of other support operations such as scale house operations. Through a request for information (RFI), the Coalition provided documents for review related to existing contracts, previous site development, financial and budgeting, personnel, equipment, and environmental operations. As a result of the site visit and informational review, the following key issues were identified as potential opportunities to improve Landfill operations:

- Section 3.1.1 – Facility Traffic Flow
- Section 3.1.2 – Staffing
- Section 3.1.3 – Equipment
- Section 3.1.4 – Scale House Operations
- Section 3.1.5 – Site Infrastructure
- Section 3.1.6 – Working Face Operations
- Section 3.1.7 – Leachate Management
- Section 3.1.8 – Stormwater Controls
- Section 3.1.9 – Litter

This section of the Plan will discuss these key issues with the focus on improving the efficiency and management of the Landfill operations as well as providing for an effective solid waste program while maintaining environmental protection.

3.1.1 Facility Traffic Flow

The Landfill accepts MSW primarily from Coalition member transfer station facilities, and also accepts a small portion of waste from residential and commercial sources. As shown on Figure 3-1, customers enter the site through the scale house entrance from 825th Road with the following options:

- Customers enter the scale house scale to weigh-in and begin their transaction. From the scale house, customers are directed to the following locations depending on the weather:
 - Landfill Area 4 non-wet weather active face; or
 - Landfill Area 5 wet weather active face

- Customers that need to weigh-out to complete their transaction enter the scale at the scale house. Other customers with completed transactions leave via the bypass lane.

Waste that arrives at the Landfill is primarily transfer trailers, however the Landfill also receives other types of waste traffic, including special waste that bypasses transfer stations. Typical waste types and quantities delivered to the Landfill include the following:

- Eight roll offs directly hauled per day on average
- Three to four rural packer trucks per day
- One to two loads of bulky waste per day
- Tire waste
- Construction waste
- Animal carcasses
- Loads by individuals from hog confinements
- Assorted loads including wind mill debris, rubber products, and medical center waste
- Goodyear hoses that the Landfill keeps in a separate area from other waste

Figure 3-1: Existing NNSWC Sanitary Landfill Entrance Waste Flow Diagram



3.1.2 Staffing

The Coalition currently contracts Landfill operations to WCI through a contract established between both parties on December 7, 1992. WCI currently has one fulltime employee to supervise overall Landfill operations, one fulltime laborer, and two fulltime operators. When necessary, WCI utilizes labor from the private operator’s other facilities as needed, which include the Butler County and G & P Landfills. The Landfill also has 1.375 full time equivalent (FTE) NNSWC employees attending the scale house and managing customers entering and exiting the site Table 3-1 provides the current staffing at the Landfill. It should be noted that this only includes the on-site staffing at the Landfill and does not include the other supervisory and administrative staffing that is provided by NNSWC.

Table 3-1: Current Staffing for NNSWC Sanitary Landfill Operations

Title/Job Function	Total FTE	Role	Employer
Site Manager	1	Supervisory role managing employees	Waste Connections, Inc.
Laborer	1	Pick up wind blown litter, perform miscellaneous housekeeping tasks	Waste Connections, Inc.
Operator	2	Operate dozer and compactor at active face of Landfill, set wind screens, excavate and haul soil	Waste Connections, Inc.
Landfill Scale Attendant	1.375	Scale house operations, manage customers entering and exiting the site	NNSWC
Total Landfill Staff	5.25	-	-

Based on the observations, the current staffing levels at the Landfill appear to be sufficient for operations, contingent upon WCI’s ability to continue utilizing staffing from other facilities for back-up labor.

3.1.3 Equipment

Equipment operating in their normal daily functions was witnessed during the site visit. Landfill operations are heavily dependent on having the right piece of equipment available to create an efficient tipping area and optimize airspace utilization. The equipment must be maintained to be operable during all hours of business, and key pieces of equipment should have backups onsite to allow for routine maintenance and unplanned downtime. Minor equipment maintenance is conducted by WCI. Major equipment maintenance is conducted by a CAT dealer. The equipment at the Landfill does not have GPS, therefore, the active face areas in the Landfill are marked with a handheld GPS. Table 3-2 summarizes the current Landfill equipment inventory. All equipment at the Landfill is owned by WCI and is generally in good working condition. At the time of the site visit, the A1-Jon compactor and one of the CAT 826 compactors were down for maintenance. The teeth on the down compactors were in good condition and were greater than six inches. The teeth on the functional CAT 826 compactor were fairly worn down at the time of the site visit.

Table 3-2: NNSWC Sanitary Landfill Equipment List

Type	Make & Model	Current Purpose/Area of Use
Dozer	D6T	Cover soil grading and sloping on active face
	D6N	Finishing off areas and miscellaneous maintenance and borrow activities

Type	Make & Model	Current Purpose/Area of Use
	D6M	Spare piece of equipment that can be used at the active face
Compactor	A1-Jon	Spread and compact waste at working face
	CAT 826G	
	CAT 826G	
Excavator	Komatsu PC400LC	Long reach, Borrow operations, pond cleanouts, etc.
	CAT 322B	Short reach, Active face support (pulling waste out of trailers)
Loader	938G	Miscellaneous site activities
Dump Truck	CAT 730	Articulated miscellaneous site operations
Water Truck	--	4,000 gallon capacity
Payloader	Caterpillar	Miscellaneous site operations (road gravel)
Motor Grader	Caterpillar	Snow removal, haul road grading
Farm Tractor	--	Miscellaneous site operations
Mobile Diesel Wagon	--	Miscellaneous fueling near active face

It is recommended to maintain frontline (i.e., primary) compactor(s) with sufficient teeth length (i.e., greater than six inches) to adequately process and compact waste for optimum airspace utilization. Additionally, it is recommended to install and utilize GPS equipment on the frontline compactor. The GPS should be equipped with a landfill specific package to help track fill elevations as well as real-time compaction rates for efficient waste filling operations.

3.1.4 Scale House Operations

The Landfill is open from 7:00 am to 4:00 pm Monday through Friday, and 7:00 am to 12:00 pm Saturday. The Landfill is closed on Sundays and on all major U.S. Holidays. The scale house is staffed by 1.375 FTE (55 hours per week) scale house attendants. The truck queue is highest within the first hour of the Landfill opening and is intermittent after the first hour. A second rush usually occurs in the early afternoon. Cash accounts are infrequent, as customers are required to bring a check.

3.1.5 Site Infrastructure

During the site visit, existing buildings and roads onsite were observed for current functionality and condition. The following summarizes the major buildings and disposal areas on-site:

- **Scale House.** The scale house was installed in 1995 and is in fair condition but nearing the end of its life, and is not on a permanent foundation.

- **Scale.** A new deck was installed in 2015. Load cells and other components are replaced or upgraded as they fail. The limited access of the scale makes it difficult to clean out; as a result, accumulation of dirt and debris below the scale is an issue.
- **Equipment Building.** The current equipment building is just large enough to store the equipment at the Landfill in the winter; equipment is stored outside at the active areas the rest of the year. The building is 25 years old and does not have a septic system. A 7,000 gallon underground holding tank stores sanitary wastewater and maintenance facility wastewater on-site. The tank is periodically unloaded, and its contents taken to a wastewater treatment facility for disposal. In addition, the building is having some issues with stormwater leaking in due to gravel that is built up higher than the building floor. It is recommended that the future equipment building is larger, has a septic system, and built at a higher elevation to prevent stormwater intrusion.
- **Site Access Roads.** The site access roads are generally maintained as dictated by active filling operations.
- **Perimeter Roads.** The perimeter roads at the Landfill were in good condition at the time of the site visit.

Overall, the site infrastructure is adequate for continued short-term operations. Additional discussion regarding long-term site infrastructure needs and improvements is included in Section 4.4.

3.1.6 Working Face Operations

Working face activities begin around 6:40 am. The Landfill staff typically stockpiles dirt at the end of the day to prepare the active face for the next day. Additional intermediate cover soil is stripped away in the morning where the daily cell area is planned. At the time of the site visit, waste was being placed in 10-foot thick lifts in a daily cell that is typically 80 feet by 40 feet. Shutdowns do not occur regularly but may occur during periods of high winds and when road conditions are poor due to ice or blizzards. Burns & McDonnell staff observed the following operations at the Landfill during the site visit:

- **Equipment at working face.** The Landfill staff currently has one person operating both the dozer and compactor at the active face. Another operator excavates and hauls soil. During normal operations, three to four trucks are dumping at one time. Wet weather operations restrict dumping trucks to two at one time. Area 4 is currently being filled during regular operations, and Area 5 is currently used for wet weather conditions, with waste lifts progressing from the west side to the east side of the cells. Landfill operators compact waste on the slope of the daily cell working face to maintain a small landfill working face and minimize blowing litter. It is typically more efficient for compactors to compact on flat, horizontal lifts.

- **Use of alternative daily cover (ADC) and daily cover.** The Landfill staff uses spray-on ADC to limit soil borrow activities as much as possible. ADC is mixed with leachate in the summer and well water in the winter when leachate is not available (i.e., pond surface is frozen). One water truck load equates to approximately two to three days of ADC. The Landfill is also permitted to use petroleum contaminated soils (PCS) as ADC, but does not receive consistent amounts of this material. The use of ADC helps with achieving a good waste to soil ratio and increases the airspace utilization.
- **Litter Fencing.** Multiple wind screens are set up at the working face to control litter. Significant changes in wind direction were observed during the site visit but the wind screens were setup and relocated effectively to control the litter. A perimeter fence collects litter that blows out of the active face on windy days. The fence is generally in good shape but has some areas that are worn out.

3.1.7 Leachate Management

Leachate collected from the Landfill is conveyed to the existing leachate pond. Leachate is currently managed on-site. Landfill operations uses a sprinkler to apply leachate over areas of daily or intermediate cover and for dust suppression on the interior working areas. Previously, the Landfill also used seepage pits on the active Landfill face to manage leachate, however this practice has been discontinued due to the staffing required to continually monitor the leachate levels within the pit. The pump used for this operation was replaced in 2019 and is in good working condition. At the time of the site visit, there was no significant scaling in the leachate piping, and it appeared to be in good condition. The Landfill should continue to flush the leachate piping annually to not only conduct integrity testing on the pipes but to also clean the manholes and sewer piping from solids build-up. Furthermore, the sewer lines should also continue to be air tested on an annual basis. The pond underdrain leak detection float system infrequently causes maintenance issues. It is recommended that Landfill staff continue keeping a daily log of the elevation in the leachate pond.

3.1.8 Stormwater Controls

Perimeter stormwater ditches are constructed around the Landfill and generally direct stormwater to the stormwater pond located in the southeast corner of the Landfill property. The Landfill utilizes diversion berms on the south side of Area 4 and north side of Area 5 that feed to the letdown constructed as part of the Area 5 construction project. The letdown structure then drains into the stormwater pond south of Area 4. Landfill staff maintains the stormwater pond, and removes sediment approximately every two years, or

as needed. At the time of the site visit, the Landfill staff were working on excavating the stormwater pond and performing erosion related repairs next to the stormwater pond.

Stormwater near the scale area drains fairly well. However, as mentioned previously the equipment building has issues with stormwater leaking into the building. The gravel pad surrounding the building gets built up higher than the floor of the equipment building during operations, preventing water from draining away from the building. It is recommended that the Landfill operator continue to make improvements to divert stormwater away from the equipment building.

3.1.9 Litter

There was minimal litter observed at the Landfill during the site visit with the exception near the active filling areas in Area 4 and Area 5. Windblown litter is typically collected and bagged on the active area. For the most part, the perimeter litter fencing was in good shape at the time of the site visit, but there were some areas that were in need of repair. It was noticed during the site visit that several trucks were not adequately sweeping out their trailers after disposal, which resulted in windblown litter occurring as trucks were pulling away. It is recommended that all trucks sweep out trailers to minimize windblown litter when trucks leave the Landfill, and that Landfill staff repair the portions of the perimeter litter fencing that are in need of repair.

3.2 Waste Shredding and Waste Bailing Evaluations

A desktop evaluation was conducted to explore the potential for the Coalition to implement waste shredding or waste bailing. The evaluation was developed based on Burns & McDonnell's industry experience and information provided by manufacturers. The cost of material processing was compared with the potential improvements in waste density and associated additional benefits of the incremental airspace gained. The findings of the evaluation are summarized below.

Airspace is the Landfill's primary asset and the grinding or shredding of waste can increase the airspace utilization factor (AUF) of the Landfill. For the waste shredding evaluation, the Landfill life gained with increased AUF was compared to the cost of owning, operating, and maintaining a shredder at the Landfill. For reference, the full waste shredding evaluation analysis is provided in Appendix A.

The cost of owning, operating, and maintaining a shredder at the Landfill is estimated to be \$255,300 per year. This cost considers full depreciation of the shredding equipment over ten years and the cost of operating and maintaining the equipment for 4-hours a day for 160-days per year. Additionally, the cost of 1.0 full-time employee (FTE) is considered to operate the shredder per year prorated by assuming 1.5

FTE required for shredder operations for 160-days per year). Table 3-3 shows a summary of the costs for the waste shredding evaluation.

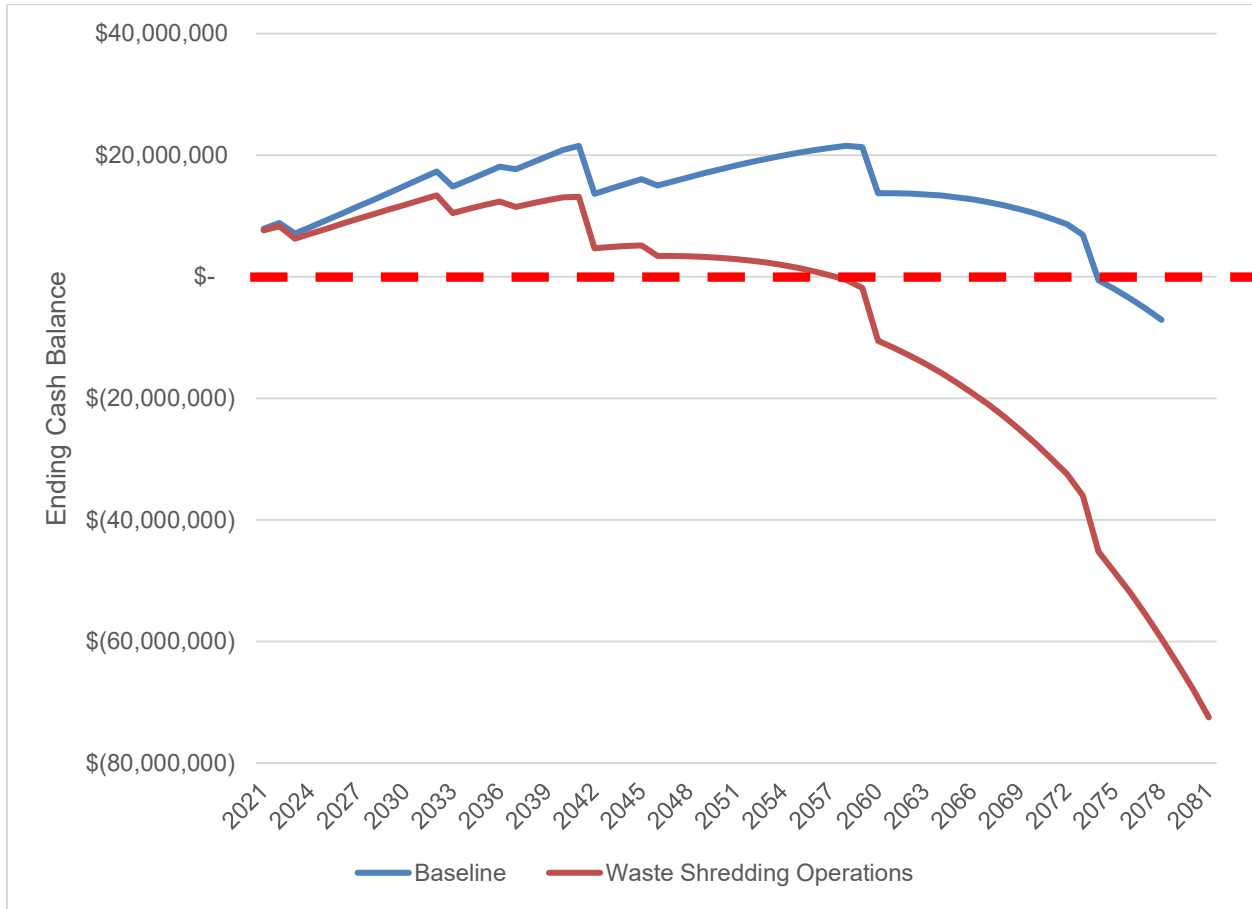
Table 3-3: Summary of Costs for NNSWC Waste Shredding

Annual Costs	2021\$
Shredder (owning and operating Costs)	\$172,800
Operator (1.0 FTE salary and benefits)	\$82,500
Total	\$255,300

To determine the Landfill life gained, an annual tonnage of 112,000 tons with a future generation growth rate of one percent and a current Landfill AUF of 1,296 pounds per cubic yard (lb/cy) per the 2019 Volume Calculations Report prepared by Burns & McDonnell in April 2020 were assumed. It was also assumed that the current Landfill AUF would increase approximately 300 lb/cy for the volume of waste being shredded. With these assumptions and a shredder capacity of 52,800 tons per year (based on 75-percent maximum throughput capacity of 110 tons per hour, operating 4 hours per day, for 160 days per year), the average effective total AUF for waste shredding operations was calculated to be 1,405 lb/cy. With the average effective total AUF, the Coalition would gain 3.67 years of additional life due to the increase in AUF provided by shredding waste, assuming the Landfill expansion detailed in Section 4.0 is completed.

The additional Landfill life gained, and the costs associated with shredding operations were used as inputs into a financial model (Appendix B) to determine the impacts that waste shredding will have on the Landfill net revenue (Section 3.3 details additional financial model inputs). Figure 3-2 compares the baseline operations versus the operations with waste shredding. From the figure, the Coalition will begin seeing a cash ending balance deficit around 2058 with waste shredding operations at the Landfill because of the additional operating costs of shredding waste. Before this date, the Coalition would need to increase tipping fees to avoid a cash deficit. It is recommended that the Coalition proceed with normal Landfill operations.

Figure 3-2: NNSWC Ending Cash Balance Comparison of Baseline versus Waste Shredding Operations



From Burns & McDonnell’s experience, waste bailing operations typically provide an AUF of approximately 1,200 lb/cy for landfills of similar size. As previously explained a landfill’s airspace is its most valuable asset. Current Landfill operations yield a calculated AUF value of 1,296 lb/cy, which exceed the expected AUF for waste bailing operations. Additionally, a waste bailing operation would require a bailer building to be constructed and additional FTEs to staff the operation. A bailing operation for the Landfill is not financially justifiable as the Coalition will spend considerable upfront capital costs and operation/maintenance costs for no gain in additional AUF.

3.3 Benefits and Impacts of Changes to Waste Acceptance Amounts

Changes to net revenues and overall costs with increases and decreases in waste receipts were evaluated as part of this task. Tipping fee requirements for NNSWC members were also reviewed. The analysis assumed the Landfill expansion concept and the supporting infrastructure discussed in Section 4.0 are developed. A planning level financial model was created to evaluate the impact of changes in waste receipts, and the detailed worksheets are provided in Appendix C.

The financial model was developed by evaluating the following scenarios:

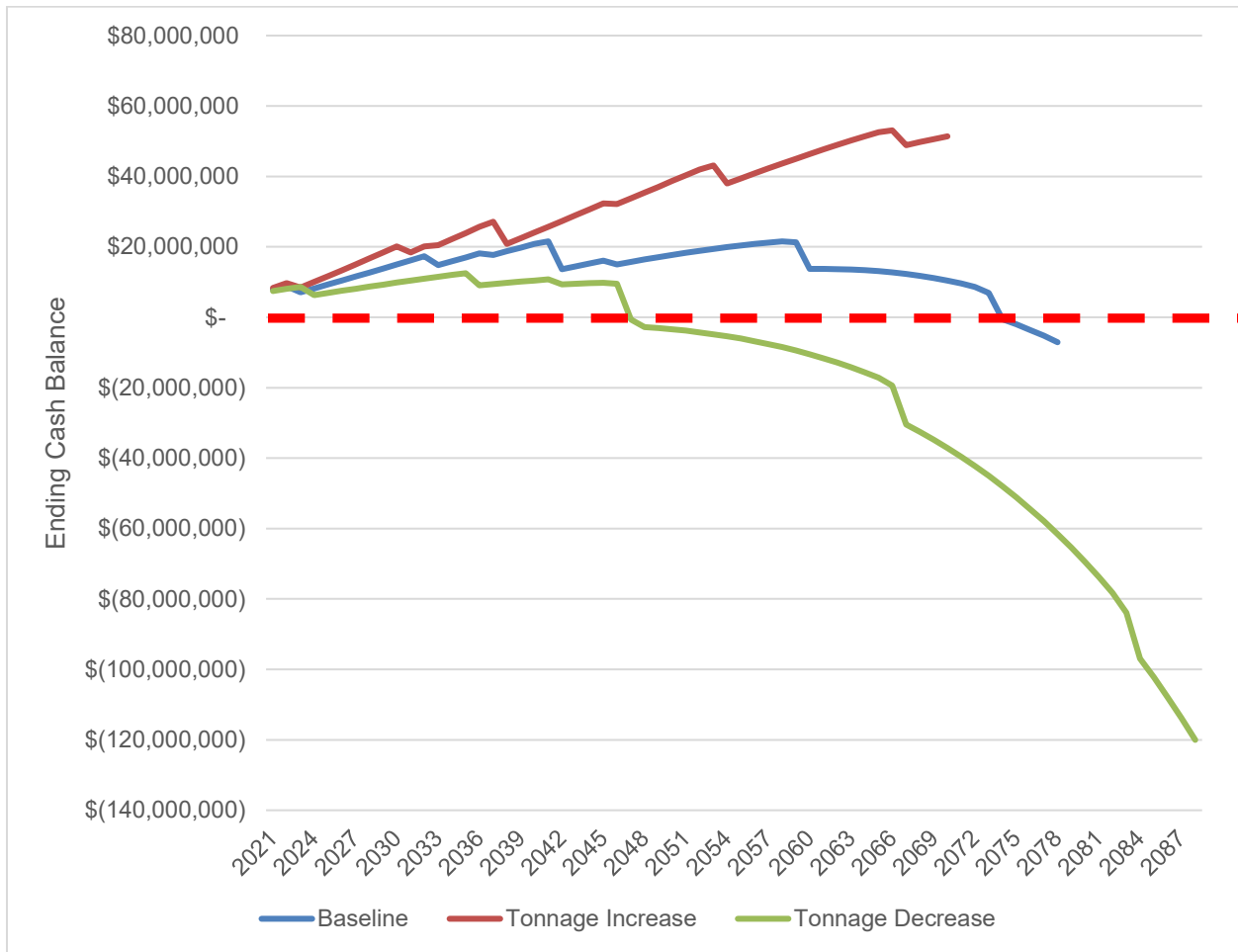
- **Baseline Scenario:** Waste received by the Landfill will remain unchanged, “no waste change.”
- **Scenario #1:** Assumes a 20-percent waste increase to the overall waste stream.
- **Scenario #2:** Assumes a 20-percent waste decrease to the overall waste stream.

For all scenarios, the financial model assumes a waste tonnage rate of 112,000 tons for 2021 with a one-percent tonnage increase per year. The following were additional key inputs into the financial model:

- **WCI Operation Costs:** The Coalition currently contracts Landfill operations to WCI through a contract established between both parties on December 7, 1992. The contract establishes a “fixed” fee for operating the facility (based at \$480,000) as well as a tonnage fee (based at \$4.00 per ton of incoming waste, not to exceed \$480,000). Additionally, there is a separate special waste fee (\$10.50 per ton) collected to manage special wastes.
- **Coalition Operating Costs:** A total cost of \$758,000 net present value was assumed for 2021 with input from the PTF. This value incorporates personnel costs, operating and maintenance costs, other administrative and overhead costs, financial assurance fund transfers, and professional services.
- Operating costs projected include inflationary increases based on the type of cost (2.5 to 3.0 percent)
- Capital costs for supporting infrastructure discussed in Section 4.0 and Section 5.0
- Current Tipping fee of \$24.00 to be unchanged
- Closure/Post-Closure costs funded via financial assurance funds

The financial evaluation results are depicted in Figure 3-3 based on the assumptions provided above. The financial evaluation was carried out until the Landfill life was depleted for each scenario. The timing of when cell construction/closure and additional capital improvements vary as determined by the findings described in Section 4.0 per each scenario. Additionally, the ending life of the Landfill varied due to the increase or decrease of waste placed in the Landfill. The objective of the financial model was to evaluate the impact on the NNSWC cash ending balance based on the three scenarios previously described.

Figure 3-3: NNSWC Financial Ending Cash Balance Analysis with Tonnage Adjustments



The Baseline Scenario generally has a positive ending balance throughout the Landfill’s life. Close to the end of the baseline scenario, the Coalition begins to experience a cash deficit around 2074. Increases to the tipping fee should be considered and evaluated approximately 10 years prior to the reserves being depleted.

Scenario #1 (tonnage increase scenario) experiences an increase in revenues from the additional tipping fees gained due to the increase in the waste stream. With this scenario, capital project construction dates are accelerated and provide the Coalition with an ending positive cash balance throughout the Landfill’s life. The Landfill life is depleted by 2070, with a positive cash balance of approximately \$50 million.

The results for Scenario #2 (tonnage reduction scenario) indicate that the Coalition will have a negative ending cash balance beginning in 2047. To avoid a negative cash ending balance, tipping fee increases would need to be considered and evaluated approximately 10 years prior to the reserves being depleted.

With this scenario, the Landfill life is depleted in 2088. Similar to other scenarios, the capital project construction dates are altered (i.e., delayed) with this scenario based on when construction is necessary.

4.0 LANDFILL EXPANSION DEVELOPMENT

Several options were identified and evaluated to increase the disposal capacity of the Landfill within the current property boundary. Multiple conceptual expansion alternatives detailed below were identified and presented to the PTF. Subsequently, the Preferred Expansion Alternative by the PTF was further refined by Burns & McDonnell, and the following conceptual plans and documents were developed:

- A conceptual base grading plan for the planned Landfill lateral expansion
- A conceptual final grading plan for the entire Landfill at closure, including the vertical expansion
- Conceptual stormwater, leachate, and landfill gas conveyance plans
- Preliminary Landfill stability calculations for the lateral and vertical expansion
- Volume calculations to determine airspace allocated for waste and soil balance requirements

An analysis of estimated construction times and net present value construction costs was completed for the lateral/vertical expansion and support facilities and infrastructure. The construction timing and costs developed for the improvements were used as inputs into the financial model developed in Section 3.3 to evaluate the impacts of waste increases or decreases into the Landfill.

4.1 Site Restrictions

A thorough review was conducted of the NDEE site location restrictions, Stanton County siting requirements, and associated historical siting evaluations in the Landfill's permit documents. This review served to establish potential lateral and vertical expansion options within the Landfill's existing property boundary. The following expansion alternatives and final expansion options all meet the restriction requirements set forth by the NDEE and Stanton County.

4.2 Conceptual Expansion Alternatives

Several conceptual expansion alternatives at the Landfill were reviewed. Four primary horizontal expansion alternatives and three vertical expansion alternatives were identified and presented to the Coalition PTF. The conceptual expansion alternatives can be referenced in Figures A through H in Appendix D and are described in further detail below. The figures presented in the appendix depict the horizontal expansion alternatives with a 30-foot vertical expansion graded at a 4 horizontal (H):1 vertical (V) slope. The amount of airspace gained for each conceptual expansion alternative was calculated and is provided in Table 4-1 below. The additional airspace capacity was calculated by subtracting the ultimate permitted airspace capacity from the ultimate airspace capacity determined for each alternative. To better understand how the additional airspace capacity compares to each alternative, the additional expansion

life was calculated based on an assume tonnage rate of 112,000 tons, tonnage growth rate of one percent, and a waste density of 1,296 lb/cy.

Table 4-1: Airspace and Expansion Life Summary for the NNSWC Landfill Expansion Alternatives

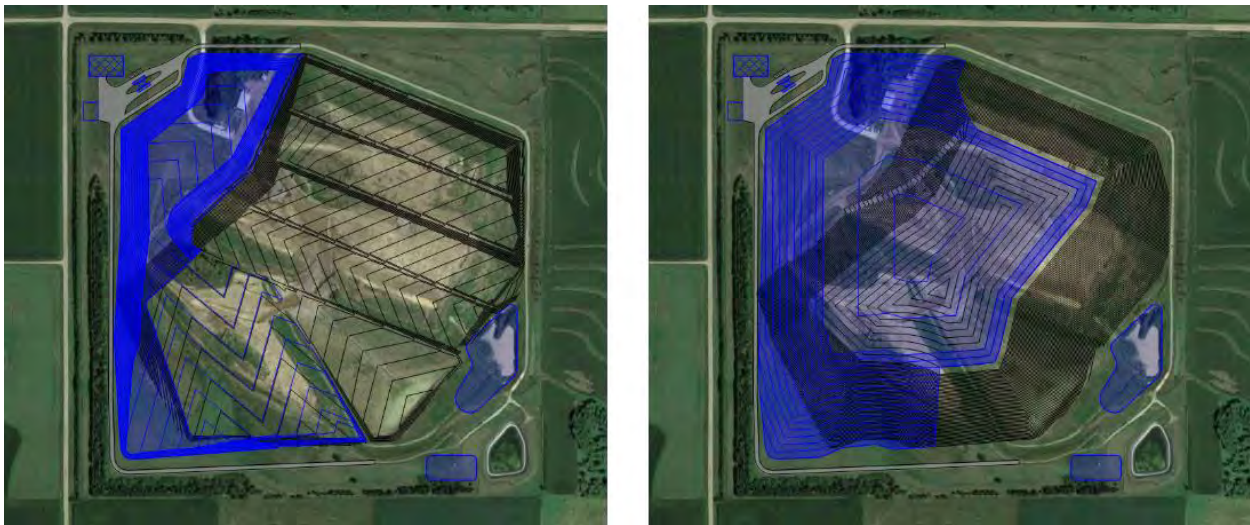
Expansion Alternative		Existing	1	2	3.A	3.B
Crest = 1780 (0ft vertical)	Available Airspace (CY)	9,598,984	12,765,172	11,814,593	13,570,528	12,524,278
	Additional Airspace (CY)	-	3,166,188	2,215,609	3,971,544	2,925,294
	Additional Expansion Life (yrs) ^a	-	13	9.2	16	12
Crest = 1810 (30ft vertical)	Available Airspace (CY)	9,598,984	14,249,672	12,900,177	15,103,410	13,716,381
	Additional Airspace (CY)	-	4,650,688	3,301,193	5,504,426	4,117,397
	Additional Expansion Life (yrs) ^a	-	18.5	13.5	21.6	16.6
Crest = 1840 (60ft vertical)	Available Airspace (CY)	9,598,984	15,207,495	13,462,874	16,145,343	14,339,019
	Additional Airspace (CY)	-	5,608,511	3,863,890	6,546,359	4,740,035
	Additional Expansion Life (yrs) ^a	-	21.9	15.6	25.2	18.8

^a Landfill life estimates assume a present annualized tonnage of 112,000 tons with a predicted future generation growth rate of one percent. At the time the existing permitted capacity is depleted in 2049, the annualized tonnage is estimated to be 149,000 tons; this value is the starting point for expansion life calculations of the expansion options.

4.2.1 Expansion Alternative 1

Expansion Alternative 1 covers an approximate non-permitted area of 20-acres to the West and Northwest of the existing permitted Landfill footprint. The expansion alternative base grades and final cover plan are presented conceptually in Figure A and Figure B in Appendix D. A snapshot of the base grades and the final cover plan is shown in Figure 4-1. This expansion alternative will provide the Landfill with approximately 13.0-22.0 years of additional life as indicated in Table 4-1. However, it will require existing Landfill infrastructure such as existing inbound/outbound scales, scale house, and equipment building to the property's northwest corner to be relocated.

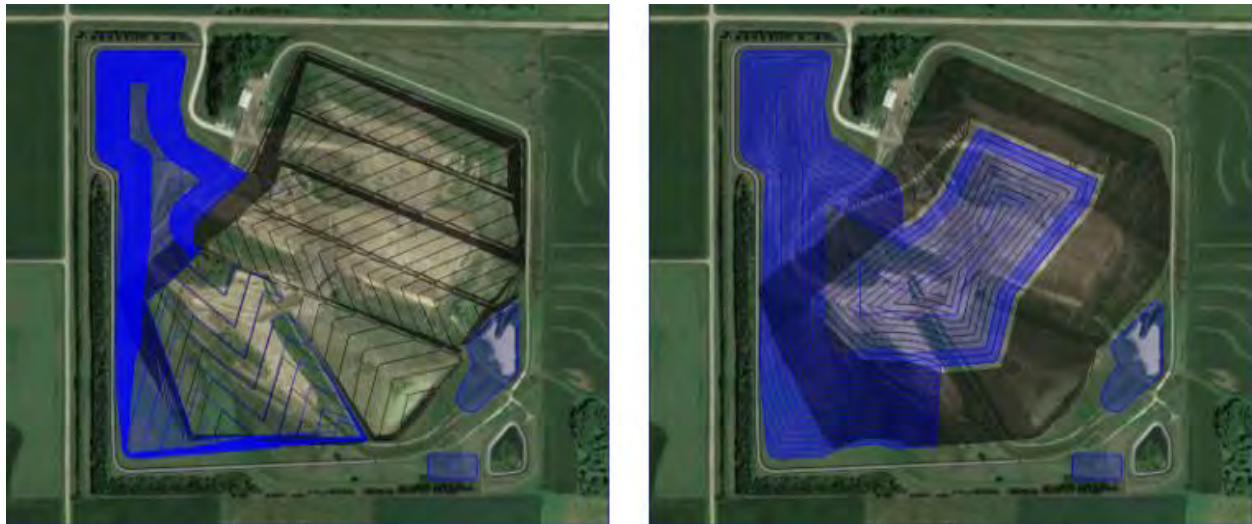
Figure 4-1: NNSWC Expansion Alternative 1 Base Grades (left) and Final Cover (right)



4.2.2 Expansion Alternative 2

Expansion Alternative 2 is located to the West and Northwest of the existing permitted Landfill footprint. This expansion alternative covers an approximate non-permitted area of 18-acres providing the Landfill with 9.3-15.6 years of additional life based on calculations summarized in Table 4-1. The decrease in additional life is primarily due to the expansion not fully piggybacking onto existing Landfill slopes. However, this alternative will not require the relocation of existing infrastructure. The base grades and final cover plan for Expansion Alternative 2 are presented conceptually in Figure C and Figure D, respectively, in Appendix D. Figure 4-2 provides a snapshot of the base grades and final cover plan.

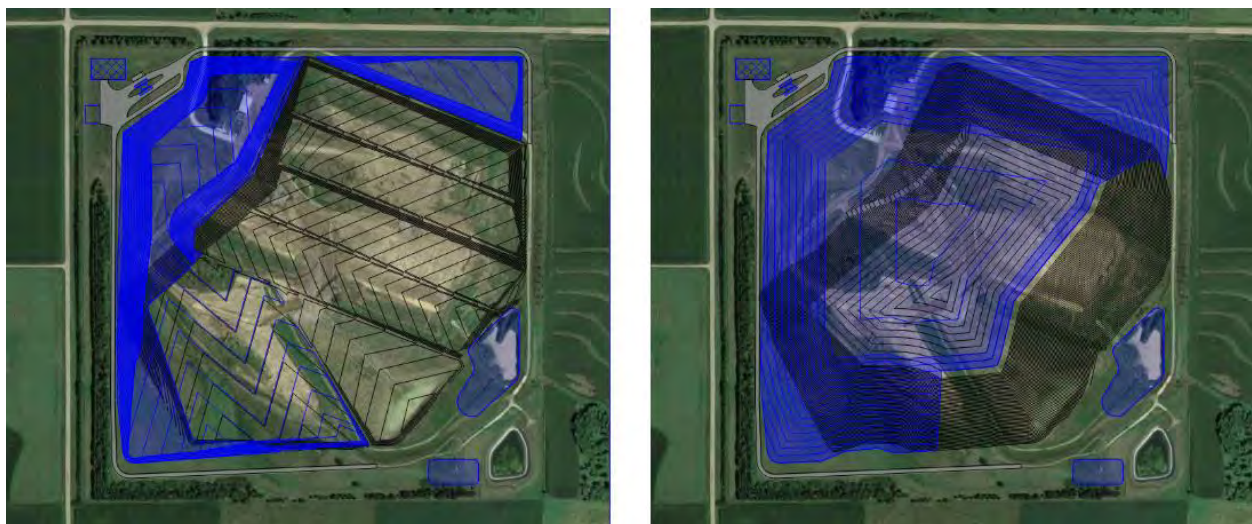
Figure 4-2: NNSWC Expansion Alternative 2 Base Grades (left) and Final Cover (right)



4.2.3 Expansion Alternative 3.A

Expansion Alternative 3.A is the same as Expansion Alternative 1 on the west side of the site, but additional landfill capacity is also added in the Northeast corner of the Landfill. This expansion alternative covers an approximate non-permitted area of 26-acres and will provide the Landfill with 16.1-25.2 years of additional life as indicated in Table 4-1. Similar to Expansion Alternative 1, the Landfill infrastructure will need to relocate to the property's northwest corner. Reference Figure E and Figure F in Appendix D for a conceptual representation of the base grades and final cover plan for this alternative. Figure 4-3 shows a snapshot of the base grade and final cover for this alternative.

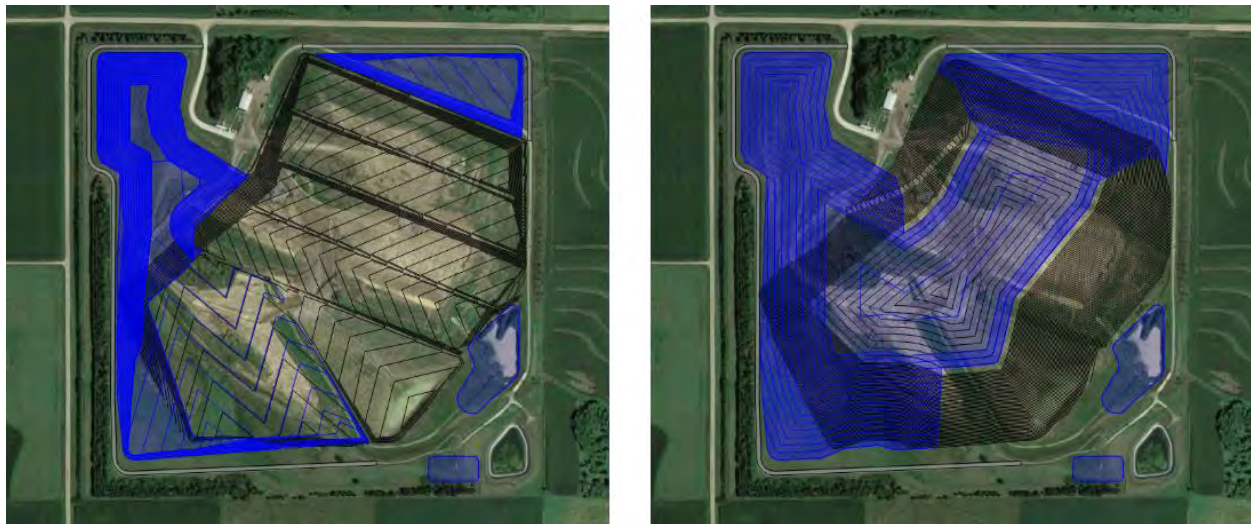
Figure 4-3: NNSWC Expansion Alternative 3.A Base Grades (left) and Final Cover (right)



4.2.4 Expansion Alternative 3.B

Expansion Alternative 3.B is the same as Expansion Alternative 2 but takes advantage of the additional waste capacity in the Northeast corner of the Landfill. The base grades and final cover plan are presented conceptually in Figure G and Figure H, respectively, in Appendix D. A snapshot of the base grades and final cover plan for this alternative is shown in Figure 4-4. This expansion alternative covers an approximate non permitted area of 24-acres and will provide the Landfill with 12.1-18.9 years of additional life as indicated in Table 4-1. Like Expansion Alternative 2, Landfill infrastructure will not need to relocate.

Figure 4-4: NNSWC Expansion Alternative 3.B Base Grades (left) and Final Cover (right)



4.3 Preferred Expansion Alternative

Based on a review of the proposed lateral and vertical expansion alternatives by the Coalition PTF, the preferred configuration for future development was Expansion Alternative 3.A with a vertical expansion of 60-feet. The Preferred Expansion Alternative 3.A was further revised with 3.3(H):1(V) slopes to match the slopes and capacities developed with the NNSWC Landfill 2020 Permit Modification (2020 Permit Modification) prepared by Burns & McDonnell in October 2020. Table 4-2 below provides the final airspace and additional expansion life gained with the revisions to this alternative calculated using the same approach explained in Section 4.2. The preferred configuration allows for the most expansion life and will also phase out existing infrastructure that will be nearing the end of its life at the time of development. With direction from the PTF, Burns & McDonnell further refined Preferred Expansion Alternative 3.A and developed a conceptual design for the alternative.

Table 4-2: Airspace and Expansion Life Summary for the NNSWC Preferred Expansion Alternative 3.A

Expansion Alternative	Crest = 1840 (60ft vertical)		
	Available Airspace (CY)	Additional Airspace (CY)	Additional Expansion Life (yrs) ^a
2020 Permit Modification	10,260,000	-	-
3.A ^b	17,530,000	7,270,000	27.7

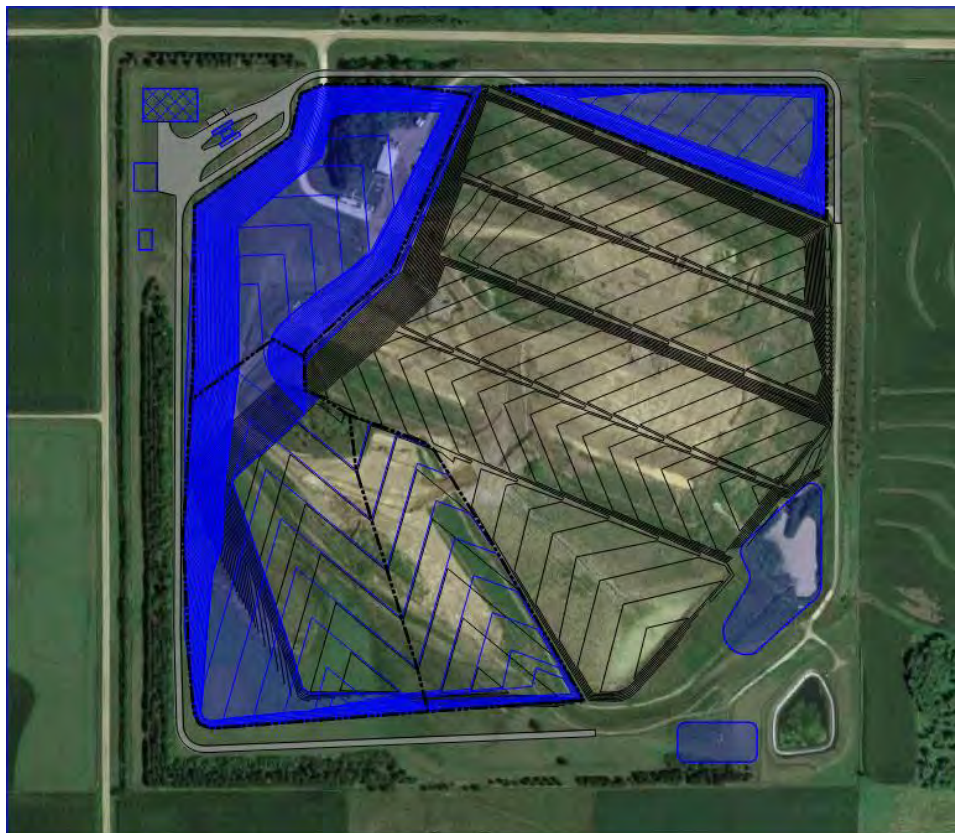
^a Landfill life estimates assume a present annualized tonnage of 112,000 tons with a predicted future generation growth of one-percent. At the time the existing permitted capacity is depleted in 2049, the annualized tonnage is estimated to be 149,000 tons; this value is the starting point for expansion life calculations.

^b Available airspace capacity adjusted per 2020 Permit Modification 3.3(H):1(V) slopes and adjusted remaining Landfill airspace.

4.3.1 Base Grade Plans

Figure 1 of Appendix E provides a conceptual base grade plan for the Preferred Expansion Alternative 3.A. A snapshot of the proposed base grade plans is shown in Figure 4-5. The new Landfill footprint will cover approximately 104 acres, increasing the Landfill footprint an additional 26-acres from the currently permitted 78-acre footprint. A summary of the proposed expansion areas are:

- **Area 6 Phase 1:** 9.3-acres
- **Area 6 Phase 2:** 19.1-acres
- **Area 7:** 14.0-acres
- **Area 8:** 6.3-acres

Figure 4-5: NNSWC Preferred Expansion Alternative 3.A Base Grade Plan

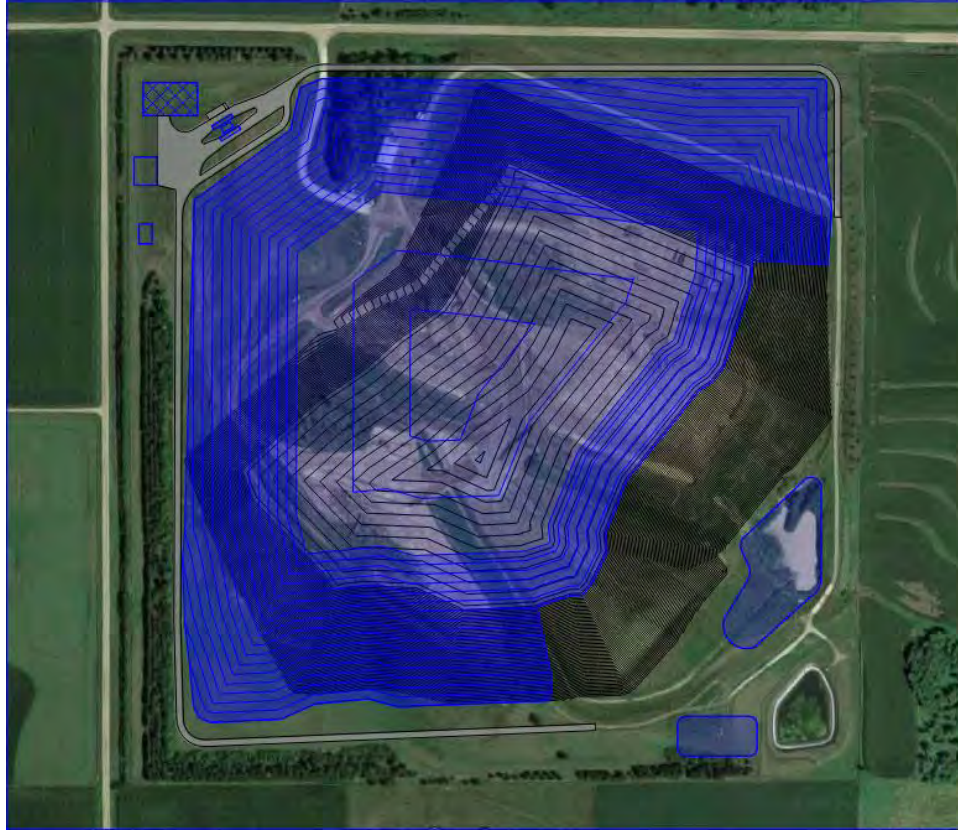
For Area 6 Phase 1-2 and Area 7, the base elevations are graded so that leachate will drain via gravity to the south and then east, connecting into the permitted leachate sewer infrastructure for Area 6. Similarly, the base elevations for Area 8 are graded so that leachate will drain via gravity to the southeast corner of the area, where it will then be pumped into the existing leachate sewer infrastructure near Area 1. Furthermore, the side slopes are graded at a 3(H):1(V) slope to match previous area construction base grades. To fully capture the horizontal expansion potential, permitting and design would need to be completed before developing Area 6 Phase 2 as significant modifications to the permitted Area 6 Phase 2 base grades are necessary. Minor modifications to the permitted Area 6 Phase 1 base grades will be submitted to the NDEE for permitting prior to Area 6 Phase 1 design and construction.

4.3.2 Final Grade Plans

The conceptual final grade plan for the Preferred Expansion Alternative 3.A is provided as Figure 2 of Appendix E. Figure 4-6 provides a snapshot of the final grades. The final grade plan incorporates a 60-foot vertical expansion from the current permitted final grades. It also considers the 3.3(H):1(V) final cover grade slope currently proposed in the 2020 Permit Modification. As provided in Figure 2, additional waste is placed over the proposed lateral landfill expansion and above the existing disposal areas to

maximize the Landfill capacity. With the proposed lateral and vertical expansions, the disposal capacity of the Landfill increases by approximately 6.5 million cubic yards. This additional Landfill capacity provides the Coalition with over 25 years of additional site life as indicated in Table 4-2.

Figure 4-6: NNSWC Preferred Expansion Alternative 3.A Final Grade Plan



Landfill stability calculations prepared for the 2020 Permit Modification are provided in Appendix F. The analysis considers the proposed lateral and vertical expansion. From the slope stability report, the proposed lateral and vertical expansion is deemed to be adequate.

4.3.3 Additional Landfill Infrastructure

4.3.3.1 Leachate Conveyance Plans

As previously described in Section 4.3.1 and provided in Figure 3 in Appendix E, a gravity leachate drainage system will be implemented to provide leachate drainage for Area 6 Phase 1-2 and Area 7. For Area 7, leachate will be directed from north to south by a leachate drainage trench up to the toe of the slope of Area 7. At the toe of the slope, a leachate drainage trench will be provided that will directly tie into the leachate drainage trench designed for Area 6 Phase 2. The leachate collected from Area 7 and Area 6 Phase 2 will then be directed from west to east to the Area 6 Phase 1 sump across the south slope

toe of both Area 6 Phase 1 and Phase 2 with a leachate drainage trench. Area 6 Phase 1 will have an individual leachate drainage trench running from north to south that will direct leachate into the Area 6 Phase 1 sump. The leachate collected in the Area 6 sump will connect into the existing leachate sewer infrastructure developed for Area 5 and will be transferred to the existing leachate pond.

Leachate in Area 8 will be collected along the toe of the slope adjacent to Area 1. The leachate will be directed via gravity to the Area 8 sump. Due to the topography at the northeast corner of the property, the leachate from the sump in Area 8 will be pumped into the existing leachate collection system adjacent to Area 1.

For the Preferred Expansion Alternative 3.A, it is anticipated that additional leachate holding capacity will be required. A new leachate pond is expected to be built next to the existing leachate pond at the southeast corner of the property, as shown in Figure 1 of Appendix E. Modifications to the existing leachate collection system will be provided as required to transfer leachate into either the existing or the proposed leachate ponds. Timing and estimated capital improvement costs for the proposed new leachate pond are found in Table 4-5 and Table 4-6, respectively, located in Section 4.4.

4.3.3.2 Stormwater Conveyance Plans

Stormwater will be collected and treated on-site through a series of terrace channels, letdown structures, open channels, and sedimentation basins. Precipitation that falls on the active working face and comes in contact with MSW will be managed as leachate. Precipitation that lands on intermediate and final cover soils and does not come in contact with waste will be managed as stormwater. The final cover system is designed to minimize infiltration of precipitation, control odors, provide a pleasing appearance, and provide a base for vegetation establishment. The proposed final cover contours and stormwater drainage of the Landfill expansion are provided on Figure 4 of Appendix E. The stormwater terraces will be constructed during final cover construction. Side slope terrace channels with a one-percent slope will be located at approximately 40-foot vertical increments and will drain to letdown channels that will then drain into stormwater ditches around the perimeter of the Landfill. These ditches will drain to the expanded sedimentation basin located in the southeast corner of the Landfill. Timing and estimated capital improvement costs for the proposed sedimentation basin expansion are provided in Table 4-5 and Table 4-6, respectively, located in Section 4.4.

4.3.3.3 Landfill Gas Conveyance Plans

Management of Landfill Gas (LFG) will continue in accordance with NDEE Title 129 – Nebraska Air Quality Regulations. Title 129 establishes the general air quality criteria that must be maintained and

directly incorporates the federal New Source Performance Standards (NSPS) for MSW landfills (40 CFR Part 60). NSPS requires reporting of Non-Methane Organic Compounds (NMOC) emission rate annually or at five-year intervals if the estimated NMOC emission rate is below the emission rate threshold. As currently permitted, the NNSWC facility is subject to 40 CFR Part 62 Subpart OOO regulations. Based on the proposed lateral and vertical expansion, the Landfill will be subject to 40 CFR Part 60 Subpart XXX, which requires an NMOC emission rate threshold of 34 megagram per year (Mg/yr). The increase in disposal capacity and the potential tonnage received are the main drivers that impact the emissions rate model. If, at any time during the landfill operating life, the calculated NMOC emission rate exceeds the threshold defined by NSPS, the Landfill will be required to install a landfill gas collection and control system.

Per the April 2021 Tier 2 Landfill Gas Sampling & Emissions Rate Report prepared by Burns & McDonnell (2021 Tier 2 Report), the Landfill will not exceed the 34 Mg/yr threshold for the foreseeable future. A landfill gas vent system is proposed for the lateral and vertical expansion of the Landfill, which should control decomposition gases generated within the Landfill and prevent the gases from posing a hazard to adjacent properties. Figure 5 of Appendix E provides the proposed Landfill gas venting layout. The proposed system consists of approximately 109 gas vents or one gas vent per acre as currently permitted. Figure 4-7 shows the currently permitted passive gas vents. The passive gas vents are interconnected with perforated gas collection pipes in the waste below the infiltration layer to effectively collect and vent LFG. Figure 4-8 depicts a passive vertical well gas venting system. A passive vertical well gas venting system should be considered at the time of permitting the preferred expansion. A passive vertical well gas venting system has the same functionality as the passive gas vents, but this system is easier to convert to an active gas collection system, if required in the future.

Figure 4-7: Typical Passive Gas Vent Section for NNSWC Landfill Expansion

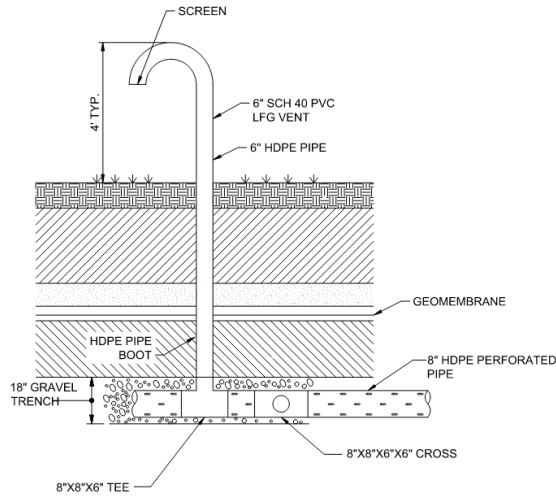
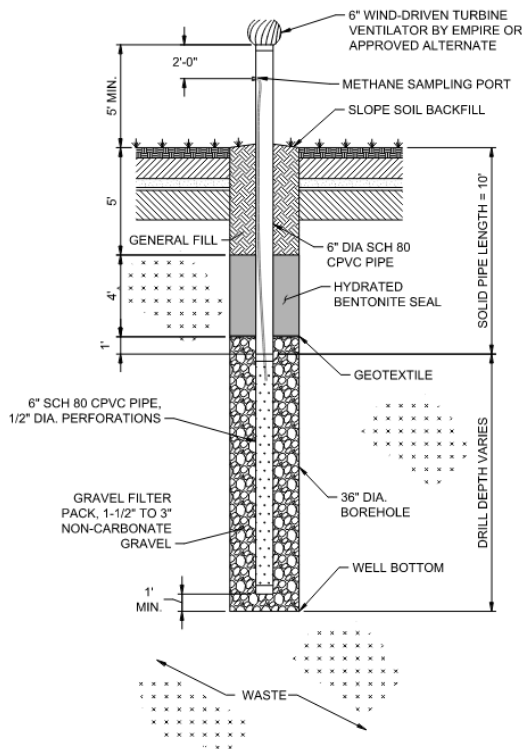


Figure 4-8: Typical Passive Vertical Well Gas Vent Section for NNSWC Landfill Expansion



A landfill gas collection and control system may alter the proposed gas venting system for the Landfill expansion and require installation of a flare station. In this occurrence, a landfill gas collection and control system will be designed and submitted for approval from NDEE. For this Plan, a preliminary flare

station location for the gas collection system has been identified at the property's northwest corner and is anticipated to be required 25-30 years out.

4.3.4 Expansion Volume Capacity

The total ultimate Landfill capacity for the Preferred Expansion Alternative 3.A is approximately 18,350,000 cubic yards. The available waste and daily and intermediate cover volume is 17,530,000 cubic yards after subtracting the final cover volume and the base liner protective cover soil volume from the total ultimate capacity. The ultimate capacity represents an increase of 7,270,000 cubic yards in airspace as compared to the 2020 Permit Modification. Based on an AUF of 1,296 lb/cy, a baseline year tonnage of 112,000 tons, and a one-percent waste growth rate through closure, it is anticipated that the additional capacity for the Preferred Expansion Alternative 3.A will add approximately 27.7 years of life to the Landfill as indicated in Table 4-2.

Appendix G provides a breakdown of the Landfill life and capacity by Landfill area and includes airspace projections for three assumed scenarios previously described in Section 3.3 (no waste change, 20-percent waste decrease, and 20-percent waste increase). Table 4-3 summarizes the expected time when the proposed lateral expansion areas will need to begin receiving waste for each assumed scenario. Areas 1-5 are currently active at the Landfill and will continue to be active through the construction of Area 6 Phase 1. From the 2020 Volume Calculation Report prepared by Burns & McDonnell in April 2021 for the Coalition, the construction of Area 6 Phase 1 is expected to occur during the 2023 construction season. As shown in Table 4-3, Area 6 Phase 1 will begin receiving waste at the same time for all three scenarios. Area 6 Phase 1 will need to be constructed prior to permitting the Preferred Expansion Alternative 3.A; however, minor modifications to the current permit are recommended for the base grades of the area to accommodate the future expansion permitting effort.

Table 4-3: NNSWC Preferred Expansion Alternative 3.A Area Construction and Waste Filling Schedule

Area	Baseline: No Waste Change		Scenario 1: 20% Waste Increase		Scenario 2: 20% Waste Decrease	
	Const. Year	Active Year	Const. Year	Active Year	Const. Year	Active Year
Area 1-5	-	Active	-	Active	-	Active
Area 6 PH 1	2023	2024	2023	2024	2023	2024
Area 6 PH 2	2042	2043	2038	2039	2047	2048
Area 7	2060	2061	2054	2055	2067	2068
Area 8	2074	2075	2066	2067	2084	2085

Area construction generally occurs the year prior to commencing waste filling operations in the area. Table 4-3 also summarizes the expected construction date for the proposed Areas. The required construction time for the proposed areas should be reassessed closer to when the areas will need to be constructed. Furthermore, as can be observed in Table 4-3, if waste into the Landfill decreases, each area's expected life is extended and vice versa if waste increases. Finally, from airspace projections, the Landfill life will be depleted in 2078 for the no waste change scenario, 2070 for the 20-percent waste increase scenario, and 2088 for the 20-percent waste decrease scenario.

4.3.5 Expansion Soil Balance

The on-site soil materials available are classified as high plasticity (CH) and low plasticity (CL) clay soils per the Unified Soil Classification System. These soils are deemed adequate by the NDEE Title 132 regulations to be used for daily, intermediate, and final cover.

Appendix G provides the soil volume calculations and a breakdown of the Landfill soil projections for the proposed expansion. The primary sources of on-site soil available for use are the remaining area excavations and the stockpile area located in the northwest corner of the property. Approximately 1,839,000 cubic yards would be removed from the Landfill expansion's proposed footprint. An approximate 309,500 cubic yards of additional soil is available in the northwest stockpile area. The total on-site available soil is approximately 2,148,500 cubic yards.

Soil required for the remaining Landfill life includes daily and intermediate cover soil, final cover soil, and protective cover soil for the proposed Area 6 through Area 8 expansion. Using a 4:1 waste to soil ratio for the remaining Landfill airspace, approximately 2,648,100 cubic yards of soil are required for daily and intermediate cover. The final cover soil required, excluding the sand layer material, is approximately 493,800 cubic yards. An additional 117,900 cubic yards of soil is needed for the 12-inch protective cover soil for Area 6 through Area 8. The total soil that is required for the proposed life of the landfill is approximately 3,259,900 cubic yards. The soil balance calculations show a soil deficit of roughly 1,111,300 cubic yards. The Landfill can improve upon the soil deficit by having efficient soil usage for daily and intermediate cover operations. Ultimately, it is anticipated that the Coalition will be required to purchase new land for soil borrow or purchase and import soil to account for the soil deficit. Similarly to the airspace projection breakdown, the required soil volume calculations assume three distinct scenarios: no waste change, 20-percent waste increase, and 20-percent waste decrease. In summary, the Landfill soil will approximately be depleted in 2063 for the no waste change scenario, 2057 for the 20-percent waste increase scenario, and 2071 for the 20-percent waste decrease scenario. It is

recommended that the Coalition purchase adjacent land for soil borrow operations. The timing of land acquisition needs is discussed in further detail in the Section 6.0 below.

4.3.6 Expansion Cost Assessment

The net present value cost was calculated for each area of Preferred Expansion Alternative 3.A for the Landfill. As previously mentioned, the proposed lateral expansion adds approximately 26-acres to the permitted landfill footprint, and the expected area construction dates are summarized in Table 4-3. Table 4-4 shows the cost of each of the expansion areas in 2021 dollars (2021\$). The estimated costs generally consist of mobilization, area mass excavation, expansion of the groundwater collection system that lies underneath the Landfill subgrade, construction of composite Landfill liner and leachate collection systems, installation of the protective cover, and extending the leachate and groundwater conveyance piping to its respective retention basin. A budgetary cost per acre for construction is approximately \$210,000 (2021\$). The estimated construction costs are based on industry experience combined with information from past projects, vendors, and published sources. It is recommended that the construction costs for the proposed areas is reassessed closer to when the areas will need to be constructed.

Table 4-4: NNSWC Preferred Expansion Alternative 3.A Construction Costs

Expansion Area	Total Cost (2021\$)
Area 6 PH 1	\$ 2,500,000
Area 6 PH 2	\$ 3,700,000
Area 7	\$ 2,700,000
Area 8	\$ 1,500,000

4.4 Support Facilities for Optimum Development

To maximize the disposal capacity at the Landfill, the existing scale, scale house, and equipment maintenance building facilities will require relocation to allow for the implementation of the proposed lateral expansion. The infrastructure is planned to be relocated to the northwest corner of the property, as shown in Figure 1 of Appendix E. The proposed location for the infrastructure allows for the existing property access to remain the same and will not require additional permitting from the County.

Additionally, dedicated inbound and outbound scales are included with a by-pass lane located adjacent to the scales to account for increased traffic if additional Coalition members are added and waste to the Landfill increases. Meeting spaces are also incorporated into the new equipment maintenance building.

These spaces will not only serve as employee breakrooms and rest areas but will also be able to be configured into educational and training facilities.

A new customer convenience drop-off area is shown in Figure 1 located in the northwest corner of the Landfill property. The drop-off area should be considered if the Coalition allows additional residential self-haulers at the Landfill as a way of separating the residential haulers from the larger commercial haulers for safety and convenience. The Landfill would oversee the hauling and dumping of the roll-offs into the Landfill's active areas once the containers are full.

The area around the scales, scale house, drop-off area, and a portion of the equipment maintenance building is planned to be paved as shown in Figure 1 in Appendix E. The remaining proposed roads outside this area shown in Figure 1 will consist of an aggregate or gravel surfacing.

Before the northwest corner of the property can be developed, the northwest soil stockpile will need to be removed from the location. Based on the soil balance calculations previously presented in Section 4.3.5 and Appendix G, the northwest corner stockpile will be depleted within approximately 10 to 15 years. This timeframe aligns with the end of the remaining life of the existing scale, scale house, and equipment maintenance building. The Landfill should begin removing and using the northwest soil stockpile as a soil borrow source following the excavation and construction of Area 6 Phase 1 to maintain the proposed development timeline of this infrastructure.

As detailed previously in Section 4.3.3.3, the 2021 Tier 2 Report was reviewed and the need for a gas collection system and flare station is not anticipated to be required in the near future. However, the emissions modeling will be impacted by the increase in disposal capacity of the Landfill and the potential increase in tonnage received. For planning purposes, Burns & McDonnell has included a flare station and a gas collection system 25 to 30 years out depending on the amount of waste the Landfill receives and potential changes in NMOC emission concentrations. The flare station is proposed to be located adjacent to the relocated equipment maintenance building, as seen in Figure 1 of Appendix E. The proximity of the flare to the new equipment maintenance building will allow for easy access by Landfill personnel. Further, gas collected from the Landfill could be beneficially used as a heating source for the equipment maintenance building and scale house. The need for a gas collection system and flare station should be reevaluated following subsequent Tier 2 and Air Permit renewals.

With the proposed Landfill expansion, an off-site location for future soil borrow and soil stockpile will be required for Landfill operations as described in Section 4.3.5. From the soil balance calculations results, the Landfill is expected to require soil to be stockpiled off-site following the construction of Area 6 Phase 2 and have a soil deficit closer to the Landfill's end of life. The need for an off-site soil stockpile location earlier in the Landfill life arises from the need to use the soil stockpiled in the northwest corner of the

property to allow for the required infrastructure to be relocated. The timing of when the acquisition of land is needed is highly dependent on the waste received by the Landfill. The need for expansion into adjacent lands is discussed in detail in Section 6.0 of this report. The Coalition should consider purchasing this land ahead of time to stockpile excavated soils and utilize as a soil borrow area closer to the end of the Landfill's life.

Table 4-5 summarizes when the Landfill is expected to construct the site improvements to support the Landfill operations. As previously described, the timing of when facilities are required is dependent on the quantity of waste that is received by the Landfill. The planning level present value construction costs for the Landfill support facilities are provided in Table 4-6.

Table 4-5: NNSWC Landfill Expansion Expected Construction Timing for Support Facilities

Facility	Baseline: No Waste Change	Scenario 1: 20% Waste Increase	Scenario 2: 20% Waste Decrease
Scales (x2)	2033	2031	2036
Scale House			
Equipment Building			
Drop-Off Area			
Asphalt Pavement			
Land Acquisition ¹	2037	2033	2042
Sedimentation Basin Expansion	2042	2038	2047
Leachate Pond Addition			
Landfill Gas Flare	2046	2048	2048

¹ Dates provided require the Landfill will acquire land five years prior to needing the land.

Table 4-6: NNSWC Landfill Expansion Support Facilities Net Present Value Construction Costs

Facility	Quantity	Unit	Unit Price ¹	Subtotal
Scales (x2)	2	LS	\$150,000	\$300,000
Scale House	1	LS	\$400,000	\$400,000
Equipment Building	6,000	SF	\$200	\$1,200,000
Drop-Off Area	1	LS	\$200,000	\$200,000
Asphalt Pavement	86,200	SF	\$7.00	\$600,000
Land Acquisition	160	AC	\$6,000	\$1,000,000
Sedimentation Basin Expansion	1	LS	\$250,000	\$250,000
Leachate Pond Addition	1	LS	\$1,000,000	\$1,000,000
Landfill Gas Flare	1	LS	\$1,000,000	\$1,000,000

¹ Costs are provided based on Burns & McDonnell's experience with similar facilities at other landfill sites.

5.0 CELL CLOSURE AND END OF USE PLANS

Landfill area closure sequencing options were reviewed and evaluated based on the Preferred Expansion Alternative previously developed. A closure phasing plan was developed, and the closure sequencing was included in the financial models developed for this Plan.

5.1 Closure Phasing Plan

The Landfill is currently permitted to be closed in one phase. For the proposed expansion option, the Landfill could delay closure until final elevations are reached for all areas. Benefits of this option include deferral of capital construction costs, the economy of scale for closure construction, and the ability to recapture airspace in areas where waste has settled below final elevations. However, the financial assurance liability for closure costs will be more significant as this option includes the largest area of opened Landfill to close. Additionally, the probability of double handling excavated soils will increase as excavated soils will need to be stockpiled off-site and hauled back at the time of closure. Further, delaying closure will result in an overall increase in leachate generation and cost management thereof.

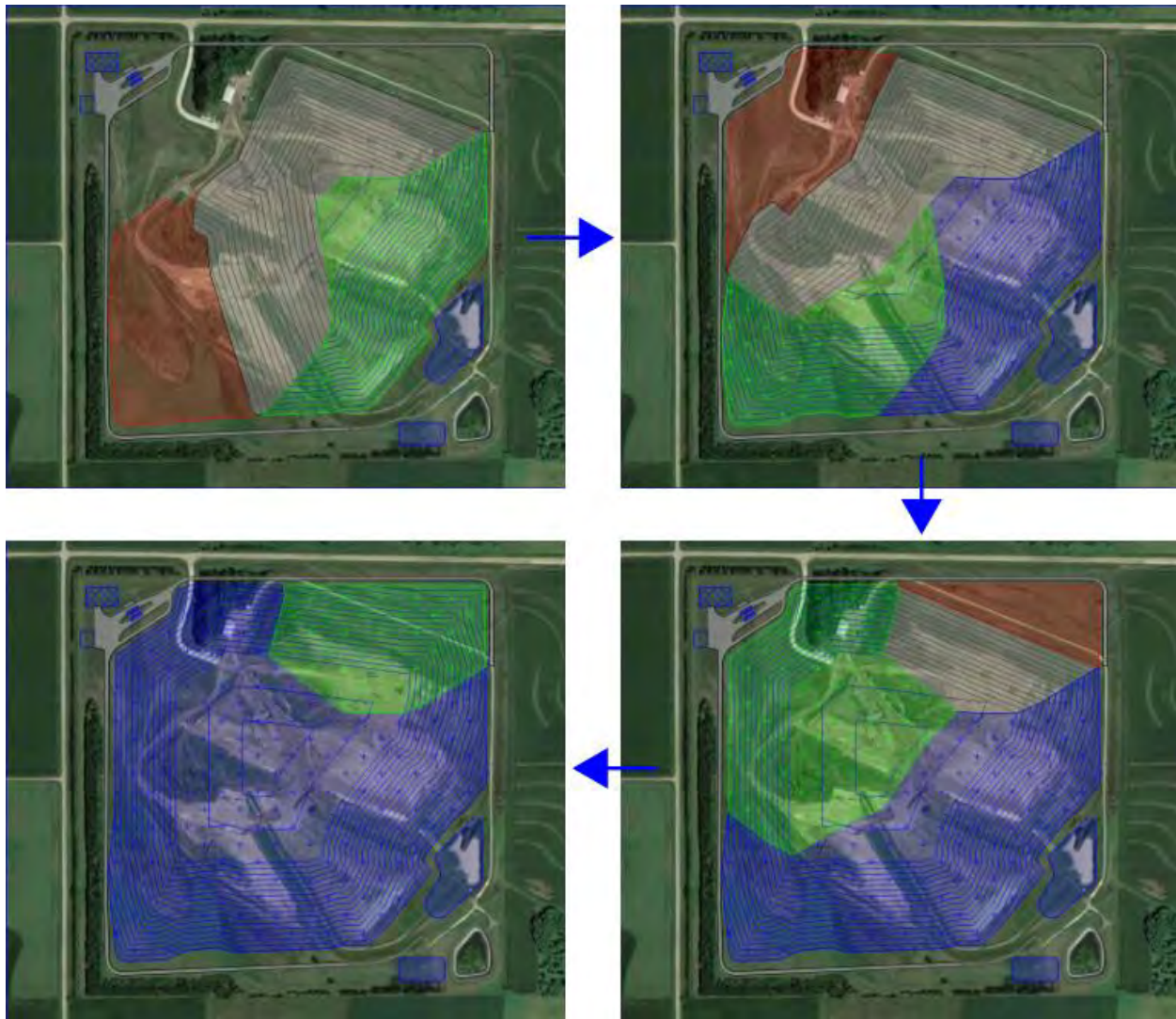
Sequencing the Landfill closure in phases where partial closures are completed as areas reach final waste elevations is recommended. Benefits of this option include reduction of final assurance closure liability as the open area of the Landfill will be reduced, closure construction projects will be manageable and more easily budgeted, and the reduction of leachate generation by capping off areas of the Landfill, thereby reducing stormwater infiltration into the waste. The main drawback with this option is differential settlement may occur as waste breaks down and if areas that have received final cover settle, the airspace cannot be recaptured. In order to mitigate this, area closures will be sequenced such that preliminary settlement should have occurred in the waste before closing the area.

Figures 1 through 4 of Appendix H show the proposed sequencing plan for the Landfill expansion. Table 5-1 provides a summary of expected area closure sequencing timing. The timing of when areas are expected to be closed is highly dependent on the amount of waste the Landfill receives. The area closures are sequenced to be constructed in-phase with new area construction, optimizing the soil usage from excavation areas and avoiding double handling of the soils. The proposed extent of area closure provided is for planning and cost purposes only and the Coalition shall revisit the full extent of the closure area closer to the time of construction. For reference, Figure 5-1 below is a summary of the proposed closure sequencing plan for the Landfill expansion.

Table 5-1: NNSWC Preferred Expansion Alternative 3.A Expected Timing of Area Closure

Closure Area	Area (Acres)	Baseline: No Waste Change	Scenario 1: 20% Waste Increase	Scenario 2: 20% Waste Decrease
Areas 1-6 PH1	26.1	2042	2038	2047
Area 6 PH 2	22.8	2060	2054	2067
Area 7	34.1	2074	2067	2084
Area 8	19.2	2078	2070	2088

Figure 5-1: NNSWC Preferred Expansion Alternative 3.A Proposed Closure Sequencing Plans



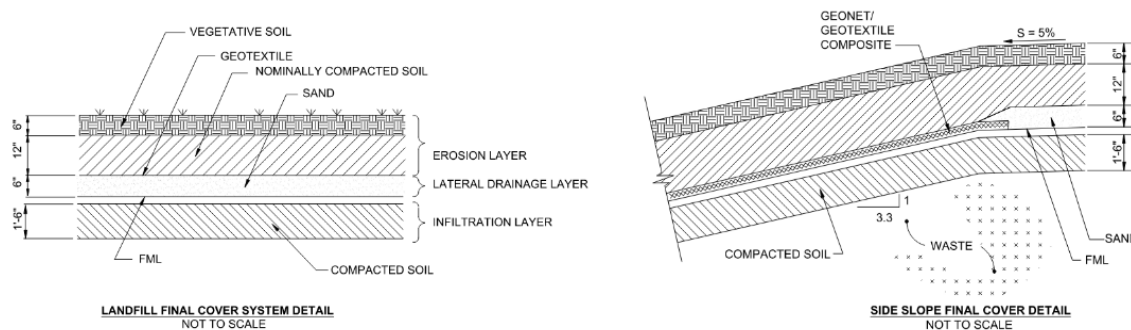
^a Closure sequencing plans in the figure are presented in a clockwise pattern. The first closure sequence is located on the top left corner of the figure.

^b Green shading represents proposed final cover closure, blue shading represents existing final cover, red shading represents proposed active area, and gray shading represents intermediate cover.

5.2 Alternative Final Cover System

The current permitted final cover profile consists of a compacted soil liner and geosynthetic flexible membrane liners as indicated in Figure 5-2. Geosynthetic liners add high material costs to closure when compared to soil-only caps. It is in the best interest of the Coalition to consider the implementation of an alternative earther cover system at the Landfill that has the potential to reduce final cover construction costs.

Figure 5-2: NNSWC Permitted Final Cover Profile



The following alternative final cover options were evaluated as part of this Plan:

- Infiltration Cover
- Evapotranspiration (ET) Cover

The sections that follow provide greater detail of the cover systems evaluated and a cost comparison per acre of the various construction types.

5.2.1 Infiltration Covers

The NDEE permits infiltration covers through the Research, Development, & Demonstration (RD&D) Rule (Title 132, Chapter 2, Section 14). Infiltration covers are similar to their ET cover counterparts with respect to the design approach; however, infiltration covers utilize less soil to promote controlled percolation into the waste mass. The design provides additional moisture to the waste after closure, which will generate additional usable landfill gas, promote controlled waste degradation, and afford a reduction in long-term environmental risks.

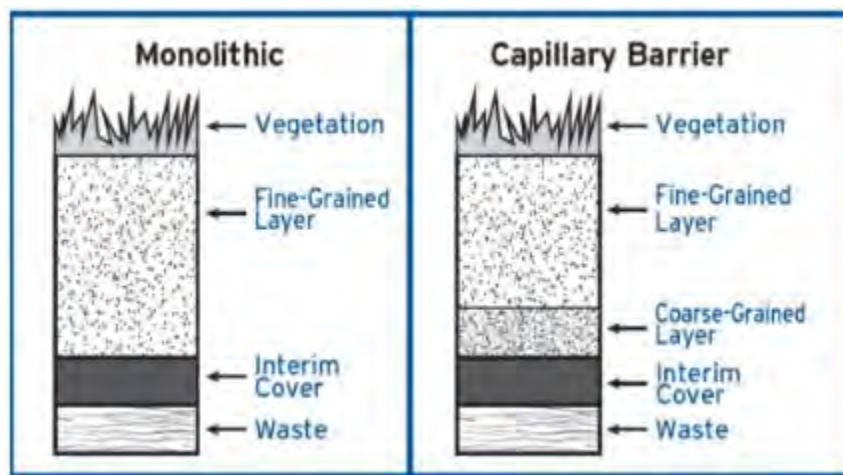
Several drawbacks are associated with permitting an infiltration cover system under the NDEE RD&D rule:

- Under the RD&D rule, the permit would be required to be renewed every three years for a period of up to 12-years. If the project goals are satisfied within the 12 years, the Coalition could then incorporate the infiltration cover as an approved final site-specific design.
- The Landfill should expect an increase in post-closure leachate quantities and associated disposal costs for an infiltration cover.

5.2.2 Evapotranspiration (ET) Covers

NDEE permits ET covers under Title 132, Chapter 3, Section 5. There are two primary types of ET alternative earthen cover systems employed in landfill caps: monolithic barrier and capillary barrier. Both types of cover systems are designed to retain water within the cover, supporting the overlying vegetation, as seen in Figure 5-3. The monolithic barrier cover system option consists of a continuous soil layer that interfaces with the pre-existing landfill intermediate cover. The capillary barrier cover system includes a granular material (sand or fine gravel) at the base of the cover system overlying the pre-existing intermediate cover. In the capillary barrier system, the difference in grain size between the soil layer and the granular material produces a capillary action whereby the soil layer holds the water until the soil's saturation point is reached. Capillary barrier systems have been shown to retain more moisture than monolithic covers of the same soil thickness and can be more economical in certain applications.

Figure 5-3: NNSWC Proposed ET Cover Designs



For comparison, a successful ET final cover system has been installed at the Sioux Falls Regional Sanitary Landfill in Sioux Falls, South Dakota. Sioux Falls also has a comparable environment with similar annual precipitation and slightly longer dormant season than that of Stanton County, Nebraska. Furthermore, the Sioux Fall Landfill has a landfill gas collection system that the ET cover system has not impaired. Therefore, this alternative cover system should be a feasible option for the NNSWC Landfill.

5.2.3 Final Cover Cost Comparison

Table 5-2 illustrates a budgetary construction cost estimate per acre of construction for various landfill cover designs. The table was composed using current regional construction costs. Final cover constructions costs can be reduced significantly for an alternative earthen landfill cover system.

Table 5-2: Cost Comparison per Acre of Construction for Various Landfill Cover Designs

Cover Design	Unit per Acre		Unit Price (\$/Unit)	Price per Acre (2021\$)
Infiltration Cover (RD&D Cover)				
Vegetative Cover (6" thick)	807	CY	\$4.50	\$3,632
Soil Cover (24" thick)	3,227	CY	\$4.50	\$14,522
Total:				\$18,153
Monolithic ET Cover				
Vegetative Cover (6" thick)	807	CY	\$4.50	\$3,632
Soil Cap (48" thick)	6,453	CY	\$4.50	\$29,039
Total:				\$32,670
Capillary Barrier ET Cover				
Vegetative Cover (6" thick)	807	CY	\$4.50	\$3,632
Soil Cap (30" thick)	4,033	CY	\$4.50	\$18,149
ASTM C33 Sand (6" thick)	1,089	Ton	\$20.00	\$21,780
Total:				\$43,560
Permitted Cover				
Vegetative Cover (6" thick)	807	CY	\$4.50	\$3,632
Erosion Layer (12" thick)	1,613	CY	\$4.50	\$7,259
Drainage Layer	4,840	SY	\$8.00	\$38,720
Geomembrane	4,840	SY	\$9.00	\$43,560
Compacted Soil Cap (18" thick)	2,420	CY	\$4.50	\$10,890
Total:				\$104,060

5.2.4 Closure Costs and Recommendations

A capillary barrier ET cover system is recommended for closure of the Landfill once areas reach final grades. The proposed layer thicknesses are highly dependent on the required storage capacity of the site. As shown in Table 5-2, the proposed capillary barrier ET cover will consist of 6-inches of vegetative cover, 30-inches of soil, and 6-inches of sand. The soil layers need to accommodate the design climate conditions, such as snowmelts and summer thunderstorms, or periods during which ET rates are low, or plants are dormant. A study conducted on capillary barrier ET covers at the Douglas County, Nebraska

Recycling and Disposal Facility by the Alternative Cover Assessment Program (ACAP) for the United States Environmental Protection Agency (EPA) has proven that capillary barrier ET covers work with similar environments to the NNSWC Landfill. The ACAP study, provided in Appendix I for reference, concluded that the permeability of the capillary barrier ET cover was better than that required by the NDEE with the soil layers and thicknesses that are being proposed. Furthermore, the thickness of the proposed final cover is the same as the permitted final cover and will not impact the airspace capacity and soil balance results presented in the previous sections. Additionally, the soil layer will need to be compacted to 80-percent to 90-percent density to promote the storage capacity of the soil and allow the growth of the vegetative roots. A permit modification will be required if the Coalition desires to proceed with a capillary barrier ET cover system. Prior to submitting a permit modification, the Coalition might be required to provide a test closure area and a pilot study of the proposed closure alternative to the NDEE.

In addition to the benefits detailed in the previous sections, Table 5-3 compares the proposed final cover closure costs to the permitted final cover design for the Preferred Expansion Alternative. This table considers the Capillary Barrier ET final cover construction costs from Table 5-2 and costs associated with the final grading, installation of landfill gas collection system, and stormwater drainage. Table 5-3 shows that installing a capillary barrier ET cover system will benefit the Landfill financially with a cost savings of over \$6,000,000 throughout the Landfill's lifetime.

Table 5-3: NNSWC Area Cover Closure Cost Comparison

Closure Area	Permitted Cover	Capillary Barrier ET Cover	Cost Savings
Area 1-6 PH1	\$4,624,817	\$3,045,767	\$1,579,050
Area 6 PH 2	\$4,040,070	\$2,660,670	\$1,379,400
Area 7	\$6,042,385	\$3,979,335	\$2,063,050
Area 8	\$3,402,164	\$2,240,564	\$1,161,600
Total	\$18,109,436	\$11,926,336	\$6,183,100

5.3 End of Use Plans

Upon the capacity of the Landfill being reached and when the final cover has been applied, short-rooted plants and/or grass are currently permitted to be planted on the remaining unvegetated areas of the facility to control erosion and create an open green space. For this Plan, incentives for a solar power project were investigated and the feasibility of processing LFG to Renewable Natural Gas (RNG) was evaluated.

5.3.1 Solar Power Incentives

A limited review of the financial incentives for developing a solar project on the final cover of the Landfill was conducted. Typically, solar farm projects in the United States cost an average of \$500,000 per acre, while general revenues range between \$21,250 and \$42,500 per acre annually based on web data compiled in 2021. If an investment is made in solar power energy at the Landfill, the Coalition will start to see a return on investment between 12-24 years after installation. In addition to site development costs, upfront costs are necessary to tie the solar power generated into the electric grid. These additional costs can range from several hundred thousand dollars to several million dollars depending on the distance and interconnection requirements. These costs make the project cost prohibited until future infrastructure is developed or solar costs are decreased.

5.3.2 Renewable Natural Gas Feasibility Evaluation

As part of this Plan's development, the NNSWC requested that a high-level feasibility evaluation be performed to determine if using LFG to produce Renewable Natural Gas (RNG) could be an economically viable option in the future. The RNG would potentially be used for commercial purposes (sale to a gas utility for subsequent sale to their customer base as renewable natural gas) or as a transportation fuel as part of the EPA's Renewable Fuel Standards Program. Injection into a local utility pipeline was assumed to be required for both potential end markets.

The estimated total capital and operating costs for an RNG plant range from approximately \$32,500,000 to \$41,500,000 in 2021 dollars. The projected annual revenue in year one of operation (assumed to be 2049) is estimated at \$5.5M and remains somewhat constant, assuming no change in current market prices. In the "Low" capital cost scenario, payback is possible in 7.4 years and is under 10 years for the "High" scenario, assuming 1,000 scfm of LFG is available. Based on the current estimated LFG flow rate, the estimated project payback period is greater than 10 years. The full RNG feasibility evaluation is provided in Appendix L.

The preliminary results indicate that this project has the potential to be financially beneficial for the NNSWC. Upgrading LFG to RNG has the potential to generate considerable revenue from multiple streams but will require investment in new infrastructure and ongoing operating costs. Given the volatility of the RNG market, it is in the best interest of the NNSWC to re-evaluate the development of an RNG project in three to five years.

5.3.3 Recommendation

It is recommended that the Landfill re-analyze these options closer to the end of the Landfill's life or during interim closure phases. The feasibility and cost of the proposed alternatives will vary based on the demand for the product produced and the cost of implementation.

6.0 PRELIMINARY OFF-SITE EXPANSION PLANS

A preliminary review of several 60+ year off-site expansion options using various sets of existing land data was conducted as part of this Plan. Properties off-site the existing Landfill footprint were evaluated based on NDEE and Stanton County solid waste guidelines, restrictions, and general construction feasibility. The following data sources were considered in site analysis:

- US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) digital data
- US Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) maps
- US Geological Survey (USGS) 7.5-minute topographic maps
- USGS National Hydrography Dataset digital stream and river data
- Nebraska Game and Parks Commission (NGPC) Estimated Current Ranges of Threatened and Endangered Species: List of Species by County
- USFWS Information for Planning and Consultation (IPaC) tool
- State Archeology Office of History Nebraska
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs)

A ranking of the proposed off-site Landfill expansion options was determined based on available data along with site restrictions, regulatory requirements, feasibility, and adaptability.

6.1 Adjacent Land Review and Restrictions

Location and construction of solid waste areas in the state of Nebraska are subject to the rules and regulations of NDEE Title 132 – Integrated Solid Waste Management Regulations. A summary of the NDEE regulations can be found in Table 6-1. Additionally, the proposed off-site expansion options must meet all Stanton county zoning regulations. All parcels considered for expansion are zoned as A-1 primary agricultural district by Stanton County and therefore fall under those specific zoning guidelines. A summary of Stanton County zoning restrictions pertaining to landfills can be found in Table 6-2. Per Stanton County records, all proposed properties have a single owner, which will allow for greater ease in property acquisition. See Appendix J for a summary of the adjacent property owners.

Table 6-1: Summary of NDEE Title 132, Chapter 3 Regulations for NNSWC Off-Site Expansion

Section 2.01	Site must have no detrimental effect on groundwater or surface water
Section 2.02	Application must describe soils, geology, nearby ground and surface water, and potential for pollution and leachate generation

Section 2.01	Site must have no detrimental effect on groundwater or surface water
Section 2.03	Must be 1000 feet from nearest state, interstate, and federal highway unless active area is screened
Section 2.04	Must be adequately distanced from nearby airports
Section 2.05	Cannot be placed in 100-year floodplain unless owner can demonstrate it will not restrict flows, reduce storage capacity, or result in solid waste washout.
Section 2.06	Site cannot be located in a wetland
Section 2.07	Must demonstrate site is not located in an unstable area
Section 2.08	Cannot be located less than 200 feet from a fault that has been displaced since Holocene times
Section 2.09	Cannot be located in seismic impact zone unless owner can demonstrate landfill and other structures can resist horizontal accelerations

Table 6-2: Summary of Stanton County Zoning Regulations for NNSWC Off-Site Expansion

Article 4	Site must be $\frac{3}{4}$ mile from the nearest dwelling
Article 4	Site must be 1000 feet from the nearest wellhead
Article 4	Site must be 100 feet from the nearest road centerline
Article 5	Sites can apply for conditional use permits if they do not fully meet zoning criteria

All proposed off-site expansion option sites meet the state and local criteria except for the East Expansion Option (described in greater detailed below). The East Expansion Option fails to meet NDEE Title 132, Chapter 3 Sections 2.05 and 2.06 as the proposed location is situated in an existing wetland and stretch of a 100-year floodplain. Therefore, the East Expansion Option will require additional site investigations and permitting if selected as the final option for a 60+ year expansion.

6.2 Off-Site Expansion Options

Four off-site locations adjacent to the existing Landfill have been evaluated for 60+ year expansion alternatives. All proposed off-site expansion option sites are located adjacent to the existing Landfill to provide greater airspace efficiency and utilization of existing site infrastructure, thus reducing development costs. All locations can be characterized by Non-Hydric soils of the Nora-Moody-Crofton complex, consisting of a variety of silty clay loams typical for the region (Appendix K). Clay soils are ideal for constructing landfills as they typically provide the levels of permeability required by the NDEE. For any of these sites, the permeability levels of the soils are expected to be adequate since they resemble the soils encountered at the existing Landfill. Additionally, these soils are ideal for soil borrow and stockpiling operations for current and future existing Landfill operations. Vegetation is primarily

grassland with some areas of tree cover for all sites, requiring minimal site clearing before future construction. The following subsections describe the various expansion options that the project team developed for this Plan.

6.2.1 North Off-Site Expansion Option

The North Off-Site Expansion Option has a footprint of approximately 71-acres and an estimated maximum capacity of 8.55 million cubic yards of waste. The estimated lifespan of this option is shown in Table 6-3. The property is located directly north of the existing Landfill and across a county road, which will require new landfill infrastructure to be developed. Figure 6-1 shows a preliminary landfill infrastructure layout and a final grading plan. The final cover is graded at a 4(H):1(V) slope, and the proposed final crest elevation is at 1790 feet above mean sea level with a five-percent slope crown to allow for adequate runoff and drainage. The topography of the site slopes towards the northeast portion of the parcel, making it the ideal location for a leachate pond and a sedimentation basin. However, a small section of a riverine habitat also runs through the northeast portion of the parcel. This environmental constraint can be mitigated by placing the sedimentation basin and leachate pond an adequate distance away from the riverine habitat or by rerouting the habitat around the sedimentation basin and leachate ponds.

Figure 6-1: Proposed NNSWC North Off-Site Expansion Option Infrastructure Layout and Grading Plan



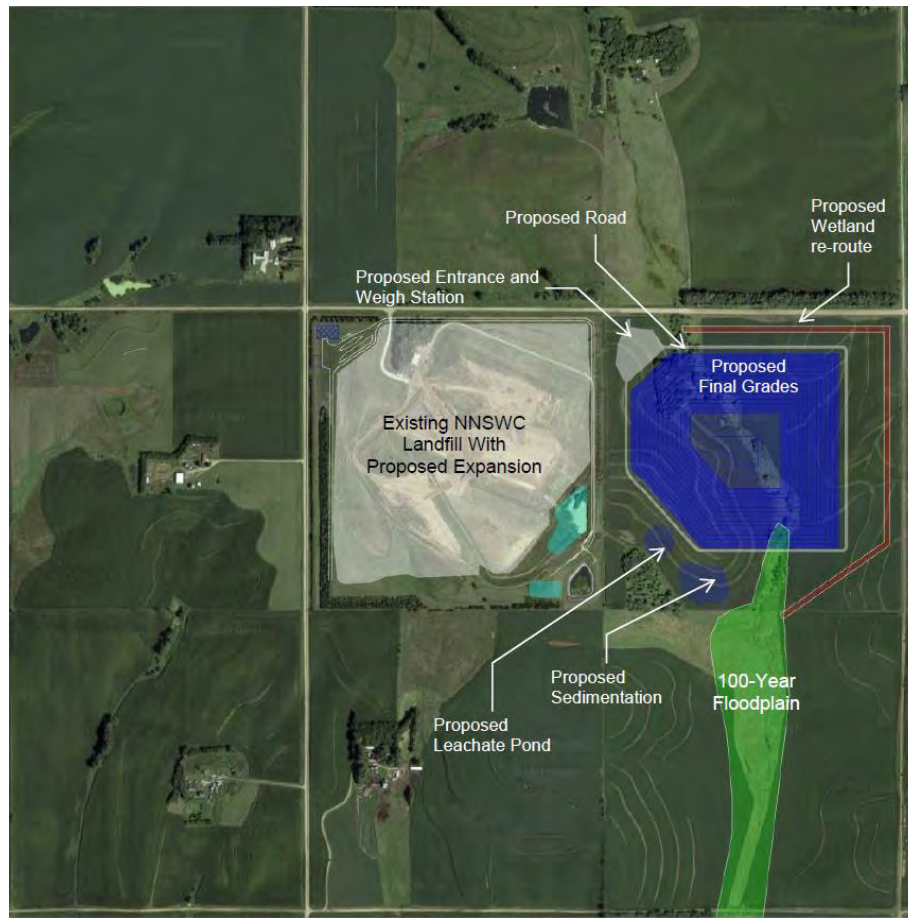
6.2.2 East Off-Site Expansion Option

The East Off-Site Expansion Option has a footprint of 65-acres and an estimated maximum capacity of 8.70 million cubic yards of waste. The estimated lifespan of this option is presented in Table 6-3. It is located on an adjacent parcel of land directly east of the existing Landfill, providing the Coalition the opportunity to utilize some existing infrastructure. If the Coalition desires, a new weigh station can be placed on the northwest corner of the property. The site's topography features the lowest elevations running north to south through the center of the property, sloping upwards to the east and west on each respective side. This low elevation area includes an emergent wetland habitat running north to south through the property and a portion of a 100-year floodplain in the southern region. Mitigation options for the wetland and floodplain include rerouting the wetland around the proposed expansion site and modifying the floodplain to maintain the storage capacity. As explained for the South Off-Site Expansion Option below, piggybacking from the existing Landfill could be considered for this option but is not

recommended since it will interfere with the existing leachate management infrastructure already developed on the east side of the existing Landfill.

Additionally, a sedimentation basin and leachate pond will need to be situated outside of the wetland and floodplain, which would make the southwest portion of the parcel the most suitable location. Due to these environmental restrictions, additional investigation and permitting will be required for this expansion option. Figure 6-2 presents a preliminary landfill infrastructure layout and a final grading plan, with the final cover graded with 4(H):1(V) slopes. The proposed final crest elevation is 1770 feet above mean sea level with a five-percent slope crown to allow for runoff and drainage.

Figure 6-2: Proposed NNSWC East Off-Site Expansion Option Infrastructure Layout and Final Grading Plan



6.2.3 East Alternative Off-Site Expansion Option

Considering the restrictions posed by the wetland and 100-year floodplain for the East Off-Site Expansion Option, an alternative design could be considered that avoids interference with both the wetland and the floodplain. The East Alternative Off-Site Expansion Option has a footprint of 34-acres and an estimated

maximum capacity of 1.18 million cubic yards of waste. With a smaller footprint, this option will need to use the existing Landfill infrastructure to optimize the site use. A preliminary landfill infrastructure layout and a final cover plan are shown in Figure 6-3, and the estimated lifespan is presented in Table 6-3. The proposed final crest elevation is 1690 feet above mean sea level with a five-percent slope crown to allow for adequate runoff and drainage. The volume and expected lifespan of the East Alternative Off-Site Expansion Option are significantly less than the other expansion options. Lastly, as explained for the East Off-Site Expansion Option, piggybacking from the existing Landfill could be considered for this option but is not recommended since it will interfere with the existing leachate management infrastructure on the east side of the Landfill.

Figure 6-3: Proposed NNSWC East Alternative Off-Site Expansion Option Infrastructure Layout and Grading Plan



6.2.4 South Off-Site Expansion Option

The South Off-Site Expansion Option has a footprint of approximately 118-acres and an estimated maximum capacity of 17.52 million cubic yards of waste. The estimated lifespan of this option is shown in Table 6-3. This proposed expansion option is adjacent to the existing Landfill and can utilize the

current Landfill entrance and weigh station to maximize the Landfill capacity. Additionally, the South Off-Site Expansion Option's proposed design will tie into and piggyback from the existing Landfill, maximizing the lifespan and airspace capacity of the option. The topography features low elevations in the northeast and southwest portions of the property. This makes the northeast corner of the property ideal for siting of the sedimentation basin and leachate pond as they will also be adjacent to the existing ponds. A drawback to this option includes a small section of a riverine habitat located in the northeast portion of the property. Proper placement of the sedimentation basin and leachate pond can mitigate the riverine habitat. Additionally, dwellings on and around the property can pose a challenge. A dwelling directly on the property can cause the land to be more expensive at the time of purchase, and a dwelling directly to the west of the property might impact permitting of the site. This can be mitigated by adding additional trees on the west side of the new landfill property to block the landfill view from the adjacent dwelling. Figure 6-4 shows a preliminary landfill infrastructure layout and a final grading plan. The final cover plan is graded with 3.3(H):1(V) slopes to match the 2020 Permit Modification slopes. The proposed final crest elevation is 1840 feet above mean sea level with a five-percent slope crown to allow for runoff and draining.

Figure 6-4: Proposed NNSWC South Off-Site Expansion Option Infrastructure Layout and Grading Plan

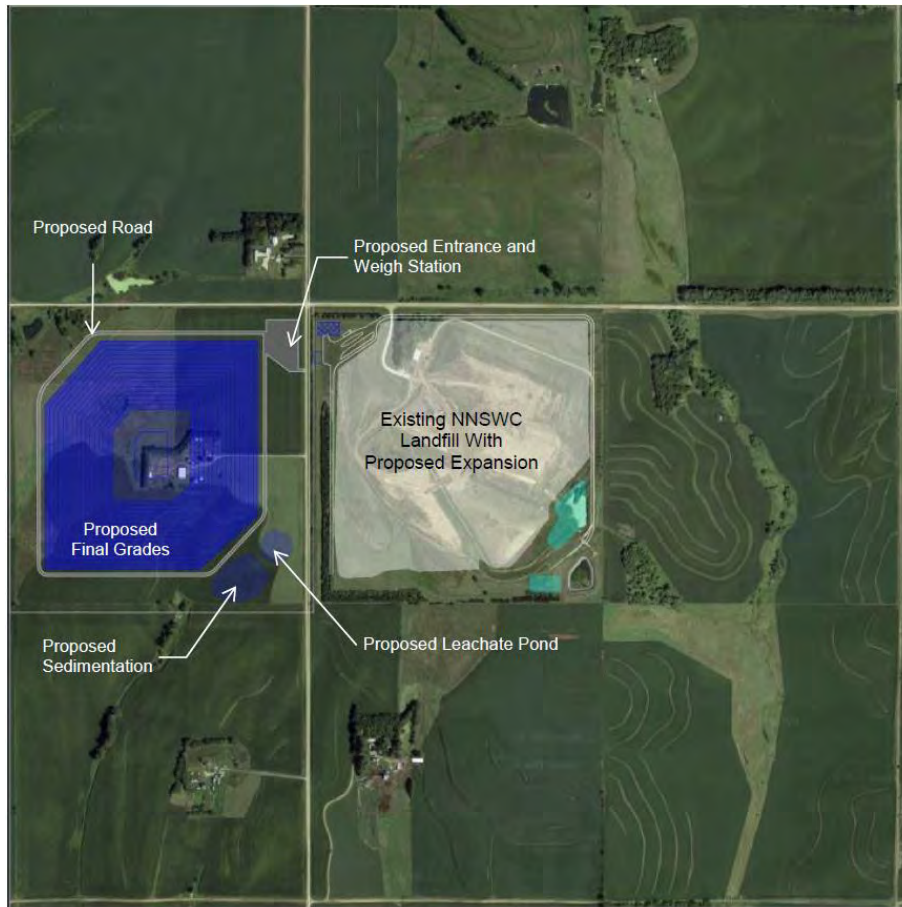


6.2.5 West Off-Site Expansion Option

The West Off-Site Expansion Option has a footprint of approximately 81-acres and an estimated maximum capacity of 11.99 million cubic yards of waste. The estimated lifespan of the expansion is in Table 6-3. A preliminary landfill infrastructure layout and a final cover plan are presented in Figure 6-5, with the final cover graded with a 4(H):1(V) slope. The proposed final crest elevation is at 1840 feet above mean sea level with a five-percent slope crown to allow for adequate runoff and drainage. The new landfill site is located across the road from the existing landfill, requiring new infrastructure to be developed. From the figure, the new infrastructure is proposed to be located on the northeast corner of the property with a sedimentation basin and leachate pond placed at a low elevation area in the southeast corner of the property. A small portion of a pond and riverine habitat is located along the northern border of the property. The placement of the landfill should be adequately distanced away from the existing pond and riverine habitat. Similar to the South Off-Site Expansion Option, a dwelling is situated on the property potentially causing the land to be more expensive at the time of purchase, and nearby dwellings

are directly north and south of this option posing a challenge at the time of permitting the landfill. This can be mitigated by planting trees along the property boundary to block the view of the Landfill.

Figure 6-5: Proposed NNSWC West Off-Site Expansion Option Infrastructure Layout and Grading Plan



6.3 Landfill Capacity Calculations

Five options for potential off-site expansion outside the current Landfill footprint were reviewed. A summary of each option's available airspace capacity and expansion life is presented in Table 6-3. The Landfill airspace capacity was calculated using the proposed off-site expansion options estimated volumes from the approximate base and final grades generated within AutoCAD Civil3D. The expansion life was then calculated based on current disposal rates and Landfill densities. Table 6-3 shows that the North, East, and West Off-Site Expansion Options have comparable available airspace while the South Off-Site Expansion Option provides the Coalition with the most airspace capacity. The East Alternative Off-Site Expansion Option has the least amount of airspace available.

Table 6-3: Proposed NNSWC Off-Site Expansion Lifespan Estimates

Options	Estimated Available Airspace (CY)	Additional Expansion Life (yrs) ^a
North	8,549,000	26.0
East	8,696,000	26.4
East Alternative	1,180,000	4.8
South	17,521,000	46.9
West	11,994,000	34.6

^a Off-Site Landfill Expansion life estimates assume a present annualized tonnage of 112,000 tons with a predicted future generation growth of one-percent. At the time the Baseline Landfill expansion capacity is depleted in 2078, the annualized tonnage is estimated to be 196,000 tons; this value is the starting point for expansion life calculations.

6.4 Recommended Expansion Option

A ranked summary of all the proposed off-site expansion options in order of most to least preferred is provided in Table 6-4 below. Development costs are not associated with these rankings. The only cost considered for this analysis was the average land acquisition cost detailed in Section 4.4.

Table 6-4: Summary of Advantages and Disadvantages for the Proposed Off-Site Expansion Options for the NNSWC Landfill

Rank	Option	Advantages	Disadvantages
1	South	<ul style="list-style-type: none"> • Highest estimated lifespan • Adjacent to existing Landfill • Ability to piggyback on existing Landfill • Ability to utilize existing Landfill infrastructure 	<ul style="list-style-type: none"> • Nearby dwelling directly to the west • Potentially more expensive land because of a dwelling on the property • Small riverine habitat on the northeast corner of the property
2	West	<ul style="list-style-type: none"> • Second highest estimated lifespan 	<ul style="list-style-type: none"> • Across the road from existing Landfill requiring new Landfill infrastructure • Nearby dwelling directly north and south • Potentially more expensive land because of a dwelling on the property • Pond riverine habitat in the northwest corner of the site

Rank	Option	Advantages	Disadvantages
3	North	<ul style="list-style-type: none"> • Ideal topography for gravity leachate drainage • Similar capacity to the West and East Options 	<ul style="list-style-type: none"> • Across the road from existing Landfill requiring new Landfill infrastructure • Riverine habitat in the northeast corner of the site
4	East	<ul style="list-style-type: none"> • Adjacent to existing Landfill • Ability to utilizes existing Landfill infrastructure 	<ul style="list-style-type: none"> • Numerous environmental constraints • 100-yr floodplain and wetland running directly through the middle of the property • Extensive permitting and mitigation efforts will be required
5	East Alternative	<ul style="list-style-type: none"> • Adjacent to existing Landfill • Ability to utilize existing Landfill infrastructure • Avoids wetland and floodplain issues on the property • Good source of borrow soil 	<ul style="list-style-type: none"> • Considerably less airspace • Better suited as a soil borrow source

Based on the preliminary estimates, the preferred expansion option would be the South Off-Site Expansion Option. This option is optimal since it can maximize the airspace capacity by being incorporated into the existing landfill and by utilizing the existing landfill infrastructure that has already been developed. Additionally, this site had the greatest estimated volume and lifespan and demonstrated very few siting restrictions.

7.0 BYLAWS AND AGREEMENT REVIEW

At the time of this final report submittal, the NNSWC Bylaws and Agreement continue to be evaluated by the NNSWC PTF and Baird Holm, the Coalition's legal council. The final updated agreement and bylaws documents will be presented to the NNSWC Board at a later date.

APPENDIX A – WASTE SHREDDING EVALUATION CALCULATIONS



Shredder Costs: (from Attachment 1)

Estimated Owning Costs	\$	160.00	per Hour
Estimated O&M Costs	\$	110.00	per Hour
Annual Usage (@4 hrs/day, 160 days/yr)		640	Hours
Annual Cost	\$	(172,800)	per Year

Operator Costs:

1 FTE (\$55,000 base salary + 50% base salary for benefits)	\$	(82,500)	per Year
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Total Waste Shredding Cost (Shredder + Operator Costs)

\$	(255,300)	per Year
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Remaining Landfill Life:

Current AUF	1,296 lb/cy	Date Capacity is Reached	May 1, 2078 Attachment 3
Average Effective Total AUF w/ Shredder (from Attachment 2)	1,405 lb/cy		January 1, 2082 Attachment 4
Additional Life w/ Increased AUF			3.67 Years



**Estimated Owning and Operating Costs
Terminator 6000**

GENERAL STATEMENT:

The following owning and operating cost analysis is based on reported contractor information and test runs conducted by Komptech. There will be cost variations depending upon the conditions and type of material being processed. This analysis is based on 10 years or 6,400 hours (640 hours per year).

Please note: There will be considerable value of the unit after the 10 year period. However, to ensure maximum figures for budget purposes, we have fully depreciated the equipment.

OWNING COSTS

Purchase Price:

Based on a \$773,000 purchase price, amortized over 6,400 hours: **\$120.78/hr.**

Interest:

Figuring 4.25% per year on a declining balance of \$773,000, total interest costs will be \$177,210.56, divided by 6,400 hours: **\$27.69/hr.**

Insurance:

Based on a replacement value of \$773,000 and an average rate of 1.00% per year, yearly insurance costs will be \$7,730.00, divided by 640 hours: **\$12.08/hr.**

TOTAL OWNING COSTS: **\$160.55/hr.**

OPERATING COSTS

Maintenance:

Labor and materials for daily maintenance involving lubrication, inspection, and wear parts as listed on page 3, "Detailed Maintenance Costs": **\$23.48/hr.**

**Estimated Owning and Operating Costs
Terminator 6000 (Continued)**

Fuel:

Fuel Consumption for the Cat C-18 (580-HP) engine is estimated at 17 gallons per hour, multiplied by the estimated cost of \$3.00 per gallon:

\$51.00/hr.

TOTAL OPERATING COSTS:

\$74.48/hr.

SUMMARY OF OWNING AND OPERATING COSTS

Owning Costs

- 1. Depreciation: \$120.78/hr.
- 2. Interest: \$27.69/hr.
- 3. Insurance: \$12.08/hr.

TOTAL OWNING COSTS:

\$160.55/hr.

Operating Costs

- 1. Maintenance: \$23.48/hr.
- 2. Fuel: \$51.00/hr.

TOTAL OPERATING COSTS:

\$74.48/hr.

TOTAL OWNING AND OPERATING COSTS PER HOUR: \$235.03/hr.

Prepared For:

Name

Company

Prepared By:

Name

Company

DISCLAIMER: The previous owning and operating costs are estimates only based on reported contractor information and factory test runs. These costs do not imply any absolutes or guarantees by Komptech.

***Estimated Detailed Maintenance Costs
Terminator 6000***

Teeth and Bolts:

32 Teeth @ \$90.00 each, every 250 hours:	\$11.52/hr.
32 Teeth Bolts @ \$13.00 each, every 250 hours:	\$1.66/hr.

Counterteeth:

17 Counterteeth @ \$420.00 each, every 2,500 hours:	\$2.86/hr.
---	------------

Belly Belt:

Belly Belt @ \$4,500.00 every 3,500 hours:	\$1.29/hr.
--	------------

Discharge Belt:

Discharge Belt @ \$7,000.00 every 5,000 hours:	\$1.40/hr.
--	------------

Labor:

Labor involved in changing wear parts and general maintenance @ \$30.00/hour, every 40 hours:	\$0.75/hr.
---	------------

Engine Maintenance:

Approximate maintenance costs for the Cat C-18 (580-HP)	\$2.00/hr.
---	------------

Miscellaneous Parts:

Includes an estimated cost for all non-standard maintenance such as seal kits, bearings, etc.:	\$2.00/hr.
--	------------

TOTAL MAINTENANCE COSTS:

\$23.48/hr.



SHREDDING

LOW-SPEED, HIGH-TORQUE WASTE SHREDDERS

Waste processors and recycling facilities today demand shredding equipment that will handle just about any material. Komptech industrial shredders are built with aggressive feed capabilities and heavy duty reversing shafts to efficiently shred the toughest materials and deliver product at the right size.



Scan this code
to watch our
shredders in action!



TERMINATOR

LOW-SPEED SINGLE-SHAFT SHREDDER

The Terminator is a low-speed, high-torque, single-shaft shredder designed to process nearly all types of difficult waste, including heavy contaminated C&D debris, bulky waste, white goods, mattresses, tires and municipal solid waste (MSW).

- » Remote-controlled hopper with 11-foot feed opening.
- » The hydraulic drum drive can reverse at any time for self-cleaning.



Continuous cutting gap adjustment enables various output particle sizes.



Full access to all maintenance points and shredding chamber.

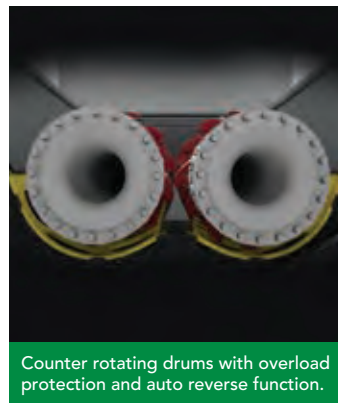
	3400 S	6000 S
Power		
Diesel Engine / Horsepower:	CAT® C9 Tier 4F / 330 HP	CAT® C18 Tier 4F / 600 HP
Proportion (dependent on equipment)		
Transport Dimensions (LxWxH):	25'8" x 9'4" x 11'10" (7.8 x 2.9 x 3.6 m)	
Maximum Weight:	57,000 lbs	60,000 lbs
Performance (dependent on material)		
Maximum Throughput:	up to 55 tons/hr	up to 110 tons/hr

CRAMBO

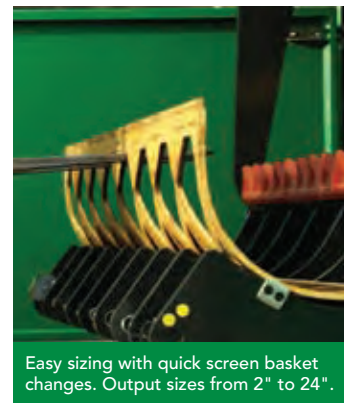
LOW-SPEED DUAL-SHAFT SHREDDER

The Crambo is a dual-shaft shredder engineered to deliver high-throughput shredding of the toughest wood and organic waste materials while mixing and blending to provide a homogeneous output.

- » Designed to withstand heavy contamination.
- » Low maintenance, fuel consumption and operating costs.



Counter rotating drums with overload protection and auto reverse function.



Easy sizing with quick screen basket changes. Output sizes from 2" to 24".

	3400	6000
Power		
Diesel Engine / Horsepower:	CAT® C9 Tier 4F / 330 HP	CAT® C18 Tier 4F / 600 HP
Proportion (dependent on equipment)		
Transport Dimensions (LxWxH):	25' x 9'4" x 11'2" (7.5 x 2.9 x 3.4 m)	
Maximum Weight:	54,000 lbs	58,000 lbs
Performance (dependent on material)		
Maximum Throughput:	up to 50 tons/hr	up to 110 tons/hr

**ATTACHMENT 2
Northeast Nebraska Solid Waste Coalition
Waste Shredding Evaluation**

5/28/2021
by:PRF
ck:LAR

MSW/Industrial Tonnage (**Assumed**) = 112,000 tons
 Predicted Future Generation Growth = 1.00%
 Current Airspace Utilization Factor (AUF) = 1,296 lb/cy
 Assumed AUF Increase w/ Waste Shredding = 300 lb/cy
 Estimated Waste Shredding AUF = 1,600 lb/cy
 Shredder Capacity = 52,800 tons/year
 assuming 75% of maximum throughput capacity of
 110 tons/hr (from Attachment 1) operating @ 4 hr
 per day, 160 days/year

Average Effective Total AUF = 1,405 lb/cy

Year	Total Tonnage	Effective AUF (lb/cy)
2021	112,000	1,439
2022	113,120	1,438
2023	114,251	1,436
2024	115,394	1,435
2025	116,548	1,434
2026	117,713	1,432
2027	118,890	1,431
2028	120,079	1,430
2029	121,280	1,428
2030	122,493	1,427
2031	123,718	1,426
2032	124,955	1,424
2033	126,204	1,423
2034	127,466	1,422
2035	128,741	1,421
2036	130,029	1,419
2037	131,329	1,418
2038	132,642	1,417
2039	133,969	1,416
2040	135,308	1,415
2041	136,661	1,413
2042	138,028	1,412
2043	139,408	1,411
2044	140,802	1,410
2045	142,210	1,409
2046	143,632	1,408
2047	145,069	1,407
2048	146,519	1,406
2049	147,985	1,404
2050	149,464	1,403
2051	150,959	1,402
2052	152,469	1,401
2053	153,993	1,400
2054	155,533	1,399
2055	157,089	1,398
2056	158,660	1,397
2057	160,246	1,396
2058	161,849	1,395
2059	163,467	1,394
2060	165,102	1,393
2061	166,753	1,392

2062	168,420	1,391
2063	170,104	1,390
2064	171,806	1,389
2065	173,524	1,389
2066	175,259	1,388
2067	177,011	1,387
2068	178,782	1,386
2069	180,569	1,385
2070	182,375	1,384
2071	184,199	1,383
2072	186,041	1,382
2073	187,901	1,381
2074	189,780	1,381
2075	191,678	1,380
2076	193,595	1,379
2077	195,531	1,378
2078	197,486	1,377

ATTACHMENT 3
Northeast Nebraska Solid Waste Coalition
Waste Shredding Evaluation
Remaining Airspace Projections w/ Expansion - Current AUF = 1,296 lb/cy

5/28/2021
 by:PRF
 ck:LAR

MSW/Industrial Tonnage (Assumed) =	112,000	tons	Remaining Area Capacity
Predicted Future Generation Growth =	1.00%		Area 1/2/3/4/5 2,210,000
Airspace Utilization Factor (AUF) =	1,296	lb/cy	Area 6 PH 1 2,060,000
Ultimate Capacity without final cover and protective soil layer (waste + soil) =	17,530,000	cy	Area 6 PH 2 4,180,000
			Area 7 3,900,000
			Area 8 970,000
			Total 13,320,000

Year	Total Tonnage	Waste Annual MSW/Industrial Airspace Consumed (cy)	Waste Remaining Expansion Ultimate Capacity (cy)	Year End Remaining Cell Capacity	Active Area
2021	112,000	172,840	13,147,160	2,037,160	Area 1/2/3/4/5
2022	113,120	174,568	12,972,593	1,862,593	
2023	114,251	176,314	12,796,279	1,686,279	
2024	115,394	178,077	12,618,202	3,568,202	Area 6 PH 1
2025	116,548	179,857	12,438,345	3,388,345	
2026	117,713	181,656	12,256,689	3,206,689	
2027	118,890	183,473	12,073,216	3,023,216	
2028	120,079	185,307	11,887,909	2,837,909	
2029	121,280	187,160	11,700,748	2,650,748	
2030	122,493	189,032	11,511,716	2,461,716	
2031	123,718	190,922	11,320,794	2,270,794	
2032	124,955	192,832	11,127,962	2,077,962	
2033	126,204	194,760	10,933,203	1,883,203	
2034	127,466	196,707	10,736,495	1,686,495	
2035	128,741	198,675	10,537,821	1,487,821	
2036	130,029	200,661	10,337,159	1,287,159	
2037	131,329	202,668	10,134,491	1,084,491	
2038	132,642	204,695	9,929,797	879,797	
2039	133,969	206,742	9,723,055	673,055	
2040	135,308	208,809	9,514,246	464,246	
2041	136,661	210,897	9,303,349	253,349	
2042	138,028	213,006	9,090,343	40,343	
2043	139,408	215,136	8,875,207	4,005,207	Area 6 PH 2
2044	140,802	217,287	8,657,920	3,787,920	
2045	142,210	219,460	8,438,459	3,568,459	
2046	143,632	221,655	8,216,804	3,346,804	
2047	145,069	223,871	7,992,933	3,122,933	
2048	146,519	226,110	7,766,823	2,896,823	
2049	147,985	228,371	7,538,452	2,668,452	
2050	149,464	230,655	7,307,797	2,437,797	
2051	150,959	232,962	7,074,835	2,204,835	
2052	152,469	235,291	6,839,544	1,969,544	
2053	153,993	237,644	6,601,900	1,731,900	
2054	155,533	240,021	6,361,879	1,491,879	
2055	157,089	242,421	6,119,459	1,249,459	
2056	158,660	244,845	5,874,614	1,004,614	
2057	160,246	247,293	5,627,320	757,320	
2058	161,849	249,766	5,377,554	507,554	
2059	163,467	252,264	5,125,290	255,290	
2060	165,102	254,787	4,870,503	503	
2061	166,753	257,334	4,613,169	3,643,169	Area 7
2062	168,420	259,908	4,353,261	3,383,261	
2063	170,104	262,507	4,090,754	3,120,754	
2064	171,806	265,132	3,825,622	2,855,622	

2065	173,524	267,783	3,557,839	2,587,839
2066	175,259	270,461	3,287,378	2,317,378
2067	177,011	273,166	3,014,212	2,044,212
2068	178,782	275,897	2,738,315	1,768,315
2069	180,569	278,656	2,459,658	1,489,658
2070	182,375	281,443	2,178,215	1,208,215
2071	184,199	284,257	1,893,958	923,958
2072	186,041	287,100	1,606,858	636,858
2073	187,901	289,971	1,316,887	346,887
2074	189,780	292,871	1,024,017	54,017
2075	191,678	295,799	728,217	728,217 Area 8
2076	193,595	298,757	429,460	429,460
2077	195,531	301,745	127,715	127,715
2078	197,486	304,762	-177,047	-177,047 Life Depleted May 2078
2079	199,461	307,810	-484,857	-484,857
2080	201,455	310,888	-795,745	-795,745

ATTACHMENT 4

**Northeast Nebraska Solid Waste Coalition
Waste Shredding Evaluation**

Remaining Airspace Projections w/ Expansion - Average Effective Total AUF = 1,405 lb/cy

5/28/2021

by:PRF

ck:LAR

MSW/Industrial Tonnage (Assumed) = 112,000 tons
 Predicted Future Generation Growth = 1.00%
 Average Effective Total AUF = 1,405 lb/cy
 Ultimate Capacity without final cover and protective soil layer (waste + soil) = 17,530,000 cy

Remaining Area Capacity	
Area 1/2/3/4/5	2,210,000
Area 6 PH 1	2,060,000
Area 6 PH 2	4,180,000
Area 7	3,900,000
Area 8	970,000
Total	13,320,000

Year	Total Tonnage	Waste Annual MSW/Industrial Airspace Consumed (cy)	Waste Remaining Expansion Ultimate Capacity (cy)	Year End Remaining Cell Capacity
2021	112,000	159,382	13,160,618	13,160,618
2022	113,120	160,976	12,999,643	12,999,643
2023	114,251	162,585	12,837,057	12,837,057
2024	115,394	164,211	12,672,846	12,672,846
2025	116,548	165,853	12,506,993	12,506,993
2026	117,713	167,512	12,339,481	12,339,481
2027	118,890	169,187	12,170,294	12,170,294
2028	120,079	170,879	11,999,415	11,999,415
2029	121,280	172,588	11,826,828	11,826,828
2030	122,493	174,313	11,652,514	11,652,514
2031	123,718	176,057	11,476,458	11,476,458
2032	124,955	177,817	11,298,640	11,298,640
2033	126,204	179,595	11,119,045	11,119,045
2034	127,466	181,391	10,937,654	10,937,654
2035	128,741	183,205	10,754,449	10,754,449
2036	130,029	185,037	10,569,411	10,569,411
2037	131,329	186,888	10,382,524	10,382,524
2038	132,642	188,757	10,193,767	10,193,767
2039	133,969	190,644	10,003,123	10,003,123
2040	135,308	192,551	9,810,573	9,810,573
2041	136,661	194,476	9,616,097	9,616,097
2042	138,028	196,421	9,419,676	9,419,676
2043	139,408	198,385	9,221,291	9,221,291
2044	140,802	200,369	9,020,922	9,020,922
2045	142,210	202,373	8,818,549	8,818,549
2046	143,632	204,396	8,614,153	8,614,153
2047	145,069	206,440	8,407,713	8,407,713
2048	146,519	208,505	8,199,208	8,199,208
2049	147,985	210,590	7,988,619	7,988,619
2050	149,464	212,696	7,775,923	7,775,923
2051	150,959	214,823	7,561,100	7,561,100
2052	152,469	216,971	7,344,130	7,344,130
2053	153,993	219,140	7,124,989	7,124,989
2054	155,533	221,332	6,903,657	6,903,657
2055	157,089	223,545	6,680,112	6,680,112
2056	158,660	225,781	6,454,332	6,454,332
2057	160,246	228,038	6,226,293	6,226,293
2058	161,849	230,319	5,995,974	5,995,974
2059	163,467	232,622	5,763,352	5,763,352
2060	165,102	234,948	5,528,404	5,528,404
2061	166,753	237,298	5,291,106	5,291,106
2062	168,420	239,671	5,051,436	5,051,436
2063	170,104	242,067	4,809,368	4,809,368
2064	171,806	244,488	4,564,880	4,564,880
2065	173,524	246,933	4,317,947	4,317,947

2066	175,259	249,402	4,068,545	4,068,545	
2067	177,011	251,896	3,816,649	3,816,649	
2068	178,782	254,415	3,562,233	3,562,233	
2069	180,569	256,959	3,305,274	3,305,274	
2070	182,375	259,529	3,045,745	3,045,745	
2071	184,199	262,124	2,783,621	2,783,621	
2072	186,041	264,746	2,518,875	2,518,875	
2073	187,901	267,393	2,251,482	2,251,482	
2074	189,780	270,067	1,981,415	1,981,415	
2075	191,678	272,768	1,708,648	1,708,648	
2076	193,595	275,495	1,433,152	1,433,152	
2077	195,531	278,250	1,154,902	1,154,902	
2078	197,486	281,033	873,869	873,869	Life Depleted May 2078 w/ AUF = 1,296 lb/cy
2079	199,461	283,843	590,026	590,026	
2080	201,455	286,681	303,345	303,345	
2081	203,470	289,548	13,796	13,796	
2082	205,505	292,444	-278,647	-278,647	Life Depleted January 2082 w/ AUF = 1,405 lb/cy
2083	207,560	295,368	-574,016	-574,016	
2084	209,635	298,322	-872,337	-872,337	
2085	211,732	301,305	-1,173,643	-1,173,643	

APPENDIX B – NNSWC WASTE SHREDDING FINANCIAL EVALUATION

NNSWC Financial Model - Waste Shredding Evaluation

Financial Model Inputs

Hours of Operation: M-F 7AM-4PM; Sat 7AM-12PM

Interest:	3.50%
Inflation:	2.50%
Current Year:	2021
Starting Year:	2021

WCI Operation Costs

WCI Fixed Fee:	\$ 480,000	annually
Annual Increase in Fixed Fee:	3%	
WCI Tonnage Fee:	\$4	per ton
Annual Increase in Tonnage Fee:	0%	
WCI Special Waste Fee:	\$10.50	per ton
Annual Increase in Special Waste Fee:	0%	
2020 Annual Tonnage (assumed):	112,000	tons
2020 Special Waste Tonnage (assumed):	50	tons
Annual Tonnage Increase:	1%	per year

Coalition Operation Costs

Personnel Costs	\$ 94,734	
Operating & Maintenance Costs	\$ 30,577	
Other Admin. and Overhead	\$ 22,455	
Other Misc.	\$ 10,000	
FA Fund Transfers	\$ 350,000	Covers Closure & Post-Closure Care Costs
Professional Services	\$ 250,000	Annual Average
Total Coalition Costs:	\$ (758,000)	2021\$

NNSWC Revenue Analysis - Baseline

Interest:	3.50%	[input from "operation inputs"]
Inflation:	2.50%	[input from "operation inputs"]
Current Year:	2021	[input from "operation inputs"]

WCI Operation Costs

WCI Fixed Fee:	\$ 480,000	annually	[input from "operation inputs"]
Annual Increase in Fixed Fee:	3.0%		[input from "operation inputs"]
WCI Tonnage Fee:	\$4	per ton	[input from "operation inputs"]
Annual Increase in Tonnage Fee:	0%		[input from "operation inputs"]
WCI Special Waste Fee:	\$10.50	per ton	[input from "operation inputs"]
Annual Increase in Special Waste Fee:	0%		[input from "operation inputs"]
2020 Annual Tonnage (assumed):	112,000	tons	[input from "operation inputs"]
2020 Special Waste Tonnage (assumed):	50	tons	[input from "operation inputs"]
Annual Tonnage Increase:	1%	per year	[input from "operation inputs"]
Starting Year:	2021		[input from "operation inputs"]

Coalition Operating Costs

Personnel Costs	\$ 94,734	[input from "operation inputs"]
Operating & Maintenance Costs	\$ 30,577	[input from "operation inputs"]
Other Admin. and Overhead	\$ 22,455	[input from "operation inputs"]
Other Misc.	\$ 10,000	[input from "operation inputs"]
FA Fund Transfers	\$ 350,000	[input from "operation inputs"]
Professional Services	\$ 250,000	[input from "operation inputs"]
Total Coalition Costs:	\$ (758,000)	

Capital Costs

	PV Cost	Execution Year	2021-2031													
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
Cell 6 Ph 1 Engineering	\$ 200,000	2022	\$ 250,000	\$ 205,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 Construction	\$ 2,500,000	2023	\$ -	\$ -	\$ 2,626,570	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 CA	\$ 250,000	2023	\$ -	\$ -	\$ 262,660	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scales	\$ 300,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scale House	\$ 400,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Equipment Building	\$ 1,200,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Drop-Off Area	\$ 200,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Asphalt Pavement	\$ 600,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Land Acquisition	\$ 1,000,000	2037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Engineering	\$ 200,000	2041	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Construction	\$ 3,700,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 CA	\$ 370,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 1-6 Ph 1 Closure*	\$ 3,100,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Sedimentation Basin	\$ 250,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Leachate Pond	\$ 1,000,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Landfill Gas Flare	\$ 1,000,000	2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Engineering	\$ 200,000	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Construction	\$ 2,700,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 CA	\$ 270,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Closure*	\$ 2,700,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Engineering	\$ 200,000	2073	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Construction	\$ 1,500,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 CA	\$ 200,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Closure*	\$ 4,000,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Ph 2 Closure*	\$ 2,300,000	2078	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Insert Row Above Here</i>			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total CIP			\$ 250,000	\$ 205,000	\$ 2,889,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Revenues

	2020 Rates	% Increase/Decrease	2021-2031										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Annual Tonnage	112,000	1%	112,000	113,120	114,251	115,394	116,548	117,713	118,890	120,079	121,280	122,493	123,718
Tipping Fee	\$ 24.00	0%	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00
Total Revenues			\$ 2,688,000	\$ 2,714,880	\$ 2,742,029	\$ 2,769,449	\$ 2,797,144	\$ 2,825,115	\$ 2,853,366	\$ 2,881,900	\$ 2,910,719	\$ 2,939,826	\$ 2,969,224

*Closure cost to be funded via FA funds

NNSWC Revenue Analysis - Baseline

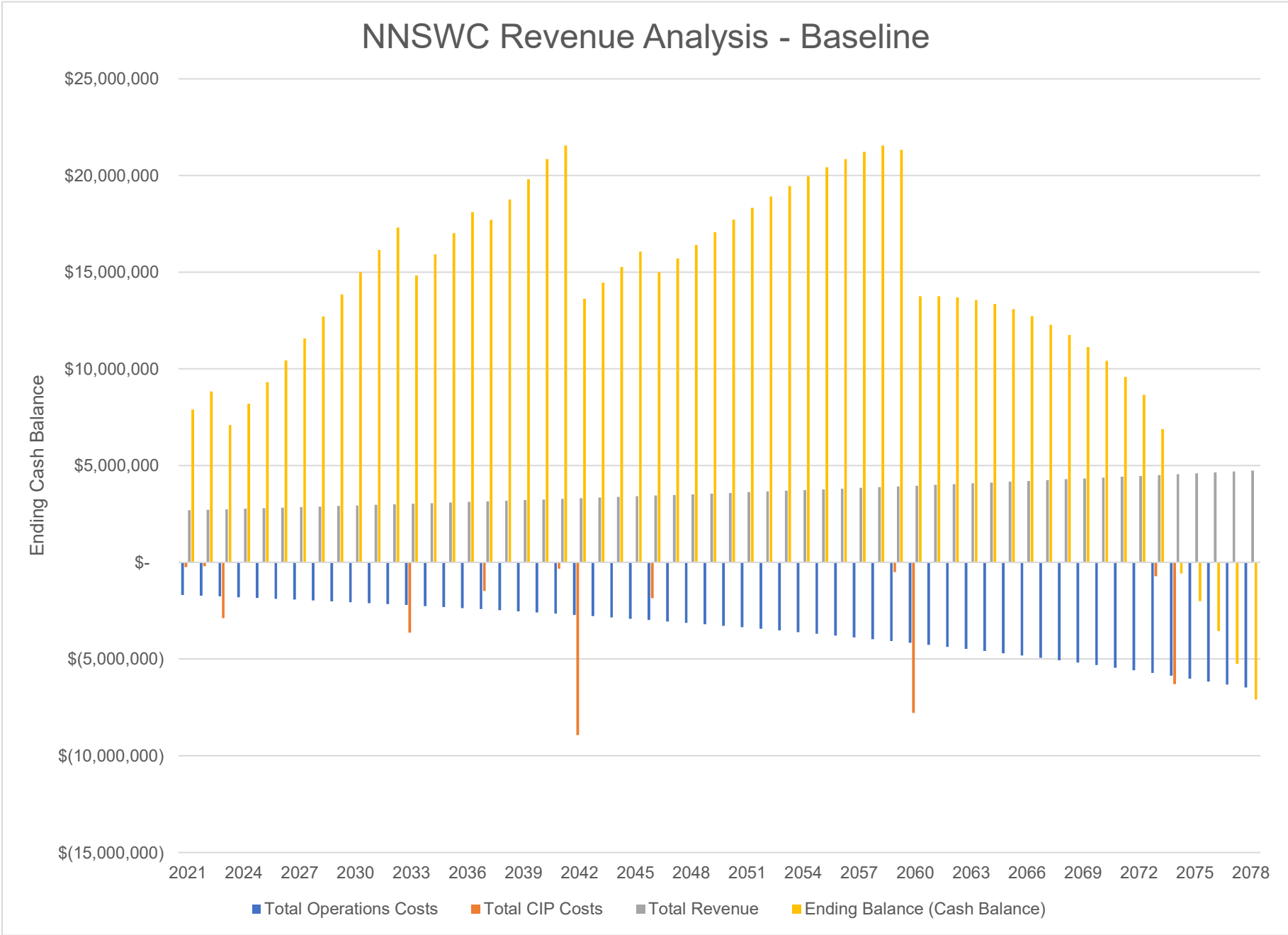
Beginning Balance:	\$ 7,000,000
Interest:	3.50%
Inflation:	2.50%
Investment APR:	2.00%
Starting Year:	2021

ProForma														
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Annual Tonnages	112,000	113,120	114,251	115,394	116,548	117,713	118,890	120,079	121,280	122,493	123,718	124,955	126,204	127,466
Fixed Fee \$	480,000	494,400	509,232	524,509	540,244	556,452	573,145	590,339	608,050	626,291	645,080	664,432	684,365	704,896
Tonnage Fee \$	448,000	452,480	457,005	461,575	466,191	470,853	475,561	480,317	485,120	489,971	494,871	499,819	504,818	509,866
Special Waste Fee \$	525	530	536	541	546	552	557	563	568	574	580	586	592	597
Total WCI Operations Costs \$	(928,525)	(947,410)	(966,772)	(986,625)	(1,006,981)	(1,027,856)	(1,049,263)	(1,071,219)	(1,093,738)	(1,116,836)	(1,140,531)	(1,164,837)	(1,189,774)	(1,215,359)
Total Coalition Operating Costs \$	(758,000)	(776,950)	(796,374)	(816,283)	(836,690)	(857,607)	(879,048)	(901,024)	(923,549)	(946,638)	(970,304)	(994,562)	(1,019,426)	(1,044,911)
Total Operations Costs \$	(1,686,525)	(1,724,360)	(1,763,146)	(1,802,908)	(1,843,671)	(1,885,463)	(1,928,311)	(1,972,243)	(2,017,287)	(2,063,474)	(2,110,835)	(2,159,399)	(2,209,200)	(2,260,271)
Total CIP Costs \$	(250,000)	(205,000)	(2,889,230)	-	-	-	-	-	-	-	-	-	(3,631,220)	-
Total Revenue \$	2,688,000	2,714,880	2,742,029	2,769,449	2,797,144	2,825,115	2,853,366	2,881,900	2,910,719	2,939,826	2,969,224	2,998,917	3,028,906	3,059,195
Beginning Balance \$	7,000,000	7,891,475	8,832,024	7,095,217	8,200,192	9,314,899	10,437,624	11,567,770	12,704,681	13,847,661	14,995,975	16,148,845	17,305,449	14,833,702
Annual Change \$	751,475	785,520	(1,910,347)	966,541	953,472	939,652	925,055	909,657	893,431	876,352	858,390	839,517	(2,811,514)	798,924
Change From Investments \$	140,000	155,030	173,540	138,434	161,235	183,073	205,091	227,254	249,549	271,962	294,480	317,087	339,767	289,879
Ending Balance (Cash Balance) \$	7,891,475	8,832,024	7,095,217	8,200,192	9,314,899	10,437,624	11,567,770	12,704,681	13,847,661	14,995,975	16,148,845	17,305,449	14,833,702	15,922,505

	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
	128,741	130,029	131,329	132,642	133,969	135,308	136,661	138,028	139,408	140,802	142,210	143,632	145,069	146,519	147,985	149,464
\$	726,043	\$ 747,824	\$ 770,259	\$ 793,367	\$ 817,168	\$ 841,683	\$ 866,933	\$ 892,941	\$ 919,730	\$ 947,322	\$ 975,741	\$ 1,005,013	\$ 1,035,164	\$ 1,066,219	\$ 1,098,205	\$ 1,131,151
\$	514,964	\$ 520,114	\$ 525,315	\$ 530,568	\$ 535,874	\$ 541,233	\$ 546,645	\$ 552,112	\$ 557,633	\$ 563,209	\$ 568,841	\$ 574,530	\$ 580,275	\$ 586,078	\$ 591,938	\$ 597,858
\$	603	\$ 610	\$ 616	\$ 622	\$ 628	\$ 634	\$ 641	\$ 647	\$ 653	\$ 660	\$ 667	\$ 673	\$ 680	\$ 687	\$ 694	\$ 701
\$	(1,241,611)	\$ (1,268,548)	\$ (1,296,190)	\$ (1,324,557)	\$ (1,353,670)	\$ (1,383,550)	\$ (1,414,219)	\$ (1,445,700)	\$ (1,478,016)	\$ (1,511,191)	\$ (1,545,249)	\$ (1,580,216)	\$ (1,616,119)	\$ (1,652,983)	\$ (1,690,837)	\$ (1,729,710)
\$	(1,071,034)	\$ (1,097,810)	\$ (1,125,255)	\$ (1,153,387)	\$ (1,182,221)	\$ (1,211,777)	\$ (1,242,071)	\$ (1,273,123)	\$ (1,304,951)	\$ (1,337,575)	\$ (1,371,014)	\$ (1,405,290)	\$ (1,440,422)	\$ (1,476,432)	\$ (1,513,343)	\$ (1,551,177)
\$	(2,312,645)	\$ (2,366,358)	\$ (2,421,445)	\$ (2,477,944)	\$ (2,535,891)	\$ (2,595,327)	\$ (2,656,290)	\$ (2,718,823)	\$ (2,782,967)	\$ (2,848,765)	\$ (2,916,263)	\$ (2,985,506)	\$ (3,056,541)	\$ (3,129,416)	\$ (3,204,181)	\$ (3,280,887)
\$	-	\$ -	\$ (1,484,510)	\$ -	\$ -	\$ -	\$ (327,730)	\$ (8,935,400)	\$ -	\$ -	\$ -	\$ (1,853,950)	\$ -	\$ -	\$ -	\$ -
\$	3,089,787	\$ 3,120,685	\$ 3,151,891	\$ 3,183,410	\$ 3,215,244	\$ 3,247,397	\$ 3,279,871	\$ 3,312,670	\$ 3,345,796	\$ 3,379,254	\$ 3,413,047	\$ 3,447,177	\$ 3,481,649	\$ 3,516,465	\$ 3,551,630	\$ 3,587,146
\$	15,922,505	\$ 17,012,299	\$ 18,100,618	\$ 17,701,887	\$ 18,754,285	\$ 19,801,785	\$ 20,842,528	\$ 21,547,455	\$ 13,628,669	\$ 14,455,617	\$ 15,269,936	\$ 16,066,441	\$ 14,989,497	\$ 15,708,089	\$ 16,403,431	\$ 17,072,783
\$	777,142	\$ 754,327	\$ (754,064)	\$ 705,467	\$ 679,353	\$ 652,070	\$ 295,850	\$ (8,341,553)	\$ 562,829	\$ 530,489	\$ 496,784	\$ (1,392,279)	\$ 425,108	\$ 387,050	\$ 347,450	\$ 306,260
\$	312,653	\$ 333,993	\$ 355,333	\$ 346,931	\$ 368,147	\$ 388,673	\$ 409,077	\$ 422,768	\$ 264,118	\$ 283,830	\$ 299,722	\$ 315,334	\$ 293,483	\$ 308,292	\$ 321,903	\$ 335,018
\$	17,012,299	\$ 18,100,618	\$ 17,701,887	\$ 18,754,285	\$ 19,801,785	\$ 20,842,528	\$ 21,547,455	\$ 13,628,669	\$ 14,455,617	\$ 15,269,936	\$ 16,066,441	\$ 14,989,497	\$ 15,708,089	\$ 16,403,431	\$ 17,072,783	\$ 17,714,060

	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065
	150,959	152,469	153,993	155,533	157,089	158,660	160,246	161,849	163,467	165,102	166,753	168,420	170,104	171,806	173,524
\$	1,165,086	\$ 1,200,039	\$ 1,236,040	\$ 1,273,121	\$ 1,311,315	\$ 1,350,654	\$ 1,391,174	\$ 1,432,909	\$ 1,475,896	\$ 1,520,173	\$ 1,565,778	\$ 1,612,751	\$ 1,661,134	\$ 1,710,968	\$ 1,762,297
\$	603,836	\$ 609,875	\$ 615,973	\$ 622,133	\$ 628,354	\$ 634,638	\$ 640,984	\$ 647,394	\$ 653,868	\$ 660,407	\$ 667,011	\$ 673,681	\$ 680,418	\$ 687,222	\$ 694,094
\$	708	\$ 715	\$ 722	\$ 729	\$ 736	\$ 744	\$ 751	\$ 759	\$ 766	\$ 774	\$ 782	\$ 789	\$ 797	\$ 805	\$ 813
\$	(1,769,630)	\$ (1,810,628)	\$ (1,852,735)	\$ (1,895,983)	\$ (1,940,405)	\$ (1,986,036)	\$ (2,032,909)	\$ (2,081,062)	\$ (2,130,531)	\$ (2,181,354)	\$ (2,233,571)	\$ (2,287,222)	\$ (2,342,349)	\$ (2,398,995)	\$ (2,457,205)
\$	(1,589,956)	\$ (1,629,705)	\$ (1,670,448)	\$ (1,712,209)	\$ (1,755,014)	\$ (1,798,890)	\$ (1,843,862)	\$ (1,889,958)	\$ (1,937,207)	\$ (1,985,637)	\$ (2,035,278)	\$ (2,086,160)	\$ (2,138,314)	\$ (2,191,772)	\$ (2,246,567)
\$	(3,359,586)	\$ (3,440,333)	\$ (3,523,183)	\$ (3,608,192)	\$ (3,695,420)	\$ (3,784,925)	\$ (3,876,771)	\$ (3,971,020)	\$ (4,067,738)	\$ (4,166,991)	\$ (4,268,849)	\$ (4,373,382)	\$ (4,480,664)	\$ (4,590,768)	\$ (4,703,771)
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (511,140)	\$ (7,780,150)	\$ -	\$ -	\$ -	\$ -	\$ -
\$	3,623,018	\$ 3,659,248	\$ 3,695,841	\$ 3,732,799	\$ 3,770,127	\$ 3,807,828	\$ 3,845,906	\$ 3,884,366	\$ 3,923,209	\$ 3,962,441	\$ 4,002,066	\$ 4,042,086	\$ 4,082,507	\$ 4,123,332	\$ 4,164,566
\$	17,714,060	\$ 18,325,073	\$ 18,903,538	\$ 19,447,075	\$ 19,953,206	\$ 20,419,347	\$ 20,842,808	\$ 21,220,789	\$ 21,550,373	\$ 21,317,388	\$ 13,750,582	\$ 13,750,452	\$ 13,688,832	\$ 13,559,059	\$ 13,357,437
\$	263,432	\$ 218,915	\$ 172,658	\$ 124,607	\$ 74,707	\$ 22,903	\$ (30,864)	\$ (86,654)	\$ (655,669)	\$ (7,984,700)	\$ (266,783)	\$ (331,296)	\$ (398,156)	\$ (467,435)	\$ (539,206)
\$	347,581	\$ 359,550	\$ 370,880	\$ 381,524	\$ 391,434	\$ 400,558	\$ 408,845	\$ 416,239	\$ 422,683	\$ 417,894	\$ 266,654	\$ 269,676	\$ 268,383	\$ 265,814	\$ 261,832
\$	18,325,073	\$ 18,903,538	\$ 19,447,075	\$ 19,953,206	\$ 20,419,347	\$ 20,842,808	\$ 21,220,789	\$ 21,550,373	\$ 21,317,388	\$ 13,750,582	\$ 13,750,452	\$ 13,688,832	\$ 13,559,059	\$ 13,357,437	\$ 13,080,064

	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
	175,259	177,011	178,782	180,569	182,375	184,199	186,041	187,901	189,780	191,678	193,595	195,531	197,486
\$	1,815,166	\$ 1,869,621	\$ 1,925,710	\$ 1,983,481	\$ 2,042,985	\$ 2,104,275	\$ 2,167,403	\$ 2,232,425	\$ 2,299,398	\$ 2,368,380	\$ 2,439,431	\$ 2,512,614	\$ 2,587,993
\$	701,035	\$ 708,046	\$ 715,126	\$ 722,277	\$ 729,500	\$ 736,795	\$ 744,163	\$ 751,605	\$ 759,121	\$ 766,712	\$ 774,379	\$ 782,123	\$ 789,944
\$	822	\$ 830	\$ 838	\$ 846	\$ 855	\$ 863	\$ 872	\$ 881	\$ 890	\$ 898	\$ 907	\$ 917	\$ 926
\$	(2,517,023)	\$ (2,578,496)	\$ (2,641,674)	\$ (2,706,605)	\$ (2,773,340)	\$ (2,841,933)	\$ (2,912,438)	\$ (2,984,911)	\$ (3,059,408)	\$ (3,135,990)	\$ (3,214,718)	\$ (3,295,654)	\$ (3,378,862)
\$	(2,302,731)	\$ (2,360,299)	\$ (2,419,306)	\$ (2,479,789)	\$ (2,541,784)	\$ (2,605,328)	\$ (2,670,462)	\$ (2,737,223)	\$ (2,805,654)	\$ (2,875,795)	\$ (2,947,690)	\$ (3,021,382)	\$ (3,096,917)
\$	(4,819,753)	\$ (4,938,795)	\$ (5,060,980)	\$ (5,186,394)	\$ (5,315,124)	\$ (5,447,262)	\$ (5,582,900)	\$ (5,722,134)	\$ (5,865,062)	\$ (6,011,785)	\$ (6,162,408)	\$ (6,317,036)	\$ (6,475,779)
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (722,230)	\$ (6,292,370)	\$ -	\$ -	\$ -	\$ -
\$	4,206,211	\$ 4,248,273	\$ 4,290,756	\$ 4,333,664	\$ 4,377,000	\$ 4,420,770	\$ 4,464,978	\$ 4,509,628	\$ 4,554,724	\$ 4,600,271	\$ 4,646,274	\$ 4,692,737	\$ 4,739,664
\$	13,080,064	\$ 12,722,886	\$ 12,281,695	\$ 11,752,118	\$ 11,129,618	\$ 10,409,482	\$ 9,586,820	\$ 8,656,558	\$ 6,891,200	\$ (577,071)	\$ (2,002,816)	\$ (3,558,721)	\$ (5,253,399)
\$	(613,542)	\$ (690,522)	\$ (770,224)	\$ (852,730)	\$ (938,124)	\$ (1,026,491)	\$ (1,117,922)	\$ (1,934,736)	\$ (7,602,708)	\$ (1,411,514)	\$ (1,516,134)	\$ (1,624,299)	\$ (1,736,115)
\$	256,365	\$ 249,330	\$ 240,647	\$ 230,229	\$ 217,988	\$ 203,830	\$ 187,660	\$ 169,378	\$ 134,436	\$ (14,230)	\$ (39,772)	\$ (70,379)	\$ (103,660)
\$	12,722,886	\$ 12,281,695	\$ 11,752,118	\$ 11,129,618	\$ 10,409,482	\$ 9,586,820	\$ 8,656,558	\$ 6,891,200	\$ (577,071)	\$ (2,002,816)	\$ (3,558,721)	\$ (5,253,399)	\$ (7,093,175)



NNSWC Revenue Analysis - Baseline w/ Waste Shredding

Interest:	3.50%	[input from "operation inputs"]
Inflation:	2.50%	[input from "operation inputs"]
Current Year:	2021	[input from "operation inputs"]

WCI Operation Costs

WCI Fixed Fee:	\$ 480,000	annually	[input from "operation inputs"]
Annual Increase in Fixed Fee:	3.0%		[input from "operation inputs"]
WCI Tonnage Fee:	\$4	per ton	[input from "operation inputs"]
Annual Increase in Tonnage Fee:	0%		[input from "operation inputs"]
WCI Special Waste Fee:	\$10.50	per ton	[input from "operation inputs"]
Annual Increase in Special Waste Fee:	0%		[input from "operation inputs"]
2020 Annual Tonnage (assumed):	112,000	tons	[input from "operation inputs"]
2020 Special Waste Tonnage (assumed):	50	tons	[input from "operation inputs"]
Annual Tonnage Increase:	1%	per year	[input from "operation inputs"]
Starting Year:	2021		[input from "operation inputs"]

Coalition Operating Costs

Personnel Costs	\$ 94,734	[input from "operation inputs"]
Operating & Maintenance Costs	\$ 30,577	[input from "operation inputs"]
Other Admin. and Overhead	\$ 22,455	[input from "operation inputs"]
Other Misc.	\$ 10,000	[input from "operation inputs"]
FA Fund Transfers	\$ 350,000	[input from "operation inputs"]
Professional Services	\$ 250,000	[input from "operation inputs"]
Waste Shredding Costs	\$ 255,300	
Total Coalition Costs:	\$ (1,014,000)	

Capital Costs														
	PV Cost	Execution Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Cell 6 Ph 1 Engineering	\$ 200,000	2022	\$ 250,000	\$ 205,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 Construction	\$ 2,500,000	2023	\$ -	\$ -	\$ 2,626,570	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 CA	\$ 250,000	2023	\$ -	\$ -	\$ 262,660	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scales	\$ 300,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scale House	\$ 400,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Equipment Building	\$ 1,200,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Drop-Off Area	\$ 200,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Asphalt Pavement	\$ 600,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Land Acquisition	\$ 1,000,000	2037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Engineering	\$ 200,000	2041	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Construction	\$ 3,700,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 CA	\$ 370,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 1-6 Ph 1 Closure*	\$ 3,100,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Sedimentation Basin	\$ 250,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Leachate Pond	\$ 1,000,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Landfill Gas Flare	\$ 1,000,000	2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Engineering	\$ 200,000	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Construction	\$ 2,700,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 CA	\$ 270,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Closure*	\$ 2,700,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Engineering	\$ 200,000	2073	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Construction	\$ 1,500,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 CA	\$ 200,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Closure*	\$ 4,000,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Ph 2 Closure*	\$ 2,300,000	2078	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Insert Row Above Here			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total CIP			\$ 250,000	\$ 205,000	\$ 2,889,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Revenues														
	2020 Rates	% Increase/Decrease	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Annual Tonnage	112,000	1%	112,000	113,120	114,251	115,394	116,548	117,713	118,890	120,079	121,280	122,493	123,718	124,955
Tipping Fee	\$ 24.00	0%	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00
Total Revenues			\$ 2,688,000	\$ 2,714,880	\$ 2,742,029	\$ 2,769,449	\$ 2,797,144	\$ 2,825,115	\$ 2,853,366	\$ 2,881,900	\$ 2,910,719	\$ 2,939,826	\$ 2,969,224	\$ 2,998,917

*Closure cost to be funded via FA funds

NNSWC Revenue Analysis - Baseline w/ Waste Shredding

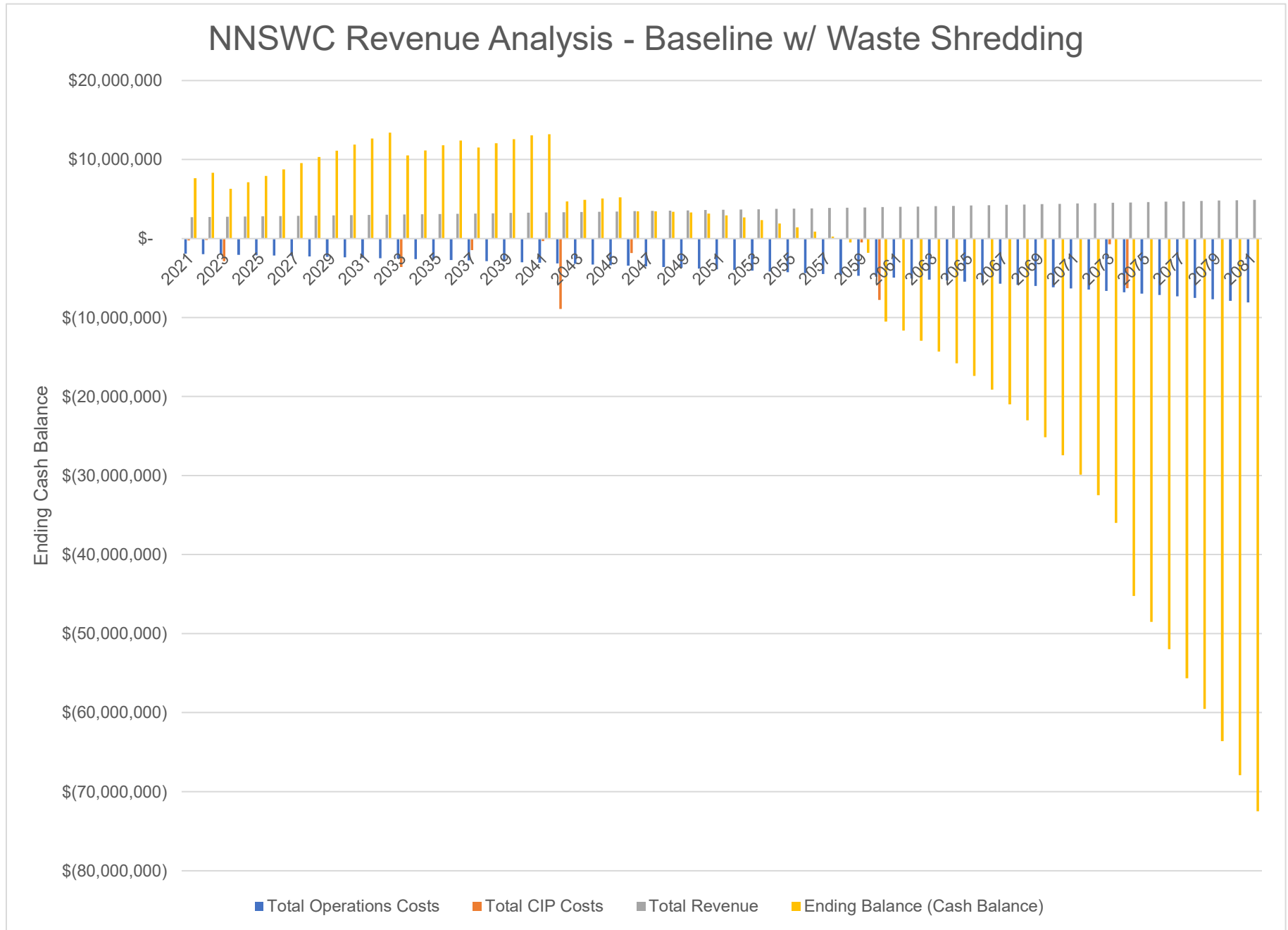
Beginning Balance:	\$ 7,000,000
Interest:	3.50%
Inflation:	2.50%
Investment APR:	2.00%
Starting Year:	2021

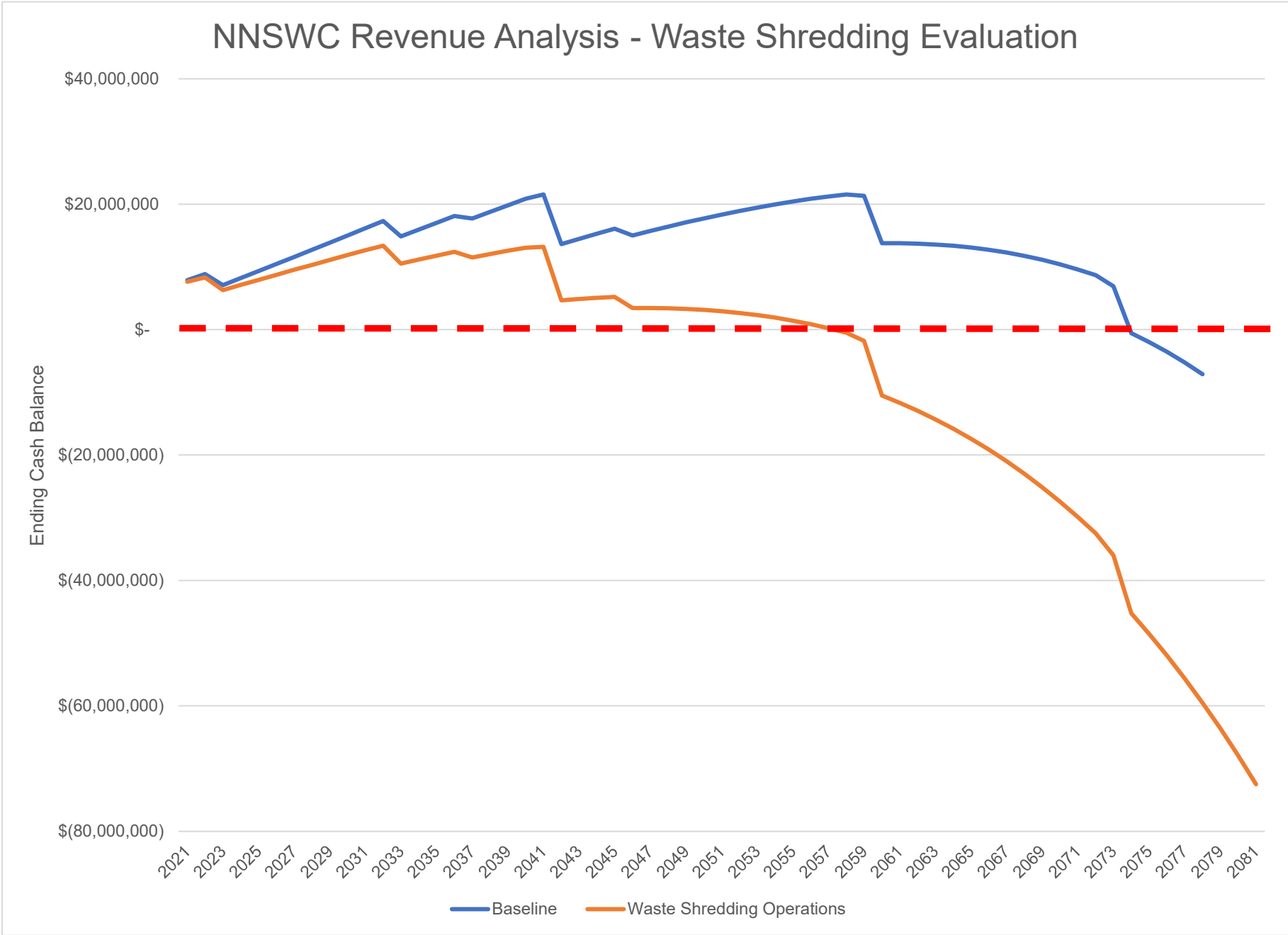
ProForma														
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Annual Tonnages	112,000	113,120	114,251	115,394	116,548	117,713	118,890	120,079	121,280	122,493	123,718	124,955	126,204	127,466
Fixed Fee \$	480,000	494,400	509,232	524,509	540,244	556,452	573,145	590,339	608,050	626,291	645,080	664,432	684,365	704,896
Tonnage Fee \$	448,000	452,480	457,005	461,575	466,191	470,853	475,561	480,317	485,120	489,971	494,871	499,819	504,818	509,866
Special Waste Fee \$	525	530	536	541	546	552	557	563	568	574	580	586	592	597
Total WCI Operations Costs	\$ (928,525)	\$ (947,410)	\$ (966,772)	\$ (986,625)	\$ (1,006,981)	\$ (1,027,856)	\$ (1,049,263)	\$ (1,071,219)	\$ (1,093,738)	\$ (1,116,836)	\$ (1,140,531)	\$ (1,164,837)	\$ (1,189,774)	\$ (1,215,359)
Total Coalition Operating Costs	\$ (1,014,000)	\$ (1,039,350)	\$ (1,065,334)	\$ (1,091,967)	\$ (1,119,266)	\$ (1,147,248)	\$ (1,175,929)	\$ (1,205,327)	\$ (1,235,461)	\$ (1,266,347)	\$ (1,298,006)	\$ (1,330,456)	\$ (1,363,717)	\$ (1,397,810)
Total Operations Costs	\$ (1,942,525)	\$ (1,986,760)	\$ (2,032,106)	\$ (2,078,592)	\$ (2,126,247)	\$ (2,175,104)	\$ (2,225,193)	\$ (2,276,546)	\$ (2,329,198)	\$ (2,383,183)	\$ (2,438,536)	\$ (2,495,293)	\$ (2,553,492)	\$ (2,613,170)
Total CIP Costs	\$ (250,000)	\$ (205,000)	\$ (2,889,230)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (3,631,220)	\$ -
Total Revenue	\$ 2,688,000	\$ 2,714,880	\$ 2,742,029	\$ 2,769,449	\$ 2,797,144	\$ 2,825,115	\$ 2,853,366	\$ 2,881,900	\$ 2,910,719	\$ 2,939,826	\$ 2,969,224	\$ 2,998,917	\$ 3,028,906	\$ 3,059,195
Beginning Balance	\$ 7,000,000	\$ 7,635,475	\$ 8,308,504	\$ 6,292,369	\$ 7,105,810	\$ 7,916,371	\$ 8,721,916	\$ 9,521,417	\$ 10,313,773	\$ 11,097,828	\$ 11,872,377	\$ 12,636,154	\$ 13,387,839	\$ 10,494,828
Annual Change	\$ 495,475	\$ 523,120	\$ (2,179,307)	\$ 690,857	\$ 670,896	\$ 650,011	\$ 628,174	\$ 605,354	\$ 581,520	\$ 556,643	\$ 530,688	\$ 503,623	\$ (3,155,806)	\$ 446,025
Change From Investments	\$ 140,000	\$ 149,910	\$ 163,172	\$ 122,584	\$ 139,665	\$ 155,534	\$ 171,328	\$ 187,002	\$ 202,535	\$ 217,906	\$ 233,089	\$ 248,061	\$ 262,796	\$ 204,641
Ending Balance (Cash Balance)	\$ 7,635,475	\$ 8,308,504	\$ 6,292,369	\$ 7,105,810	\$ 7,916,371	\$ 8,721,916	\$ 9,521,417	\$ 10,313,773	\$ 11,097,828	\$ 11,872,377	\$ 12,636,154	\$ 13,387,839	\$ 10,494,828	\$ 11,145,494

2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
128,741	130,029	131,329	132,642	133,969	135,308	136,661	138,028	139,408	140,802	142,210	143,632	145,069	146,519	147,985	149,464
\$ 726,043	\$ 747,824	\$ 770,259	\$ 793,367	\$ 817,168	\$ 841,683	\$ 866,933	\$ 892,941	\$ 919,730	\$ 947,322	\$ 975,741	\$ 1,005,013	\$ 1,035,164	\$ 1,066,219	\$ 1,098,205	\$ 1,131,151
\$ 514,964	\$ 520,114	\$ 525,315	\$ 530,568	\$ 535,874	\$ 541,233	\$ 546,645	\$ 552,112	\$ 557,633	\$ 563,209	\$ 568,841	\$ 574,530	\$ 580,275	\$ 586,078	\$ 591,938	\$ 597,858
\$ 603	\$ 610	\$ 616	\$ 622	\$ 628	\$ 634	\$ 641	\$ 647	\$ 653	\$ 660	\$ 667	\$ 673	\$ 680	\$ 687	\$ 694	\$ 701
\$ (1,241,611)	\$ (1,268,548)	\$ (1,296,190)	\$ (1,324,557)	\$ (1,353,670)	\$ (1,383,550)	\$ (1,414,219)	\$ (1,445,700)	\$ (1,478,016)	\$ (1,511,191)	\$ (1,545,249)	\$ (1,580,216)	\$ (1,616,119)	\$ (1,652,983)	\$ (1,690,837)	\$ (1,729,710)
\$ (1,432,755)	\$ (1,468,574)	\$ (1,505,289)	\$ (1,542,921)	\$ (1,581,494)	\$ (1,621,031)	\$ (1,661,557)	\$ (1,703,096)	\$ (1,745,673)	\$ (1,789,315)	\$ (1,834,048)	\$ (1,879,899)	\$ (1,926,897)	\$ (1,975,069)	\$ (2,024,446)	\$ (2,075,057)
\$ (2,674,366)	\$ (2,737,122)	\$ (2,801,479)	\$ (2,867,478)	\$ (2,935,164)	\$ (3,004,581)	\$ (3,075,776)	\$ (3,148,796)	\$ (3,223,689)	\$ (3,300,506)	\$ (3,379,297)	\$ (3,460,116)	\$ (3,543,015)	\$ (3,628,052)	\$ (3,715,283)	\$ (3,804,767)
\$ -	\$ -	\$ (1,484,510)	\$ -	\$ -	\$ -	\$ (327,730)	\$ (8,935,400)	\$ -	\$ -	\$ -	\$ (1,853,950)	\$ -	\$ -	\$ -	\$ -
\$ 3,089,787	\$ 3,120,685	\$ 3,151,891	\$ 3,183,410	\$ 3,215,244	\$ 3,247,397	\$ 3,279,871	\$ 3,312,670	\$ 3,345,796	\$ 3,379,254	\$ 3,413,047	\$ 3,447,177	\$ 3,481,649	\$ 3,516,465	\$ 3,551,630	\$ 3,587,146
\$ 11,145,494	\$ 11,779,732	\$ 12,394,512	\$ 11,503,681	\$ 12,044,821	\$ 12,561,294	\$ 13,050,608	\$ 13,183,055	\$ 4,670,068	\$ 4,880,405	\$ 5,054,997	\$ 5,187,930	\$ 3,422,817	\$ 3,427,871	\$ 3,383,513	\$ 3,286,186
\$ 415,420	\$ 383,562	\$ (1,134,097)	\$ 315,932	\$ 280,081	\$ 242,816	\$ (123,635)	\$ (8,771,526)	\$ 122,107	\$ 78,748	\$ 33,750	\$ (1,866,888)	\$ (61,366)	\$ (111,587)	\$ (163,653)	\$ (217,620)
\$ 218,817	\$ 231,218	\$ 243,266	\$ 225,208	\$ 236,392	\$ 246,498	\$ 256,082	\$ 258,539	\$ 88,231	\$ 95,843	\$ 99,183	\$ 101,775	\$ 66,421	\$ 67,229	\$ 66,326	\$ 64,397
\$ 11,779,732	\$ 12,394,512	\$ 11,503,681	\$ 12,044,821	\$ 12,561,294	\$ 13,050,608	\$ 13,183,055	\$ 4,670,068	\$ 4,880,405	\$ 5,054,997	\$ 5,187,930	\$ 3,422,817	\$ 3,427,871	\$ 3,383,513	\$ 3,286,186	\$ 3,132,962

	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065
	150,959	152,469	153,993	155,533	157,089	158,660	160,246	161,849	163,467	165,102	166,753	168,420	170,104	171,806	173,524
\$	1,165,086	\$ 1,200,039	\$ 1,236,040	\$ 1,273,121	\$ 1,311,315	\$ 1,350,654	\$ 1,391,174	\$ 1,432,909	\$ 1,475,896	\$ 1,520,173	\$ 1,565,778	\$ 1,612,751	\$ 1,661,134	\$ 1,710,968	\$ 1,762,297
\$	603,836	\$ 609,875	\$ 615,973	\$ 622,133	\$ 628,354	\$ 634,638	\$ 640,984	\$ 647,394	\$ 653,868	\$ 660,407	\$ 667,011	\$ 673,681	\$ 680,418	\$ 687,222	\$ 694,094
\$	708	\$ 715	\$ 722	\$ 729	\$ 736	\$ 744	\$ 751	\$ 759	\$ 766	\$ 774	\$ 782	\$ 789	\$ 797	\$ 805	\$ 813
\$	(1,769,630)	\$ (1,810,628)	\$ (1,852,735)	\$ (1,895,983)	\$ (1,940,405)	\$ (1,986,036)	\$ (2,032,909)	\$ (2,081,062)	\$ (2,130,531)	\$ (2,181,354)	\$ (2,233,571)	\$ (2,287,222)	\$ (2,342,349)	\$ (2,398,995)	\$ (2,457,205)
\$	(2,126,934)	\$ (2,180,107)	\$ (2,234,610)	\$ (2,290,475)	\$ (2,347,737)	\$ (2,406,430)	\$ (2,466,591)	\$ (2,528,256)	\$ (2,591,462)	\$ (2,656,249)	\$ (2,722,655)	\$ (2,790,721)	\$ (2,860,489)	\$ (2,932,001)	\$ (3,005,301)
\$	(3,896,563)	\$ (3,990,735)	\$ (4,087,345)	\$ (4,186,458)	\$ (4,288,142)	\$ (4,392,466)	\$ (4,499,500)	\$ (4,609,317)	\$ (4,721,992)	\$ (4,837,602)	\$ (4,956,225)	\$ (5,077,943)	\$ (5,202,838)	\$ (5,330,997)	\$ (5,462,506)
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (511,140)	\$ (7,780,150)	\$ -	\$ -	\$ -	\$ -	\$ -
\$	3,623,018	\$ 3,659,248	\$ 3,695,841	\$ 3,732,799	\$ 3,770,127	\$ 3,807,828	\$ 3,845,906	\$ 3,884,366	\$ 3,923,209	\$ 3,962,441	\$ 4,002,066	\$ 4,042,086	\$ 4,082,507	\$ 4,123,332	\$ 4,164,566
\$	3,132,962	\$ 2,920,788	\$ 2,646,490	\$ 2,306,772	\$ 1,898,212	\$ 1,417,260	\$ 860,226	\$ 223,285	\$ (497,534)	\$ (1,817,491)	\$ (10,508,951)	\$ (11,672,567)	\$ (12,937,686)	\$ (14,312,185)	\$ (15,801,010)
\$	(273,546)	\$ (331,487)	\$ (391,504)	\$ (453,659)	\$ (518,015)	\$ (584,638)	\$ (653,593)	\$ (724,952)	\$ (1,309,923)	\$ (8,655,311)	\$ (954,160)	\$ (1,035,857)	\$ (1,120,331)	\$ (1,207,664)	\$ (1,297,941)
\$	61,371	\$ 57,188	\$ 51,786	\$ 45,100	\$ 37,062	\$ 27,604	\$ 16,652	\$ 4,133	\$ (10,033)	\$ (36,149)	\$ (209,456)	\$ (229,262)	\$ (254,168)	\$ (281,160)	\$ (310,397)
\$	2,920,788	\$ 2,646,490	\$ 2,306,772	\$ 1,898,212	\$ 1,417,260	\$ 860,226	\$ 223,285	\$ (497,534)	\$ (1,817,491)	\$ (10,508,951)	\$ (11,672,567)	\$ (12,937,686)	\$ (14,312,185)	\$ (15,801,010)	\$ (17,409,348)

	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081
	175,259	177,011	178,782	180,569	182,375	184,199	186,041	187,901	189,780	191,678	193,595	195,531	197,486	199,461	201,455	203,470
\$	1,815,166	1,869,621	1,925,710	1,983,481	2,042,985	2,104,275	2,167,403	2,232,425	2,299,398	2,368,380	2,439,431	2,512,614	2,587,993	2,665,632	2,745,601	2,827,969
\$	701,035	708,046	715,126	722,277	729,500	736,795	744,163	751,605	759,121	766,712	774,379	782,123	789,944	797,843	805,822	813,880
\$	822	830	838	846	855	863	872	881	890	898	907	917	926	935	944	954
\$	(2,517,023)	(2,578,496)	(2,641,674)	(2,706,605)	(2,773,340)	(2,841,933)	(2,912,438)	(2,984,911)	(3,059,408)	(3,135,990)	(3,214,718)	(3,295,654)	(3,378,862)	(3,464,411)	(3,552,368)	(3,642,803)
\$	(3,080,434)	(3,157,445)	(3,236,381)	(3,317,290)	(3,400,223)	(3,485,228)	(3,572,359)	(3,661,668)	(3,753,210)	(3,847,040)	(3,943,216)	(4,041,796)	(4,142,841)	(4,246,412)	(4,352,572)	(4,461,387)
\$	(5,597,457)	(5,735,941)	(5,878,055)	(6,023,895)	(6,173,563)	(6,327,162)	(6,484,797)	(6,646,579)	(6,812,618)	(6,983,030)	(7,157,934)	(7,337,450)	(7,521,704)	(7,710,823)	(7,904,940)	(8,104,190)
\$	-	-	-	-	-	-	-	(722,230)	(6,292,370)	-	-	-	-	-	-	-
\$	4,206,211	4,248,273	4,290,756	4,333,664	4,377,000	4,420,770	4,464,978	4,509,628	4,554,724	4,600,271	4,646,274	4,692,737	4,739,664	4,787,061	4,834,931	4,883,281
\$	(17,409,348)	(19,142,572)	(21,006,252)	(23,006,155)	(25,148,257)	(27,438,747)	(29,884,035)	(32,490,757)	(35,988,015)	(40,245,277)	(44,518,802)	(48,983,022)	(53,648,344)	(58,522,939)	(63,615,308)	(68,934,251)
\$	(1,391,245)	(1,487,668)	(1,587,298)	(1,690,231)	(1,796,563)	(1,906,391)	(2,019,819)	(2,136,181)	(2,262,264)	(2,397,759)	(2,543,660)	(2,699,973)	(2,867,709)	(3,047,886)	(3,238,615)	(3,443,449)
\$	(341,979)	(376,012)	(412,605)	(451,871)	(493,928)	(538,896)	(586,903)	(638,077)	(696,999)	(760,766)	(829,561)	(904,609)	(986,555)	(1,076,008)	(1,174,934)	(1,283,706)
\$	(19,142,572)	(21,006,252)	(23,006,155)	(25,148,257)	(27,438,747)	(29,884,035)	(32,490,757)	(35,988,015)	(40,245,277)	(44,518,802)	(48,983,022)	(53,648,344)	(58,522,939)	(63,615,308)	(68,934,251)	(74,488,867)





APPENDIX C – NNSWC FINANCIAL EVALUATION

NNSWC Financial Model

Financial Model Inputs

Hours of Operation: M-F 7AM-4PM; Sat 7AM-12PM

Interest:	3.50%
Inflation:	2.50%
Current Year:	2021
Starting Year:	2021

WCI Operation Costs

WCI Fixed Fee:	\$ 480,000	annually
Annual Increase in Fixed Fee:	3%	
WCI Tonnage Fee:	\$4	per ton
Annual Increase in Tonnage Fee:	0%	
WCI Special Waste Fee:	\$10.50	per ton
Annual Increase in Special Waste Fee:	0%	
2020 Annual Tonnage (assumed):	112,000	tons
2020 Special Waste Tonnage (assumed):	50	tons
Annual Tonnage Increase:	1%	per year

Coalition Operation

Personnel Costs	\$ 94,734	
Operating & Maintenance Costs	\$ 30,577	
Other Admin. and Overhead	\$ 22,455	
Other Misc.	\$ 10,000	
FA Fund Transfers	\$ 350,000	Covers Closure and Post-Closure Care Costs
Professional Services	\$ 250,000	Annual Average
Total Coalition Costs:	\$ (758,000)	2021\$

NNSWC Revenue Analysis - Baseline

Interest:	3.50%	[input from "operation inputs"]
Inflation:	2.50%	[input from "operation inputs"]
Current Year:	2021	[input from "operation inputs"]

WCI Operation Costs

WCI Fixed Fee:	\$ 480,000	annually	[input from "operation inputs"]
Annual Increase in Fixed Fee:	3.0%		[input from "operation inputs"]
WCI Tonnage Fee:	\$4	per ton	[input from "operation inputs"]
Annual Increase in Tonnage Fee:	0%		[input from "operation inputs"]
WCI Special Waste Fee:	\$10.50	per ton	[input from "operation inputs"]
Annual Increase in Special Waste Fee:	0%		[input from "operation inputs"]
2020 Annual Tonnage (assumed):	112,000	tons	[input from "operation inputs"]
2020 Special Waste Tonnage (assumed):	50	tons	[input from "operation inputs"]
Annual Tonnage Increase:	1%	per year	[input from "operation inputs"]
Starting Year:	2021		[input from "operation inputs"]

Coalition Operating Costs

Personnel Costs	\$ 94,734	[input from "operation inputs"]
Operating & Maintenance Costs	\$ 30,577	[input from "operation inputs"]
Other Admin. and Overhead	\$ 22,455	[input from "operation inputs"]
Other Misc.	\$ 10,000	[input from "operation inputs"]
FA Fund Transfers	\$ 350,000	[input from "operation inputs"]
Professional Services	\$ 250,000	[input from "operation inputs"]
Total Coalition Costs:	\$ (758,000)	

Capital Costs

	PV Cost	Execution Year	2021-2031													
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
Cell 6 Ph 1 Engineering	\$ 200,000	2022	\$ 250,000	\$ 205,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 Construction	\$ 2,500,000	2023	\$ -	\$ -	\$ 2,626,570	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 CA	\$ 250,000	2023	\$ -	\$ -	\$ 262,660	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scales	\$ 300,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scale House	\$ 400,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Equipment Building	\$ 1,200,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Drop-Off Area	\$ 200,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Asphalt Pavement	\$ 600,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Land Acquisition	\$ 1,000,000	2037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Engineering	\$ 200,000	2041	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Construction	\$ 3,700,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 CA	\$ 370,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 1-6 Ph 1 Closure*	\$ 3,100,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Sedimentation Basin	\$ 250,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Leachate Pond	\$ 1,000,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Landfill Gas Flare	\$ 1,000,000	2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Engineering	\$ 200,000	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Construction	\$ 2,700,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 CA	\$ 270,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Closure*	\$ 2,700,000	2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Engineering	\$ 200,000	2073	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Construction	\$ 1,500,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 CA	\$ 200,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Closure*	\$ 4,000,000	2074	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Ph 2 Closure*	\$ 2,300,000	2078	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Insert Row Above Here</i>			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total CIP			\$ 250,000	\$ 205,000	\$ 2,889,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Revenues

	2020 Rates	% Increase/Decrease	2021-2031										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Annual Tonnage	112,000	1%	112,000	113,120	114,251	115,394	116,548	117,713	118,890	120,079	121,280	122,493	123,718
Tipping Fee	\$ 24.00	0%	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00
Total Revenues			\$ 2,688,000	\$ 2,714,880	\$ 2,742,029	\$ 2,769,449	\$ 2,797,144	\$ 2,825,115	\$ 2,853,366	\$ 2,881,900	\$ 2,910,719	\$ 2,939,826	\$ 2,969,224

*Closure cost to be funded via FA funds

NNSWC Revenue Analysis - Baseline

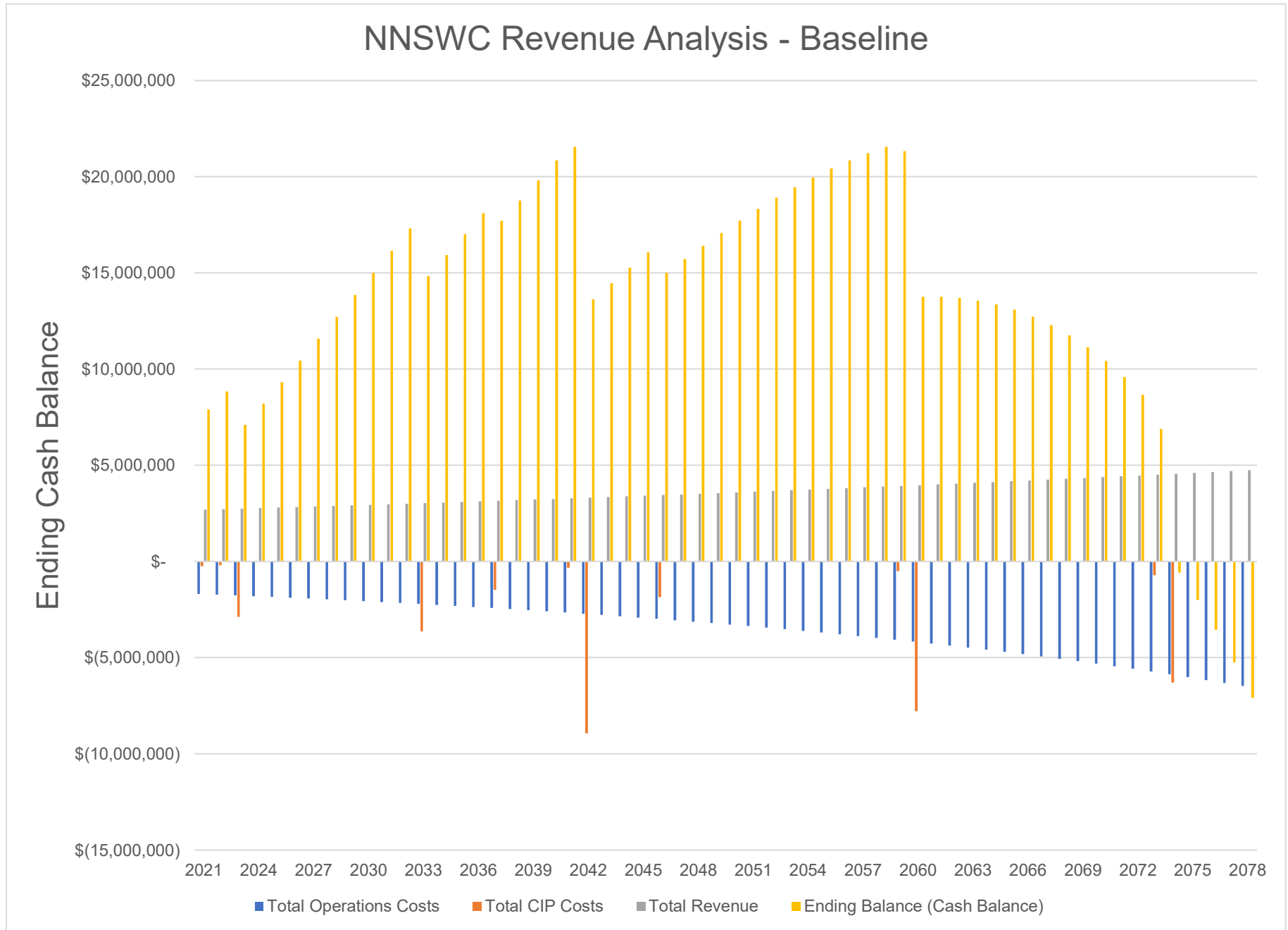
Beginning Balance:	\$ 7,000,000
Interest:	3.50%
Inflation:	2.50%
Investment APR:	2.00%
Starting Year:	2021

ProForma														
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Annual Tonnages	112,000	113,120	114,251	115,394	116,548	117,713	118,890	120,079	121,280	122,493	123,718	124,955	126,204	127,466
Fixed Fee \$	480,000	494,400	509,232	524,509	540,244	556,452	573,145	590,339	608,050	626,291	645,080	664,432	684,365	704,896
Tonnage Fee \$	448,000	452,480	457,005	461,575	466,191	470,853	475,561	480,317	485,120	489,971	494,871	499,819	504,818	509,866
Special Waste Fee \$	525	530	536	541	546	552	557	563	568	574	580	586	592	597
Total WCI Operations Costs \$	(928,525)	(947,410)	(966,772)	(986,625)	(1,006,981)	(1,027,856)	(1,049,263)	(1,071,219)	(1,093,738)	(1,116,836)	(1,140,531)	(1,164,837)	(1,189,774)	(1,215,359)
Total Coalition Operating Costs \$	(758,000)	(776,950)	(796,374)	(816,283)	(836,690)	(857,607)	(879,048)	(901,024)	(923,549)	(946,638)	(970,304)	(994,562)	(1,019,426)	(1,044,911)
Total Operations Costs \$	(1,686,525)	(1,724,360)	(1,763,146)	(1,802,908)	(1,843,671)	(1,885,463)	(1,928,311)	(1,972,243)	(2,017,287)	(2,063,474)	(2,110,835)	(2,159,399)	(2,209,200)	(2,260,271)
Total CIP Costs \$	(250,000)	(205,000)	(2,889,230)	-	-	-	-	-	-	-	-	-	(3,631,220)	-
Total Revenue \$	2,688,000	2,714,880	2,742,029	2,769,449	2,797,144	2,825,115	2,853,366	2,881,900	2,910,719	2,939,826	2,969,224	2,998,917	3,028,906	3,059,195
Beginning Balance \$	7,000,000	7,891,475	8,832,024	7,095,217	8,200,192	9,314,899	10,437,624	11,567,770	12,704,681	13,847,661	14,995,975	16,148,845	17,305,449	14,833,702
Annual Change \$	751,475	785,520	(1,910,347)	966,541	953,472	939,652	925,055	909,657	893,431	876,352	858,390	839,517	(2,811,514)	798,924
Change From Investments \$	140,000	155,030	173,540	138,434	161,235	183,073	205,091	227,254	249,549	271,962	294,480	317,087	339,767	289,879
Ending Balance (Cash Balance) \$	7,891,475	8,832,024	7,095,217	8,200,192	9,314,899	10,437,624	11,567,770	12,704,681	13,847,661	14,995,975	16,148,845	17,305,449	14,833,702	15,922,505

	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
	128,741	130,029	131,329	132,642	133,969	135,308	136,661	138,028	139,408	140,802	142,210	143,632	145,069	146,519	147,985	149,464
\$	726,043	\$ 747,824	\$ 770,259	\$ 793,367	\$ 817,168	\$ 841,683	\$ 866,933	\$ 892,941	\$ 919,730	\$ 947,322	\$ 975,741	\$ 1,005,013	\$ 1,035,164	\$ 1,066,219	\$ 1,098,205	\$ 1,131,151
\$	514,964	\$ 520,114	\$ 525,315	\$ 530,568	\$ 535,874	\$ 541,233	\$ 546,645	\$ 552,112	\$ 557,633	\$ 563,209	\$ 568,841	\$ 574,530	\$ 580,275	\$ 586,078	\$ 591,938	\$ 597,858
\$	603	\$ 610	\$ 616	\$ 622	\$ 628	\$ 634	\$ 641	\$ 647	\$ 653	\$ 660	\$ 667	\$ 673	\$ 680	\$ 687	\$ 694	\$ 701
\$	(1,241,611)	\$ (1,268,548)	\$ (1,296,190)	\$ (1,324,557)	\$ (1,353,670)	\$ (1,383,550)	\$ (1,414,219)	\$ (1,445,700)	\$ (1,478,016)	\$ (1,511,191)	\$ (1,545,249)	\$ (1,580,216)	\$ (1,616,119)	\$ (1,652,983)	\$ (1,690,837)	\$ (1,729,710)
\$	(1,071,034)	\$ (1,097,810)	\$ (1,125,255)	\$ (1,153,387)	\$ (1,182,221)	\$ (1,211,777)	\$ (1,242,071)	\$ (1,273,123)	\$ (1,304,951)	\$ (1,337,575)	\$ (1,371,014)	\$ (1,405,290)	\$ (1,440,422)	\$ (1,476,432)	\$ (1,513,343)	\$ (1,551,177)
\$	(2,312,645)	\$ (2,366,358)	\$ (2,421,445)	\$ (2,477,944)	\$ (2,535,891)	\$ (2,595,327)	\$ (2,656,290)	\$ (2,718,823)	\$ (2,782,967)	\$ (2,848,765)	\$ (2,916,263)	\$ (2,985,506)	\$ (3,056,541)	\$ (3,129,416)	\$ (3,204,181)	\$ (3,280,887)
\$	-	\$ -	\$ (1,484,510)	\$ -	\$ -	\$ -	\$ (327,730)	\$ (8,935,400)	\$ -	\$ -	\$ -	\$ (1,853,950)	\$ -	\$ -	\$ -	\$ -
\$	3,089,787	\$ 3,120,685	\$ 3,151,891	\$ 3,183,410	\$ 3,215,244	\$ 3,247,397	\$ 3,279,871	\$ 3,312,670	\$ 3,345,796	\$ 3,379,254	\$ 3,413,047	\$ 3,447,177	\$ 3,481,649	\$ 3,516,465	\$ 3,551,630	\$ 3,587,146
\$	15,922,505	\$ 17,012,299	\$ 18,100,618	\$ 17,701,887	\$ 18,754,285	\$ 19,801,785	\$ 20,842,528	\$ 21,547,455	\$ 13,628,669	\$ 14,455,617	\$ 15,269,936	\$ 16,066,441	\$ 14,989,497	\$ 15,708,089	\$ 16,403,431	\$ 17,072,783
\$	777,142	\$ 754,327	\$ (754,064)	\$ 705,467	\$ 679,353	\$ 652,070	\$ 295,850	\$ (8,341,553)	\$ 562,829	\$ 530,489	\$ 496,784	\$ (1,392,279)	\$ 425,108	\$ 387,050	\$ 347,450	\$ 306,260
\$	312,653	\$ 333,993	\$ 355,333	\$ 346,931	\$ 368,147	\$ 388,673	\$ 409,077	\$ 422,768	\$ 264,118	\$ 283,830	\$ 299,722	\$ 315,334	\$ 293,483	\$ 308,292	\$ 321,903	\$ 335,018
\$	17,012,299	\$ 18,100,618	\$ 17,701,887	\$ 18,754,285	\$ 19,801,785	\$ 20,842,528	\$ 21,547,455	\$ 13,628,669	\$ 14,455,617	\$ 15,269,936	\$ 16,066,441	\$ 14,989,497	\$ 15,708,089	\$ 16,403,431	\$ 17,072,783	\$ 17,714,060

	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065
	150,959	152,469	153,993	155,533	157,089	158,660	160,246	161,849	163,467	165,102	166,753	168,420	170,104	171,806	173,524
\$	1,165,086	\$ 1,200,039	\$ 1,236,040	\$ 1,273,121	\$ 1,311,315	\$ 1,350,654	\$ 1,391,174	\$ 1,432,909	\$ 1,475,896	\$ 1,520,173	\$ 1,565,778	\$ 1,612,751	\$ 1,661,134	\$ 1,710,968	\$ 1,762,297
\$	603,836	\$ 609,875	\$ 615,973	\$ 622,133	\$ 628,354	\$ 634,638	\$ 640,984	\$ 647,394	\$ 653,868	\$ 660,407	\$ 667,011	\$ 673,681	\$ 680,418	\$ 687,222	\$ 694,094
\$	708	\$ 715	\$ 722	\$ 729	\$ 736	\$ 744	\$ 751	\$ 759	\$ 766	\$ 774	\$ 782	\$ 789	\$ 797	\$ 805	\$ 813
\$	(1,769,630)	\$ (1,810,628)	\$ (1,852,735)	\$ (1,895,983)	\$ (1,940,405)	\$ (1,986,036)	\$ (2,032,909)	\$ (2,081,062)	\$ (2,130,531)	\$ (2,181,354)	\$ (2,233,571)	\$ (2,287,222)	\$ (2,342,349)	\$ (2,398,995)	\$ (2,457,205)
\$	(1,589,956)	\$ (1,629,705)	\$ (1,670,448)	\$ (1,712,209)	\$ (1,755,014)	\$ (1,798,890)	\$ (1,843,862)	\$ (1,889,958)	\$ (1,937,207)	\$ (1,985,637)	\$ (2,035,278)	\$ (2,086,160)	\$ (2,138,314)	\$ (2,191,772)	\$ (2,246,567)
\$	(3,359,586)	\$ (3,440,333)	\$ (3,523,183)	\$ (3,608,192)	\$ (3,695,420)	\$ (3,784,925)	\$ (3,876,771)	\$ (3,971,020)	\$ (4,067,738)	\$ (4,166,991)	\$ (4,268,849)	\$ (4,373,382)	\$ (4,480,664)	\$ (4,590,768)	\$ (4,703,771)
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (511,140)	\$ (7,780,150)	\$ -	\$ -	\$ -	\$ -	\$ -
\$	3,623,018	\$ 3,659,248	\$ 3,695,841	\$ 3,732,799	\$ 3,770,127	\$ 3,807,828	\$ 3,845,906	\$ 3,884,366	\$ 3,923,209	\$ 3,962,441	\$ 4,002,066	\$ 4,042,086	\$ 4,082,507	\$ 4,123,332	\$ 4,164,566
\$	17,714,060	\$ 18,325,073	\$ 18,903,538	\$ 19,447,075	\$ 19,953,206	\$ 20,419,347	\$ 20,842,808	\$ 21,220,789	\$ 21,550,373	\$ 21,317,388	\$ 13,750,582	\$ 13,750,452	\$ 13,688,832	\$ 13,559,059	\$ 13,357,437
\$	263,432	\$ 218,915	\$ 172,658	\$ 124,607	\$ 74,707	\$ 22,903	\$ (30,864)	\$ (86,654)	\$ (655,669)	\$ (7,984,700)	\$ (266,783)	\$ (331,296)	\$ (398,156)	\$ (467,435)	\$ (539,206)
\$	347,581	\$ 359,550	\$ 370,880	\$ 381,524	\$ 391,434	\$ 400,558	\$ 408,845	\$ 416,239	\$ 422,683	\$ 417,894	\$ 266,654	\$ 269,676	\$ 268,383	\$ 265,814	\$ 261,832
\$	18,325,073	\$ 18,903,538	\$ 19,447,075	\$ 19,953,206	\$ 20,419,347	\$ 20,842,808	\$ 21,220,789	\$ 21,550,373	\$ 21,317,388	\$ 13,750,582	\$ 13,750,452	\$ 13,688,832	\$ 13,559,059	\$ 13,357,437	\$ 13,080,064

	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
	175,259	177,011	178,782	180,569	182,375	184,199	186,041	187,901	189,780	191,678	193,595	195,531	197,486
\$	1,815,166	\$ 1,869,621	\$ 1,925,710	\$ 1,983,481	\$ 2,042,985	\$ 2,104,275	\$ 2,167,403	\$ 2,232,425	\$ 2,299,398	\$ 2,368,380	\$ 2,439,431	\$ 2,512,614	\$ 2,587,993
\$	701,035	\$ 708,046	\$ 715,126	\$ 722,277	\$ 729,500	\$ 736,795	\$ 744,163	\$ 751,605	\$ 759,121	\$ 766,712	\$ 774,379	\$ 782,123	\$ 789,944
\$	822	\$ 830	\$ 838	\$ 846	\$ 855	\$ 863	\$ 872	\$ 881	\$ 890	\$ 898	\$ 907	\$ 917	\$ 926
\$	(2,517,023)	\$ (2,578,496)	\$ (2,641,674)	\$ (2,706,605)	\$ (2,773,340)	\$ (2,841,933)	\$ (2,912,438)	\$ (2,984,911)	\$ (3,059,408)	\$ (3,135,990)	\$ (3,214,718)	\$ (3,295,654)	\$ (3,378,862)
\$	(2,302,731)	\$ (2,360,299)	\$ (2,419,306)	\$ (2,479,789)	\$ (2,541,784)	\$ (2,605,328)	\$ (2,670,462)	\$ (2,737,223)	\$ (2,805,654)	\$ (2,875,795)	\$ (2,947,690)	\$ (3,021,382)	\$ (3,096,917)
\$	(4,819,753)	\$ (4,938,795)	\$ (5,060,980)	\$ (5,186,394)	\$ (5,315,124)	\$ (5,447,262)	\$ (5,582,900)	\$ (5,722,134)	\$ (5,865,062)	\$ (6,011,785)	\$ (6,162,408)	\$ (6,317,036)	\$ (6,475,779)
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (722,230)	\$ (6,292,370)	\$ -	\$ -	\$ -	\$ -
\$	4,206,211	\$ 4,248,273	\$ 4,290,756	\$ 4,333,664	\$ 4,377,000	\$ 4,420,770	\$ 4,464,978	\$ 4,509,628	\$ 4,554,724	\$ 4,600,271	\$ 4,646,274	\$ 4,692,737	\$ 4,739,664
\$	13,080,064	\$ 12,722,886	\$ 12,281,695	\$ 11,752,118	\$ 11,129,618	\$ 10,409,482	\$ 9,586,820	\$ 8,656,558	\$ 6,891,200	\$ (577,071)	\$ (2,002,816)	\$ (3,558,721)	\$ (5,253,399)
\$	(613,542)	\$ (690,522)	\$ (770,224)	\$ (852,730)	\$ (938,124)	\$ (1,026,491)	\$ (1,117,922)	\$ (1,934,736)	\$ (7,602,708)	\$ (1,411,514)	\$ (1,516,134)	\$ (1,624,299)	\$ (1,736,115)
\$	256,365	\$ 249,330	\$ 240,647	\$ 230,229	\$ 217,988	\$ 203,830	\$ 187,660	\$ 169,378	\$ 134,436	\$ (14,230)	\$ (39,772)	\$ (70,379)	\$ (103,660)
\$	12,722,886	\$ 12,281,695	\$ 11,752,118	\$ 11,129,618	\$ 10,409,482	\$ 9,586,820	\$ 8,656,558	\$ 6,891,200	\$ (577,071)	\$ (2,002,816)	\$ (3,558,721)	\$ (5,253,399)	\$ (7,093,175)



NNSWC Revenue Analysis - Tonnage Increase

Interest:	3.50%	[input from "operation inputs"]
Inflation:	2.50%	[input from "operation inputs"]
Current Year:	2021	[input from "operation inputs"]

WCI Operation Costs

WCI Fixed Fee:	\$ 480,000	annually	[input from "operation inputs"]
Annual Increase in Fixed Fee:	3.0%		[input from "operation inputs"]
WCI Tonnage Fee:	\$4	per ton	[input from "operation inputs"]
Annual Increase in Tonnage Fee:	0%		[input from "operation inputs"]
WCI Special Waste Fee:	\$10.50	per ton	[input from "operation inputs"]
Annual Increase in Special Waste Fee:	0%		[input from "operation inputs"]
2020 Annual Tonnage (assumed):	134,400	tons	[input from "operation inputs"]
2020 Special Waste Tonnage (assumed):	50	tons	[input from "operation inputs"]
Annual Tonnage Increase:	1%	per year	[input from "operation inputs"]
Starting Year:	2021		[input from "operation inputs"]

Coalition Operating Costs

Personnel Costs	\$ 94,734	[input from "operation inputs"]
Operating & Maintenance Costs	\$ 30,577	[input from "operation inputs"]
Other Admin. and Overhead	\$ 22,455	[input from "operation inputs"]
Other Misc.	\$ 10,000	[input from "operation inputs"]
FA Fund Transfers	\$ 350,000	[input from "operation inputs"]
Professional Services	\$ 250,000	[input from "operation inputs"]
Total Coalition Costs:	\$ (758,000)	

Capital Costs

	PV Cost	Execution Year	2021-2031													
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
Cell 6 Ph 1 Engineering	\$ 200,000	2022	\$ 250,000	\$ 205,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 Construction	\$ 2,500,000	2023	\$ -	\$ -	\$ 2,626,570	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 CA	\$ 250,000	2023	\$ -	\$ -	\$ 262,660	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scales	\$ 300,000	2031	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 384,030
Facility Improvement - Scale House	\$ 400,000	2031	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 512,040
Facility Improvement - Equipment Building	\$ 1,200,000	2031	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,536,110
Facility Improvement - Drop-Off Area	\$ 200,000	2031	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 256,020
Facility Improvement - Asphalt Pavement	\$ 600,000	2031	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 768,060
Facility Improvement - Land Acquisition	\$ 1,000,000	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Engineering	\$ 200,000	2037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Construction	\$ 3,700,000	2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 CA	\$ 370,000	2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 1-6 Ph 1 Closure*	\$ 3,100,000	2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Sedimentation Basin	\$ 250,000	2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Leachate Pond	\$ 1,000,000	2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Landfill Gas Flare	\$ 1,000,000	2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Engineering	\$ 200,000	2053	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Construction	\$ 2,700,000	2054	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 CA	\$ 270,000	2054	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Closure*	\$ 2,700,000	2054	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Engineering	\$ 200,000	2066	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Construction	\$ 1,500,000	2067	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 CA	\$ 200,000	2067	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Closure*	\$ 4,000,000	2067	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Ph 2 Closure*	\$ 2,300,000	2070	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Insert Row Above Here</i>			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total CIP			\$ 250,000	\$ 205,000	\$ 2,889,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,456,260

Revenues

	2020 Rates	% Increase/Decrease	2021-2031										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Annual Tonnage	134,400	1%	134,400	135,744	137,101	138,472	139,857	141,256	142,668	144,095	145,536	146,991	148,461
Tipping Fee	\$ 24.00	0%	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00
Total Revenues			\$ 3,225,600	\$ 3,257,856	\$ 3,290,435	\$ 3,323,339	\$ 3,356,572	\$ 3,390,138	\$ 3,424,039	\$ 3,458,280	\$ 3,492,863	\$ 3,527,791	\$ 3,563,069

*Closure cost to be funded via FA funds

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	1,344,890	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	296,910	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	5,629,990	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	563,000	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	380,410	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	1,521,620	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,853,950	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	1,344,890	-	-	-	296,910	8,095,020	-	-	-	-	-	-	-	1,853,950	-	-

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
\$	149,946	151,445	152,960	154,489	156,034	157,595	159,171	160,762	162,370	163,994	165,633	167,290	168,963	170,652	172,359	174,082	175,823
\$	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
\$	3,598,700	3,634,687	3,671,034	3,707,744	3,744,821	3,782,270	3,820,092	3,858,293	3,896,876	3,935,845	3,975,203	4,014,955	4,055,105	4,095,656	4,136,613	4,177,979	4,219,759

NNSWC Revenue Analysis - Tonnage Increase

Beginning Balance:	\$ 7,000,000.00
Interest:	3.50%
Inflation:	2.50%
Investment APR:	2.00%
Starting Year:	2021

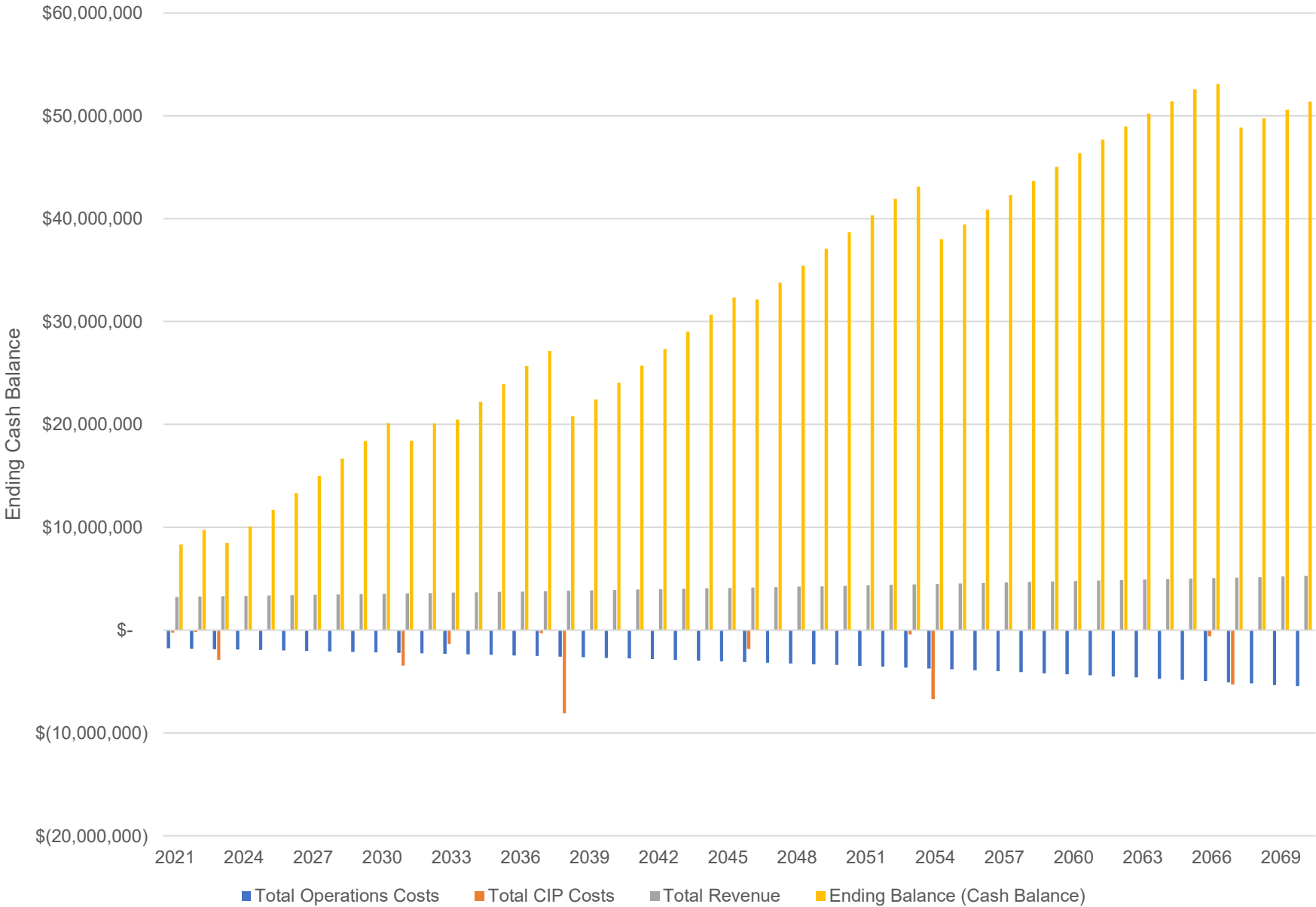
ProForma													
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Annual Tonnages	134,400	135,744	137,101	138,472	139,857	141,256	142,668	144,095	145,536	146,991	148,461	149,946	151,445
Fixed Fee \$	480,000	494,400	509,232	524,509	540,244	556,452	573,145	590,339	608,050	626,291	645,080	664,432	684,365
Tonnage Fee \$	537,600	542,976	548,406	553,890	559,429	565,023	570,673	576,380	582,144	587,965	593,845	599,783	605,781
Special Waste Fee \$	525	530	536	541	546	552	557	563	568	574	580	586	592
Total WCI Operations Costs	\$ (1,018,125)	\$ (1,037,906)	\$ (1,058,173)	\$ (1,078,940)	\$ (1,100,219)	\$ (1,122,026)	\$ (1,144,376)	\$ (1,167,282)	\$ (1,190,762)	\$ (1,214,831)	\$ (1,239,505)	\$ (1,264,801)	\$ (1,290,738)
Total Coalition Operating Costs	\$ (758,000)	\$ (776,950)	\$ (796,374)	\$ (816,283)	\$ (836,690)	\$ (857,607)	\$ (879,048)	\$ (901,024)	\$ (923,549)	\$ (946,638)	\$ (970,304)	\$ (994,562)	\$ (1,019,426)
Total Operations Costs	\$ (1,776,125)	\$ (1,814,856)	\$ (1,854,547)	\$ (1,895,223)	\$ (1,936,909)	\$ (1,979,634)	\$ (2,023,423)	\$ (2,068,306)	\$ (2,114,311)	\$ (2,161,469)	\$ (2,209,809)	\$ (2,259,363)	\$ (2,310,164)
Total CIP Costs	\$ (250,000)	\$ (205,000)	\$ (2,889,230)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (3,456,260)	\$ -	\$ (1,344,890)
Total Revenue	\$ 3,225,600	\$ 3,257,856	\$ 3,290,435	\$ 3,323,339	\$ 3,356,572	\$ 3,390,138	\$ 3,424,039	\$ 3,458,280	\$ 3,492,863	\$ 3,527,791	\$ 3,563,069	\$ 3,598,700	\$ 3,634,687
Beginning Balance	\$ 7,000,000	\$ 8,339,475	\$ 9,741,464	\$ 8,479,671	\$ 10,073,550	\$ 11,691,368	\$ 13,331,737	\$ 14,994,391	\$ 16,679,011	\$ 18,385,250	\$ 20,112,724	\$ 18,404,756	\$ 20,104,287
Annual Change	\$ 1,199,475	\$ 1,238,000	\$ (1,453,343)	\$ 1,428,116	\$ 1,419,663	\$ 1,410,504	\$ 1,400,616	\$ 1,389,974	\$ 1,378,551	\$ 1,366,323	\$ (2,103,000)	\$ 1,339,337	\$ (20,367)
Change from Investments	\$ 140,000	\$ 163,990	\$ 191,549	\$ 165,762	\$ 198,156	\$ 229,864	\$ 262,037	\$ 294,647	\$ 327,687	\$ 361,151	\$ 395,031	\$ 360,194	\$ 394,882
Ending Balance (Cash Balance)	\$ 8,339,475	\$ 9,741,464	\$ 8,479,671	\$ 10,073,550	\$ 11,691,368	\$ 13,331,737	\$ 14,994,391	\$ 16,679,011	\$ 18,385,250	\$ 20,112,724	\$ 18,404,756	\$ 20,104,287	\$ 20,478,802

2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
152,960	154,489	156,034	157,595	159,171	160,762	162,370	163,994	165,633	167,290	168,963	170,652	172,359	174,082	175,823
\$ 704,896	\$ 726,043	\$ 747,824	\$ 770,259	\$ 793,367	\$ 817,168	\$ 841,683	\$ 866,933	\$ 892,941	\$ 919,730	\$ 947,322	\$ 975,741	\$ 1,005,013	\$ 1,035,164	\$ 1,066,219
\$ 611,839	\$ 617,957	\$ 624,137	\$ 630,378	\$ 636,682	\$ 643,049	\$ 649,479	\$ 655,974	\$ 662,534	\$ 669,159	\$ 675,851	\$ 682,609	\$ 689,435	\$ 696,330	\$ 703,293
\$ 597	\$ 603	\$ 610	\$ 616	\$ 622	\$ 628	\$ 634	\$ 641	\$ 647	\$ 653	\$ 660	\$ 667	\$ 673	\$ 680	\$ 687
\$ (1,317,333)	\$ (1,344,604)	\$ (1,372,571)	\$ (1,401,253)	\$ (1,430,671)	\$ (1,460,845)	\$ (1,491,797)	\$ (1,523,548)	\$ (1,556,122)	\$ (1,589,542)	\$ (1,623,832)	\$ (1,659,017)	\$ (1,695,122)	\$ (1,732,174)	\$ (1,770,199)
\$ (1,044,911)	\$ (1,071,034)	\$ (1,097,810)	\$ (1,125,255)	\$ (1,153,387)	\$ (1,182,221)	\$ (1,211,777)	\$ (1,242,071)	\$ (1,273,123)	\$ (1,304,951)	\$ (1,337,575)	\$ (1,371,014)	\$ (1,405,290)	\$ (1,440,422)	\$ (1,476,432)
\$ (2,362,244)	\$ (2,415,638)	\$ (2,470,381)	\$ (2,526,508)	\$ (2,584,057)	\$ (2,643,066)	\$ (2,703,573)	\$ (2,765,619)	\$ (2,829,245)	\$ (2,894,493)	\$ (2,961,407)	\$ (3,030,031)	\$ (3,100,412)	\$ (3,172,595)	\$ (3,246,631)
\$ -	\$ -	\$ -	\$ (296,910)	\$ (8,095,020)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1,853,950)	\$ -	\$ -
\$ 3,671,034	\$ 3,707,744	\$ 3,744,821	\$ 3,782,270	\$ 3,820,092	\$ 3,858,293	\$ 3,896,876	\$ 3,935,845	\$ 3,975,203	\$ 4,014,955	\$ 4,055,105	\$ 4,095,656	\$ 4,136,613	\$ 4,177,979	\$ 4,219,759
\$ 20,478,802	\$ 22,189,270	\$ 23,917,128	\$ 25,661,196	\$ 27,123,879	\$ 20,797,295	\$ 22,417,820	\$ 24,051,373	\$ 25,693,821	\$ 27,344,211	\$ 29,001,469	\$ 30,664,460	\$ 32,331,988	\$ 32,148,841	\$ 33,784,509
\$ 1,308,790	\$ 1,292,106	\$ 1,274,441	\$ 958,851	\$ (6,858,985)	\$ 1,215,227	\$ 1,193,303	\$ 1,170,226	\$ 1,145,958	\$ 1,120,462	\$ 1,093,698	\$ 1,065,625	\$ (817,749)	\$ 1,005,383	\$ 973,128
\$ 401,678	\$ 435,752	\$ 469,628	\$ 503,831	\$ 532,401	\$ 405,298	\$ 440,250	\$ 472,222	\$ 504,432	\$ 536,796	\$ 569,293	\$ 601,903	\$ 634,602	\$ 630,285	\$ 663,084
\$ 22,189,270	\$ 23,917,128	\$ 25,661,196	\$ 27,123,879	\$ 20,797,295	\$ 22,417,820	\$ 24,051,373	\$ 25,693,821	\$ 27,344,211	\$ 29,001,469	\$ 30,664,460	\$ 32,331,988	\$ 32,148,841	\$ 33,784,509	\$ 35,420,721

2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062
177,582	179,357	181,151	182,962	184,792	186,640	188,506	190,391	192,295	194,218	196,160	198,122	200,103	202,104
\$ 1,098,205	\$ 1,131,151	\$ 1,165,086	\$ 1,200,039	\$ 1,236,040	\$ 1,273,121	\$ 1,311,315	\$ 1,350,654	\$ 1,391,174	\$ 1,432,909	\$ 1,475,896	\$ 1,520,173	\$ 1,565,778	\$ 1,612,751
\$ 710,326	\$ 717,429	\$ 724,604	\$ 731,850	\$ 739,168	\$ 746,560	\$ 754,025	\$ 761,566	\$ 769,181	\$ 776,873	\$ 784,642	\$ 792,488	\$ 800,413	\$ 808,417
\$ 694	\$ 701	\$ 708	\$ 715	\$ 722	\$ 729	\$ 736	\$ 744	\$ 751	\$ 759	\$ 766	\$ 774	\$ 782	\$ 789
\$ (1,809,225)	\$ (1,849,281)	\$ (1,890,397)	\$ (1,932,603)	\$ (1,975,930)	\$ (2,020,410)	\$ (2,066,076)	\$ (2,112,963)	\$ (2,161,106)	\$ (2,210,541)	\$ (2,261,304)	\$ (2,313,435)	\$ (2,366,973)	\$ (2,421,958)
\$ (1,513,343)	\$ (1,551,177)	\$ (1,589,956)	\$ (1,629,705)	\$ (1,670,448)	\$ (1,712,209)	\$ (1,755,014)	\$ (1,798,890)	\$ (1,843,862)	\$ (1,889,958)	\$ (1,937,207)	\$ (1,985,637)	\$ (2,035,278)	\$ (2,086,160)
\$ (3,322,568)	\$ (3,400,458)	\$ (3,480,353)	\$ (3,562,308)	\$ (3,646,377)	\$ (3,732,619)	\$ (3,821,090)	\$ (3,911,853)	\$ (4,004,968)	\$ (4,100,499)	\$ (4,198,511)	\$ (4,299,073)	\$ (4,402,251)	\$ (4,508,119)
\$ -	\$ -	\$ -	\$ -	\$ (440,760)	\$ (6,708,790)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 4,261,956	\$ 4,304,576	\$ 4,347,621	\$ 4,391,098	\$ 4,435,009	\$ 4,479,359	\$ 4,524,152	\$ 4,569,394	\$ 4,615,088	\$ 4,661,239	\$ 4,707,851	\$ 4,754,930	\$ 4,802,479	\$ 4,850,504
\$ 35,420,721	\$ 37,055,261	\$ 38,686,581	\$ 40,313,037	\$ 41,932,903	\$ 43,103,611	\$ 37,987,177	\$ 39,433,070	\$ 40,864,416	\$ 42,276,348	\$ 43,666,578	\$ 45,032,660	\$ 46,372,035	\$ 47,682,033
\$ 939,388	\$ 904,118	\$ 867,268	\$ 828,790	\$ 347,871	\$ (5,962,050)	\$ 703,062	\$ 657,541	\$ 610,120	\$ 560,740	\$ 509,340	\$ 455,857	\$ 400,228	\$ 342,385
\$ 695,153	\$ 727,202	\$ 759,188	\$ 791,077	\$ 822,837	\$ 845,615	\$ 742,831	\$ 773,805	\$ 801,812	\$ 829,491	\$ 856,742	\$ 883,518	\$ 909,770	\$ 935,445
\$ 37,055,261	\$ 38,686,581	\$ 40,313,037	\$ 41,932,903	\$ 43,103,611	\$ 37,987,177	\$ 39,433,070	\$ 40,864,416	\$ 42,276,348	\$ 43,666,578	\$ 45,032,660	\$ 46,372,035	\$ 47,682,033	\$ 48,959,863

	2063	2064	2065	2066	2067	2068	2069	2070
	204,125	206,167	208,228	210,311	212,414	214,538	216,683	218,850
\$	1,661,134	\$ 1,710,968	\$ 1,762,297	\$ 1,815,166	\$ 1,869,621	\$ 1,925,710	\$ 1,983,481	\$ 2,042,985
\$	816,501	\$ 824,666	\$ 832,913	\$ 841,242	\$ 849,655	\$ 858,151	\$ 866,733	\$ 875,400
\$	797	\$ 805	\$ 813	\$ 822	\$ 830	\$ 838	\$ 846	\$ 855
\$	(2,478,433)	\$ (2,536,440)	\$ (2,596,024)	\$ (2,657,230)	\$ (2,720,105)	\$ (2,784,699)	\$ (2,851,060)	\$ (2,919,240)
\$	(2,138,314)	\$ (2,191,772)	\$ (2,246,567)	\$ (2,302,731)	\$ (2,360,299)	\$ (2,419,306)	\$ (2,479,789)	\$ (2,541,784)
\$	(4,616,747)	\$ (4,728,212)	\$ (4,842,590)	\$ (4,959,960)	\$ (5,080,404)	\$ (5,204,005)	\$ (5,330,849)	\$ (5,461,024)
\$	-	\$ -	\$ -	\$ (607,590)	\$ (5,293,560)	\$ -	\$ -	\$ -
\$	4,899,009	\$ 4,947,999	\$ 4,997,479	\$ 5,047,454	\$ 5,097,928	\$ 5,148,907	\$ 5,200,396	\$ 5,252,400
\$	48,959,863	\$ 50,202,613	\$ 51,407,242	\$ 52,570,579	\$ 53,081,724	\$ 48,846,698	\$ 49,747,714	\$ 50,593,093
\$	282,261	\$ 219,787	\$ 154,889	\$ (520,097)	\$ (5,276,036)	\$ (55,098)	\$ (130,453)	\$ (208,624)
\$	960,488	\$ 984,842	\$ 1,008,448	\$ 1,031,243	\$ 1,041,010	\$ 956,114	\$ 975,832	\$ 992,345
\$	50,202,613	\$ 51,407,242	\$ 52,570,579	\$ 53,081,724	\$ 48,846,698	\$ 49,747,714	\$ 50,593,093	\$ 51,376,814

NNSWC Revenue Analysis - Tonnage Increase



NNSWC Revenue Analysis - Tonnage Decrease

Interest:	3.50%	[input from "operation inputs"]
Inflation:	2.50%	[input from "operation inputs"]
Current Year:	2021	[input from "operation inputs"]

WCI Operation Costs

WCI Fixed Fee:	\$ 480,000	annually	[input from "operation inputs"]
Annual Increase in Fixed Fee:	3.0%		[input from "operation inputs"]
WCI Tonnage Fee:	\$4	per ton	[input from "operation inputs"]
Annual Increase in Tonnage Fee:	0%		[input from "operation inputs"]
WCI Special Waste Fee:	\$10.50	per ton	[input from "operation inputs"]
Annual Increase in Special Waste Fee:	0%		[input from "operation inputs"]
2020 Annual Tonnage (assumed):	89,600	tons	[input from "operation inputs"]
2020 Special Waste Tonnage (assumed):	50	tons	[input from "operation inputs"]
Annual Tonnage Increase:	1%	per year	[input from "operation inputs"]
Starting Year:	2021		[input from "operation inputs"]

Coalition Operating Costs

Personnel Costs	\$ 94,734	[input from "operation inputs"]
Operating & Maintenance Costs	\$ 30,577	[input from "operation inputs"]
Other Admin. and Overhead	\$ 22,455	[input from "operation inputs"]
Other Misc.	\$ 10,000	[input from "operation inputs"]
FA Fund Transfers	\$ 350,000	[input from "operation inputs"]
Professional Services	\$ 250,000	[input from "operation inputs"]
Total Coalition Costs:	\$ (758,000)	

Capital Costs

	PV Cost	Execution Year	2021-2031													
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
Cell 6 Ph 1 Engineering	\$ 200,000	2023	\$ 250,000	\$ -	\$ 210,130	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 Construction	\$ 2,500,000	2024	\$ -	\$ -	\$ -	\$ 2,692,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 1 CA	\$ 250,000	2024	\$ -	\$ -	\$ -	\$ 269,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scales	\$ 300,000	2036	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Scale House	\$ 400,000	2036	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Equipment Building	\$ 1,200,000	2036	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Drop-Off Area	\$ 200,000	2036	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Asphalt Pavement	\$ 600,000	2036	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Land Acquisition	\$ 1,000,000	2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Engineering	\$ 200,000	2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Construction	\$ 3,700,000	2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 CA	\$ 370,000	2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 1-6 Ph 1 Closure*	\$ 3,100,000	2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Sedimentation Basin	\$ 250,000	2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Leachate Pond	\$ 1,000,000	2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvement - Landfill Gas Flare	\$ 1,000,000	2048	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Engineering	\$ 200,000	2066	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Construction	\$ 2,700,000	2067	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 CA	\$ 270,000	2067	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 6 Ph 2 Closure*	\$ 2,700,000	2067	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Engineering	\$ 200,000	2083	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Construction	\$ 1,500,000	2084	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 CA	\$ 200,000	2084	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 7 Closure*	\$ 4,000,000	2084	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cell 8 Ph 2 Closure*	\$ 2,300,000	2088	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Insert Row Above Here</i>			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total CIP			\$ 250,000	\$ -	\$ 210,130	\$ 2,961,460	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Revenues

	2020 Rates	% Increase/Decrease	2021-2031										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Annual Tonnage	89,600	1%	89,600	90,496	91,401	92,315	93,238	94,171	95,112	96,063	97,024	97,994	98,974
Tipping Fee	\$ 24.00	0%	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00
Total Revenues			\$ 2,150,400	\$ 2,171,904	\$ 2,193,623	\$ 2,215,559	\$ 2,237,715	\$ 2,260,092	\$ 2,282,693	\$ 2,305,520	\$ 2,328,575	\$ 2,351,861	\$ 2,375,379

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	434,490	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	579,320	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	1,737,960	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	289,660	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	868,980	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	1,679,590	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	370,790	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,031,090	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	703,110	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	475,080	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,900,300	-
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,947,810
\$	-	-	-	-	3,910,410	-	-	-	-	-	1,679,590	-	-	-	370,790	#####	1,947,810

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
	99,964	100,964	101,973	102,993	104,023	105,063	106,114	107,175	108,247	109,329	110,422	111,527	112,642	113,768	114,906	116,055	117,216
\$	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
\$	2,399,133	2,423,125	2,447,356	2,471,829	2,496,548	2,521,513	2,546,728	2,572,196	2,597,917	2,623,897	2,650,136	2,676,637	2,703,403	2,730,437	2,757,742	2,785,319	2,813,172

2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065
118,388	119,572	120,767	121,975	123,195	124,427	125,671	126,928	128,197	129,479	130,774	132,081	133,402	134,736	136,084	137,444	138,819
\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00	\$ 24.00
\$ 2,841,304	\$ 2,869,717	\$ 2,898,414	\$ 2,927,398	\$ 2,956,672	\$ 2,986,239	\$ 3,016,102	\$ 3,046,263	\$ 3,076,725	\$ 3,107,492	\$ 3,138,567	\$ 3,169,953	\$ 3,201,653	\$ 3,233,669	\$ 3,266,006	\$ 3,298,666	\$ 3,331,653

NNSWC Revenue Analysis - Tonnage Decrease

Beginning Balance:	\$ 7,000,000.00
Interest:	3.50%
Inflation:	2.50%
Investment APR:	2.00%
Starting Year:	2021

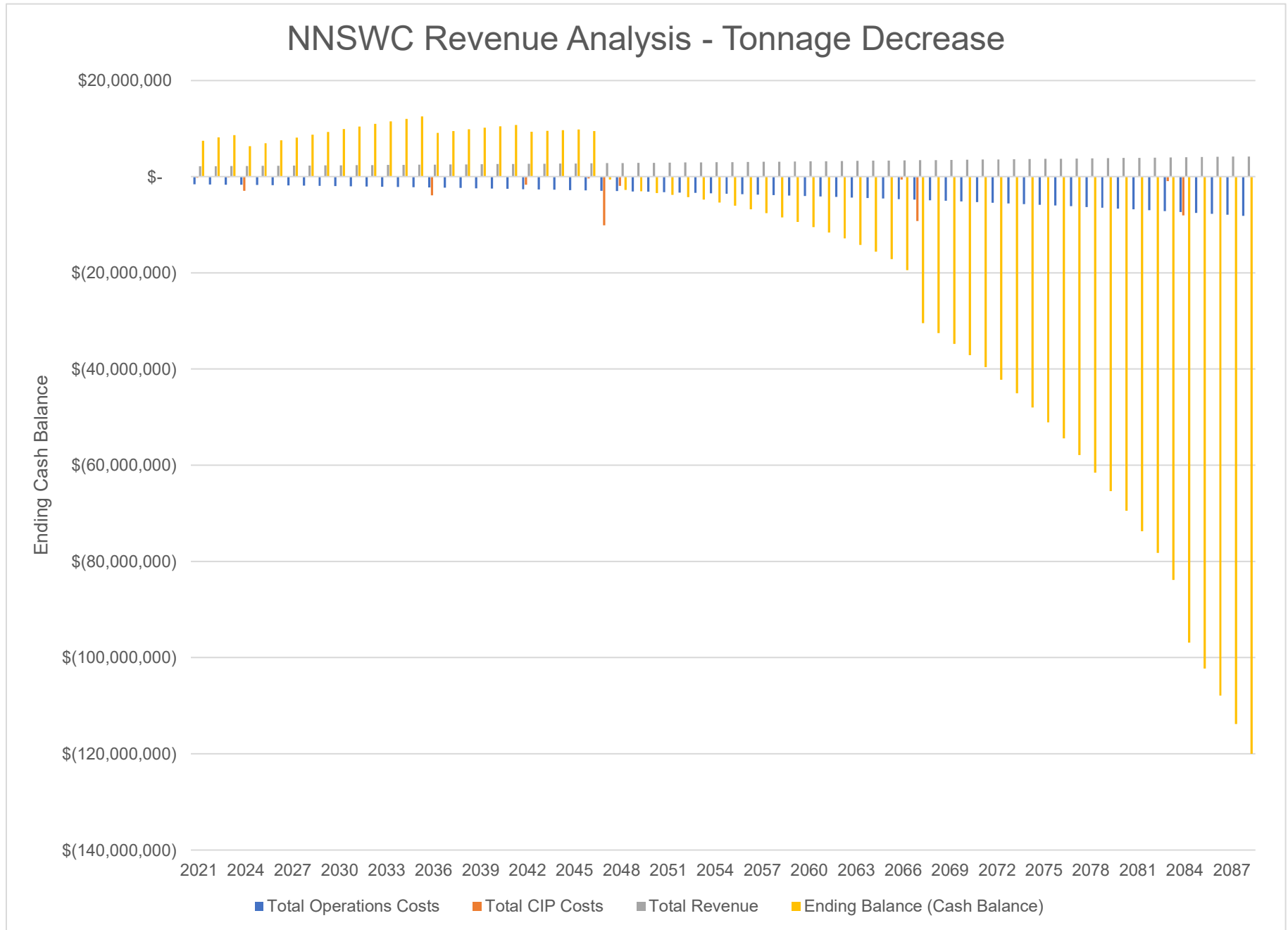
ProForma													
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Annual Tonnages	89,600	90,496	91,401	92,315	93,238	94,171	95,112	96,063	97,024	97,994	98,974	99,964	100,964
Fixed Fee \$	480,000	494,400	509,232	524,509	540,244	556,452	573,145	590,339	608,050	626,291	645,080	664,432	684,365
Tonnage Fee \$	358,400	361,984	365,604	369,260	372,952	376,682	380,449	384,253	388,096	391,977	395,897	399,856	403,854
Special Waste Fee \$	525	530	536	541	546	552	557	563	568	574	580	586	592
Total WCI Operations Costs \$	(838,925)	(856,914)	(875,371)	(894,310)	(913,743)	(933,685)	(954,151)	(975,156)	(996,714)	(1,018,842)	(1,041,556)	(1,064,874)	(1,088,811)
Total Coalition Operating Costs \$	(758,000)	(776,950)	(796,374)	(816,283)	(836,690)	(857,607)	(879,048)	(901,024)	(923,549)	(946,638)	(970,304)	(994,562)	(1,019,426)
Total Operations Costs \$	(1,596,925)	(1,633,864)	(1,671,745)	(1,710,593)	(1,750,433)	(1,791,293)	(1,833,199)	(1,876,179)	(1,920,263)	(1,965,480)	(2,011,860)	(2,059,435)	(2,108,237)
Total CIP Costs \$	(250,000)	-	(210,130)	(2,961,460)	-	-	-	-	-	-	-	-	-
Total Revenue \$	2,150,400	2,171,904	2,193,623	2,215,559	2,237,715	2,260,092	2,282,693	2,305,520	2,328,575	2,351,861	2,375,379	2,399,133	2,423,125
Beginning Balance \$	7,000,000	7,443,475	8,127,584	8,598,962	6,311,256	6,921,387	7,526,157	8,123,454	8,712,308	9,291,675	9,860,468	10,417,548	10,961,726
Annual Change \$	303,475	538,040	311,748	(2,456,494)	487,282	468,799	449,494	429,340	408,312	386,381	363,519	339,698	314,888
Change from Investments \$	140,000	146,070	159,630	168,787	122,849	135,971	147,804	159,513	171,056	182,412	193,561	204,480	215,145
Ending Balance (Cash Balance) \$	7,443,475	8,127,584	8,598,962	6,311,256	6,921,387	7,526,157	8,123,454	8,712,308	9,291,675	9,860,468	10,417,548	10,961,726	11,491,759

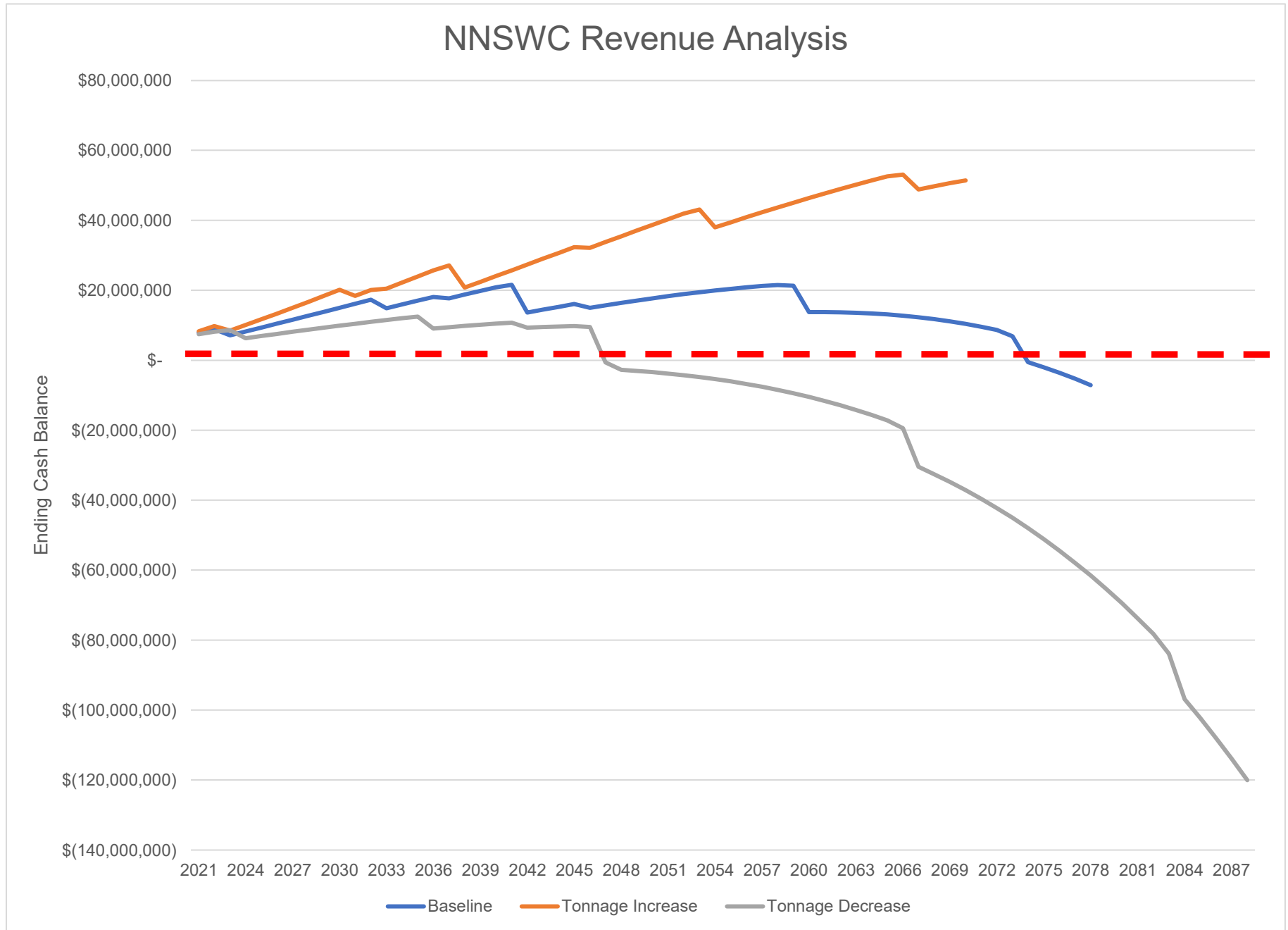
2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
101,973	102,993	104,023	105,063	106,114	107,175	108,247	109,329	110,422	111,527	112,642	113,768	114,906	116,055	117,216
\$ 704,896	\$ 726,043	\$ 747,824	\$ 770,259	\$ 793,367	\$ 817,168	\$ 841,683	\$ 866,933	\$ 892,941	\$ 919,730	\$ 947,322	\$ 975,741	\$ 1,005,013	\$ 1,035,164	\$ 1,066,219
\$ 407,893	\$ 411,972	\$ 416,091	\$ 420,252	\$ 424,455	\$ 428,699	\$ 432,986	\$ 437,316	\$ 441,689	\$ 446,106	\$ 450,567	\$ 455,073	\$ 459,624	\$ 464,220	\$ 468,862
\$ 597	\$ 603	\$ 610	\$ 616	\$ 622	\$ 628	\$ 634	\$ 641	\$ 647	\$ 653	\$ 660	\$ 667	\$ 673	\$ 680	\$ 687
\$ (1,113,386)	\$ (1,138,618)	\$ (1,164,525)	\$ (1,191,127)	\$ (1,218,443)	\$ (1,246,495)	\$ (1,275,303)	\$ (1,304,890)	\$ (1,335,278)	\$ (1,366,489)	\$ (1,398,549)	\$ (1,431,481)	\$ (1,465,310)	\$ (1,500,064)	\$ (1,535,768)
\$ (1,044,911)	\$ (1,071,034)	\$ (1,097,810)	\$ (1,125,255)	\$ (1,153,387)	\$ (1,182,221)	\$ (1,211,777)	\$ (1,242,071)	\$ (1,273,123)	\$ (1,304,951)	\$ (1,337,575)	\$ (1,371,014)	\$ (1,405,290)	\$ (1,440,422)	\$ (1,476,432)
\$ (2,158,298)	\$ (2,209,652)	\$ (2,262,335)	\$ (2,316,382)	\$ (2,371,830)	\$ (2,428,716)	\$ (2,487,080)	\$ (2,546,961)	\$ (2,608,401)	\$ (2,671,440)	\$ (2,736,124)	\$ (2,802,495)	\$ (2,870,600)	\$ (2,940,486)	\$ (3,012,200)
\$ -	\$ -	\$ (3,910,410)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1,679,590)	\$ -	\$ -	\$ -	\$ (370,790)	\$ (10,109,580)	\$ (1,947,810)
\$ 2,447,356	\$ 2,471,829	\$ 2,496,548	\$ 2,521,513	\$ 2,546,728	\$ 2,572,196	\$ 2,597,917	\$ 2,623,897	\$ 2,650,136	\$ 2,676,637	\$ 2,703,403	\$ 2,730,437	\$ 2,757,742	\$ 2,785,319	\$ 2,813,172
\$ 11,491,759	\$ 12,006,349	\$ 12,504,143	\$ 9,073,316	\$ 9,455,006	\$ 9,815,473	\$ 10,151,550	\$ 10,461,566	\$ 10,743,749	\$ 9,316,664	\$ 9,503,979	\$ 9,657,696	\$ 9,775,063	\$ 9,483,128	\$ (595,790)
\$ 289,058	\$ 262,177	\$ (3,676,198)	\$ 205,131	\$ 174,898	\$ 143,479	\$ 110,837	\$ 76,935	\$ (1,637,855)	\$ 5,197	\$ (32,720)	\$ (72,058)	\$ (483,648)	\$ (10,264,746)	\$ (2,146,838)
\$ 225,532	\$ 235,616	\$ 245,371	\$ 176,559	\$ 185,569	\$ 192,598	\$ 199,179	\$ 205,248	\$ 210,770	\$ 182,118	\$ 186,437	\$ 189,425	\$ 191,713	\$ 185,828	\$ (15,632)
\$ 12,006,349	\$ 12,504,143	\$ 9,073,316	\$ 9,455,006	\$ 9,815,473	\$ 10,151,550	\$ 10,461,566	\$ 10,743,749	\$ 9,316,664	\$ 9,503,979	\$ 9,657,696	\$ 9,775,063	\$ 9,483,128	\$ (595,790)	\$ (2,758,260)

2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062
118,388	119,572	120,767	121,975	123,195	124,427	125,671	126,928	128,197	129,479	130,774	132,081	133,402	134,736
\$ 1,098,205	\$ 1,131,151	\$ 1,165,086	\$ 1,200,039	\$ 1,236,040	\$ 1,273,121	\$ 1,311,315	\$ 1,350,654	\$ 1,391,174	\$ 1,432,909	\$ 1,475,896	\$ 1,520,173	\$ 1,565,778	\$ 1,612,751
\$ 473,551	\$ 478,286	\$ 483,069	\$ 487,900	\$ 492,779	\$ 497,707	\$ 502,684	\$ 507,710	\$ 512,788	\$ 517,915	\$ 523,095	\$ 528,326	\$ 533,609	\$ 538,945
\$ 694	\$ 701	\$ 708	\$ 715	\$ 722	\$ 729	\$ 736	\$ 744	\$ 751	\$ 759	\$ 766	\$ 774	\$ 782	\$ 789
\$ (1,572,450)	\$ (1,610,138)	\$ (1,648,863)	\$ (1,688,653)	\$ (1,729,540)	\$ (1,771,557)	\$ (1,814,734)	\$ (1,859,108)	\$ (1,904,712)	\$ (1,951,583)	\$ (1,999,757)	\$ (2,049,272)	\$ (2,100,169)	\$ (2,152,486)
\$ (1,513,343)	\$ (1,551,177)	\$ (1,589,956)	\$ (1,629,705)	\$ (1,670,448)	\$ (1,712,209)	\$ (1,755,014)	\$ (1,798,890)	\$ (1,843,862)	\$ (1,889,958)	\$ (1,937,207)	\$ (1,985,637)	\$ (2,035,278)	\$ (2,086,160)
\$ (3,085,793)	\$ (3,161,315)	\$ (3,238,819)	\$ (3,318,358)	\$ (3,399,988)	\$ (3,483,765)	\$ (3,569,749)	\$ (3,657,998)	\$ (3,748,574)	\$ (3,841,541)	\$ (3,936,964)	\$ (4,034,910)	\$ (4,135,447)	\$ (4,238,646)
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 2,841,304	\$ 2,869,717	\$ 2,898,414	\$ 2,927,398	\$ 2,956,672	\$ 2,986,239	\$ 3,016,102	\$ 3,046,263	\$ 3,076,725	\$ 3,107,492	\$ 3,138,567	\$ 3,169,953	\$ 3,201,653	\$ 3,233,669
\$ (2,758,260)	\$ (3,057,601)	\$ (3,409,254)	\$ (3,816,643)	\$ (4,282,596)	\$ (4,810,063)	\$ (5,402,108)	\$ (6,061,907)	\$ (6,792,757)	\$ (7,598,079)	\$ (8,481,420)	\$ (9,446,459)	\$ (10,497,012)	\$ (11,637,035)
\$ (244,489)	\$ (291,598)	\$ (340,405)	\$ (390,960)	\$ (443,316)	\$ (497,526)	\$ (553,647)	\$ (611,735)	\$ (671,849)	\$ (734,049)	\$ (798,397)	\$ (864,957)	\$ (933,794)	\$ (1,004,977)
\$ (54,853)	\$ (60,055)	\$ (66,984)	\$ (74,993)	\$ (84,152)	\$ (94,518)	\$ (106,152)	\$ (119,115)	\$ (133,473)	\$ (149,292)	\$ (166,643)	\$ (185,596)	\$ (206,228)	\$ (228,616)
\$ (3,057,601)	\$ (3,409,254)	\$ (3,816,643)	\$ (4,282,596)	\$ (4,810,063)	\$ (5,402,108)	\$ (6,061,907)	\$ (6,792,757)	\$ (7,598,079)	\$ (8,481,420)	\$ (9,446,459)	\$ (10,497,012)	\$ (11,637,035)	\$ (12,870,628)

2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076
136,084	137,444	138,819	140,207	141,609	143,025	144,455	145,900	147,359	148,833	150,321	151,824	153,342	154,876
\$ 1,661,134	\$ 1,710,968	\$ 1,762,297	\$ 1,815,166	\$ 1,869,621	\$ 1,925,710	\$ 1,983,481	\$ 2,042,985	\$ 2,104,275	\$ 2,167,403	\$ 2,232,425	\$ 2,299,398	\$ 2,368,380	\$ 2,439,431
\$ 544,334	\$ 549,778	\$ 555,275	\$ 560,828	\$ 566,436	\$ 572,101	\$ 577,822	\$ 583,600	\$ 589,436	\$ 595,330	\$ 601,284	\$ 607,297	\$ 613,370	\$ 619,503
\$ 797	\$ 805	\$ 813	\$ 822	\$ 830	\$ 838	\$ 846	\$ 855	\$ 863	\$ 872	\$ 881	\$ 890	\$ 898	\$ 907
\$ (2,206,266)	\$ (2,261,551)	\$ (2,318,386)	\$ (2,376,816)	\$ (2,436,887)	\$ (2,498,648)	\$ (2,562,149)	\$ (2,627,440)	\$ (2,694,574)	\$ (2,763,606)	\$ (2,834,590)	\$ (2,907,584)	\$ (2,982,648)	\$ (3,059,842)
\$ (2,138,314)	\$ (2,191,772)	\$ (2,246,567)	\$ (2,302,731)	\$ (2,360,299)	\$ (2,419,306)	\$ (2,479,789)	\$ (2,541,784)	\$ (2,605,328)	\$ (2,670,462)	\$ (2,737,223)	\$ (2,805,654)	\$ (2,875,795)	\$ (2,947,690)
\$ (4,344,580)	\$ (4,453,323)	\$ (4,564,952)	\$ (4,679,546)	\$ (4,797,186)	\$ (4,917,955)	\$ (5,041,938)	\$ (5,169,224)	\$ (5,299,903)	\$ (5,434,067)	\$ (5,571,813)	\$ (5,713,238)	\$ (5,858,443)	\$ (6,007,532)
\$ -	\$ -	\$ -	\$ (607,590)	\$ (9,248,140)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 3,266,006	\$ 3,298,666	\$ 3,331,653	\$ 3,364,969	\$ 3,398,619	\$ 3,432,605	\$ 3,466,931	\$ 3,501,600	\$ 3,536,616	\$ 3,571,982	\$ 3,607,702	\$ 3,643,779	\$ 3,680,217	\$ 3,717,019
\$ (12,870,628)	\$ (14,202,042)	\$ (15,635,684)	\$ (17,176,118)	\$ (19,435,665)	\$ (30,464,338)	\$ (32,551,335)	\$ (34,765,336)	\$ (37,115,487)	\$ (39,607,433)	\$ (42,247,093)	\$ (45,040,594)	\$ (47,994,277)	\$ (51,114,704)
\$ (1,078,574)	\$ (1,154,657)	\$ (1,233,300)	\$ (1,922,167)	\$ (10,646,707)	\$ (1,485,350)	\$ (1,575,007)	\$ (1,667,624)	\$ (1,763,287)	\$ (1,862,085)	\$ (1,964,111)	\$ (2,069,459)	\$ (2,178,226)	\$ (2,290,513)
\$ (252,840)	\$ (278,984)	\$ (307,134)	\$ (337,380)	\$ (381,966)	\$ (601,647)	\$ (638,994)	\$ (682,527)	\$ (728,659)	\$ (777,575)	\$ (829,390)	\$ (884,224)	\$ (942,201)	\$ (1,003,450)
\$ (14,202,042)	\$ (15,635,684)	\$ (17,176,118)	\$ (19,435,665)	\$ (30,464,338)	\$ (32,551,335)	\$ (34,765,336)	\$ (37,115,487)	\$ (39,607,433)	\$ (42,247,093)	\$ (45,040,594)	\$ (47,994,277)	\$ (51,114,704)	\$ (54,408,666)

2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088
156,425	157,989	159,569	161,164	162,776	164,404	166,048	167,708	169,385	171,079	172,790	174,518
\$ 2,512,614	\$ 2,587,993	\$ 2,665,632	\$ 2,745,601	\$ 2,827,969	\$ 2,912,809	\$ 3,000,193	\$ 3,090,199	\$ 3,182,905	\$ 3,278,392	\$ 3,376,743	\$ 3,478,046
\$ 625,698	\$ 631,955	\$ 638,275	\$ 644,658	\$ 651,104	\$ 657,615	\$ 664,191	\$ 670,833	\$ 677,542	\$ 684,317	\$ 691,160	\$ 698,072
\$ 917	\$ 926	\$ 935	\$ 944	\$ 954	\$ 963	\$ 973	\$ 983	\$ 992	\$ 1,002	\$ 1,012	\$ 1,023
\$ (3,139,229)	\$ (3,220,874)	\$ (3,304,842)	\$ (3,391,203)	\$ (3,480,027)	\$ (3,571,387)	\$ (3,665,357)	\$ (3,762,014)	\$ (3,861,439)	\$ (3,963,711)	\$ (4,068,916)	\$ (4,177,140)
\$ (3,021,382)	\$ (3,096,917)	\$ (3,174,340)	\$ (3,253,698)	\$ (3,335,041)	\$ (3,418,417)	\$ (3,503,877)	\$ (3,591,474)	\$ (3,681,261)	\$ (3,773,292)	\$ (3,867,625)	\$ (3,964,315)
\$ (6,160,611)	\$ (6,317,790)	\$ (6,479,182)	\$ (6,644,901)	\$ (6,815,068)	\$ (6,989,804)	\$ (7,169,234)	\$ (7,353,488)	\$ (7,542,699)	\$ (7,737,003)	\$ (7,936,541)	\$ (8,141,455)
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (924,510)	\$ (8,054,760)	\$ -	\$ -	\$ -	\$ -
\$ 3,754,189	\$ 3,791,731	\$ 3,829,649	\$ 3,867,945	\$ 3,906,625	\$ 3,945,691	\$ 3,985,148	\$ 4,024,999	\$ 4,065,249	\$ 4,105,902	\$ 4,146,961	\$ 4,188,430
\$ (54,408,666)	\$ (57,883,192)	\$ (61,545,553)	\$ (65,403,272)	\$ (69,464,130)	\$ (73,736,178)	\$ (78,227,742)	\$ (83,871,944)	\$ (96,901,920)	\$ (102,284,474)	\$ (107,923,163)	\$ (113,831,055)
\$ (2,406,422)	\$ (2,526,059)	\$ (2,649,533)	\$ (2,776,956)	\$ (2,908,443)	\$ (3,044,113)	\$ (4,108,596)	\$ (11,383,249)	\$ (3,477,450)	\$ (3,631,102)	\$ (3,789,580)	\$ (3,953,025)
\$ (1,068,104)	\$ (1,136,302)	\$ (1,208,185)	\$ (1,283,902)	\$ (1,363,605)	\$ (1,447,451)	\$ (1,535,606)	\$ (1,646,727)	\$ (1,905,104)	\$ (2,007,587)	\$ (2,118,312)	\$ (2,234,255)
\$ (57,883,192)	\$ (61,545,553)	\$ (65,403,272)	\$ (69,464,130)	\$ (73,736,178)	\$ (78,227,742)	\$ (83,871,944)	\$ (96,901,920)	\$ (102,284,474)	\$ (107,923,163)	\$ (113,831,055)	\$ (120,018,335)









APPENDIX D – CONCEPTUAL EXPANSION ALTERNATIVES FIGURES



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS AND PROPOSED CONTOURS SHOWN ARE TOP OF LINER. CONTOUR INTERVAL IS 2-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  AREA BOUNDARY
-  PROPOSED ROAD

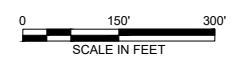
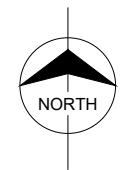






Figure A
NNSWC Regional Landfill
Conceptual Expansion Opt. 1
Base Grades Plan



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 2 FEET.
3. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  AREA BOUNDARY
-  PROPOSED ROAD

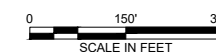


Figure B
 NNSWC Regional Landfill
 Conceptual Expansion Opt. 1
 Final Grades Plan



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS AND PROPOSED CONTOURS SHOWN ARE TOP OF LINER. CONTOUR INTERVAL IS 2-FEET.

LEGEND

- EXISTING PERMITTED CONTOURS
- PROPOSED EXPANSION CONTOURS
- AREA BOUNDARY
- PROPOSED ROAD

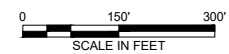
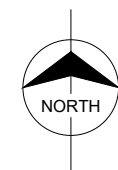




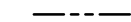

	Figure C
	NNSWC Regional Landfill
	Conceptual Expansion Opt. 2 Base Grades Plan



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 2 FEET.
3. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  AREA BOUNDARY
-  PROPOSED ROAD

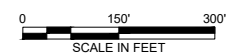
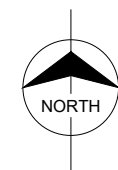






Figure D
 NNSWC Regional Landfill
 Conceptual Expansion Opt. 2
 Final Grades Plan



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS AND PROPOSED CONTOURS SHOWN ARE TOP OF LINER. CONTOUR INTERVAL IS 2-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  AREA BOUNDARY
-  PROPOSED ROAD

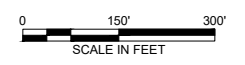
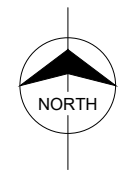
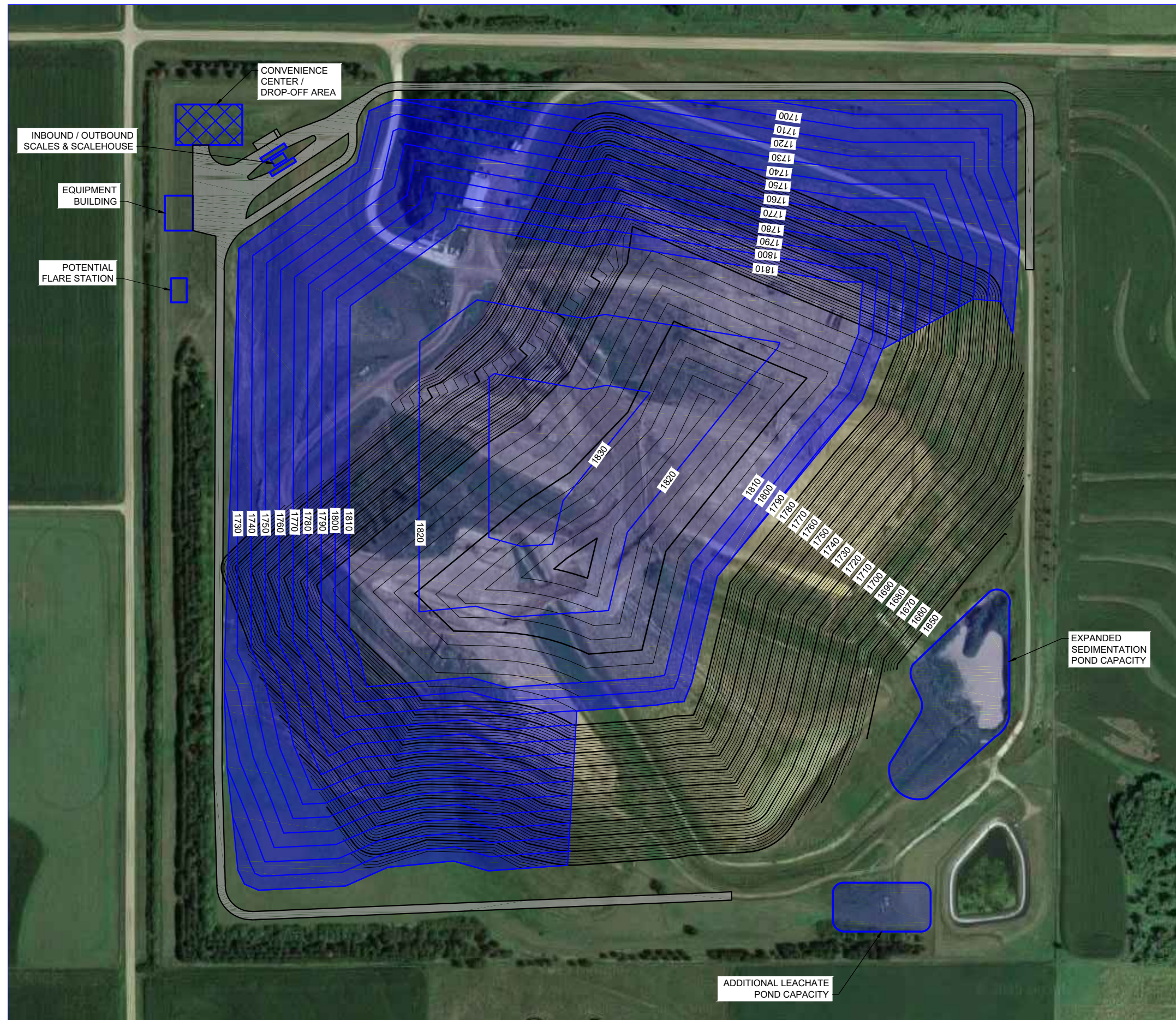






Figure E
NNSWC Regional Landfill
Conceptual Expansion Opt. 3A
Base Grades Plan



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 2 FEET.
3. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  AREA BOUNDARY
-  PROPOSED ROAD



0 150' 300'
SCALE IN FEET







Figure F
NNSWC Regional Landfill
Conceptual Expansion Opt. 3A
Final Grades Plan



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS AND PROPOSED CONTOURS SHOWN ARE TOP OF LINER. CONTOUR INTERVAL IS 2-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  AREA BOUNDARY
-  PROPOSED ROAD

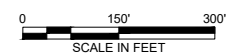
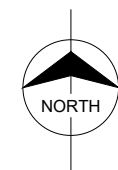




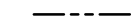

Figure G
 NNSWC Regional Landfill
 Conceptual Expansion Opt. 3B
 Base Grades Plan



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 2 FEET.
3. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  AREA BOUNDARY
-  PROPOSED ROAD

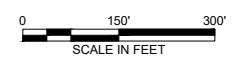
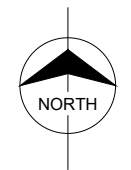


Figure H
 NNSWC Regional Landfill
 Conceptual Expansion Opt. 3B
 Final Grades Plan



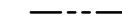

APPENDIX E – PREFERRED EXPANSION OPTION FIGURES



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS AND PROPOSED CONTOURS SHOWN ARE TOP OF LINER. CONTOUR INTERVAL IS 2-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  AREA BOUNDARY
-  PROPOSED ROAD

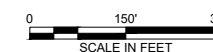
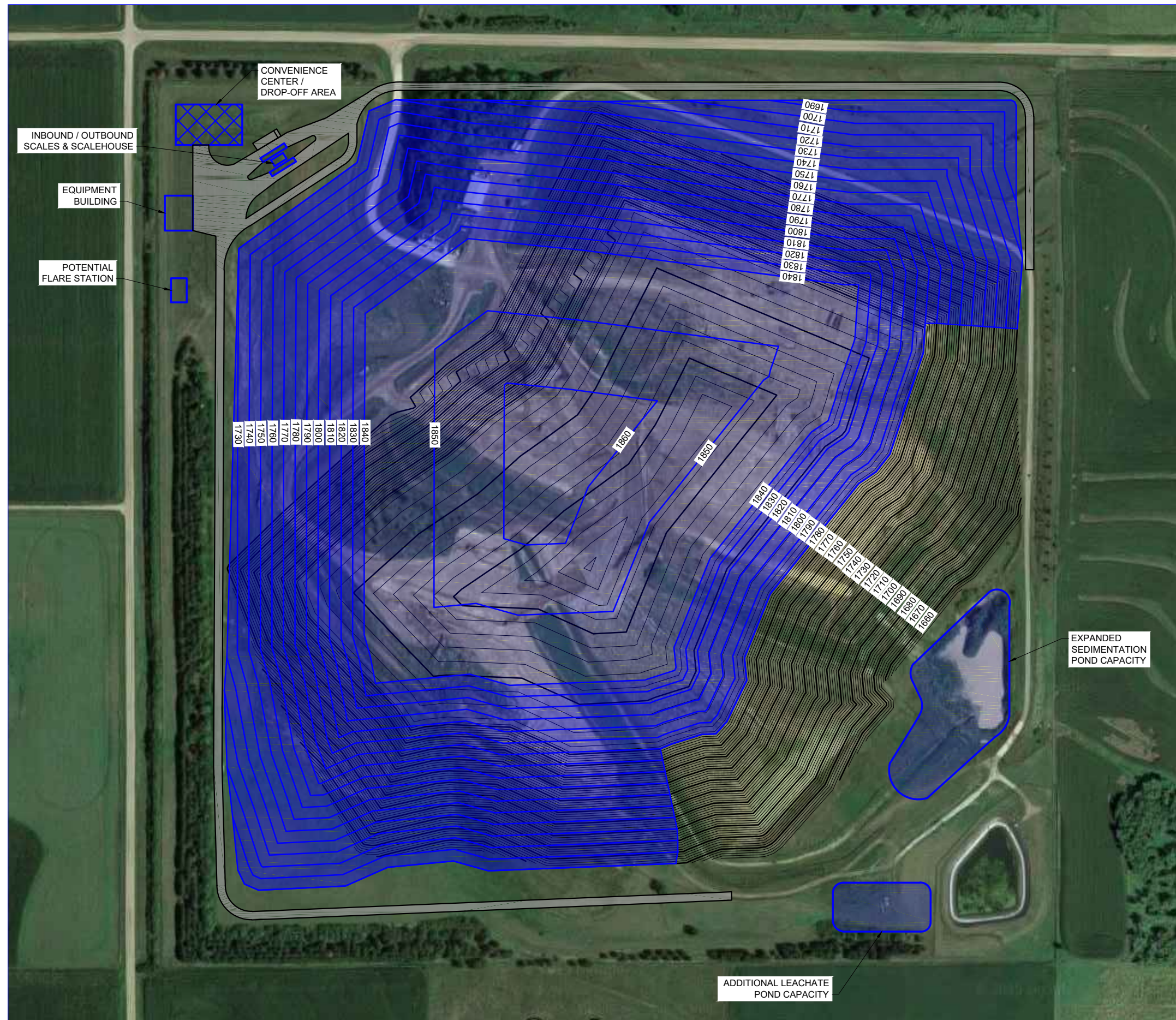





Figure 1
 NNSWC Regional Landfill
 Final Expansion Option
 Base Grades Plan

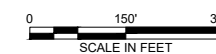



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 2 FEET.
3. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  PROPOSED ROAD



	<p>Figure 2 NNSWC Regional Landfill</p>
	<p>Final Expansion Option Final Grades Plan</p>

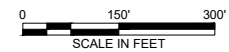
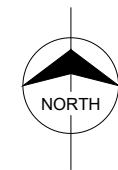


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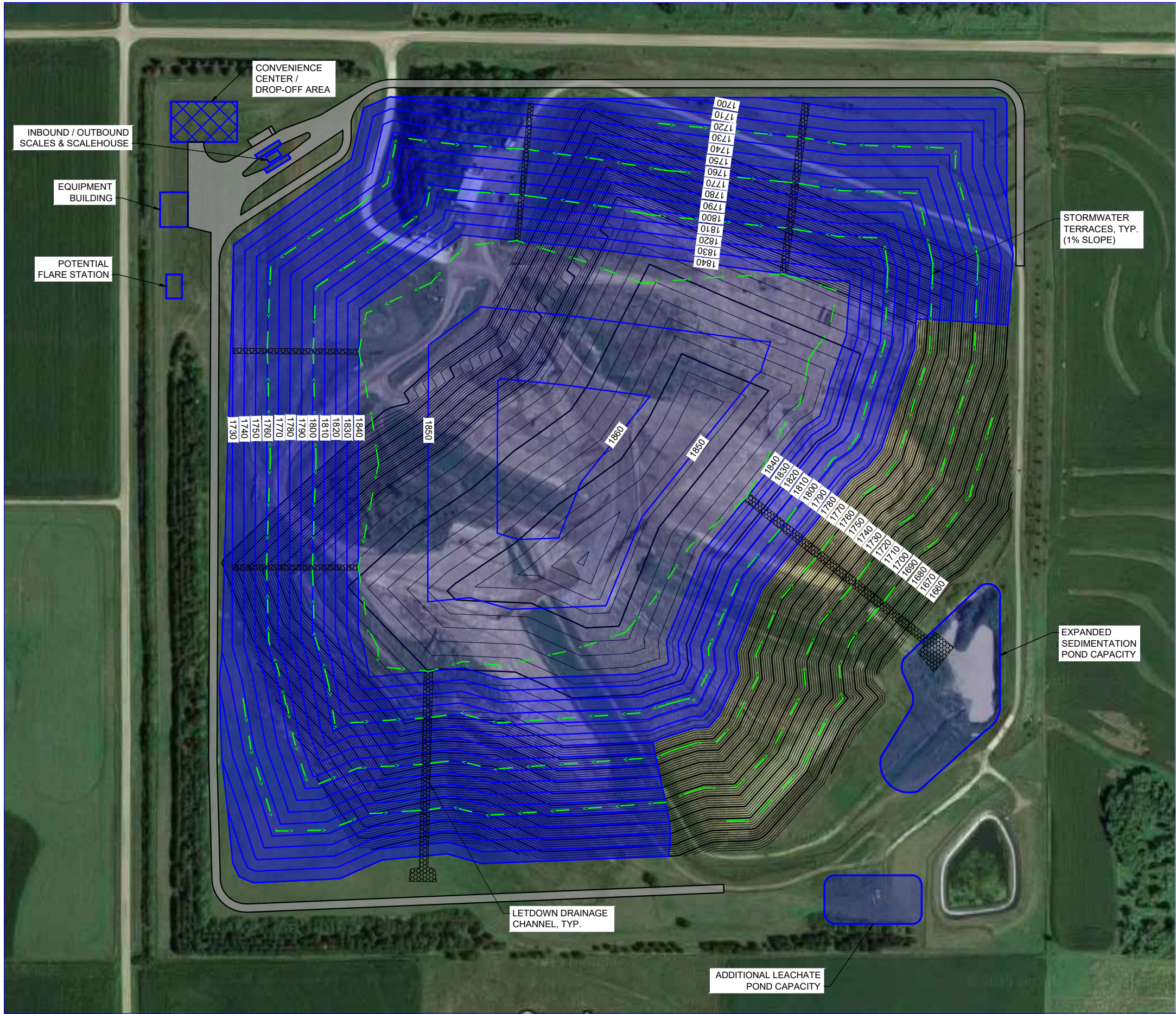
1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS AND PROPOSED CONTOURS SHOWN ARE TOP OF LINER. CONTOUR INTERVAL IS 2-FEET.

LEGEND

- EXISTING PERMITTED CONTOURS
- PROPOSED EXPANSION CONTOURS
- PROPOSED ROAD
- LDT LEACHATE DRAINAGE TRENCH
- HLD HIGH CAPACITY LEACHATE DRAIN







	<p>Figure 3 NNSWC Regional Landfill</p>
	<p>Final Expansion Option Leachate Collection Plan</p>



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 2 FEET.
3. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  EXISTING PERMITTED CONTOURS
-  PROPOSED EXPANSION CONTOURS
-  PROPOSED ROAD
-  STORMWATER TERRACES

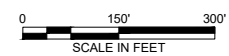
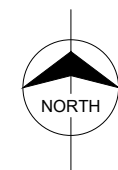
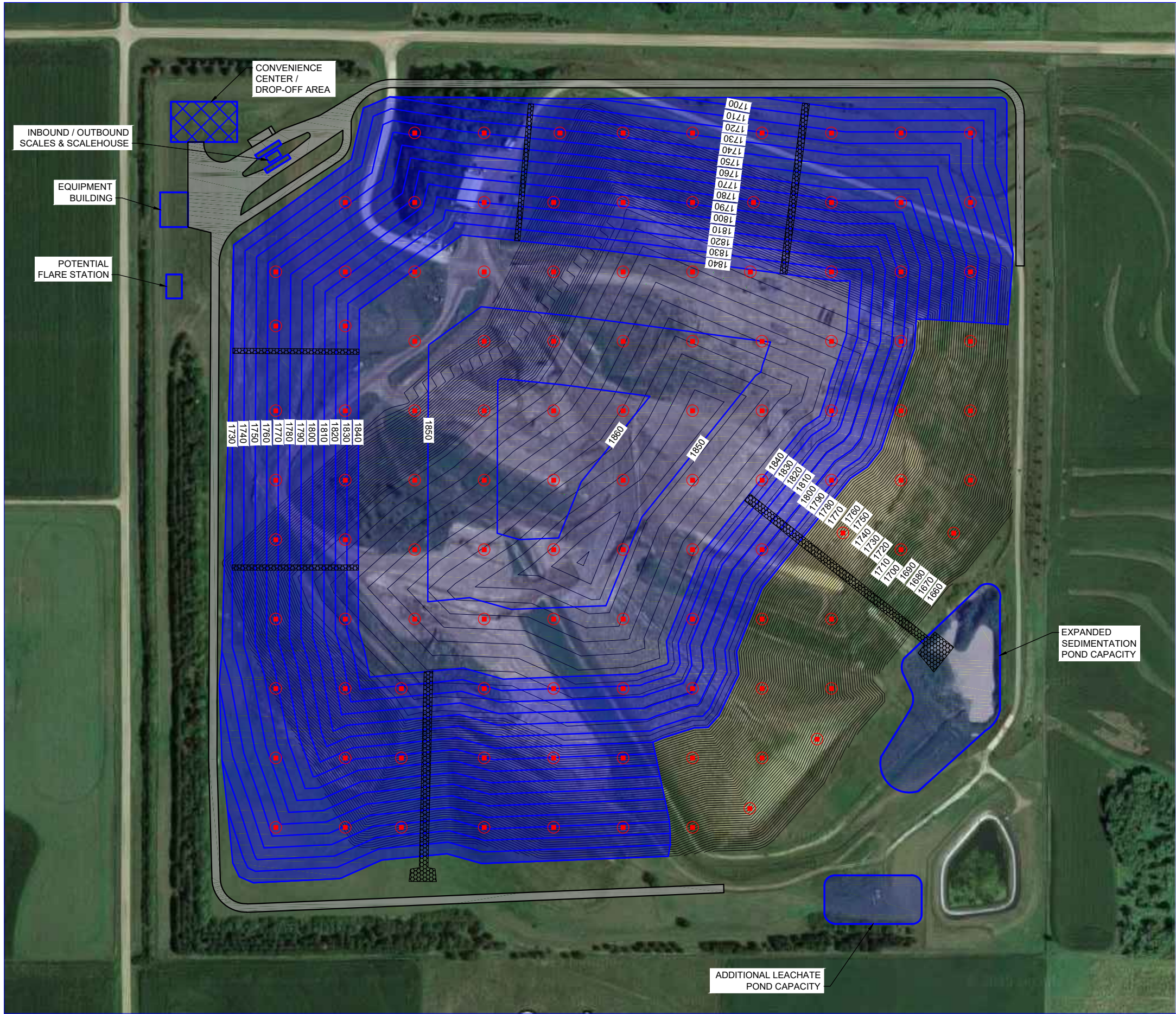


Figure 4
NNSWC Regional Landfill
Final Expansion Option
Stormwater Plan



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. EXISTING PERMITTED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 2 FEET.
3. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL CONTOUR INTERVAL IS 10-FEET.

LEGEND

- EXISTING PERMITTED CONTOURS
- PROPOSED EXPANSION CONTOURS
- PROPOSED ROAD
- GAS VENT

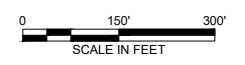
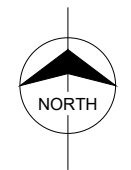


Figure 5
 NNSWC Regional Landfill
 Final Expansion Option
 Landfill Gas Vent Plan

APPENDIX F – LANDFILL STABILITY CALCULATIONS



Client:	NNSWC	Page	1	of	11
Project:	122625	Date:	9/28/2020	Made by:	Textor
NNSWC Landfill Expansion			Checked by:		
Slope Stability and Settlement			Prelim:		Final:

Introduction

This project involves the evaluation of existing conditions as well as design of a new expansion at the Northeast Nebraska Solid Waste Coalition (NNSWC) MSW landfill near Clarkson, Nebraska. For evaluation of existing conditions, previous design had stipulated a maximum side slope of 4H:1V for placed MSW. Survey information has confirmed that slopes have been placed at steeper slopes than this in some areas of the landfill. For the new expansion, MSW is to be placed to a higher elevation than currently permitted. For both of these conditions, slope stability and settlement calculations were performed to confirm minimum factors of safety are met for the existing and future conditions.

As part of previous design and permitting of the landfill, slope stability and settlement calculations were performed. These previous calculations and subsurface information were considered as part of the current evaluations. New geotechnical information was also obtained that was also considered.

Subsurface Information

As part of previous work at the site, 23 borings were drilled. These borings covered the footprint of the permitted landfill area and included borings (sampled and not sampled) and piezometers. Field and laboratory testing on a limited number of these borings was performed. Field testing included SPT sampling and vane shear tests. Laboratory testing included index testing, unconfined compression, consolidation and consolidated-undrained triaxial testing with pore pressure measurements.

For the current evaluation, additional field investigation and laboratory testing were performed. For the field investigation, geotechnical borings were performed, one on the east side and one on the west. The east boring was to coincide with a controlling section based on the higher slopes and liner configuration. The west boring was in an area where the landfill was going to be expanded to. Additionally, gas vent wells were installed to the north of the landfill. Samples were obtained during installation of two of these gas wells. Laboratory testing included index testing, unconsolidated-undrained triaxial tests, direct shear tests and consolidation tests.

General subsurface conditions at the site are made up of Loess soil over Glacial Till. Both soil types are generally classified as a Lean Clay based on Atterberg Limits results, with the Glacial Till being slightly more plastic than the Loess and containing more sand. The Loess soil layer has lower blow counts, higher moisture content and lower dry density compared to the Glacial Till. Based on this, the Loess soil was the controlling soil layer in terms of strength and consolidation.

The thickness of the Loess layer varied throughout the site. Original ground surface at the site varied significant, upwards of 100 feet between the highest and lowest ground surface elevation borings. Borings at higher ground elevations had thicker Loess deposits than borings at lower ground elevations. During development of the currently constructed landfill phases, civil grading was performed. This led to Loess thicknesses beneath the landfill varying from original thickness encountered.

Groundwater was generally found above the Loess-Glacial Till interface. The Loess soils in this zone had higher moisture contents, lower strengths and higher compressibility compared to Loess in the upper portions of the subsurface profile. Because of this, these soils were the focus of sampling and testing for the current investigation.

A plan view with borings, boring fence diagram, SPT blow counts and historical laboratory testing results are included in Attachment A.

Soil Design Parameters

Historical and current laboratory results are available to be considered when determining soil design parameters for design. While some of the testing, like consolidation testing, are directly comparable, there were modifications to the laboratory tests performed between the two investigations, specifically for strength testing. Historical strength testing included consolidated-undrained with pore pressure measurements triaxial testing (CU-bar), unconfined compression testing (UC) and in-situ vane shear testing. For the current conditions, strength testing included direct shear testing (DS) and unconsolidated-undrained triaxial testing (UU). Based on the differences in measured strengths and results, these different tests will all be evaluated separately in determining the design parameters.

Unit Weight

Based on historical testing results, average unit weights for the Loess and Glacial Till were calculated to be 114 and 121 pcf. These were used for the evaluations.



Client:	NNSWC	Page	2	of	11
Project:	122625	Date:	9/28/2020	Made by:	Textor
NNWSC Landfill Expansion			Checked by:		
Slope Stability and Settlement			Prelim: Final:		

Undrained Strength

Four different tests that measure undrained shear strengths have been performed during the historical and current investigations including CU-bar, UC, UU and vane shear testing. For CU-bar testing, the undrained shear strength measured is the total shear strength envelope which provides the relationship between undrained shear strength and effective stress. For the UC, UU and vane shear testing, cohesion or the undrained shear strength is measured for the effective stress associated with the sampling/testing depth.

Most laboratory strength testing was performed on the Loess, with the exception being one CU-bar test performed on Glacial Till. As noted previously, the Loess was found to be of higher moisture content, lower density and lower strength than the Glacial Till and thus will be the controlling soil for any slope stability calculations.

For CU-bar testing from the previous investigation, the total friction angle and cohesion for the Loess were 16 degrees and 540 psf, respectively and total friction angle and cohesion for the Glacial Till were 17 degrees and 179 psf, respectively. As noted, these design parameters are the total shear strength envelope and not an undrained cohesion value. Per requirements from the Nebraska Department of Natural Resources (NeDNR) during previous submittals, slope stability calculations were required to be performed using this total shear strength envelope. These values were used as the basis for the total shear strength envelope for the current evaluations.

Previous and current laboratory testing included UC, UU and vane shear testing. For UC testing, significantly lower strengths were measured. It is possible that this testing type led to artificially lower shear strengths. Since there is no confining stress used for UC testing, any disturbance or failure plane within the sample will lead to a premature failure. Loess is cemented by nature, making it highly susceptible to apparent strength loss because of disturbance during sampling causing a breakdown of the cemented structure. Based on this, UC results were not considered.

For UU testing, disturbance is still a concern. However, since the samples are confined during testing to the approximate in-situ effective stress the samples, the effects from disturbance are partially mitigated. Results of the UU testing did vary significantly though, with cohesions ranging from 570 to 1,627 psf with no apparent correlation with depth.

Vane shear testing was also performed during the previous investigation. Since this test does not require obtaining a sample, it provides the most direct measurement of the materials in-situ and will be affected the least by disturbance. Results of the vane shear testing provided cohesions between 1,600 and 1,640 psf at different depths. However, the maximum measurable cohesion for the apparatus used was 1,640 psf, indicating higher undrained cohesions may have been possible. The vane shear testing results were considered the most representative for undrained shear strengths and were thus relied upon most in determining the undrained cohesion.

For the Glacial Till, SPT blow counts were used to estimate cohesion. The average SPT blow count was calculated to be 16 blows per foot. Correcting for an auto hammer efficiency of 75%, the average SPT blow count will be 20 blows per foot. Using the cohesion relationship of $c = N_{60}/8$, an undrained cohesion of 2,500 psf was used for the Glacial Till.

Drained Strength

To measure drained shear strength, CU-bar and DS tests were performed during the historical and current investigations, respectively. The results from these tests are comparable.

For CU-bar testing from the previous investigation, the effective friction angle and cohesion for the Loess were 28 degrees and 234 psf, respectively and effective friction angle and cohesion for the Glacial Till were 28.1 degrees and 156 psf. The Glacial Till values were used as the basis for the effective shear strength envelope for Glacial Till in the current evaluations. Adjusted values were used for the Loess as discussed below.

For DS testing, three tests were performed on Loess. Instead of evaluating the results of each of the tests separately, the results of all three tests were evaluated together (9 points). This is considered reasonable since the material is all one soil type (Loess) and each testing point should represent the relationship between shear strength and effective stress for the soil. This approach also allows for assessing the variation of each test result from the determined overall relationship.



Based on all the DS results, a friction angle of 25.5 degrees and a cohesion of 161 psf were calculated for Loess. This relationship has a coefficient of variation of 5% for all the data points, which indicates a good fit between the drained shear strength envelope and all the measured data.

For Loess, the DS results were used as the basis for the effective shear strength envelope. For Glacial Till, the CU-bar results were used.

Consolidation

Four consolidation tests have been performed, three during the original investigation and one during the current investigation. Measured consolidation parameters ranged as noted below:

- Consolidation Index: 0.23 to 0.33, average = 0.26
- Reconsolidation index: 0.03 to 0.04, average = 0.037
- P’c: 1.1 to 2.6 tsf, average = 1.6 tsf

Settlement evaluations will be performed for the range of results to understand the effect the variations will have on performance of the liner system.

Design Parameters

Soil Type	Unit Weight (pcf)	Undrained Cohesion (psf)	Total Strength Envelope		Effective Strength Envelope	
			Friction Angle (deg)	Cohesion (psf)	Friction Angle (deg)	Cohesion (psf)
Loess	114	1640	16	540	25.5	161
Glacial Till	121	2500	17	190	28.1	156

Current strength testing results and consolidation are included in Attachment B.

Sections

Sections that show existing contours and the currently permitted MSW slopes and extents were drawn. As noted previously, current MSW contours are outside of the permitted boundary. Additionally, increasing the permitted elevation of the MSW was also to be considered.

Sections A through G were drawn and evaluated. Section D was found to be the controlling section overall based on the geometry of the section, specifically the liner sloping towards the perimeter and the generally downward slope of the liner system at the perimeter edge. Both of these factors lead to the stability of Section D being the controlling stability for the landfill.

When drawing Section D, the cross-section was noted to be slightly askew from the slope face, leading to the horizontal distance being slightly exaggerated. This causes the measured slopes to be shallower than in actuality. To correct for this, the known 4H:1V slope that was drawn on the section was used to determine the required reduction factor needed. This factor was used in determining the actual slope of the current MSW surface at the site.

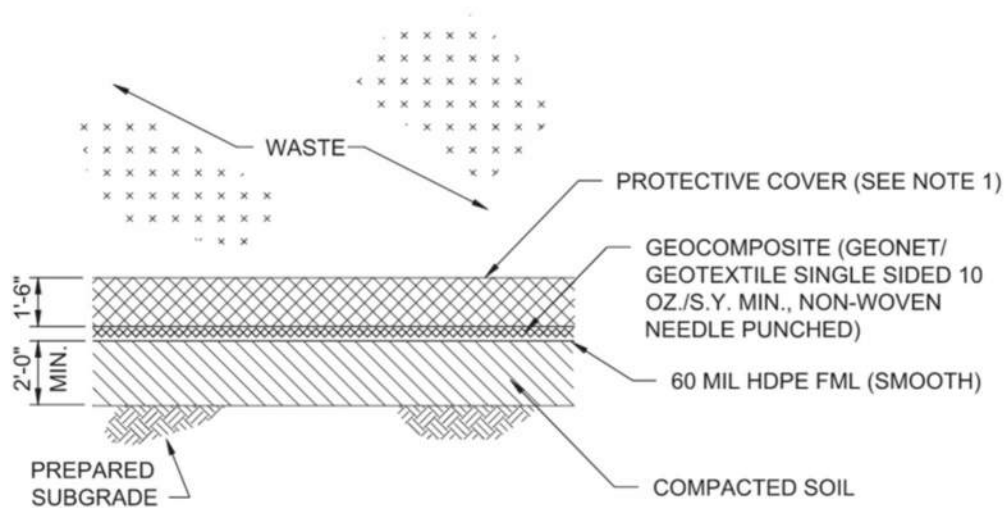
Another consideration in evaluating the existing MSW slope was how to consider differences in slope along the MSW surface. It can be seen that the slope does vary slightly, with the lower portion of Section D being steeper than the upper section. This level of detail does not affect the overall slope stability factors of safety. Therefore, the existing MSW surface was modeled with a single slope of 3.7H:1V that corresponds to the overall effective slope.

Additional crest elevation was also evaluated. To evaluate this, it was assumed that an adjusted sloped from the current conditions up to final design elevations would be constant. Based on evaluations, it was determined that the MSW surface above the current conditions can be stably placed at a 3.3H:1V slope and up to an outer crest elevation of 1840 feet.

For the new footprint addition to the landfill, along the west side, conditions were evaluated to determine how controlling this area may be in terms of stability. Based on subsurface conditions and grading, most of the Loess material will be removed. This material has been previously noted as being the weaker material at the site. Additionally, the landfill geometry will

require that the liner system in this area slope up significantly at the landfill perimeter which will also greatly increase the stability factor of safety, especially compared to the east side of Section D. Based on this, the new landfill addition was deemed not be a controlling section for evaluation.

The landfill has a geocomposite base liner. This liner is made up of the following materials:



The existing landfill geomembrane is made up of smooth HDPE liner except along the slopes on the perimeter of the landfill where the HDPE is textured. Drawings indicate this textured HDPE should extend towards the center of the landfill at least 5 feet beyond the inner edge of the perimeter slope. These different liner materials were incorporated into the stability models that evaluated liner strength.

The controlling interface for the liner is between the HDPE and geocomposite. Based on published interface shear strength results in GRI Report #30, this interface (smooth HDPE-geocomposite) has a peak friction angle of 15 degrees and a residual friction angle of 12 degrees. Previous testing was performed on the textured HDPE-geocomposite used for the liner. Results from this testing showed a peak friction angle and cohesion of 21 degrees and 100 psf, respectively and a residual friction angle and cohesion of 11.7 degrees and 87 psf, respectively. Based on the available information, smooth HDPE-geocomposite strengths were based on the GRI Report #30 values and textured HDPE-geocomposite strengths were based on previous material testing.

MSW was modeled utilizing a friction angle of 20 degrees, a cohesion of 500 psf and a total unit weight of 59 pcf. These values were based off previous calculations for the site and were based on published values for similar material.

As previously noted, the existing slopes are steeper than current permits allow. Additional slopes are to be modeled at 3.3H:1V slope which is steeper than any existing slopes. Based on this, the slope stability calculations for the full landfill height (up to elevation 1840 feet) will also apply to existing conditions.

Section information and liner interface strength information are included in Attachment C.

Slope Stability

Slope stability calculations were performed for Section D using UTexas4. Calculations were performed for the following conditions:

- End of Construction 1 – Undrained strength (cohesion), full MSW height
- End of Construction 2 – Total Shear Strength envelope, full MSW height
- Long-term Steady State 1 – Effective Shear Strength envelope, full MSW height



- Long-term Steady State 2 – Noncircular Surface Through Liner, Effective Shear Strength envelope, Peak liner strength, full MSW height
- Seismic – Total Shear Strength Envelope, full MSW height, 2% in 50 Years Seismic Event Peak Ground Acceleration

For the End of Construction 1 case, the cohesion values determined based on the UU and vane shear testing were used for modeling the Loess. These tests were performed on materials that were only consolidated under the existing soil conditions at the time of the investigations. During placement of the MSW, the materials will be loaded in an undrained manner as different layers of MSW are placed. After each loading, dissipation of excess pore pressures will occur, increasing the effective stress increases in the Loess and Glacial Till soils leading the undrained shear strength of these materials to increase with time compared to the original values based on the in-situ effective stresses. Based on this, using the undrained cohesion under full MSW landfill loading, essentially assuming the MSW is placed instantaneously, is somewhat conservative.

For the Seismic case, the 2014 USGS Deaggregation online program was utilized for determining the design seismic event peak ground acceleration. For a Site Class B/C, which represents acceleration on bedrock, the bedrock acceleration is 0.056g. To account for possible amplification of the seismic shaking through the soil column, the bedrock acceleration is factored by 1.6, leading to a peak ground acceleration of 0.09g. This was used for the seismic evaluation.

For all cases except Long-term Steady State 2, a “floating grid” search method was used for calculating the stability factor of safety. This method involves setting a gridded location of circular centers and then choosing a point along the surface to run all the circular surfaces through. UTexas4 will then cycle through all the circles based on the different circular centers. Multiple points along the surface were evaluated to determine the lowest factor of safety.

For the Long-term Steady State 2 case, noncircular surfaces are evaluated. Since this case is to evaluate any possible sliding along the liner interface, the surface must stay within the liner system. This requires a noncircular surface. Multiple different points along the slope and liner are evaluated to determine the controlling factor of safety.

Results of the slope stability analyses are listed below:

Case	Factor of Safety
EOC – 1	1.40
EOC – 2	1.61
LTSS – 1	1.96
LTSS – 2	1.51
Seismic	1.28

All these factors of safety meet generally accepted minimum factors of safety for slope stability as listed below:

- End of Construction – 1.3
- Long-term Steady State – 1.5
- Seismic – 1.1

As a comparison to current calculations, the calculated factor of safety for the EOC – 2 case in previous calculations was 1.96. Compared to the current EOC – 2 case value indicates the decrease in slope stability factor of safety caused by the steepened slopes and additional MSW height.

Inputs and outputs from the UTexas4 program and the 2014 USGS deaggregation for the site are included in Attachment D.

Settlement

Settlement was also evaluated to confirm that the liner grades are not decrease and appropriate flow towards the sumps is disrupted. The liner slopes to the east side of the landfill, with a slight southeasterly orientation.

As noted previously, it is expected that most of the settlement will occur in the softer weaker Loess layer. Differences in settlement will be greatly driven by differences in the thickness of Loess across the site. Based on the borings and sections



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NNWSC Landfill Expansion			Checked by:		
Slope Stability and Settlement			Prelim: _____ Final: _____		

evaluated, the Loess material increases with thickness as one moves to the east and to the southeast. Based on this, it is expected that the highest settlements will occur along the east and southeast portions of the landfill which coincides with the locations of the sumps.

Settlement parameters varied between the different tests performed, including significant differences in the consolidation index and past preconsolidation pressures. To understand possible differences in the consolidation possible, two settlement scenarios were evaluated:

- Scenario 1: $C_c = 0.25$, $p'_c = 5.2$ ksf
- Scenario 2: $C_c = 0.33$, $p'_c = 2.6$ ksf

Scenario 1 roughly corresponds to the average values from the consolidation tests performed, both historical and current. It also matches the previously submitted calculations as part of previous permit submittals. Scenario 2 is based on the current consolidation test performed in the west expansion area of the Landfill.

For both cases, the amount of relative settlement across the site is controlled by the thickness of the Loess in a specific area and the loading from the MSW based on the final MSW surface slope. Based on the borings and conditions encountered, the Loess thickens in general from northwest to southwest.

The MSW landfill was modeled using fill areas. Areas with the MSW slopes were modeled as triangular shaped load distributions, with 0 psf at the landfill edges and 11.2 ksf at the inner edges (based on 190 feet of 59 pcf unit weight MSW). The center portion is modeled as a constant fill load with a bearing pressure of 11.2 ksf.

Maximum settlements vary between 35 (Scenario 1) and 70 inches (Scenario 2), depending on which consolidation parameters are used. The range in settlements were evaluated along the three query lines to understand the changes to the base liner slope that are caused by the settlement. Query 1 is along the north portion of the landfill, Query 2 is along the center of the landfill and Query 3 is along the south portion of the landfill.

Based on the Settle3D results, final slopes were calculated for each 100 feet section of the liners, as well as the overall slope from the landfill approximate center point. For Scenario 1, the minimum slope over a 100 feet section was estimated to be approximately 1.4% and the overall center to edge minimum slope was estimated to be 1.8%. For Scenario 2, the minimum slope over a 100 feet section was estimated to be approximately 0.9% and the overall center to edge minimum slope was estimated to be 1.6%. It should be noted that the design base liner slope is 2%.

For Scenario 2, these settlements are considered conservative. Out of the four consolidation tests performed at the site, this is the only results that showed such high consolidation parameters. Based on this, while these results indicate some areas with base slopes that will be lower than the recommended minimum value of 1.2% (per previous settlement evaluations), actual settlements are expected to be more in line with Scenario 1. Based on this, liner slope changes caused by settlement are not expected to be an issue.

Results from the Settle3D analysis are included in Attachment E.



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Attachment A – Boring Information



Gas Wells (2 ST samples) PZ-2S/2D

B-02-2020 (not drilled)

B-5

B-1

B-6

PZ-1D/1S

B-02-2020

B-2

PZ-3S

B-9

B-7

PZ-4S

B-8

B-01-2020

B-3

B-11

PZ-8S

PZ-5S

B-10

572nd Ave

B-12

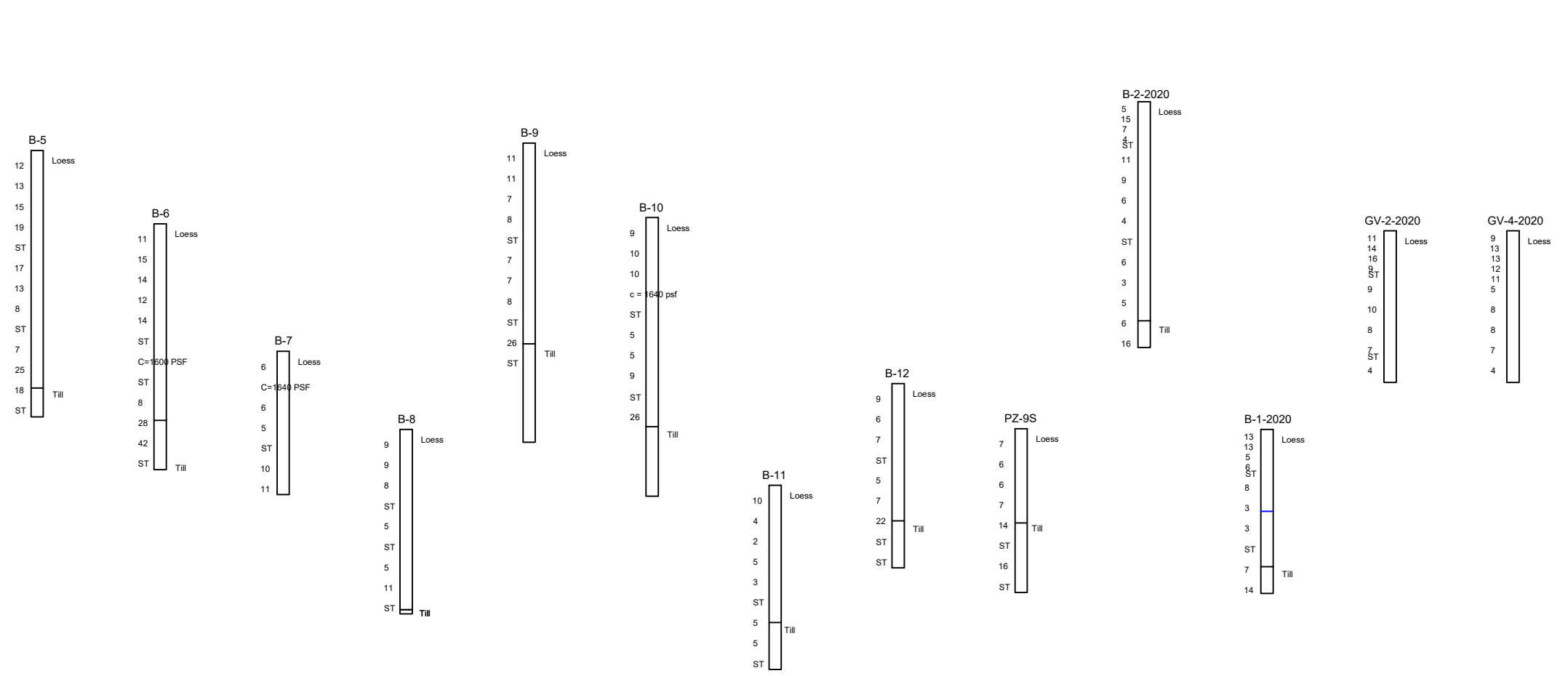
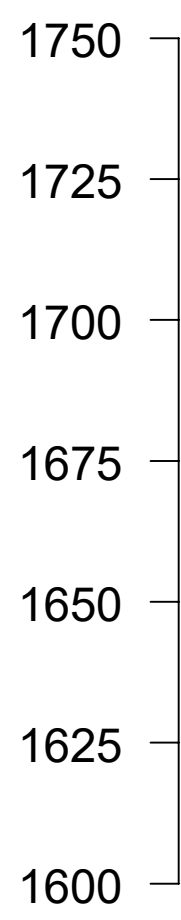
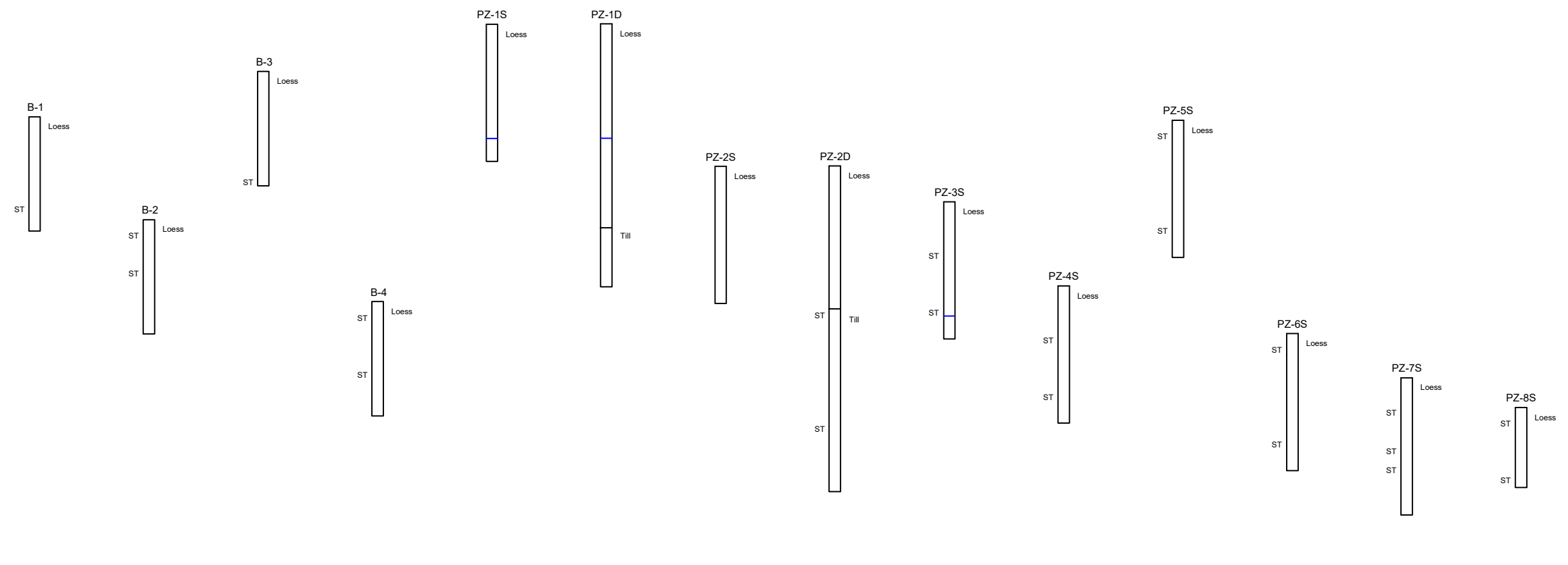
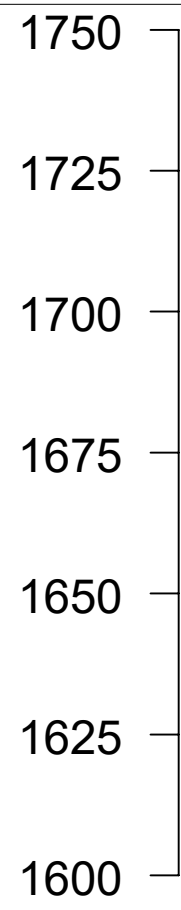
B-4

PZ-9S

PZ-6S

PZ-7S





Boring	Material	Depth (ft)	Blow Count (bpf)	Boring	Material	Depth (ft)	Blow Count (bpf)
B-5	Loess	3.5	12	PZ-9S	Loess	3.5	7
	Loess	8.5	13		Loess	8.5	6
	Loess	13.5	15		Loess	13.5	6
	Loess	18.5	19		Loess	18.5	7
	Loess	28.5	17		Till	23.5	14
	Loess	33.5	13		Till	33.5	16
	Loess	38.5	8	B-1-2020	Loess	1	13
	Loess	48.5	7		Loess	3.5	13
	Loess	53.5	25		Loess	6	5
	Till	58.5	18		Loess	8.5	6
B-6	Loess	3.5	11		Loess	13.5	8
	Loess	8.5	15		Loess	18.5	3
	Loess	13.5	14	Loess	23.5	3	
	Loess	18.5	12	Till	33.5	7	
	Loess	23.5	14	Till	38.5	14	
	Loess	43.5	8	B-2-2020	Loess	1	5
	Till	48.5	28		Loess	3.5	15
Till	53.5	42	Loess		6	7	
B-7	Loess	3.5	6		Loess	8.5	4
	Loess	13.5	6		Loess	13.5	11
	Loess	18.5	5		Loess	18.5	9
	Loess	28.5	10	Loess	23.5	6	
	Loess	33.5	11	Loess	28.5	4	
B-8	Loess	3.5	9	Loess	38.5	6	
	Loess	8.5	9	Loess	43.5	3	
	Loess	13.5	8	Loess	48.5	5	
	Loess	23.5	5	Till	53.5	6	
	Loess	33.5	5	Till	58.5	16	
B-9	Loess	38.5	11	GV-2	Loess	1	11
	Loess	3.5	11		Loess	3.5	14
	Loess	8.5	11		Loess	6	16
	Loess	13.5	7		Loess	8.5	9
	Loess	18.5	8		Loess	13.5	9
	Loess	28.5	7		Loess	18.5	10
	Loess	33.5	7		Loess	23.5	8
Loess	38.5	8	Loess		28.5	7	
B-10	Till	48.5	26	Loess	33.5	4	
	Loess	3.5	9	GV-4	Loess	1	9
	Loess	8.5	10		Loess	3.5	13
	Loess	13.5	10		Loess	6	13
	Loess	28.5	5		Loess	8.5	12
	Loess	33.5	5		Loess	10	11
	Loess	38.5	9		Loess	13.5	5
Loess	48.5	26	Loess		18.5	8	
B-11	Loess	3.5	10		Loess	23.5	8
	Loess	8.5	4	Loess	28.5	7	
	Loess	13.5	2	Loess	33.5	4	
	Loess	18.5	5	B-12	Loess	3.5	9
	Loess	23.5	3		Loess	8.5	6
	Till	33.5	5		Loess	13.5	7
Till	38.5	5	Loess		23.5	5	
B-12	Loess	3.5	9		Loess	28.5	7
	Loess	8.5	6		Till	33.5	22
	Loess	13.5	7				
	Loess	23.5	5				
	Loess	28.5	7				
Till	33.5	22					

	Average	Median	Min	Max
Loess	8.9	8	2	26
Till	16.8	16	5	42

Boring	Depth (ft)	Material	LL	PL	PI	Shrinkage	MC (%)	DD (pcf)	Uncon (psf)	Cc	Cr	p'c (tsf)	OCR	c (psf)	phi (deg)	c' (psf)	phi' (deg)
B-5	8	Loess	39	19	20		21.8										
	23	Loess	39	18	21		23.1	94									
	38	Loess					30.4										
	43	Loess	35	19	16		30	88	850								
	63	Till	39	14	25		15.8	112									
B-6	13	Loess	37	20	17	9	24.1										
	28	Loess	40	19	21		28.2	85	1000								
	38	Loess	38	19	19		30.1	86									
	43	Loess					31.1										
	53	Till	41	18	23	17	18.5										
	58	Till	49	14	35		18.4	108									
B-7	8	Loess	37	20	17		31.8	86		0.26	0.03	2.64	5.1				
	23	Loess	43	16	27		28.8	91									
B-8	3	Loess	50	23	27		35.1										
	18	Loess	42	18	24		32.2	76		0.23	0.04	1.12	0.7				
	28	Loess	37	18	19		34.7	85		0.23	0.039	1.35	0.8				
	38.5	Loess					27.6										
	43	Till	39	17	22		31.4	93									
B-9	8	Loess	39	20	19	11	27.4										
	23	Loess	40	19	21		30.9	86						536	15.7	234	28
	43	Loess	32	18	14		22.4	97	1300								
	48	Till					21.5										
	53	Till	36	14	22		19.1	105	750								
	55	Till	38	14	24												
B-10	23	Loess	40	19	21		30.7	88	650								
	38	Loess	50	14	36		27.5										
	43	Loess	54	18	36		22.5	102									
	50	Loess	46	13	33		22.5										
B-11	3	Loess	47	27	20		30.5										
	8	Loess					31.4										
	13	Loess	39	20	19	20	31.7										
	23	Loess	40	18	22		33.4										
	28	Loess	41	19	22		32.4	87	200								
	38	Till	38	18	20		30.8	89									
B-12	8	Loess	42	20	22	18	30.6										
	18	Loess	43	17	26		32.6	89	350								
	28	Loess	40	20	20		34.7										
	38	Till	38	17	21		27.4	92						191	17.1	156	28.1
	43	Till	40	16	24		30.5	92	300								
PZ-95	8	Loess	38	19	19		25.5										
	28	Till	47	15	32		23.6	100	1200								
	38	Till	63	19	44		26.7	93									

Loess	Average	41	19	22
	Median	40	19	21
	Min	32	13	14
	Max	54	27	36

	29	89	725
	30.5	87.5	750
	21.8	76	200
	35.1	102	1300

Till	Average	43	16	27
	Median	39	16	24
	Min	36	14	20
	Max	63	19	44

	24	98	750
	23.6	93	750
	15.8	89	300
	31.4	112	1200



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NNWSC Landfill Expansion Checked by: _____
Slope Stability and Settlement Prelim: _____ Final: _____

Attachment B – Current Testing Results

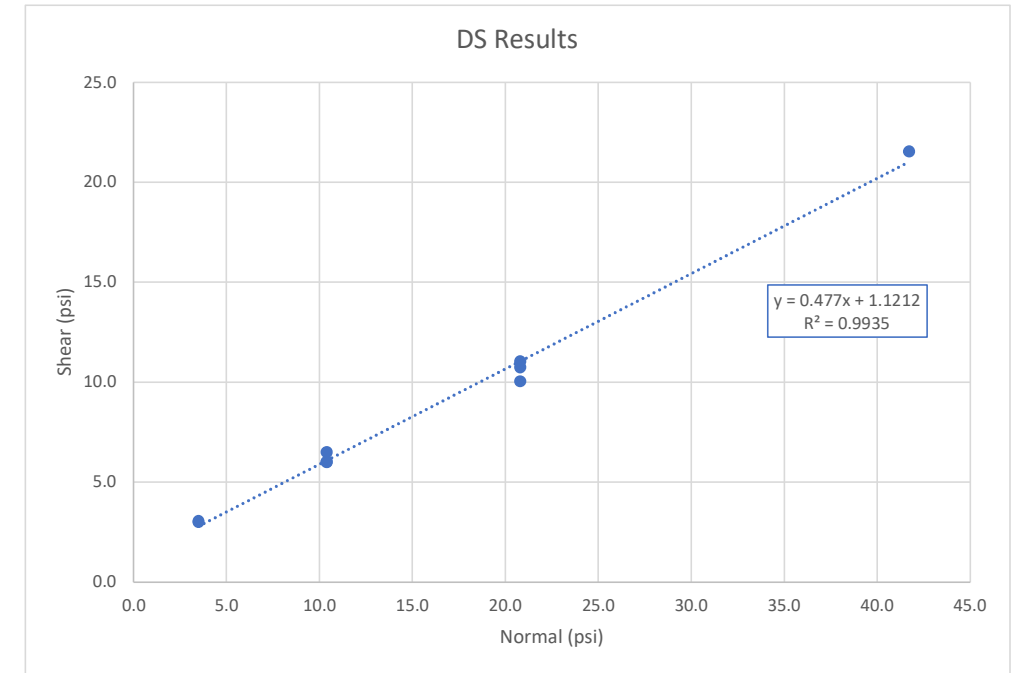
		Dry Density (pcf)	Moisture Content (%)	Atterbergs			Normal	Shear	Shear - Calculated	Difference	Difference^2
B-1, ST-1	10-12	93.6	23.4				3.5	3.0	2.8	0.21	0.04
		93.6	23.3	39	24	15	10.4	6.0	6.1	-0.08	0.01
		92.2	25.1				20.8	11.0	11.0	0.00	0.00
B-2, ST-2	33.5-35.5	85.6	32.3				10.4	6.5	6.1	0.42	0.17
		84.9	32.3	38	25	13	20.8	10.0	11.0	-1.00	1.01
		86.2	32.4				41.7	21.6	21.0	0.54	0.29
GV-2, ST-1	10-12	84.1	21.3				3.5	3.1	2.8	0.27	0.07
		85.5	22.2	23	23	12	10.4	6.0	6.1	-0.05	0.00
		85.1	21.6				20.8	10.8	11.0	-0.29	0.09

Phi (radians)	0.477
Cohesion	1.121
phi (deg)	25.5
c (psf)	161

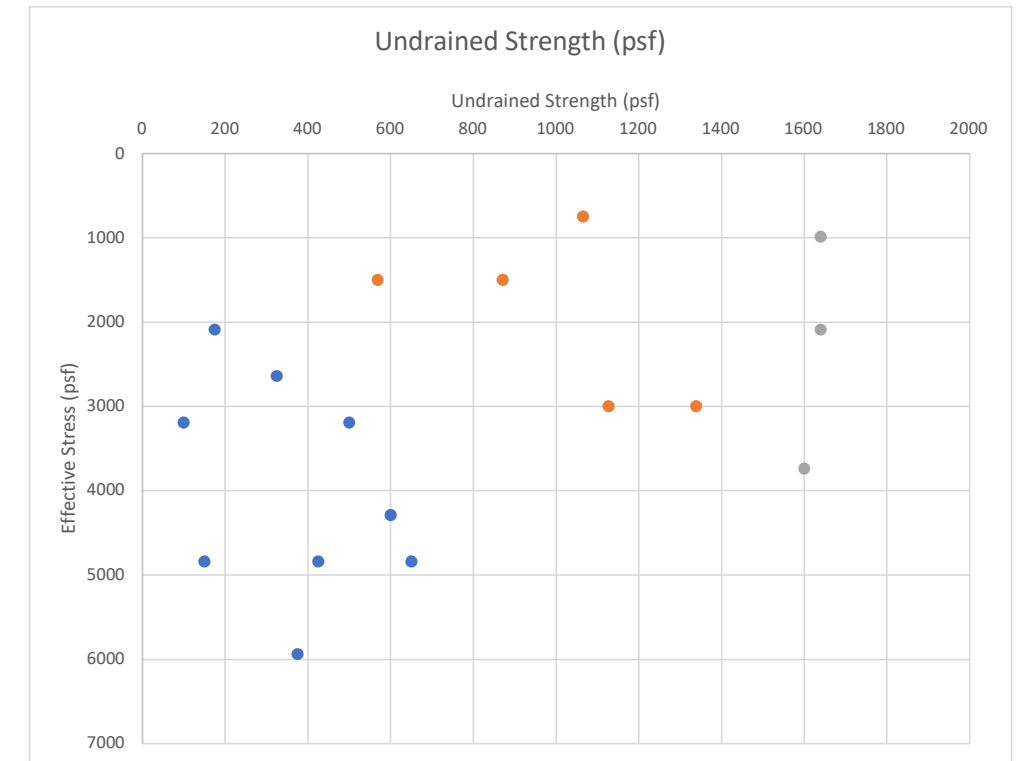
Sum	1.7
St Dev	0.46
Average	8.7
COV	5%

Previous Testing

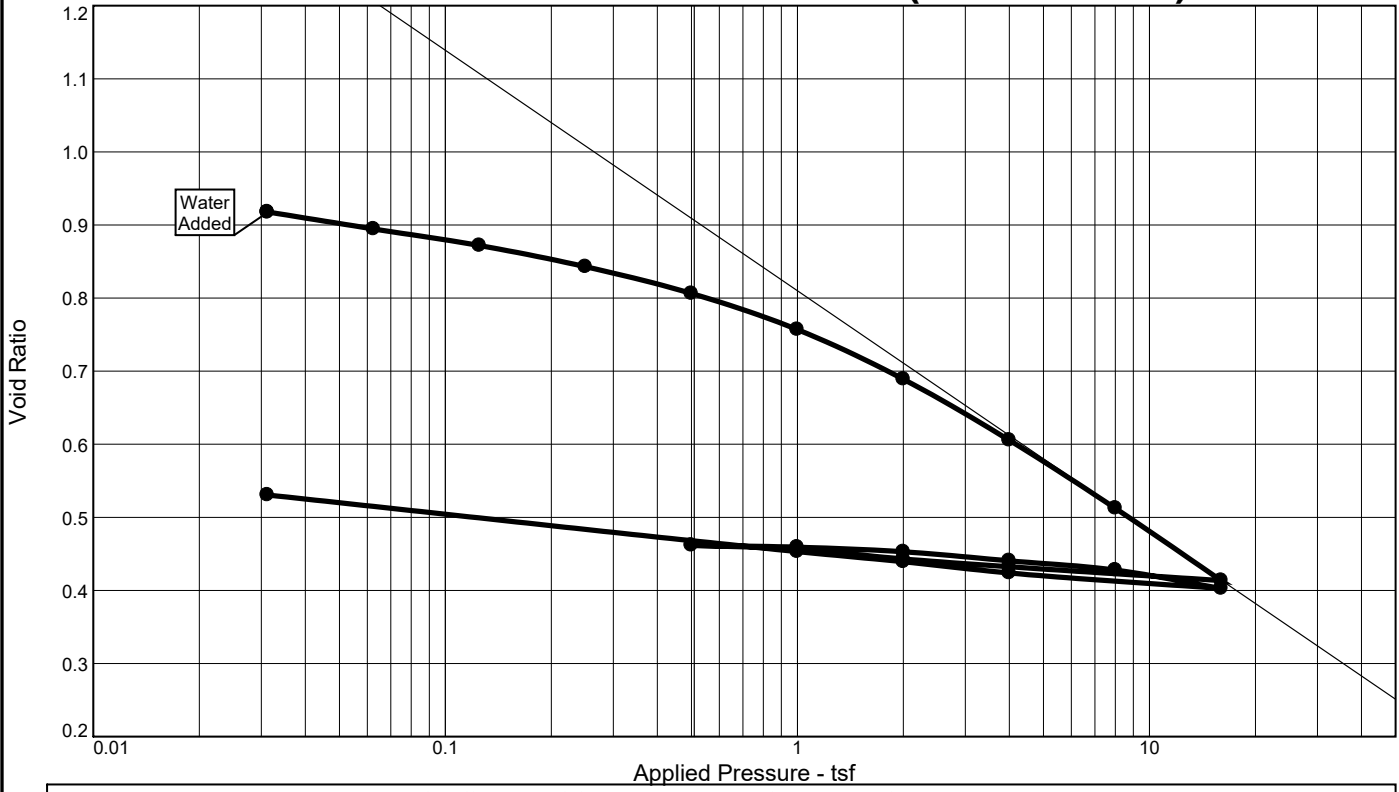
phi (deg)	28.1
c (psf)	156



		Material	Dry Density (pcf)	Moisture Content (%)	Atterbergs			Confining Pressure (psf)	Failure Stress (psf)	c-p ratio	Cohesion (psf)	Effective Stress (psf)
B-1, ST-2	28.5-30.5	Loess	92.8	29.9	44	21	23	1500	1742	0.58	871	1500
		Loess	90.3	30.7				1500	1138	0.38	569	1500
B-2, ST-1	10-12	Loess	95.8	26	36	24	12	750	3254	2.17	1627	750
		Loess	86	27.2				750	2131	1.42	1065.5	750
GV-2, ST-2	30-32	Loess	89.4	29.1	37	24	13	3000	2678	0.45	1339	3000
		Loess	89.7	30				3000	2254	0.38	1127	3000
B-5	43-45	Loess	88	30	35	19	16	0	850	0.09	425	4840
B-6	28-30	Loess	85	28.2	40	19	21	0	1000	0.16	500	3190
B-6	34	Loess						0		0.43	1600	3740
B-7	9	Loess						0		1.66	1640	990
B-9	43-45	Loess	97	22.4	32	18	14	0	1300	0.13	650	4840
B-9	53-55	Loess	105	19.1	36	14	22	0	750	0.06	375	5940
B-10	18-20	Loess						0		0.78	1640	2090
B-10	23-25	Loess	88	30.7	40	19	21	0	650	0.12	325	2640
B-11	28-30	Loess	87	32.4	41	19	22	0	200	0.03	100	3190
B-12	18-20	Loess	89	32.6	43	17	26	0	350	0.08	175	2090
B-12	43-45	Loess	92	30.5	40	16	24	0	300	0.03	150	4840
PZ-9S	38-40	Loess	100	23.6	47	15	32	0	1200	0.14	600	4290



One-Dimensional Consolidation (ASTM D2435)



Coefficients of Consolidation and Secondary Consolidation

No.	Load (tsf)	C_v (ft.2/day)	C_α	No.	Load (tsf)	C_v (ft.2/day)	C_α	No.	Load (tsf)	C_v (ft.2/day)	C_α
7	1.00	0.155									
8	2.00	0.050									

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
102.3 %	34.7 %	87.9	44	23	2.70	0	1.3	0.33	0.04	0.917

MATERIAL DESCRIPTION

Brown, mottled gray, spotted reddish brown LEAN CLAY

USCS

AASHTO

Project No. 20-198T **Client:** Burns & McDonnell
Project: NNSWC Landfill, #122625
Depth: 28.5' - 30.5' **Sample Number:** B-1, ST-2

Remarks:



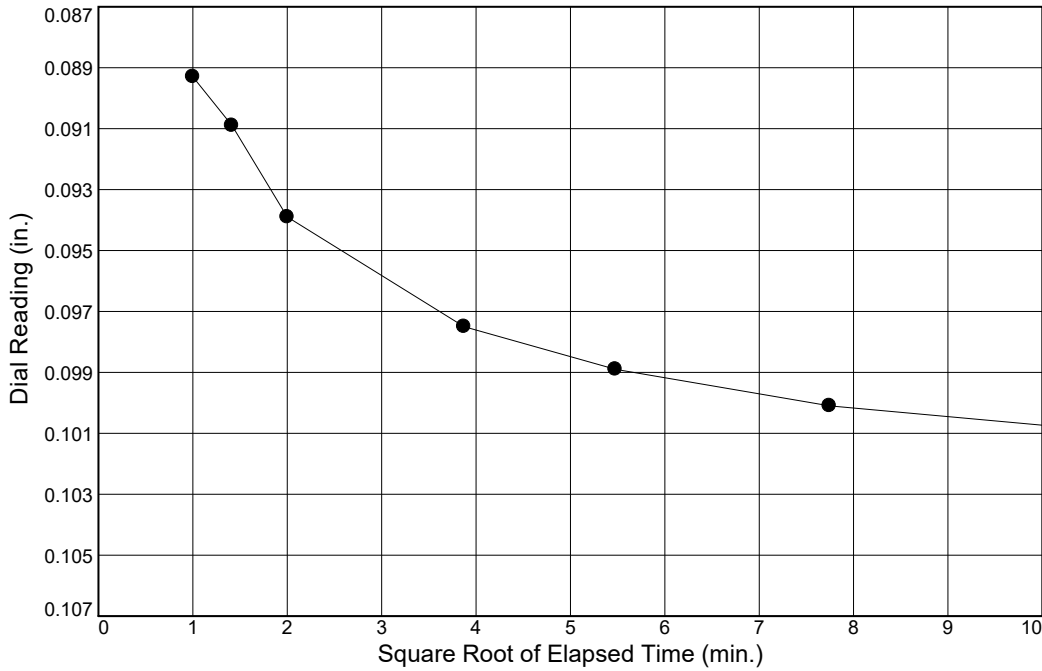
Figure 1 of 1

Tested By: D.B. **Checked By:** T.B.

Dial Reading vs. Time

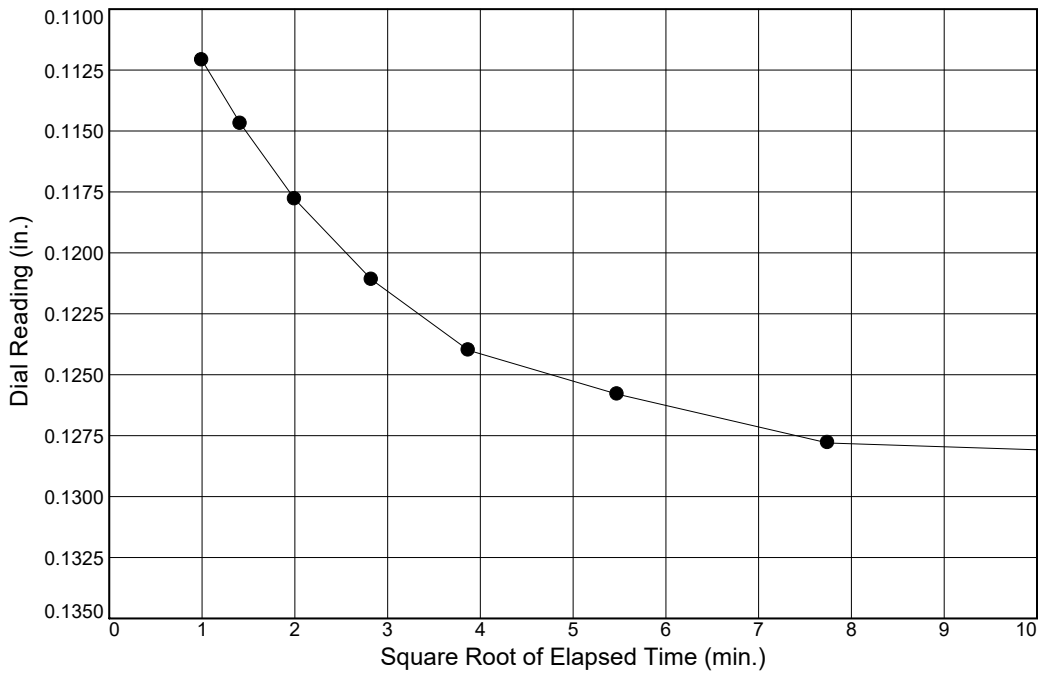
Project No.: 20-198T
 Project: NNSWC Landfill, #122625

Depth: 28.5' - 30.5' Sample Number: B-1, ST-2



Load No.= 7
 Load= 1.00 tsf
 $D_0 = 0.0845$
 $D_{90} = 0.0951$
 $D_{100} = 0.0962$
 $T_{90} = 6.83 \text{ min.}$

$C_v @ T_{90}$
 0.155 ft.²/day



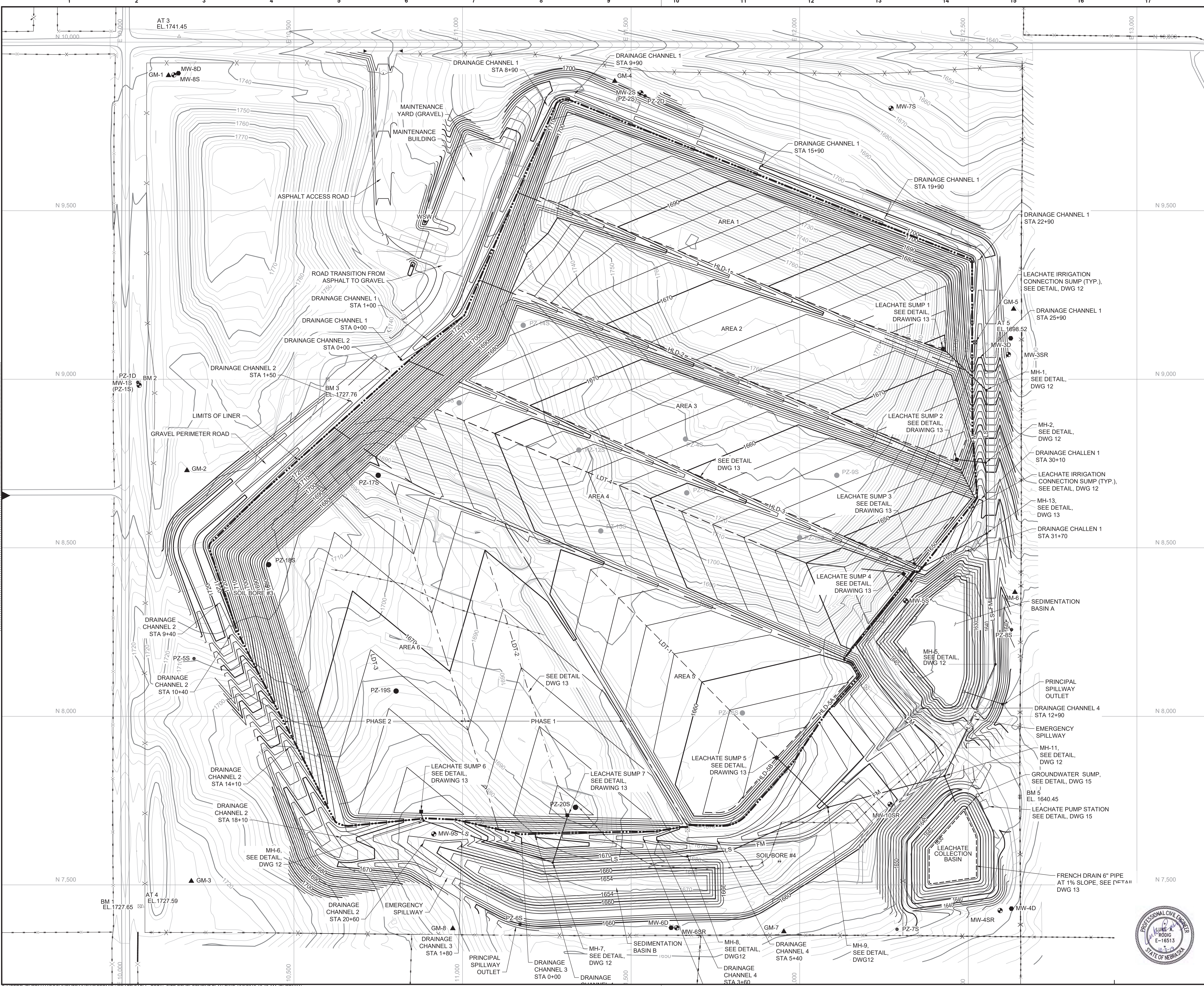
Load No.= 8
 Load= 2.00 tsf
 $D_0 = 0.1088$
 $D_{90} = 0.1246$
 $D_{100} = 0.1264$
 $T_{90} = 19.62 \text{ min.}$

$C_v @ T_{90}$
 0.050 ft.²/day



Client: NNSWC Page 9 of 11
Project: 122625 Date: 9/28/2020 Made by: Textor
NNWSC Landfill Expansion Checked by: _____
Slope Stability and Settlement Prelim: _____ Final: _____

Attachment C – Section and Liner Information



no.	date	by	ckd	description
A	10/03/19	LAR	SAM	ISSUED FOR PERMIT

- NOTES:
1. SITE TOPOGRAPHY WAS FLOWN APRIL 6, 1999 BY WESTERN AIR MAPS, INC., LEXEXA, KANSAS. TOPOGRAPHY WITHIN THE LANDFILL BOUNDARY IS FROM A SURVEY DATED NOVEMBER 27, 2018 BY JEVO CONSULTING GROUP, INC.
 2. LANDFILL BOTTOM ELEVATIONS SHOWN ARE TOP OF LINER.
 3. EXCAVATION CONTOURS IN THE LANDFILL AREA ARE A MINIMUM OF 2 FEET BELOW THE ELEVATIONS SHOWN ON THIS DRAWING.
 4. EXISTING PIEZOMETERS WITHIN LANDFILL AREA 6 WILL BE ABANDONED PRIOR TO CONSTRUCTION OF THE LANDFILL AREA.
 5. LAYOUT OF GROUNDWATER DRAINAGE SYSTEM BENEATH LANDFILL AREAS 3, 4, 5 AND 6 IS SHOWN ON DRAWING 17.



date	SEPTEMBER 2019	detailed	J. HEDMAN
designed	L. RODIG	checked	S. MARTIN

NORTHEAST NEBRASKA SOLID WASTE COALITION

PERMIT MODIFICATION AND RENEWAL DRAWINGS
TOTAL SITE DEVELOPMENT PLAN

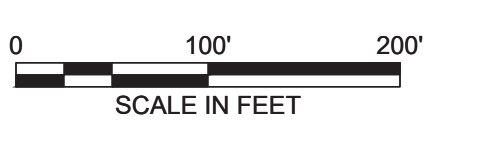
project	118418	contract	
drawing	4	rev.	
sheet	9	of	24
file	4 - Total Site Development Plan.dwg		



1,236,116.0 SQ. FT.

no.	date	by	ckd	description
A	10/03/19	LAR	SAM	ISSUED FOR PERMIT

- NOTES:
1. SITE TOPOGRAPHY WAS FLOWN APRIL 6, 1999 BY WESTERN AIR MAPS, INC., LEXEXA, KANSAS. TOPOTRAPHY WITHIN THE LANDFILL BOUNDARY IS FROM A SURVEY DATED NOVEMBER 27, 2018 BY JEO CONSULTING GROUP, INC.
 2. A SINGLE PHASE CLOSURE OF THE LANDFILL IS PROPOSED.



date	SEPTEMBER 2019	detailed	J. HEDMAN
designed	L. RODIG	checked	S. MARTIN

**NORTHEAST NEBRASKA
SOLID WASTE COALITION**

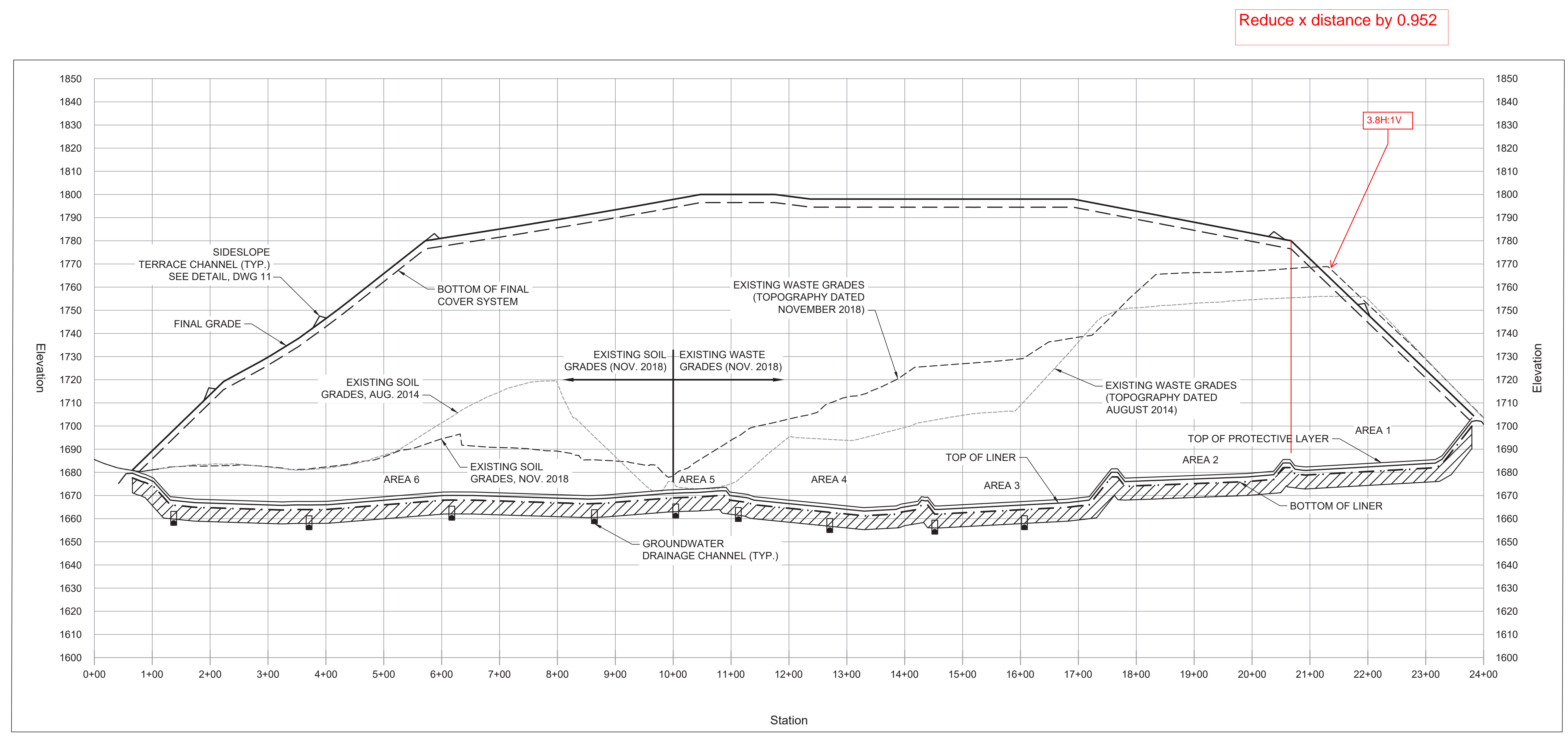


PERMIT MODIFICATION
AND RENEWAL DRAWINGS
FINAL CLOSURE PLAN

project	118418	contract	
drawing	5	rev.	
sheet	10	of	24
file	5 - Final Closure Plan.dwg		

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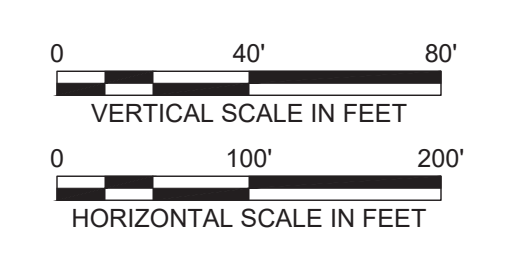
no.	date	by	ckd	description
A	10/03/19	LAR	SAM	ISSUED FOR PERMIT



**SECTION AREAS 1-6
(SOUTH TO NORTH)**
 VERTICAL SCALE: 1" = 40'
 HORIZONTAL SCALE: 1" = 100'

LEGEND

	FINAL GRADE
	BOTTOM OF FINAL COVER SYSTEM
	EXISTING GRADE 2018
	EXISTING GRADE 2014
	TOP OF PROTECTIVE COVER
	TOP OF LINER
	BOTTOM OF LINER
	MINIMUM DESATURATED ZONE



date SEPTEMBER 2019	detailed J. HEDMAN
designed L. RODIG	checked S. MARTIN

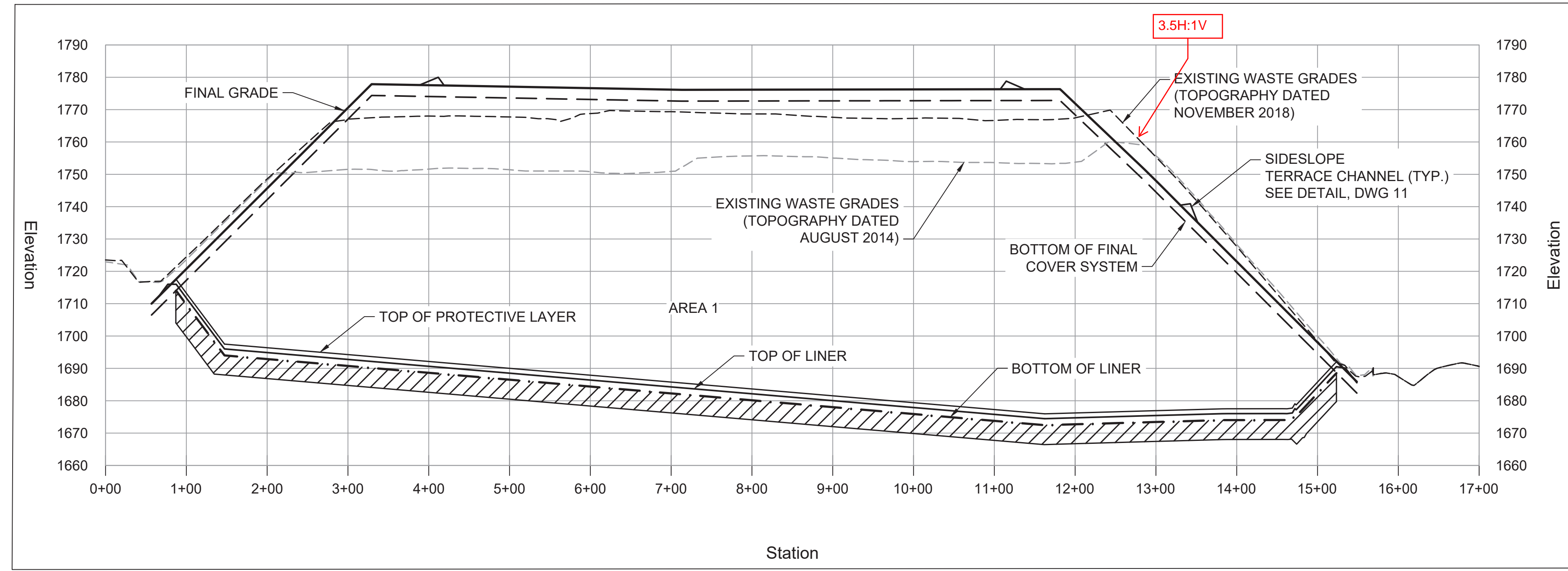
**NORTHEAST NEBRASKA
SOLID WASTE COALITION**



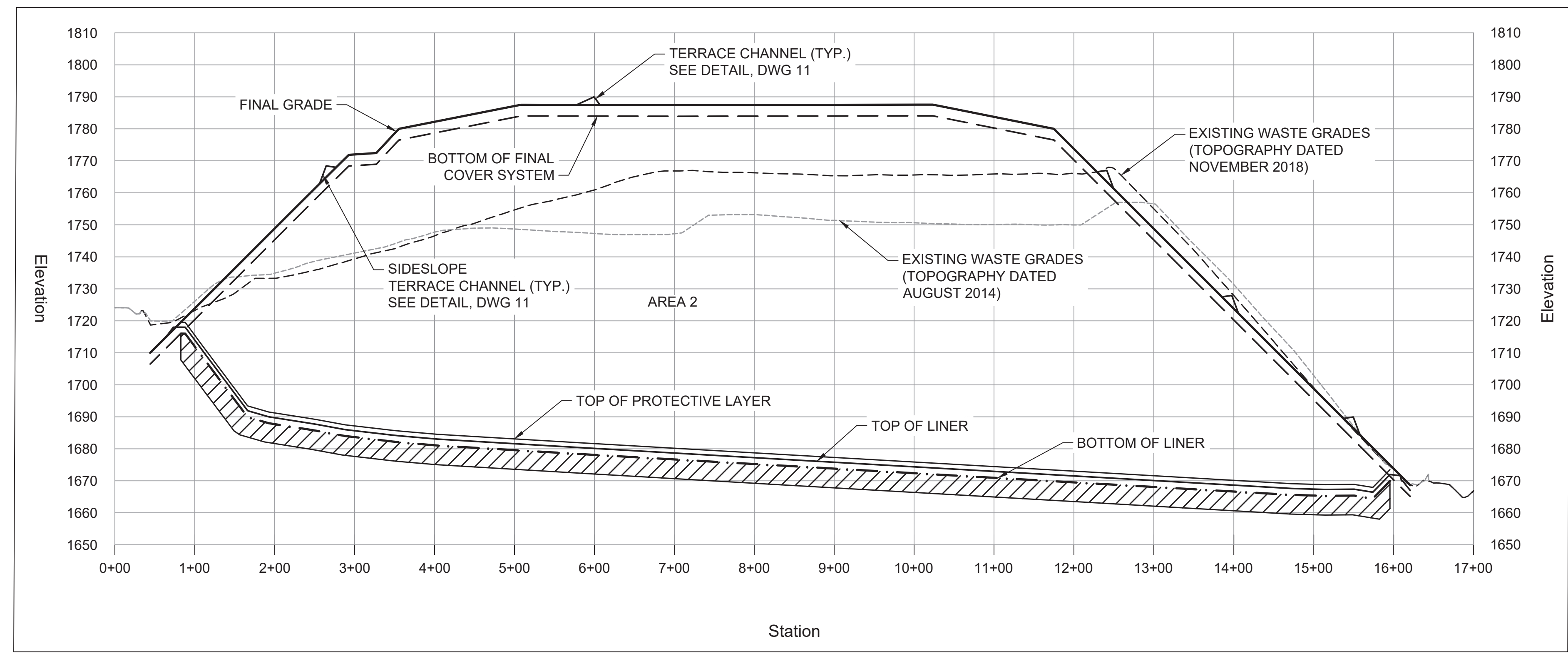
**PERMIT MODIFICATION
AND RENEWAL DRAWINGS**
 LANDFILL CROSS SECTIONS 1

project 118418	contract
drawing 6	rev.
sheet 11	of 24 sheets
file 6 - Landfill Cross Sections 1.dwg	

Reduce x distance by 0.98



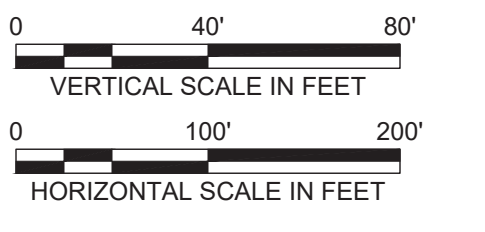
SECTION AREA 1 (WEST TO EAST) B-B'
 VERTICAL SCALE: 1" = 40'
 HORIZONTAL SCALE: 1" = 100'



SECTION AREA 2 (WEST TO EAST) C-C'
 VERTICAL SCALE: 1" = 40'
 HORIZONTAL SCALE: 1" = 100'

LEGEND

	FINAL GRADE
	BOTTOM OF FINAL COVER SYSTEM
	EXISTING GRADE 2018
	EXISTING GRADE 2014
	TOP OF PROTECTIVE COVER
	TOP OF LINER
	BOTTOM OF LINER
	MINIMUM DESATURATED ZONE



date SEPTEMBER 2019	detailed J. HEDMAN
designed L. RODIG	checked S. MARTIN

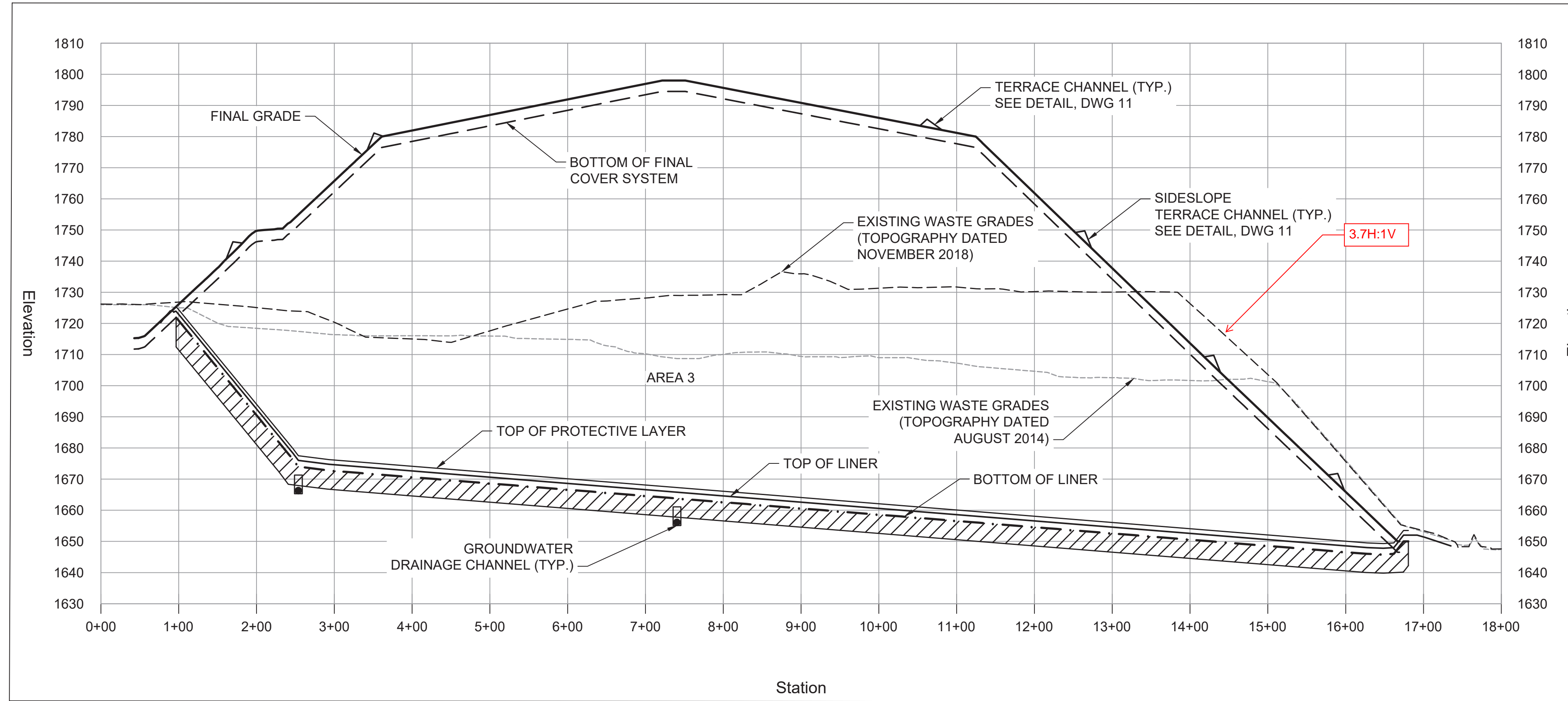
**NORTHEAST NEBRASKA
 SOLID WASTE COALITION**

**PERMIT MODIFICATION
 AND RENEWAL DRAWINGS
 LANDFILL CROSS SECTIONS 2**

project 118418	contract
drawing 7	rev.
sheet 12	of 24 sheets
file 7 - Landfill Cross Sections 2.dwg	

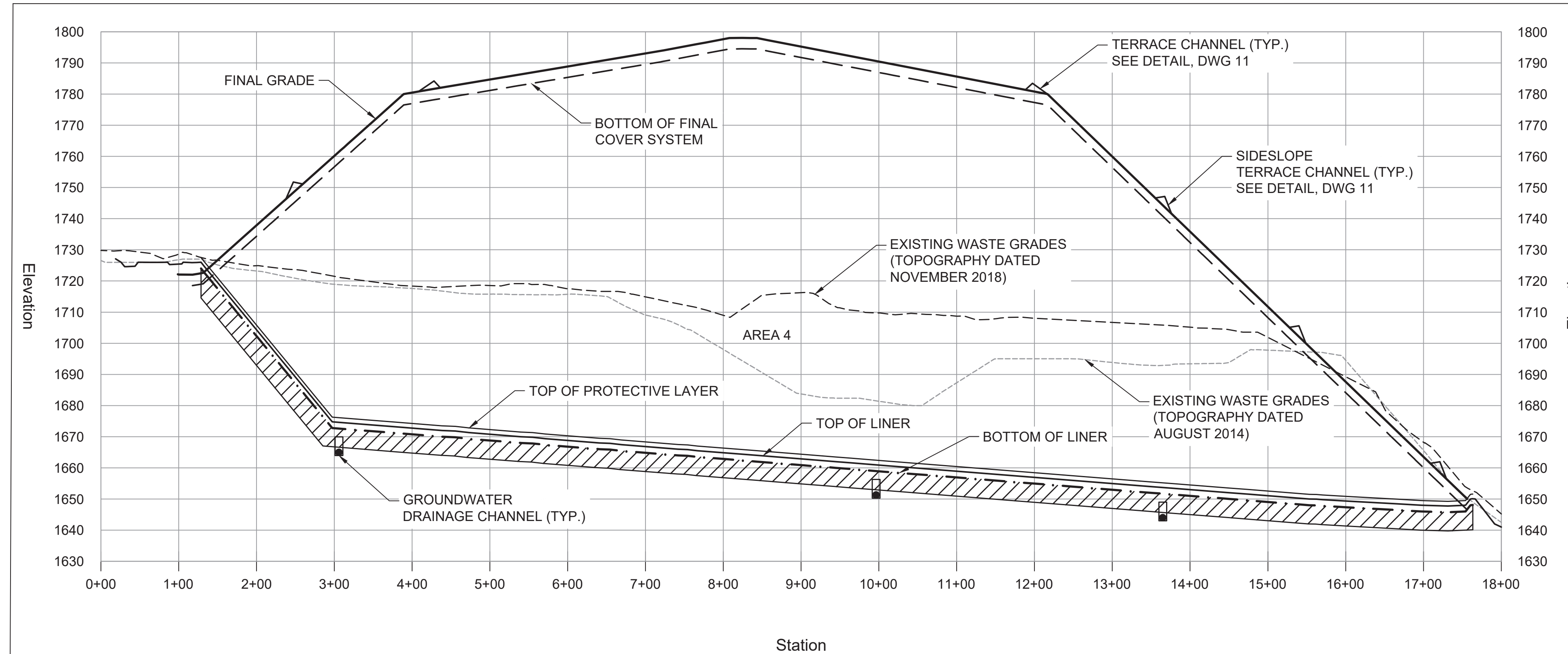


Reduce x distance by 0.967



SECTION AREA 3 (WEST TO EAST) D-D'
 VERTICAL SCALE: 1" = 40'
 HORIZONTAL SCALE: 1" = 100'

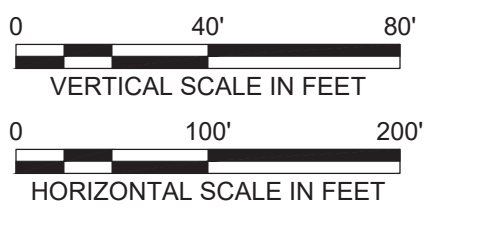
Reduce x distance by 0.97



SECTION AREA 4 (WEST TO EAST) E-E'
 VERTICAL SCALE: 1" = 40'
 HORIZONTAL SCALE: 1" = 100'

LEGEND

	FINAL GRADE
	BOTTOM OF FINAL COVER SYSTEM
	EXISTING GRADE 2018
	EXISTING GRADE 2014
	TOP OF PROTECTIVE COVER
	TOP OF LINER
	BOTTOM OF LINER
	MINIMUM DESATURATED ZONE



date SEPTEMBER 2019	detailed J. HEDMAN
designed L. RODIG	checked S. MARTIN

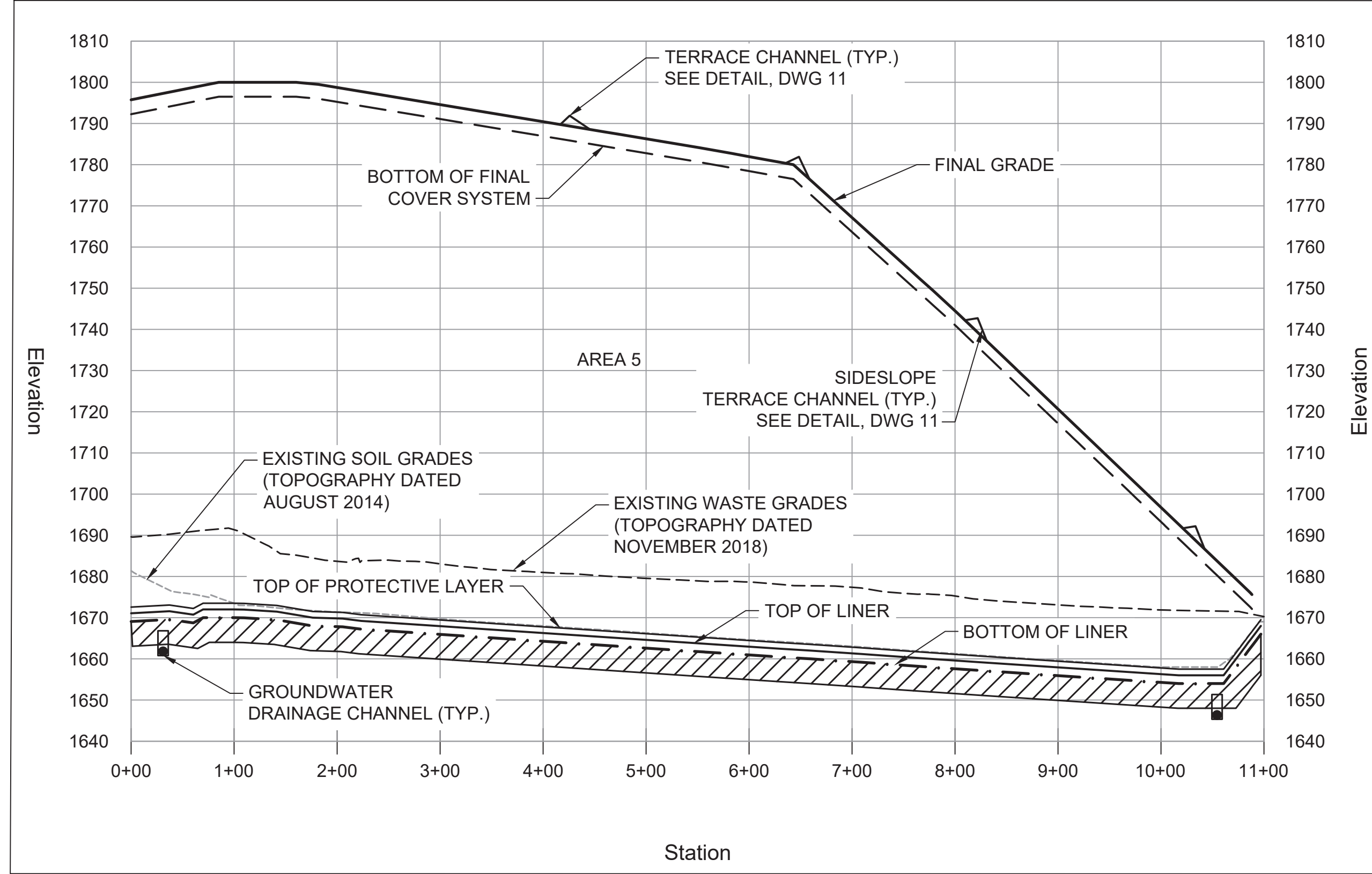
**NORTHEAST NEBRASKA
 SOLID WASTE COALITION**

**PERMIT MODIFICATION
 AND RENEWAL DRAWINGS**
 LANDFILL CROSS SECTIONS 3

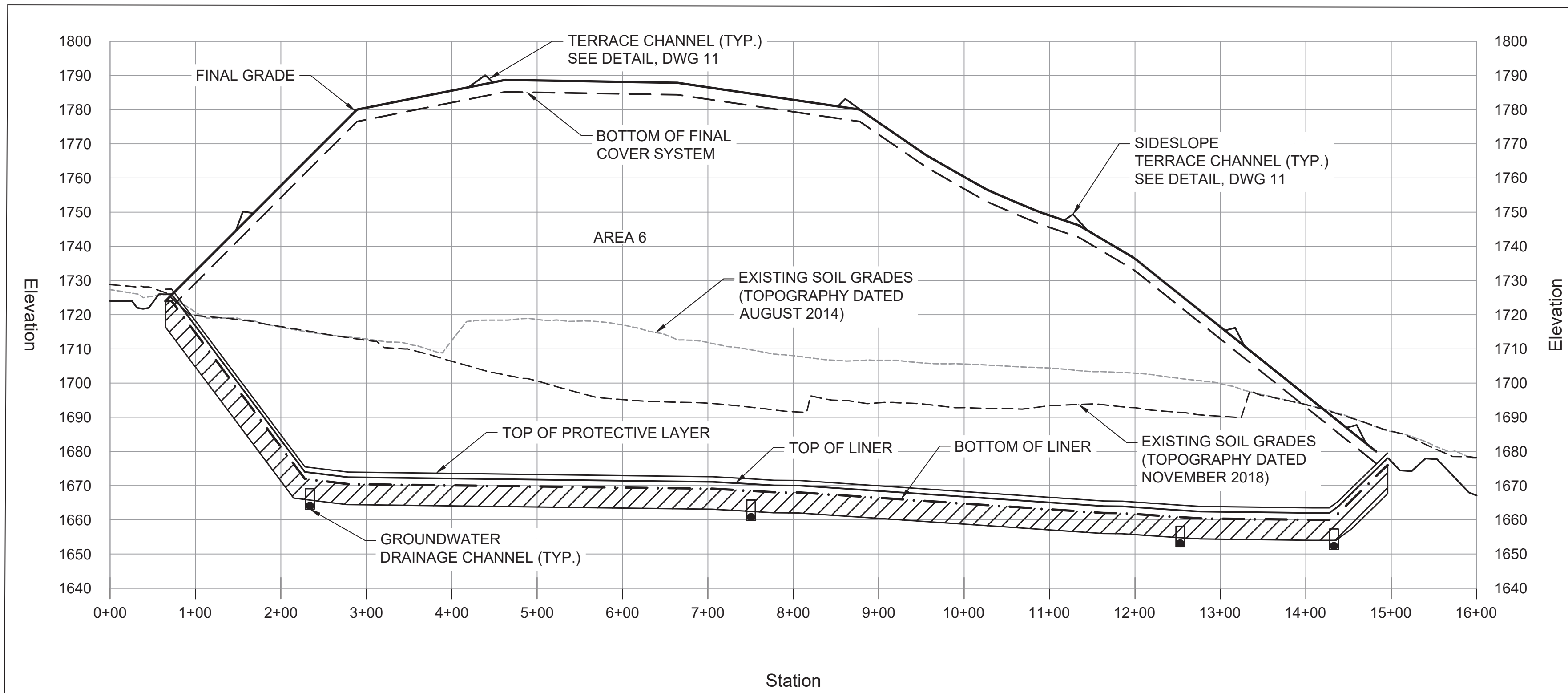
project 118418	contract
drawing 8	rev.
sheet 13	of 24 sheets
file 8 - Landfill Cross Sections 3.dwg	



no.	date	by	ckd	description
A	10/03/19	LAR	SAM	ISSUED FOR PERMIT



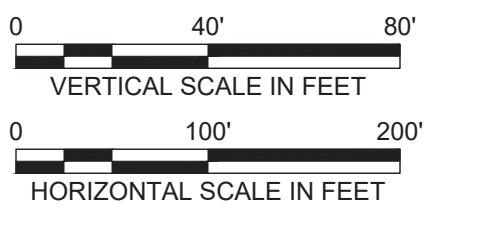
SECTION AREA 5 (WEST TO EAST) F-F'
 VERTICAL SCALE: 1" = 40'
 HORIZONTAL SCALE: 1" = 100'



SECTION AREA 6 (WEST TO EAST) G-G'
 VERTICAL SCALE: 1" = 40'
 HORIZONTAL SCALE: 1" = 100'

LEGEND

	FINAL GRADE
	BOTTOM OF FINAL COVER SYSTEM
	EXISTING GRADE 2018
	EXISTING GRADE 2014
	TOP OF PROTECTIVE COVER
	TOP OF LINER
	BOTTOM OF LINER
	MINIMUM DESATURATED ZONE



date SEPTEMBER 2019	detailed J. HEDMAN
designed L. RODIG	checked S. MARTIN

**NORTHEAST NEBRASKA
 SOLID WASTE COALITION**

**PERMIT MODIFICATION
 AND RENEWAL DRAWINGS
 LANDFILL CROSS SECTIONS 4**

project 118418	contract
drawing 9	rev.
sheet 14	of 24 sheets
file 9 - Landfill Cross Sections 4.dwg	



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Appendix Table I. Summary of interface shear strengths.

Interface 1*	Interface 2*	Peak Strength					Residual Strength				
		Fig. No.	δ (deg)	Ca (kPa)	Points	R ²	Fig. No.	δ (deg)	Ca (kPa)	Points	R ²
HDPE-S	Granular Soil	1a	21	0	162	0.93	1b	17	0	128	0.92
HDPE-S	Cohesive Soil										
	Saturated	1c	11	7	79	0.94	1d	11	0	59	0.95
	Unsaturated	1c	22	0	44	0.93	1d	18	0	32	0.93
HDPE-S	NW-NP GT	1e	11	0	149	0.93	1f	9	0	82	0.96
HDPE-S	Geonet	1g	11	0	196	0.90	1h	9	0	118	0.93
HDPE-S	Geocomposite	1i	15	0	36	0.97	1j	12	0	30	0.93
HDPE-T	Granular Soil	2a	34	0	251	0.98	2b	31	0	239	0.96
HDPE-T	Cohesive Soil										
	Saturated	2c	18	10	167	0.93	2d	16	0	150	0.90
	Unsaturated	2c	19	23	62	0.91	2d	22	0	35	0.93
HDPE-T	NW-NP GT	2e	25	8	254	0.96	2f	17	0	217	0.95
HDPE-T	Geonet	2g	13	0	31	0.99	2h	10	0	27	0.99
HDPE-T	Geocomposite	2i	26	0	168	0.95	2j	15	0	164	0.94
LLDPE-S	Granular Soil	3a	27	0	6	1.00	3b	24	0	9	1.00
LLDPE-S	Cohesive Soil	3c	11	12.4	12	0.94	3d	12	3.7	9	0.93
LLDPE-S	NW-NP GT	3e	10	0	23	0.63	3f	9	0	23	0.49
LLDPE-S	Geonet	3g	11	0	9	0.99	3h	10	0	9	1.00
LLDPE-T	Granular Soil	4a	26	7.7	12	0.95	4b	25	5.2	12	0.95
LLDPE-T	Cohesive Soil	4c	21	5.8	12	1.00	4d	13	7.0	9	0.98
LLDPE-T	NW-NP GT	4e	26	8.1	9	1.00	4f	17	9.5	9	0.96
LLDPE-T	Geonet	4g	15	3.6	6	0.97	4h	11	0	6	0.98
PVC-S	Granular Soil	5a	26	0.4	6	0.99	5b	19	0	6	0.99
PVC-S	Cohesive Soil	5c	22	0.9	11	0.88	5d	15	0	9	0.95
PVC-S	NW-NP GT	5e	20	0	89	0.91	5f	16	0	83	0.74
PVC-S	NW-HB GT	5g	18	0	3	1.00	5h	12	0.1	3	1.00
PVC-S	Woven GT	5i	17	0	6	0.54	5j	7	0	6	0.93
PVC-S	Geonet	5k	18	0.1	3	1.00	5l	16	0.6	3	1.00

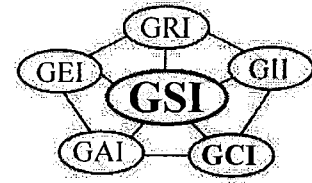
Appendix Table 1. (continued)

Interface 1*	Interface 2*	Peak Strength					Residual Strength				
		Fig. No.	δ (deg)	Ca (kPa)	Points	R ²	Fig. No.	δ (deg)	Ca (kPa)	Points	R ²
PVC-F	NW-NP GT	6a	27	0.2	26	0.95	6b	23	0	26	0.95
PVC-F	NW-HB GT	6c	30	0	8	0.97	6d	27	0	8	0.90
PVC-F	Woven GT	6e	15	0	6	0.78	6f	10	0	6	0.76
PVC-F	Geonet	6g	25	0	11	1.00	6h	19	0	11	0.99
PVC-F	Geocomposite	6i	27	1.1	5	1.00	6j	22	4.7	6	1.00
CSPE-R	Granular Soil	7a	36	0	3	1.00	7b	16	0	3	1.00
CSPE-R	Cohesive Soil	7c	31	5.7	6	0.71	7d	18	0	6	0.99
CSPE-R	NW-NP GT	7e	14	0	6	0.97	7f	10	0	6	0.98
CSPE-R	NW-HB GT	7g	21	0	3	1.00	7h	10	0	3	1.00
CSPE-R	Woven GT	7i	11	0	6	0.92	7j	11	0	3	1.00
CSPE-R	Geonet	7k	28	0	9	0.87	7l	16	0	9	0.80
NW-NP GT	Granular Soil	8a	33	0	290	0.97	8b	33	0	117	0.96
NW-HB GT	Granular Soil	8c	28	0	6	0.99	8d	16	0	6	0.91
Woven GT	Granular Soil	8e	32	0	81	0.99	8f	29	0	28	0.98
NW-NP GT	Cohesive Soil	9a	30	5	79	0.96	9b	21	0	28	0.79
NW-HB GT	Cohesive Soil	9c	29	0.9	15	0.71	9d	10	0	15	0.83
Woven GT	Cohesive Soil	9e	29	0	34	0.94	9f	19	0	16	0.86
GCL Reinforced (internal)	N/A	10a	16	38	406	0.85	10b	6	12	182	0.91
GCL (NW-NP GT)	HDPE-T	11a	23	8	180	0.95	11b	13	0	157	0.90
GCL (W-SF GT)	HDPE-T	11c	18	11	196	0.96	11d	12	0	153	0.92
Geonet	NW-NP GT	12a	23	0	52	0.97	12b	16	0	32	0.97
Geocomposite (NW-NP GT)	Granular Soil	13a	27	14	14	0.86	13b	21	8	10	0.92



Geosynthetic Research Institute

475 Kedron Avenue
Folsom, PA 19033-1208 USA
TEL (610) 522-8440
FAX (610) 522-8441



**Direct Shear Database of
Geosynthetic-to-Geosynthetic and Geosynthetic-to-Soil Interfaces**

by

**George R. Koerner, Ph.D., P.E.
Geosynthetic Research Institute
Folsom, PA 19033-1208
gkoerner@dca.net**

and

**Dhani Narejo, Ph.D.
GSE Lining Technology, Inc.
Houston, TX 77073
dnarejo@gseworld.com**


GRI Report #30

June 14, 2005

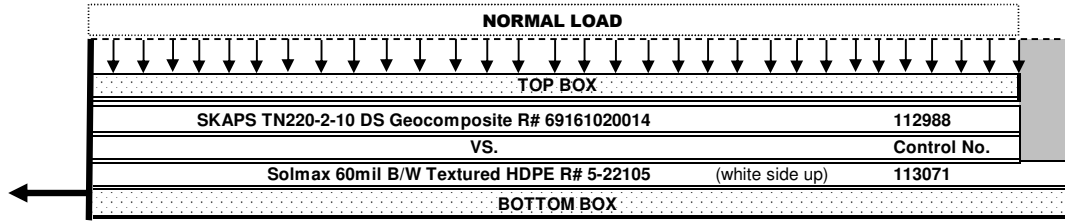


TABLE 2
 CLIENT: JJ Westhoff Construction
 PROJECT: NNSWC

INTERFACE SHEAR TEST RESULT (ASTM D5321)
 TRI Job No. G160536

Reviewed By: 
 Date: 13-Jun-2016

TEST CONFIGURATION 2



TEST CONDITIONS:

SAMPLE PREPARATION:

- Specimens were cut along machine direction to 14" x 17" for the upper box, and 14" x 19" for the lower box, with an effective test area of 12" x 12".
- Geosynthetic specimens were secured via flat bar clamping mechanisms complete with bolts and nuts (7-pairs).

CONSOLIDATION:

- Each set of specimen was consolidated under **dry** condition for **4 hours** at normal load before shearing.
- Normal loads were applied using **bladder** for the 9 psi and 6 psi loads and **dead weights** for the 3 psi load.

SHEAR TEST:

- Shear test was conducted at **0.04 in/min**.
- Sheared at a maximum of **3.0 inch** horizontal displacement
- The test specimens were sheared at **dry** condition.
- Test were performed in general accordance with ASTM D5321 using Geotac Direct Shear machine with effective test area of 12 in X 12 in.

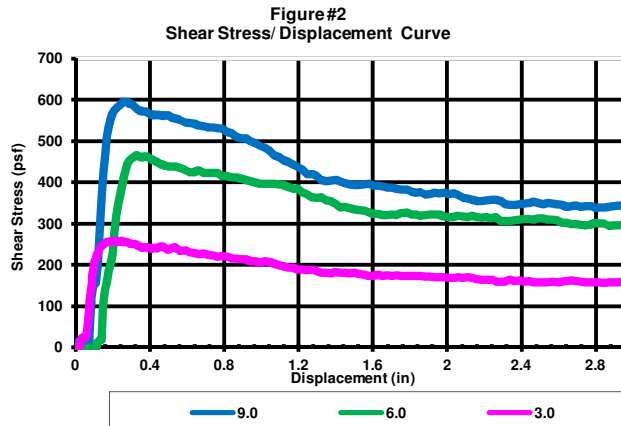
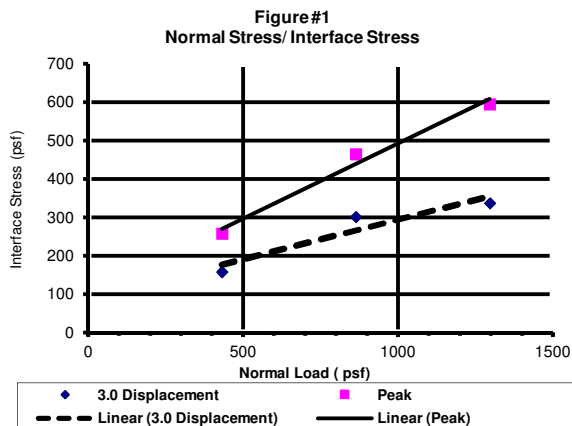
TEST RESULTS:

Normal Stresses Applied		Pre-test Asperity Heights (mils)	PEAK STRENGTH		POST- PEAK STRENGTH AT 3.0 INCHES	
(psi)	(psf)		Shear Stress (psf)	Secant Angle (degrees)	Shear Stress (psf)	Secant Angle (degrees)
3.0	432	18	258	31	158	20
6.0	864	17	465	28	302	19
9.0	1,296	18	595	25	337	15
COHESION (psf) :			102		87	
COEFFICIENT OF FRICTION :			0.39		0.21	
FRICTION ANGLE (degrees) :			21.3		11.7	

NOTE: The friction angles and cohesion results given here are based on mathematically determined best fit line.

OBSERVATIONS:

- No tilting of the system or any abnormalities observed during and after the test.
- Superficial abrasion on the geosynthetics interfacing sides (typical to all loads).
- No tearing, stretching and wrinkling observed on the specimens.
- Sliding occurred between the two interfacing surfaces.



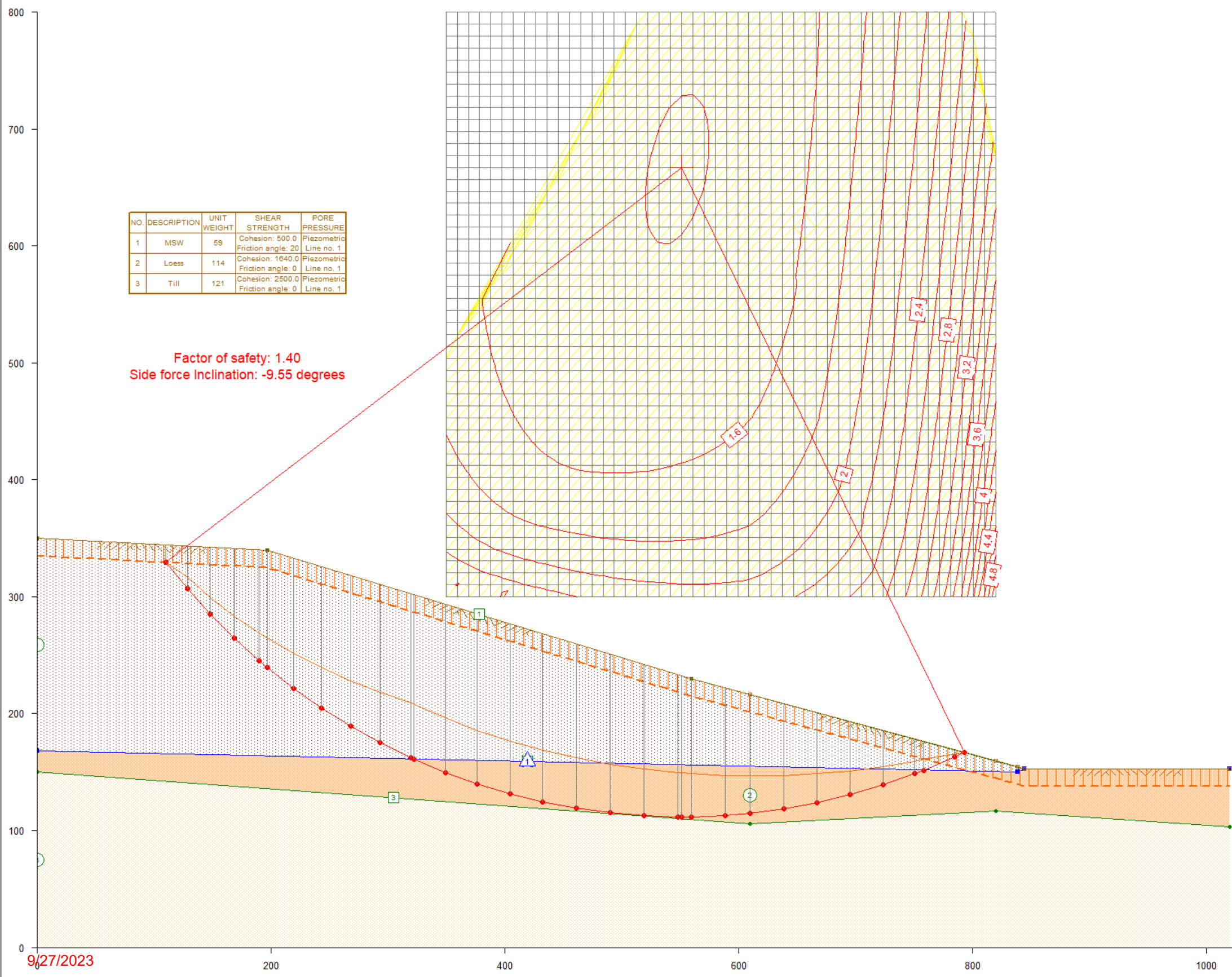
By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI from and against all liabilities in excess of the aforementioned limit.





Client: NNSWC Page 10 of 11
Project: 122625 Date: 9/28/2020 Made by: Textor
NNWSC Landfill Expansion Checked by: _____
Slope Stability and Settlement Prelim: _____ Final: _____

Attachment D – Utxas4 Input/Output and USGS Deaggregation



NNSWC Landfill Expansion

Cross-Section: D

Case: End of Construction 1 – Undrained Cohesion

Filename: 20200929 Profile D EOC 1_input (textor).docx

UTEXAS4 Input File

Page 1 of 2

GRaphics

HEAding follows -

NNSWC Landfill Evaluation - Section D EOC - 1
#122625

PROfile lines

1 1 MSW
0 350
197 340
560 230
845 153

2 2 Loess
0 168
839 150
845 153
1020 153

3 3 Till
0 150.4
610 106
820 116.5
1020 102.9

MATerial properties

1 MSW
59 = unit weight
Conventional Shear Strength
500 20
Piezometric Line
1

2 Loess
114 = unit weight
Conventional Shear Strength
1640 0
Piezometric Line
1

3 Till
121 = unit weight
Conventional Shear Strength
2500 00
Piezometric Line
1

PIEzometric line

1 Piezometric Line
0 168
839 150
845 153
1020 153

LABel

NNSWC Landfill Evaluation - Section D EOC - 1

NNSWC Landfill Expansion

Cross-Section: D

Case: End of Construction 1 – Undrained Cohesion

Filename: 20200929 Profile D EOC 1_input (textor).docx

UTEXAS4 Input File

Page 2 of 2

ANALYSIS/COMPUTATION

Circular Search 2

50 50

350 300 350 800 820 800 820 300

5 5

Tangent

0 150.4

610 106

820 116.5

1020 102.9

Minimum

5000

Crack

15 D

Short

COMpute

NNSWC Landfill Expansion

Cross-Section: D

Case: End of Construction 1 – Undrained Cohesion

Filename: 20200929 Profile D EOC 1_output (textor).docx

UTEXAS4 Output File

Page 1 of 15

TABLE NO. 1

COMPUTER PROGRAM DESIGNATION: UTEXAS4

Originally Coded By Stephen G. Wright

Version No. 4.1.0.8 - Last Revision Date: 11/9/2009

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```
*****  
* RESULTS OF COMPUTATIONS PERFORMED USING THIS SOFTWARE *  
* SHOULD NOT BE USED FOR DESIGN PURPOSES UNLESS THEY HAVE *  
* BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL DATA *  
* OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE ALGORITHMS *  
* AND ANALYTICAL PROCEDURES USED IN THIS SOFTWARE AND MUST HAVE *  
* READ ALL DOCUMENTATION FOR THIS SOFTWARE BEFORE ATTEMPTING *  
* TO USE IT. NEITHER SHINOAK SOFTWARE NOR STEPHEN G. WRIGHT *  
* MAKE OR ASSUME LIABILITY FOR ANY WARRANTIES, EXPRESSED OR *  
* IMPLIED, CONCERNING THE ACCURACY, RELIABILITY, USEFULNESS *  
* OR ADAPTABILITY OF THIS SOFTWARE. *  
*****
```

NNSWC Landfill Expansion

Cross-Section: D

Case: End of Construction 1 – Undrained Cohesion

Filename: 20200929 Profile D EOC 1_output (textor).docx

UTEXAS4 Output File

Page 2 of 15

UTEXAS4 S/N:10001 - Version: 4.1.0.8 - Latest Revision: 11/9/2009
Licensed for use by: Nathan Textor, Burns & McDonnell
Time and date of run: Tue Sep 29 14:04:57 2020
Name of input data file:
Z:\Clients\ENS\NNSWC\122625_NNSWC2020MOD\Design\GeoTech\Working\Dsgn\Stability - Existing
Conditions\Section D\Final\Section D EOC - 1.dat

NNSWC Landfill Evaluation - Section D EOC - 1
#122625

TABLE NO. 3

* NEW PROFILE LINE DATA *

----- Profile Line No. 1 - Material Type (Number): 1 -----

Description: MSW

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	845.00	153.00

----- Profile Line No. 2 - Material Type (Number): 2 -----

Description: Loess

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

----- Profile Line No. 3 - Material Type (Number): 3 -----

Description: Till

Point	X	Y
1	0.00	150.40
2	610.00	106.00
3	820.00	116.50
4	1020.00	102.90

NNSWC Landfill Expansion

Cross-Section: D

Case: End of Construction 1 – Undrained Cohesion

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TABLE NO. 4

* NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- DATA FOR MATERIAL NUMBER 1 -----

Description: MSW

Constant unit weight of soil (material): 59.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 500.0
Friction angle - - - - 20.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 2 -----

Description: Loess

Constant unit weight of soil (material): 114.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 1640.0
Friction angle - - - - 0.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 3 -----

Description: Till

Constant unit weight of soil (material): 121.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 2500.0
Friction angle - - - - 0.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

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TABLE NO. 6

* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- Piezometric Line Number 1 -----

Description: Piezometric Line
Unit weight of fluid (water): 62.4

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

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TABLE NO. 16

* NEW ANALYSIS/COMPUTATION DATA *

Search will be conducted using a fixed grid.
Number of Points Across Grid: 50
Number of Points Up Grid: 50

Table with 3 columns: Grid Corner Number, X, Y. Rows 1-4 showing coordinates for grid corners.

----- Control Parameters for Finding "Critical" Radius -----
Initial number of subdivisions between maximum and minimum
radius for finding a critical radius/radii: 5

Minimum radius increment for terminating subdivision of radii: 5.000

The following criteria will be used for determining
the maximum and minimum radii:

Table with 4 columns: Tangent Line, X, Y. Rows showing values for tangent lines at 0.00, 610.00, 820.00, and 1020.00.

Minimum weight required for computations to be performed: 5000

Depth of crack: 15.000
Automatic search output will be in short form.

The following represent default values or values that were previously defined:
Subtended angle for slice subdivision: 3.00(degrees)
There is no water in a crack.
Conventional (single-stage) computations will be performed.
Seismic coefficient: 0.000
Unit weight of water (or other fluid) in crack: 62.4
Search will be continued after the initial mode to find a most critical circle.
No restrictions exist on the lateral extent of the search.
No shear surfaces other than the most critical will be saved for display later.
Neither slope face was explicitly designated for analysis.
Radii for each grid point will be sorted in the order of increasing radius.
Critical circles for grid points will be output in the order of increasing factor of safety.
Standard sign convention used for direction of shear stress on shear surface.
Procedure of Analysis: Spencer

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Iteration limit: 100
Force imbalance: 1.000000e-005 (fraction of total weight)
Moment imbalance: 1.000000e-005 (fraction of moment due to total weight)
Initial trial factor of safety: 3.000
Initial trial side force inclination: 17.189 (degrees)
Minimum (most negative) side force inclination allowed in Spencer's procedure: -10.00

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TABLE NO. 26

* NEW, COMPUTED SLOPE GEOMETRY DATA *

These slope geometry were generated from the Profile Lines.

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	610.00	216.49
5	820.00	159.75
6	839.00	154.62
7	845.00	153.00
8	1020.00	153.00

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TABLE NO. 38

* FINAL SUMMARY OF COMPUTATIONS WITH FIXED-GRID *

Number of circles attempted: 2500
Number of circles for which F calculated: 2194
Circle with Lowest Factor of Safety:
 X coordinate for center: 551.43
 Y coordinate for center: 667.35
 Radius of circle: 555.614
Factor of safety: 1.395
Side force inclination: -9.55
Time Required for Computations: 2.0 seconds

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TABLE NO. 43

 * Coordinate, Weight, Strength and Pore Water Pressure *
 * Information for Individual Slices for Conventional *
 * Computations or First Stage of Multi-Stage Computations. *
 * (Information is for the critical shear surface in the *
 * case of an automatic search.) *

Slice No.	X	Y	Slice Weight	Matl. No.	Cohesion	Friction Angle	Pore Pressure
1	110.41	329.40	27891	1	500.0	20.00	0.0
	119.56	318.09					
2	128.70	306.78	53947	1	500.0	20.00	0.0
	138.43	295.96					
3	148.15	285.15	81378	1	500.0	20.00	0.0
	158.43	274.86					
4	168.71	264.57	109698	1	500.0	20.00	0.0
	179.51	254.83					
5	190.31	245.09	38620	1	500.0	20.00	0.0
	193.66	242.27					
6	197.00	239.46	143163	1	500.0	20.00	0.0
	208.44	230.48					
7	219.88	221.50	163279	1	500.0	20.00	0.0
	231.77	213.13					
8	243.67	204.76	181815	1	500.0	20.00	0.0
	255.98	197.02					
9	268.30	189.28	198390	1	500.0	20.00	0.0
	281.00	182.20					
10	293.71	175.12	212660	1	500.0	20.00	0.0
	306.76	168.71					
11	319.82	162.31	22354	1	500.0	20.00	0.0
	321.17	161.69					
12	322.52	161.08	233245	2	1640.0	0.00	334.2
	335.92	155.44					
13	349.32	149.79	256933	2	1640.0	0.00	958.0
	363.01	144.86					
14	376.69	139.93	275810	2	1640.0	0.00	1491.7
	390.61	135.71					
15	404.53	131.50	289457	2	1640.0	0.00	1933.9
	418.65	128.03					
16	432.78	124.55	297547	2	1640.0	0.00	2283.3
	447.06	121.82					
17	461.35	119.08	299847	2	1640.0	0.00	2539.1
	475.76	117.10					
18	490.16	115.12	296224	2	1640.0	0.00	2700.5
	504.66	113.90					
19	519.15	112.67	286642	2	1640.0	0.00	2767.0
	533.69	112.21					
20	548.22	111.74	30790	2	1640.0	0.00	2774.7
	549.83	111.74					
	551.43	111.73					

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21	555.71	111.77	81339	2	1640.0	0.00	2765.0
	560.00	111.80					
22	574.53	112.40	264080	2	1640.0	0.00	2700.0
	589.06	113.01					
23	599.53	113.92	177661	2	1640.0	0.00	2572.0
	610.00	114.83					
24	624.42	116.74	223134	2	1640.0	0.00	2362.7
	638.84	118.65					
25	653.13	121.31	192308	2	1640.0	0.00	2038.8
	667.43	123.98					
26	681.57	127.39	156830	2	1640.0	0.00	1621.9
	695.71	130.79					
27	709.65	134.94	117228	2	1640.0	0.00	1113.1
	723.60	139.08					
28	737.30	143.95	74113	2	1640.0	0.00	513.8
	751.01	148.81					
29	754.71	150.27	12486	2	1640.0	0.00	95.9
	758.42	151.73					
30	771.77	157.50	24082	1	500.0	20.00	0.0
	785.12	163.27					
31	789.09	165.15	1386	1	500.0	20.00	0.0
	793.07	167.03					

No water in crack.

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TABLE NO. 44

* Seismic Forces and Forces Due to Distributed Loads for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the critical shear surface in the *
* case of an automatic search.) *

There are no seismic forces or forces due to distributed loads
for the current shear surface

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TABLE NO. 47

 * Information for the Iterative Solution for the Factor of *
 * Safety and Side Force Inclination by Spencer's Procedure *

Allowable force imbalance for convergence: 48
 Allowable moment imbalance for convergence: 21311

Iter- ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	-17.1887	-4.887e+005	1.094e+008		
					First-order corrections to F and Theta	-4.3415 32.2236
					Reduced values - Deltas were too large	-0.3860 2.8648
2	2.61402	-14.3239	-4.367e+005	9.791e+007		
					First-order corrections to F and Theta	-2.6194 16.8599
					Reduced values - Deltas were too large	-0.4451 2.8648
3	2.16894	-11.4592	-3.440e+005	7.787e+007		
					First-order corrections to F and Theta	-1.2482 4.7023
					Reduced values - Deltas were too large	-0.5000 1.8837
4	1.66894	-9.5755	-1.624e+005	3.805e+007		
					First-order corrections to F and Theta	-0.3257 0.0422
					Second-order corrections to F and Theta	-0.2801 0.0251
5	1.38884	-9.5503	4.405e+003	-1.022e+006		
					First-order corrections to F and Theta	0.0062 -0.0029
					Second-order corrections to F and Theta	0.0062 -0.0029
6	1.39508	-9.5532	-8.297e-002	1.890e+001		
					First-order corrections to F and Theta	-0.0000 0.0000

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TABLE NO. 55

* Check of Computations by Spencer's Procedure (Results are for the *
* critical shear surface in the case of an automatic search.) *

Summation of Horizontal Forces: 4.12944e-010

Summation of Vertical Forces: 4.96372e-010

Summation of Moments: 1.38545e-006

Mohr Coulomb Shear Force/Shear Strength Check Summation: 1.20161e-010

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TABLE NO. 58

 * Final Results for Stresses Along the Shear Surface *
 * (Results are for the critical shear surface in the case of a search.) *

SPENCER'S PROCEDURE USED TO COMPUTE THE FACTOR OF SAFETY
 Factor of Safety: 1.395 Side Force Inclination: -9.55

----- VALUES AT CENTER OF BASE OF SLICE -----

Slice No.	X-Center	Y-Center	Total	Effective	Shear Stress
			Normal Stress	Normal Stress	
1	119.56	318.09	768.1	768.1	558.8
2	138.43	295.96	1699.0	1699.0	801.7
3	158.43	274.86	2641.3	2641.3	1047.5
4	179.51	254.83	3585.0	3585.0	1293.7
5	193.66	242.27	4201.3	4201.3	1454.5
6	208.44	230.48	4668.1	4668.1	1576.3
7	231.77	213.13	5303.0	5303.0	1741.9
8	255.98	197.02	5887.6	5887.6	1894.5
9	281.00	182.20	6415.6	6415.6	2032.2
10	306.76	168.71	6880.9	6880.9	2153.6
11	321.17	161.69	7118.5	7118.5	2215.6
12	335.92	155.44	7847.0	7512.8	1175.6
13	363.01	144.86	8639.2	7681.2	1175.6
14	390.61	135.71	9276.1	7784.4	1175.6
15	418.65	128.03	9752.4	7818.5	1175.6
16	447.06	121.82	10063.4	7780.1	1175.6
17	475.76	117.10	10205.1	7666.0	1175.6
18	504.66	113.90	10173.6	7473.1	1175.6
19	533.69	112.21	9965.8	7198.8	1175.6
20	549.83	111.74	9794.7	7020.0	1175.6
21	555.71	111.77	9709.1	6944.0	1175.6
22	574.53	112.40	9399.0	6699.0	1175.6
23	599.53	113.92	8916.1	6344.1	1175.6
24	624.42	116.74	8276.3	5913.6	1175.6
25	653.13	121.31	7372.8	5334.0	1175.6
26	681.57	127.39	6281.8	4660.0	1175.6
27	709.65	134.94	5001.6	3888.5	1175.6
28	737.30	143.95	3530.0	3016.2	1175.6
29	754.71	150.27	2510.8	2414.9	1175.6
30	771.77	157.50	1449.7	1449.7	736.6
31	789.09	165.15	536.9	536.9	498.5

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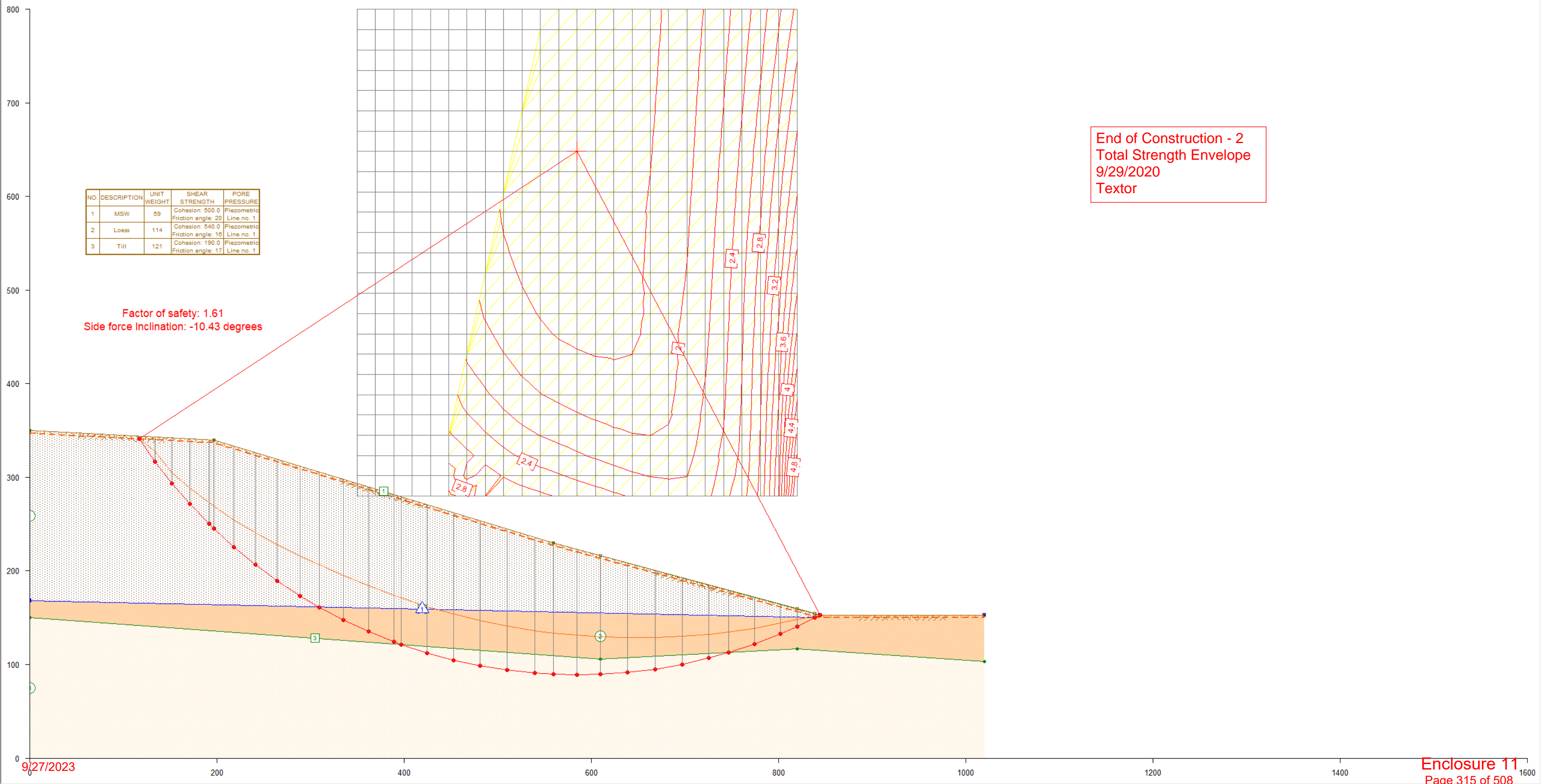
TABLE NO. 59

 * Final Results for Side Forces and Stresses Between Slices *
 * (Results are for the critical shear surface in the case of a search.) *

----- VALUES AT RIGHT SIDE OF SLICE -----

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	128.70	7252	316.55	0.266	-78.4	468.2
2	148.15	28706	299.11	0.244	-265.9	1253.4
3	168.71	61999	283.56	0.247	-411.7	2002.5
4	190.31	104466	268.98	0.251	-535.3	2698.4
5	197.00	118581	264.74	0.251	-571.2	2897.4
6	219.88	167041	251.51	0.269	-569.8	3522.6
7	243.67	215047	239.39	0.286	-497.8	4000.1
8	268.30	260107	228.26	0.302	-374.9	4348.2
9	293.71	299886	218.16	0.317	-207.9	4570.5
10	319.82	332264	209.16	0.334	2.7	4662.3
11	322.52	335066	208.31	0.335	26.8	4663.8
12	349.32	392917	196.35	0.323	-164.0	5543.8
13	376.69	446748	185.81	0.315	-330.6	6381.2
14	404.53	492782	176.67	0.310	-463.8	7138.5
15	432.78	527880	168.84	0.308	-559.3	7789.1
16	461.35	549600	162.27	0.307	-615.8	8313.8
17	490.16	556261	156.90	0.307	-633.8	8698.2
18	519.15	546979	152.71	0.309	-614.1	8931.2
19	548.22	521711	149.67	0.311	-558.6	9004.7
20	551.43	517981	149.40	0.312	-550.6	9003.0
21	560.00	507112	148.75	0.313	-527.0	8988.6
22	589.06	460934	147.25	0.314	-489.7	8819.3
23	610.00	419522	146.84	0.315	-450.0	8588.8
24	638.84	353064	147.20	0.317	-378.4	8111.3
25	667.43	279151	148.60	0.320	-290.0	7440.5
26	695.71	202022	151.03	0.324	-185.1	6556.1
27	723.60	126753	154.51	0.330	-50.1	5400.9
28	751.01	59230	159.30	0.355	252.0	3697.2
29	758.42	42976	161.24	0.386	538.1	2898.6
30	785.12	6066	165.82	0.431	596.1	1428.5
31	793.07	-0	167.03	0.000	0.0	0.0

Read end-of-file on input while looking for another command word.
 End of input data assumed - normal termination.



NO.	DESCRIPTION	UNIT WEIGHT	SHEAR STRENGTH	PORE PRESSURE
1	MSW	59	Cohesion: 500.0 Friction angle: 20	Piezometric Line no. 1
2	Loess	114	Cohesion: 540.0 Friction angle: 18	Piezometric Line no. 1
3	Till	121	Cohesion: 190.0 Friction angle: 17	Piezometric Line no. 1

Factor of safety: 1.61
Side force Inclination: -10.43 degrees

End of Construction - 2
Total Strength Envelope
9/29/2020
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GRaphics

HEAding follows -

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PROfile lines

1 1 MSW
0 350
197 340
560 230
845 153

2 2 Loess
0 168
839 150
845 153
1020 153

3 3 Till
0 150.4
610 106
820 116.5
1020 102.9

MATerial properties

1 MSW
59 = unit weight
Conventional Shear Strength
500 20
Piezometric Line
1

2 Loess
114 = unit weight
Conventional Shear Strength
540 16
Piezometric Line
1

3 Till
121 = unit weight
Conventional Shear Strength
190 17
Piezometric Line
1

PIEzometric line

1 Piezometric Line
0 168
839 150
845 153
1020 153

LABel

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ANALYSIS/COMPUTATION

Circular Search 2

25 25

350 280 350 800 820 800 820 280

5 5

Point

845 153

Minimum

5000

Crack

3 D

Short

COMpute

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TABLE NO. 1

COMPUTER PROGRAM DESIGNATION: UTEXAS4

Originally Coded By Stephen G. Wright

Version No. 4.1.0.8 - Last Revision Date: 11/9/2009

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```
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TABLE NO. 3

* NEW PROFILE LINE DATA *

----- Profile Line No. 1 - Material Type (Number): 1 -----

Description: MSW

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	845.00	153.00

----- Profile Line No. 2 - Material Type (Number): 2 -----

Description: Loess

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

----- Profile Line No. 3 - Material Type (Number): 3 -----

Description: Till

Point	X	Y
1	0.00	150.40
2	610.00	106.00
3	820.00	116.50
4	1020.00	102.90

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TABLE NO. 4

* NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- DATA FOR MATERIAL NUMBER 1 -----

Description: MSW

Constant unit weight of soil (material): 59.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 500.0
Friction angle - - - - 20.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 2 -----

Description: Loess

Constant unit weight of soil (material): 114.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 540.0
Friction angle - - - - 16.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 3 -----

Description: Till

Constant unit weight of soil (material): 121.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 190.0
Friction angle - - - - 17.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

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TABLE NO. 6

* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- Piezometric Line Number 1 -----

Description: Piezometric Line
Unit weight of fluid (water): 62.4

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

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TABLE NO. 16

* NEW ANALYSIS/COMPUTATION DATA *

Search will be conducted using a fixed grid.
Number of Points Across Grid: 25
Number of Points Up Grid: 25

Grid Corner Number	X	Y
1	350.00	280.00
2	350.00	800.00
3	820.00	800.00
4	820.00	280.00

----- Control Parameters for Finding "Critical" Radius -----
Initial number of subdivisions between maximum and minimum
radius for finding a critical radius/radii: 5

Minimum radius increment for terminating subdivision of radii: 5.000

The following criteria will be used for determining
the maximum and minimum radii:
Point circles pass through - X: 845.00 Y: 153.00
Minimum weight required for computations to be performed: 5000

Depth of crack: 3.000
Automatic search output will be in short form.

The following represent default values or values that were previously defined:
Subtended angle for slice subdivision: 3.00(degrees)
There is no water in a crack.
Conventional (single-stage) computations will be performed.
Seismic coefficient: 0.000
Unit weight of water (or other fluid) in crack: 62.4
Search will be continued after the initial mode to find a most critical circle.
No restrictions exist on the lateral extent of the search.
No shear surfaces other than the most critical will be saved for display later.
Neither slope face was explicitly designated for analysis.
Radii for each grid point will be sorted in the order of increasing radius.
Critical circles for grid points will be output in the order of increasing factor of safety.
Standard sign convention used for direction of shear stress on shear surface.
Procedure of Analysis: Spencer

Iteration limit: 100
Force imbalance: 1.000000e-005 (fraction of total weight)
Moment imbalance: 1.000000e-005 (fraction of moment due to total weight)
Initial trial factor of safety: 3.000

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Initial trial side force inclination: 17.189 (degrees)

Minimum (most negative) side force inclination allowed in Spencer's procedure: -10.00

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TABLE NO. 26

* NEW, COMPUTED SLOPE GEOMETRY DATA *

These slope geometry were generated from the Profile Lines.

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	610.00	216.49
5	820.00	159.75
6	839.00	154.62
7	845.00	153.00
8	1020.00	153.00

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TABLE NO. 38

* FINAL SUMMARY OF COMPUTATIONS WITH FIXED-GRID *

Number of circles attempted: 625
Number of circles for which F calculated: 434
Circle with Lowest Factor of Safety:
 X coordinate for center: 585.00
 Y coordinate for center: 648.33
 Radius of circle: 559.424
Factor of safety: 1.615
Side force inclination: -10.43
Time Required for Computations: 0.0 seconds

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TABLE NO. 43

 * Coordinate, Weight, Strength and Pore Water Pressure *
 * Information for Individual Slices for Conventional *
 * Computations or First Stage of Multi-Stage Computations. *
 * (Information is for the critical shear surface in the *
 * case of an automatic search.) *

Slice No.	X	Y	Slice Weight	Matl. No.	Cohesion	Friction Angle	Pore Pressure
1	117.54	341.03	14403	1	500.0	20.00	0.0
	125.90	329.01					
2	134.26	316.99	39530	1	500.0	20.00	0.0
	143.24	305.42					
3	152.22	293.85	66662	1	500.0	20.00	0.0
	161.79	282.77					
4	171.36	271.69	95313	1	500.0	20.00	0.0
	181.50	261.12					
5	191.64	250.56	29138	1	500.0	20.00	0.0
	194.32	247.94					
6	197.00	245.33	129198	1	500.0	20.00	0.0
	207.81	235.45					
7	218.62	225.58	151845	1	500.0	20.00	0.0
	229.94	216.28					
8	241.25	206.98	173452	1	500.0	20.00	0.0
	253.04	198.29					
9	264.82	189.60	193587	1	500.0	20.00	0.0
	277.04	181.53					
10	289.27	173.47	170344	1	500.0	20.00	0.0
	299.47	167.41					
11	309.67	161.36	234390	2	540.0	16.00	411.5
	322.60	154.49					
12	335.53	147.61	266841	2	540.0	16.00	1191.1
	348.80	141.43					
13	362.08	135.24	295205	2	540.0	16.00	1883.1
	375.66	129.76					
14	389.24	124.28	85568	2	540.0	16.00	2288.1
	393.02	122.90					
15	396.79	121.52	325228	3	190.0	17.00	2635.4
	410.71	116.95					
16	424.62	112.39	343559	3	190.0	17.00	3121.6
	438.76	108.56					
17	452.89	104.73	355973	3	190.0	17.00	3514.9
	467.21	101.65					
18	481.52	98.56	362167	3	190.0	17.00	3814.4
	495.98	96.23					
19	510.44	93.90	361942	3	190.0	17.00	4019.0
	525.00	92.33					
20	539.56	90.76	249669	3	190.0	17.00	4124.1
	549.78	90.11					
	560.00	89.47					

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21	572.50	89.19	297612	3	190.0	17.00	4151.4
	585.00	88.91					
22	597.50	89.19	286593	3	190.0	17.00	4117.9
	610.00	89.47					
23	624.61	90.51	316658	3	190.0	17.00	3999.5
	639.21	91.54					
24	653.75	93.34	290864	3	190.0	17.00	3783.4
	668.28	95.14					
25	682.70	97.70	259370	3	190.0	17.00	3472.7
	697.12	100.26					
26	711.38	103.57	222625	3	190.0	17.00	3068.1
	725.65	106.88					
27	736.27	109.86	140677	3	190.0	17.00	2642.2
	746.88	112.84					
28	760.79	117.45	147989	2	540.0	16.00	2136.0
	774.69	122.05					
29	788.33	127.37	101479	2	540.0	16.00	1479.6
	801.97	132.70					
30	810.99	136.68	40937	2	540.0	16.00	868.6
	820.00	140.66					
31	829.50	145.28	18495	2	540.0	16.00	307.3
	839.00	149.90					
32	842.00	151.45	853	2	540.0	16.00	3.2
	845.00	153.00					

No water in crack.

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TABLE NO. 44

* Seismic Forces and Forces Due to Distributed Loads for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the critical shear surface in the *
* case of an automatic search.) *

There are no seismic forces or forces due to distributed loads
for the current shear surface

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TABLE NO. 47

 * Information for the Iterative Solution for the Factor of *
 * Safety and Side Force Inclination by Spencer's Procedure *

Allowable force imbalance for convergence: 61
 Allowable moment imbalance for convergence: 29327

Iter- ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	-17.1887	-4.772e+005	9.213e+007		
					First-order corrections to F and Theta	-2.9468 15.7925
					Reduced values - Deltas were too large	-0.5000 2.6796
2	2.50000	-14.5091	-3.755e+005	7.252e+007		
					First-order corrections to F and Theta	-1.4753 7.7105
					Reduced values - Deltas were too large	-0.5000 2.6132
3	2.00000	-11.8959	-2.109e+005	4.140e+007		
					First-order corrections to F and Theta	-0.4871 2.0260
					Second-order corrections to F and Theta	-0.3989 1.5442
4	1.60111	-10.3517	8.981e+003	-1.556e+006		
					First-order corrections to F and Theta	0.0134 -0.0805
					Second-order corrections to F and Theta	0.0135 -0.0815
5	1.61461	-10.4332	-6.503e-001	9.328e+001		
					First-order corrections to F and Theta	-0.0000 0.0000

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TABLE NO. 55

* Check of Computations by Spencer's Procedure (Results are for the *
* critical shear surface in the case of an automatic search.) *

Summation of Horizontal Forces: 5.44605e-010

Summation of Vertical Forces: 4.96989e-010

Summation of Moments: 5.93853e-005

Mohr Coulomb Shear Force/Shear Strength Check Summation: 1.97582e-010

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TABLE NO. 58

 * Final Results for Stresses Along the Shear Surface *
 * (Results are for the critical shear surface in the case of a search.) *

SPENCER'S PROCEDURE USED TO COMPUTE THE FACTOR OF SAFETY
 Factor of Safety: 1.615 Side Force Inclination: -10.43

----- VALUES AT CENTER OF BASE OF SLICE -----

Slice No.	X-Center	Y-Center	Total	Effective	Shear Stress
			Normal Stress	Normal Stress	
1	125.90	329.01	305.7	305.7	378.6
2	143.24	305.42	1251.1	1251.1	591.7
3	161.79	282.77	2220.0	2220.0	810.1
4	181.50	261.12	3201.1	3201.1	1031.3
5	194.32	247.94	3824.5	3824.5	1171.8
6	207.81	235.45	4314.0	4314.0	1282.2
7	229.94	216.28	5029.2	5029.2	1443.4
8	253.04	198.29	5701.9	5701.9	1595.0
9	277.04	181.53	6324.9	6324.9	1735.4
10	299.47	167.41	6843.8	6843.8	1852.4
11	322.60	154.49	7737.6	7326.1	1635.5
12	348.80	141.43	8818.8	7627.7	1689.1
13	375.66	129.76	9763.3	7880.1	1733.9
14	393.02	122.90	10308.8	8020.7	1758.9
15	410.71	116.95	10795.3	8159.9	1662.8
16	438.76	108.56	11435.9	8314.3	1692.0
17	467.21	101.65	11907.3	8392.3	1706.8
18	495.98	96.23	12202.2	8387.8	1705.9
19	525.00	92.33	12313.8	8294.7	1688.3
20	549.78	90.11	12271.4	8147.3	1660.4
21	572.50	89.19	12117.6	7966.3	1626.1
22	597.50	89.19	11838.6	7720.7	1579.6
23	624.61	90.51	11374.1	7374.6	1514.1
24	653.75	93.34	10689.9	6906.5	1425.4
25	682.70	97.70	9788.9	6316.3	1313.7
26	711.38	103.57	8663.0	5594.8	1177.1
27	736.27	109.86	7494.0	4851.9	1036.4
28	760.79	117.45	6253.0	4117.0	1065.6
29	788.33	127.37	4552.1	3072.5	880.1
30	810.99	136.68	2951.5	2082.9	704.3
31	829.50	145.28	1466.9	1159.6	540.4
32	842.00	151.45	482.4	479.2	419.5

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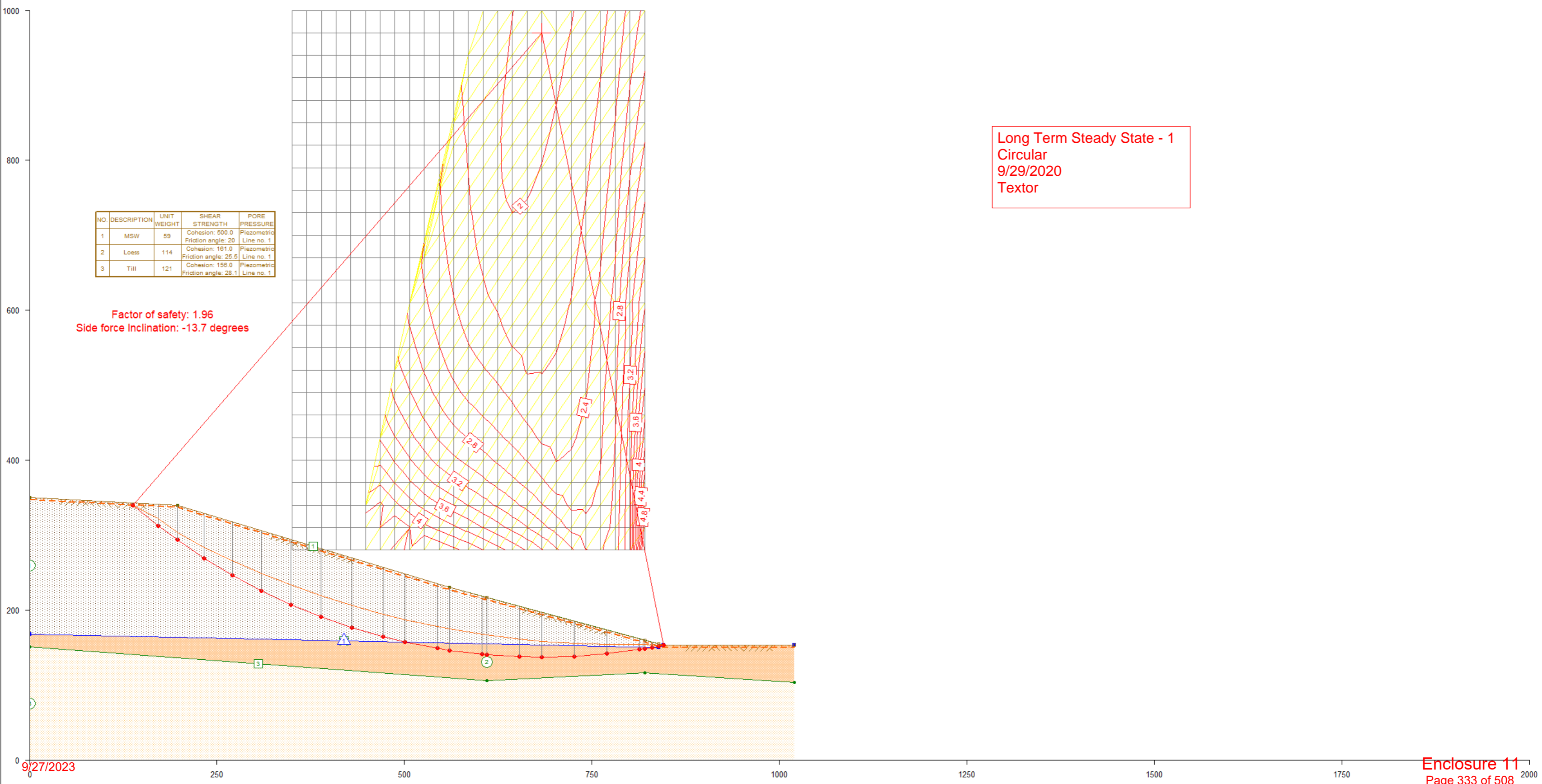
TABLE NO. 59

 * Final Results for Side Forces and Stresses Between Slices *
 * (Results are for the critical shear surface in the case of a search.) *

----- VALUES AT RIGHT SIDE OF SLICE -----

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	134.26	1037	327.47	0.400	15.6	62.2
2	152.22	19663	304.84	0.227	-254.9	1053.6
3	171.36	53924	288.41	0.240	-425.4	1949.1
4	191.64	101442	272.77	0.248	-572.0	2796.1
5	197.00	115386	268.84	0.248	-611.0	3008.4
6	218.62	173848	254.30	0.266	-637.4	3807.4
7	241.25	235731	240.70	0.282	-597.9	4474.4
8	264.82	298302	227.92	0.295	-517.7	5036.2
9	289.27	358886	215.97	0.307	-407.0	5501.1
10	309.67	404743	206.92	0.315	-297.4	5806.7
11	335.53	469853	195.22	0.317	-309.5	6453.9
12	362.08	535180	184.07	0.316	-363.2	7166.3
13	389.24	596139	173.77	0.314	-425.5	7872.0
14	396.79	611570	171.11	0.314	-441.6	8058.0
15	424.62	664713	161.86	0.312	-530.8	8772.8
16	452.89	705138	153.75	0.311	-594.7	9388.2
17	481.52	730140	146.79	0.311	-628.9	9881.3
18	510.44	737828	140.96	0.311	-631.3	10234.8
19	539.56	727186	136.27	0.313	-601.4	10436.1
20	560.00	708767	133.66	0.314	-561.8	10482.0
21	585.00	674317	131.21	0.315	-546.4	10419.6
22	610.00	627435	129.57	0.316	-512.7	10228.5
23	639.21	558469	128.69	0.317	-450.5	9834.7
24	668.28	477205	128.90	0.320	-364.8	9253.1
25	697.12	387756	130.17	0.323	-262.1	8490.1
26	725.65	295306	132.43	0.326	-162.9	7574.8
27	746.88	227469	134.66	0.327	-121.5	6833.0
28	774.69	138810	138.90	0.337	67.5	5399.0
29	801.97	65105	144.09	0.357	282.3	3728.7
30	820.00	28295	148.25	0.397	560.8	2354.2
31	839.00	4082	152.00	0.445	571.2	1128.3
32	845.00	-0	153.00	0.000	0.0	0.0

Read end-of-file on input while looking for another command word.
 End of input data assumed - normal termination.



NO.	DESCRIPTION	UNIT WEIGHT	SHEAR STRENGTH	PORE PRESSURE
1	MSW	59	Cohesion: 500.0 Friction angle: 20	Piezometric Line no. 1
2	Loess	114	Cohesion: 161.0 Friction angle: 25.5	Piezometric Line no. 1
3	Till	121	Cohesion: 156.0 Friction angle: 28.1	Piezometric Line no. 1

Factor of safety: 1.96
 Side force Inclination: -13.7 degrees

Long Term Steady State - 1
 Circular
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GRAphics

HEAding follows -

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PROfile lines

1 1 MSW
0 350
197 340
560 230
845 153

2 2 Loess
0 168
839 150
845 153
1020 153

3 3 Till
0 150.4
610 106
820 116.5
1020 102.9

MATerial properties

1 MSW
59 = unit weight
Conventional Shear Strength
500 20
Piezometric Line
1

2 Loess
114 = unit weight
Conventional Shear Strength
161 25.5
Piezometric Line
1

3 Till
121 = unit weight
Conventional Shear Strength
156 28.1
Piezometric Line
1

PIEzometric line

1 Piezometric Line
0 168
839 150
845 153
1020 153

LABel

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ANALYSIS/COMPUTATION

Circular Search 2

25 25

350 280 350 1000 820 1000 820 280

5 5

Point

845 153

Minimum

5000

Crack

3 D

Short

COMpute

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TABLE NO. 1

COMPUTER PROGRAM DESIGNATION: UTEXAS4

Originally Coded By Stephen G. Wright

Version No. 4.1.0.8 - Last Revision Date: 11/9/2009

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```
*****  
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TABLE NO. 3

* NEW PROFILE LINE DATA *

----- Profile Line No. 1 - Material Type (Number): 1 -----

Description: MSW

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	845.00	153.00

----- Profile Line No. 2 - Material Type (Number): 2 -----

Description: Loess

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

----- Profile Line No. 3 - Material Type (Number): 3 -----

Description: Till

Point	X	Y
1	0.00	150.40
2	610.00	106.00
3	820.00	116.50
4	1020.00	102.90

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TABLE NO. 4

* NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- DATA FOR MATERIAL NUMBER 1 -----

Description: MSW

Constant unit weight of soil (material): 59.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 500.0
Friction angle - - - - - 20.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 2 -----

Description: Loess

Constant unit weight of soil (material): 114.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 161.0
Friction angle - - - - - 25.50 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 3 -----

Description: Till

Constant unit weight of soil (material): 121.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 156.0
Friction angle - - - - - 28.10 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

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TABLE NO. 6

* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- Piezometric Line Number 1 -----

Description: Piezometric Line
Unit weight of fluid (water): 62.4

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

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TABLE NO. 16

* NEW ANALYSIS/COMPUTATION DATA *

Search will be conducted using a fixed grid.
Number of Points Across Grid: 25
Number of Points Up Grid: 25

Table with 3 columns: Grid Corner Number, X, Y. Rows 1-4 with coordinates (350.00, 280.00), (350.00, 1000.00), (820.00, 1000.00), (820.00, 280.00).

----- Control Parameters for Finding "Critical" Radius -----
Initial number of subdivisions between maximum and minimum
radius for finding a critical radius/radii: 5
Minimum radius increment for terminating subdivision of radii: 5.000

The following criteria will be used for determining
the maximum and minimum radii:
Point circles pass through - X: 845.00 Y: 153.00
Minimum weight required for computations to be performed: 5000

Depth of crack: 3.000
Automatic search output will be in short form.

The following represent default values or values that were previously defined:
Subtended angle for slice subdivision: 3.00(degrees)
There is no water in a crack.
Conventional (single-stage) computations will be performed.
Seismic coefficient: 0.000
Unit weight of water (or other fluid) in crack: 62.4
Search will be continued after the initial mode to find a most critical circle.
No restrictions exist on the lateral extent of the search.
No shear surfaces other than the most critical will be saved for display later.
Neither slope face was explicitly designated for analysis.
Radii for each grid point will be sorted in the order of increasing radius.
Critical circles for grid points will be output in the order of increasing factor of safety.
Standard sign convention used for direction of shear stress on shear surface.
Procedure of Analysis: Spencer

Iteration limit: 100
Force imbalance: 1.000000e-005 (fraction of total weight)
Moment imbalance: 1.000000e-005 (fraction of moment due to total weight)
Initial trial factor of safety: 3.000

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Initial trial side force inclination: 17.189 (degrees)

Minimum (most negative) side force inclination allowed in Spencer's procedure: -10.00

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TABLE NO. 26

* NEW, COMPUTED SLOPE GEOMETRY DATA *

These slope geometry were generated from the Profile Lines.

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	610.00	216.49
5	820.00	159.75
6	839.00	154.62
7	845.00	153.00
8	1020.00	153.00

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TABLE NO. 38

* FINAL SUMMARY OF COMPUTATIONS WITH FIXED-GRID *

Number of circles attempted: 625
Number of circles for which F calculated: 402
Circle with Lowest Factor of Safety:
 X coordinate for center: 682.92
 Y coordinate for center: 970.00
 Radius of circle: 832.923
Factor of safety: 1.956
Side force inclination: -13.70
Time Required for Computations: 0.0 seconds

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TABLE NO. 43

 * Coordinate, Weight, Strength and Pore Water Pressure *
 * Information for Individual Slices for Conventional *
 * Computations or First Stage of Multi-Stage Computations. *
 * (Information is for the critical shear surface in the *
 * case of an automatic search.) *

Slice No.	X	Y	Slice Weight	Matl. No.	Cohesion	Friction Angle	Pore Pressure
1	138.08	339.99					
	154.94	326.17	31770	1	500.0	20.00	0.0
	171.80	312.34					
2	184.40	302.92	56084	1	500.0	20.00	0.0
	197.00	293.51					
3	215.04	281.25	113392	1	500.0	20.00	0.0
	233.07	269.00					
4	251.72	257.71	144617	1	500.0	20.00	0.0
	270.37	246.42					
5	289.59	236.12	171938	1	500.0	20.00	0.0
	308.81	225.82					
6	328.54	216.54	194631	1	500.0	20.00	0.0
	348.27	207.26					
7	368.46	199.03	212061	1	500.0	20.00	0.0
	388.65	190.79					
8	409.24	183.63	223692	1	500.0	20.00	0.0
	429.83	176.46					
9	450.77	170.38	229091	1	500.0	20.00	0.0
	471.71	164.30					
10	486.19	160.78	156537	1	500.0	20.00	0.0
	500.68	157.26					
11	522.07	153.05	232102	2	161.0	25.50	234.2
	543.46	148.83					
12	551.73	147.52	90789	2	161.0	25.50	539.6
	560.00	146.20					
13	581.64	143.54	234359	2	161.0	25.50	747.3
	603.28	140.89					
14	606.64	140.58	35762	2	161.0	25.50	898.6
	610.00	140.28					
15	631.76	138.94	221189	2	161.0	25.50	967.8
	653.52	137.60					
16	668.22	137.34	136382	2	161.0	25.50	1018.8
	682.92	137.08					
17	704.71	137.65	173486	2	161.0	25.50	950.5
	726.51	138.22					
18	748.24	139.93	129305	2	161.0	25.50	749.9
	769.98	141.64					
19	791.60	144.49	74049	2	161.0	25.50	407.5
	813.21	147.33					
20	816.61	147.88	6088	2	161.0	25.50	162.0
	820.00	148.44					

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21	825.07	149.31	5973	2	161.0	25.50	61.5
	830.13	150.19					
22	834.57	151.01	2516	1	500.0	20.00	0.0
	839.00	151.83					
23	842.00	152.42	494	1	500.0	20.00	0.0
	845.00	153.00					

No water in crack.

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TABLE NO. 44

* Seismic Forces and Forces Due to Distributed Loads for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the critical shear surface in the *
* case of an automatic search.) *

There are no seismic forces or forces due to distributed loads
for the current shear surface

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TABLE NO. 47

 * Information for the Iterative Solution for the Factor of *
 * Safety and Side Force Inclination by Spencer's Procedure *

Allowable force imbalance for convergence: 29
 Allowable moment imbalance for convergence: 13890

Iter- ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	-17.1887	-2.410e+005	7.040e+007		
					First-order corrections to F and Theta	-2.5893 101.4771
					Reduced values - Deltas were too large	-0.0731 2.8648
2	2.92690	-14.3239	-2.342e+005	6.843e+007		
					First-order corrections to F and Theta	-1.8723 39.1924
					Reduced values - Deltas were too large	-0.1369 2.8648
3	2.79004	-11.4592	-2.164e+005	6.348e+007		
					First-order corrections to F and Theta	-0.7626 -41.3580
					Reduced values - Deltas were too large	-0.0528 -2.8648
4	2.73722	-14.3239	-2.014e+005	5.867e+007		
					First-order corrections to F and Theta	-1.1261 4.0438
					Reduced values - Deltas were too large	-0.5000 1.7954
5	2.23722	-12.5285	-9.172e+004	2.803e+007		
					First-order corrections to F and Theta	-0.3164 -1.9538
					Second-order corrections to F and Theta	-0.2848 -1.2280
6	1.95242	-13.7566	1.599e+003	-5.617e+005		
					First-order corrections to F and Theta	0.0040 0.0534
					Second-order corrections to F and Theta	0.0040 0.0538
7	1.95643	-13.7027	-8.833e-003	3.944e+000		
					First-order corrections to F and Theta	-0.0000 -0.0000

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TABLE NO. 55

* Check of Computations by Spencer's Procedure (Results are for the *
* critical shear surface in the case of an automatic search.) *

Summation of Horizontal Forces: 1.06996e-010

Summation of Vertical Forces: 2.13797e-010

Summation of Moments: 7.65845e-008

Mohr Coulomb Shear Force/Shear Strength Check Summation: 6.27561e-011

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TABLE NO. 58

 * Final Results for Stresses Along the Shear Surface *
 * (Results are for the critical shear surface in the case of a search.) *

SPENCER'S PROCEDURE USED TO COMPUTE THE FACTOR OF SAFETY
 Factor of Safety: 1.956 Side Force Inclination: -13.70

----- VALUES AT CENTER OF BASE OF SLICE -----

Slice No.	X-Center	Y-Center	Total	Effective	Shear Stress
			Normal Stress	Normal Stress	
1	154.94	326.17	608.2	608.2	368.7
2	184.40	302.92	1643.3	1643.3	561.3
3	215.04	281.25	2432.3	2432.3	708.1
4	251.72	257.71	3115.0	3115.0	835.1
5	289.59	236.12	3712.0	3712.0	946.1
6	328.54	216.54	4213.7	4213.7	1039.5
7	368.46	199.03	4610.8	4610.8	1113.4
8	409.24	183.63	4894.7	4894.7	1166.2
9	450.77	170.38	5056.9	5056.9	1196.3
10	486.19	160.78	5102.0	5102.0	1204.7
11	522.07	153.05	5234.6	5000.4	1301.4
12	551.73	147.52	5387.1	4847.5	1264.1
13	581.64	143.54	5400.8	4653.5	1216.8
14	606.64	140.58	5381.9	4483.3	1175.3
15	631.76	138.94	5207.2	4239.3	1115.8
16	668.22	137.34	4849.0	3830.2	1016.1
17	704.71	137.65	4246.1	3295.5	885.7
18	748.24	139.93	3261.0	2511.1	694.5
19	791.60	144.49	1947.1	1539.6	457.6
20	816.61	147.88	1062.0	900.0	301.7
21	825.07	149.31	721.4	659.9	243.2
22	834.57	151.01	449.5	449.5	339.2
23	842.00	152.42	223.1	223.1	297.1

NNSWC Landfill Expansion

Cross-Section: D

Case: Long Term Steady State 1 – Circular

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NNSWC Landfill Evaluation - Section D LTSS - 1
 #122625

TABLE NO. 59

 * Final Results for Side Forces and Stresses Between Slices *
 * (Results are for the critical shear surface in the case of a search.) *

----- VALUES AT RIGHT SIDE OF SLICE -----

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	171.80	4512	322.05	0.336	2.1	300.8
2	197.00	21809	303.17	0.208	-342.9	1254.3
3	233.07	56868	283.58	0.243	-500.6	2340.1
4	270.37	97209	265.63	0.269	-508.5	3155.9
5	308.81	138483	248.86	0.287	-466.2	3817.3
6	348.27	176759	233.28	0.299	-401.7	4354.0
7	388.65	208646	218.96	0.309	-324.3	4772.9
8	429.83	231423	205.93	0.317	-237.7	5073.6
9	471.71	243138	194.25	0.324	-143.6	5253.5
10	500.68	244199	187.06	0.329	-75.8	5306.3
11	543.46	232275	178.11	0.340	99.5	5137.8
12	560.00	225383	174.95	0.343	152.6	5073.2
13	603.28	200659	167.61	0.345	178.7	4857.8
14	610.00	195955	166.60	0.345	181.6	4814.1
15	653.52	160325	160.96	0.348	204.6	4435.6
16	682.92	132174	158.06	0.351	233.7	4067.2
17	726.51	87443	155.16	0.362	312.6	3318.4
18	769.98	44883	153.98	0.390	469.1	2288.3
19	813.21	13111	153.66	0.444	593.0	1194.0
20	820.00	9798	153.68	0.463	656.1	1025.8
21	830.13	5959	153.23	0.445	568.0	1128.0
22	839.00	2103	153.15	0.472	608.0	857.2
23	845.00	-0	153.00	1.000	0.0	0.0

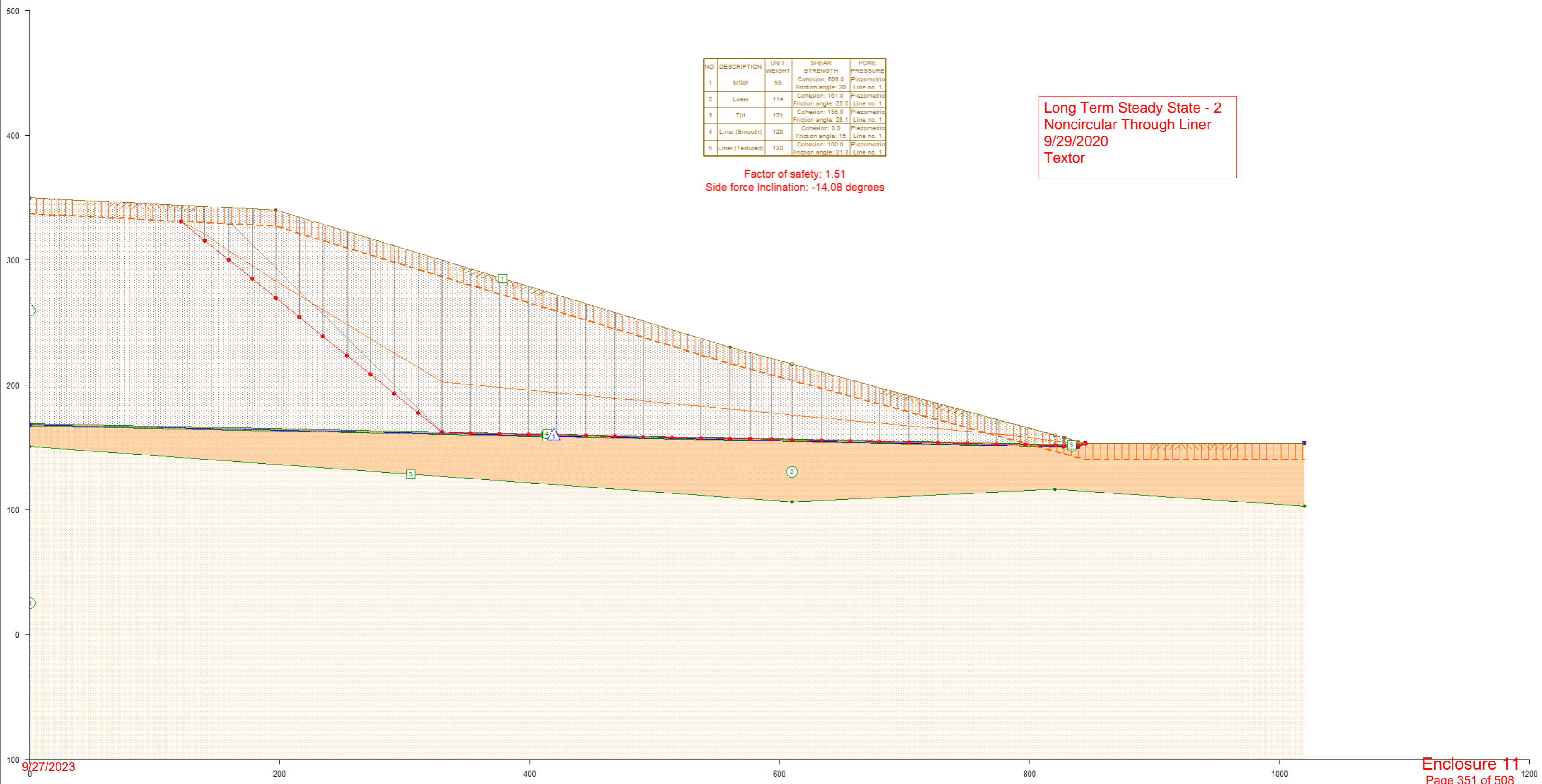
Read end-of-file on input while looking for another command word.
 End of input data assumed - normal termination.



NO.	DESCRIPTION	UNIT WEIGHT	SHEAR STRENGTH	PORE PRESSURE
1	MSW	59	Cohesion: 500.0 Friction angle: 20	Piezometric Line no. 1
2	Loess	114	Cohesion: 161.0 Friction angle: 25.5	Piezometric Line no. 1
3	Till	121	Cohesion: 156.0 Friction angle: 28.1	Piezometric Line no. 1
4	Liner (Smooth)	120	Cohesion: 0.0 Friction angle: 15	Piezometric Line no. 1
5	Liner (Textured)	120	Cohesion: 100.0 Friction angle: 21.3	Piezometric Line no. 1

Long Term Steady State - 2
 Noncircular Through Liner
 9/29/2020
 Textor

Factor of safety: 1.51
 Side force Inclination: -14.08 degrees



9/27/2023

NNSWC Landfill Expansion

Cross-Section: D

Case: Long Term Steady State 2 – Noncircular Through Liner

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UTEXAS4 Input File

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GRAphics

HEAding follows -

NNSWC Landfill Evaluation - Section D LTSS - 2

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PROfile lines

1 1 MSW

0 350

197 340

560 230

845 153

2 2 Loess

0 166.8

827 150.24

839 150

845 153

1020 153

3 3 Till

0 150.4

610 106

820 116.5

1020 102.9

4 4 Liner (smooth)

0 168.8

828 152.24

5 5 Liner (textured)

827 150.24

828 152.24

839 152

845 153

MATerial properties

1 MSW

59 = unit weight

Conventional Shear Strength

500 20

Piezometric Line

1

2 Loess

114 = unit weight

Conventional Shear Strength

161 25.5

Piezometric Line

1

3 Till

121 = unit weight

Conventional Shear Strength

156 28.1

Piezometric Line

1

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```
4 Liner (Smooth)
  120 = unit weight
  Conventional Shear Strength
    0 15
  Piezometric Line
    1
5 Liner (Textured)
  120 = unit weight
  Conventional Shear Strength
    100 21.3
  Piezometric Line
    1
```

```
PIEzometric line
  1 Piezometric Line
    0 168
    839 150
    845 153
    1020 153
```

```
LAbel
NNSWC Landfill Evaluation - Section D LTSS - 2
ANALYSIS/COMPUTATION
  NonCircular Search
    150 340
    330 162
    839 151 fixed
    845 153 fixed
```

```
5 1
Crack
13 D
Short
```

```
COMpute
```

NNSWC Landfill Expansion

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UTEXAS4 Output File

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TABLE NO. 1

COMPUTER PROGRAM DESIGNATION: UTEXAS4

Originally Coded By Stephen G. Wright

Version No. 4.1.0.8 - Last Revision Date: 11/9/2009

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TABLE NO. 3

* NEW PROFILE LINE DATA *

----- Profile Line No. 1 - Material Type (Number): 1 -----

Description: MSW

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	845.00	153.00

----- Profile Line No. 2 - Material Type (Number): 2 -----

Description: Loess

Point	X	Y
1	0.00	166.80
2	827.00	150.24
3	839.00	150.00
4	845.00	153.00
5	1020.00	153.00

----- Profile Line No. 3 - Material Type (Number): 3 -----

Description: Till

Point	X	Y
1	0.00	150.40
2	610.00	106.00
3	820.00	116.50
4	1020.00	102.90

----- Profile Line No. 4 - Material Type (Number): 4 -----

Description: Liner (smooth)

Point	X	Y
1	0.00	168.80
2	828.00	152.24

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----- Profile Line No. 5 - Material Type (Number): 5 -----

Description: Liner (textured)

Point	X	Y
1	827.00	150.24
2	828.00	152.24
3	839.00	152.00
4	845.00	153.00

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TABLE NO. 4

* NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- DATA FOR MATERIAL NUMBER 1 -----

Description: MSW

Constant unit weight of soil (material): 59.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 500.0
Friction angle - - - - - 20.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 2 -----

Description: Loess

Constant unit weight of soil (material): 114.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 161.0
Friction angle - - - - - 25.50 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 3 -----

Description: Till

Constant unit weight of soil (material): 121.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 156.0
Friction angle - - - - - 28.10 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 4 -----

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Description: Liner (Smooth)

Constant unit weight of soil (material): 120.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS

Cohesion - - - - - 0.0

Friction angle - - - - 15.00 (degrees)

Pore water pressures are defined by a piezometric line.

Piezometric line number: 1

Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 5 -----

Description: Liner (Textured)

Constant unit weight of soil (material): 120.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS

Cohesion - - - - - 100.0

Friction angle - - - - 21.30 (degrees)

Pore water pressures are defined by a piezometric line.

Piezometric line number: 1

Negative pore water pressures are NOT allowed - set to zero.

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TABLE NO. 6

* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- Piezometric Line Number 1 -----

Description: Piezometric Line
Unit weight of fluid (water): 62.4

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

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TABLE NO. 16

* NEW ANALYSIS/COMPUTATION DATA *

Coordinates of points on shear surface which are to be shifted

Point	X	Y	Shift Angle
1	150.00	340.00	angle to be computed - moveable
2	330.00	162.00	angle to be computed - moveable
3	839.00	151.00	- fixed
4	845.00	153.00	- fixed

Initial distance for shifting points on shear surface = 5.000
Final distance for shifting points on shear surface = 1.000
Maximum steepness permitted for toe of shear surface = 50.00

Depth of crack: 13.000
Automatic search output will be in short form.

The following represent default values or values that were previously defined:
Maximum increment for slice subdivision: 30
There is no water in a crack.
Conventional (single-stage) computations will be performed.
Seismic coefficient: 0.000
Unit weight of water (or other fluid) in crack: 62.4
Maximum number of passes for noncircular search: 50
No restrictions exist on the lateral extent of the search.
No shear surfaces other than the most critical will be saved for display later.
Neither slope face was explicitly designated for analysis.
Standard sign convention used for direction of shear stress on shear surface.
Procedure of Analysis: Spencer

Iteration limit: 100
Force imbalance: 1.000000e-005 (fraction of total weight)
Moment imbalance: 1.000000e-005 (fraction of moment due to total weight)
Minimum weight required for computations to be performed: 100
Initial trial factor of safety: 3.000
Initial trial side force inclination: 17.189 (degrees)
Minimum (most negative) side force inclination allowed in Spencer's procedure: -10.00

NNSWC Landfill Expansion

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TABLE NO. 26

* NEW, COMPUTED SLOPE GEOMETRY DATA *

These slope geometry were generated from the Profile Lines.

Table with 3 columns: Point, X, Y. Rows 1-10 showing coordinates for profile lines.

Left end point on noncircular shear surface adjusted to:
X: 161.31, Y: 328.81
Adjustment was made to put end point at bottom of crack.

Noncircular Shear Surface Points After End Point Adjustment
Coordinates of points on shear surface which are to be shifted

Table with 4 columns: Point, X, Y, Shift Angle. Rows 1-4 showing adjusted coordinates and shift status.

Computed crack depth: 13.00

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TABLE NO. 40

 * Short-Form Output Table for Search with Noncircular Shear Surfaces *

Shift Distance	Factor of Safety	Point	X	Y	Point	X	Y
5.000	1.525	1	161.31	328.81	3	839.00	151.00
		2	330.00	162.00	4	845.00	153.00
End of Trial: 1							
2.500	1.525	1	161.31	328.81	3	839.00	151.00
		2	330.00	162.00	4	845.00	153.00
End of Trial: 2							
2.500	1.523	1	158.82	328.94	3	839.00	151.00
		2	329.97	161.93	4	845.00	153.00
End of Trial: 3							
2.500	1.520	1	156.32	329.06	3	839.00	151.00
		2	329.95	161.91	4	845.00	153.00
End of Trial: 4							
2.500	1.518	1	153.82	329.19	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 5							
2.500	1.516	1	151.33	329.32	3	839.00	151.00
		2	329.95	161.89	4	845.00	153.00
End of Trial: 6							
2.500	1.514	1	148.83	329.45	3	839.00	151.00
		2	329.95	161.89	4	845.00	153.00
End of Trial: 7							
2.500	1.513	1	146.33	329.57	3	839.00	151.00
		2	329.95	161.89	4	845.00	153.00
End of Trial: 8							
2.500	1.511	1	143.84	329.70	3	839.00	151.00
		2	329.95	161.89	4	845.00	153.00
End of Trial: 9							
2.500	1.510	1	141.34	329.83	3	839.00	151.00
		2	329.95	161.89	4	845.00	153.00
End of Trial: 10							
2.500	1.509	1	138.84	329.95	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 11							
2.500	1.508	1	136.35	330.08	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 12							
2.500	1.507	1	133.85	330.21	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 13							
2.500	1.506	1	131.35	330.33	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 14							
2.500	1.506	1	128.86	330.46	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 15							

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2.500	1.506	1	126.36	330.59	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 16							
2.500	1.506	1	123.86	330.71	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 17							
2.500	1.506	1	121.37	330.84	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 18							
1.250	1.505	1	121.37	330.84	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 19							
0.625	1.505	1	121.37	330.84	3	839.00	151.00
		2	329.95	161.90	4	845.00	153.00
End of Trial: 20							

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TABLE NO. 41

 * Critical Noncircular Shear Surface *

***** CRITICAL NONCIRCULAR SHEAR SURFACE *****

X: 121.37 Y: 330.84
 X: 329.95 Y: 161.90
 X: 839.00 Y: 151.00
 X: 845.00 Y: 153.00

Minimum factor of safety: 1.505
 Side force inclination: -14.08

Time required to find most critical surface: 0.0 seconds
 Number of passes required to find most critical surface: 20
 Total number of shear surfaces attempted: 100
 Total number of shear surfaces for which the factor of safety
 was successfully calculated: 100

Pass	Shift Distance	Pt.	Max. Dist. Moved	Minimum F	n Tried	n Computed
1	5.0000	1	5.000	1.5246	5	5
2	2.5000	1	2.500	1.5225	10	10
3	2.5000	1	2.500	1.5203	15	15
4	2.5000	1	2.500	1.5181	20	20
5	2.5000	1	2.500	1.5161	25	25
6	2.5000	1	2.500	1.5142	30	30
7	2.5000	1	2.500	1.5126	35	35
8	2.5000	1	2.500	1.5112	40	40
9	2.5000	1	2.500	1.5098	45	45
10	2.5000	1	2.500	1.5087	50	50
11	2.5000	1	2.500	1.5078	55	55
12	2.5000	1	2.500	1.5070	60	60
13	2.5000	1	2.500	1.5064	65	65
14	2.5000	1	2.500	1.5060	70	70
15	2.5000	1	2.500	1.5057	75	75
16	2.5000	1	2.500	1.5055	80	80
17	2.5000	1	2.500	1.5055	85	85
18	2.5000	2	0.001	1.5055	90	90
19	1.2500	1	1.250	1.5055	95	95
20	0.6250	1	0.625	1.5055	100	100

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TABLE NO. 43

 * Coordinate, Weight, Strength and Pore Water Pressure *
 * Information for Individual Slices for Conventional *
 * Computations or First Stage of Multi-Stage Computations. *
 * (Information is for the critical shear surface in the *
 * case of an automatic search.) *

Slice No.	X	Y	Slice Weight	Matl. No.	Cohesion	Friction Angle	Pore Pressure
1	121.37	330.84	22510	1	500.0	20.00	0.0
	130.82	323.18					
	140.27	315.52					
2	149.73	307.87	38524	1	500.0	20.00	0.0
	159.18	300.21					
3	168.64	292.55	54538	1	500.0	20.00	0.0
	178.09	284.90					
4	187.55	277.24	70552	1	500.0	20.00	0.0
	197.00	269.58					
5	206.47	261.91	84049	1	500.0	20.00	0.0
	215.94	254.24					
6	225.41	246.57	94776	1	500.0	20.00	0.0
	234.88	238.90					
7	244.35	231.23	105503	1	500.0	20.00	0.0
	253.82	223.56					
8	263.29	215.90	116230	1	500.0	20.00	0.0
	272.76	208.23					
9	282.23	200.56	126957	1	500.0	20.00	0.0
	291.70	192.89					
10	301.16	185.22	137684	1	500.0	20.00	0.0
	310.63	177.55					
11	320.10	169.88	148411	1	500.0	20.00	0.0
	329.57	162.21					
12	329.76	162.06	3069	4	0.0	15.00	0.0
	329.95	161.90					
13	341.45	161.66	183091	4	0.0	15.00	0.0
	352.96	161.41					
14	364.46	161.16	174344	4	0.0	15.00	0.0
	375.96	160.92					
15	387.46	160.67	165597	4	0.0	15.00	0.0
	398.97	160.42					
16	410.47	160.18	156849	4	0.0	15.00	0.0
	421.97	159.93					
17	433.47	159.69	148102	4	0.0	15.00	0.0
	444.98	159.44					
18	456.48	159.19	139354	4	0.0	15.00	0.0
	467.98	158.95					
19	479.48	158.70	130607	4	0.0	15.00	0.0
	490.99	158.45					
20	502.49	158.21	121860	4	0.0	15.00	0.0
	513.99	157.96					

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21	525.49	157.71	113112	4	0.0	15.00	0.0
	537.00	157.47					
22	548.50	157.22	104365	4	0.0	15.00	0.0
	560.00	156.98					
23	568.33	156.80	70416	4	0.0	15.00	0.0
	576.67	156.62					
24	585.00	156.44	66363	4	0.0	15.00	0.0
	593.33	156.26					
25	601.67	156.08	62310	4	0.0	15.00	0.0
	610.00	155.90					
26	621.67	155.65	80425	4	0.0	15.00	0.0
	633.33	155.41					
27	645.00	155.16	72482	4	0.0	15.00	0.0
	656.67	154.91					
28	668.33	154.66	64538	4	0.0	15.00	0.0
	680.00	154.41					
29	691.67	154.16	56595	4	0.0	15.00	0.0
	703.33	153.91					
30	715.00	153.66	48651	4	0.0	15.00	0.0
	726.67	153.41					
31	738.33	153.16	40707	4	0.0	15.00	0.0
	750.00	152.91					
32	761.67	152.66	32764	4	0.0	15.00	0.0
	773.33	152.41					
33	785.00	152.16	24820	4	0.0	15.00	0.0
	796.67	151.91					
34	808.33	151.66	16877	4	0.0	15.00	0.0
	820.00	151.41					
35	823.50	151.33	3514	4	0.0	15.00	0.0
	827.00	151.26					
36	827.25	151.25	225	4	0.0	15.00	0.0
	827.50	151.25					
37	827.75	151.24	219	5	100.0	21.30	0.0
	828.00	151.24					
38	833.50	151.12	3910	5	100.0	21.30	0.0
	839.00	151.00					
39	842.00	152.00	824	5	100.0	21.30	0.0
	845.00	153.00					

No water in crack.

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TABLE NO. 44

* Seismic Forces and Forces Due to Distributed Loads for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the critical shear surface in the *
* case of an automatic search.) *

There are no seismic forces or forces due to distributed loads
for the current shear surface

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 Conditions\Section D\Final\Section D LTSS - 2.dat

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TABLE NO. 47

 * Information for the Iterative Solution for the Factor of *
 * Safety and Side Force Inclination by Spencer's Procedure *

Allowable force imbalance for convergence: 31
 Allowable moment imbalance for convergence: 13005

Iter- ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	-17.1887	-3.532e+005	1.001e+008		
					First-order corrections to F and Theta	-2.5433 -11.7406
					Reduced values - Deltas were too large	-0.5000 -2.3081
2	2.50000	-19.4969	-2.718e+005	7.577e+007		
					First-order corrections to F and Theta	-3.1412 89.5246
					Reduced values - Deltas were too large	-0.1005 2.8648
3	2.39948	-16.6321	-2.627e+005	7.327e+007		
					First-order corrections to F and Theta	-2.2300 48.5728
					Reduced values - Deltas were too large	-0.1315 2.8648
4	2.26796	-13.7673	-2.461e+005	6.881e+007		
					First-order corrections to F and Theta	-1.0828 -3.6784
					Reduced values - Deltas were too large	-0.5000 -1.6985
5	1.76796	-15.4658	-1.027e+005	2.736e+007		
					First-order corrections to F and Theta	-0.3153 2.2262
					Second-order corrections to F and Theta	-0.2681 1.4680
6	1.49989	-13.9978	2.391e+003	-5.412e+005		
					First-order corrections to F and Theta	0.0056 -0.0803
					Second-order corrections to F and Theta	0.0056 -0.0810
7	1.50550	-14.0788	-3.429e-002	4.524e+000		
					First-order corrections to F and Theta	-0.0000 0.0000

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TABLE NO. 55

* Check of Computations by Spencer's Procedure (Results are for the *
* critical shear surface in the case of an automatic search.) *

Summation of Horizontal Forces: 1.99341e-010

Summation of Vertical Forces: 2.28370e-010

Summation of Moments: 1.10645e-007

Mohr Coulomb Shear Force/Shear Strength Check Summation: 7.01221e-011

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TABLE NO. 58

 * Final Results for Stresses Along the Shear Surface *
 * (Results are for the critical shear surface in the case of a search.) *

SPENCER'S PROCEDURE USED TO COMPUTE THE FACTOR OF SAFETY
 Factor of Safety: 1.505 Side Force Inclination: -14.08

----- VALUES AT CENTER OF BASE OF SLICE -----

Slice No.	X-Center	Y-Center	Total	Effective	Shear Stress
			Normal Stress	Normal Stress	
1	130.82	323.18	750.8	750.8	513.6
2	149.73	307.87	1383.6	1383.6	666.6
3	168.64	292.55	2016.4	2016.4	819.6
4	187.55	277.24	2649.3	2649.3	972.6
5	206.47	261.91	3177.3	3177.3	1100.3
6	225.41	246.57	3600.5	3600.5	1202.6
7	244.35	231.23	4023.8	4023.8	1304.9
8	263.29	215.90	4447.0	4447.0	1407.2
9	282.23	200.56	4870.2	4870.2	1509.5
10	301.16	185.22	5293.4	5293.4	1611.9
11	320.10	169.88	5716.6	5716.6	1714.2
12	329.76	162.06	6244.4	6244.4	1111.4
13	341.45	161.66	8251.3	8251.3	1468.6
14	364.46	161.16	7857.1	7857.1	1398.4
15	387.46	160.67	7462.9	7462.9	1328.2
16	410.47	160.18	7068.7	7068.7	1258.1
17	433.47	159.69	6674.5	6674.5	1187.9
18	456.48	159.19	6280.2	6280.2	1117.8
19	479.48	158.70	5886.0	5886.0	1047.6
20	502.49	158.21	5491.8	5491.8	977.4
21	525.49	157.71	5097.6	5097.6	907.3
22	548.50	157.22	4703.4	4703.4	837.1
23	568.33	156.80	4380.2	4380.2	779.6
24	585.00	156.44	4128.1	4128.1	734.7
25	601.67	156.08	3876.0	3876.0	689.9
26	621.67	155.65	3573.5	3573.5	636.0
27	645.00	155.16	3220.5	3220.5	573.2
28	668.33	154.66	2867.6	2867.6	510.4
29	691.67	154.16	2514.6	2514.6	447.6
30	715.00	153.66	2161.7	2161.7	384.7
31	738.33	153.16	1808.7	1808.7	321.9
32	761.67	152.66	1455.8	1455.8	259.1
33	785.00	152.16	1102.8	1102.8	196.3
34	808.33	151.66	749.9	749.9	133.5
35	823.50	151.33	520.5	520.5	92.6
36	827.25	151.25	463.7	463.7	82.5
37	827.75	151.24	481.2	481.2	191.0
38	833.50	151.12	391.9	391.9	167.9

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39	842.00	152.00	230.2	230.2	126.0
----	--------	--------	-------	-------	-------

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 Conditions\Section D\Final\Section D LTSS - 2.dat

NNSWC Landfill Evaluation - Section D LTSS - 2
 #122625

TABLE NO. 59

 * Final Results for Side Forces and Stresses Between Slices *
 * (Results are for the critical shear surface in the case of a search.) *

----- VALUES AT RIGHT SIDE OF SLICE -----

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	140.27	1841	320.81	0.193	-54.9	185.4
2	159.18	10691	307.32	0.170	-243.1	740.3
3	178.09	26551	295.17	0.183	-413.5	1332.2
4	197.00	49419	283.23	0.194	-569.9	1931.3
5	215.94	78182	271.51	0.216	-668.3	2563.7
6	234.88	111640	260.00	0.235	-710.1	3126.7
7	253.82	149793	248.53	0.252	-718.2	3646.9
8	272.76	192641	237.05	0.265	-705.4	4139.6
9	291.70	240184	225.54	0.276	-679.3	4614.0
10	310.63	292422	214.02	0.285	-644.3	5075.6
11	329.57	349355	202.46	0.292	-603.5	5528.2
12	329.95	350890	202.19	0.292	-607.6	5547.1
13	352.96	320251	200.02	0.294	-558.2	5288.8
14	375.96	291076	197.86	0.296	-508.3	5031.0
15	398.97	263364	195.70	0.298	-457.8	4773.9
16	421.97	237116	193.54	0.300	-406.7	4517.6
17	444.98	212333	191.39	0.303	-355.0	4262.4
18	467.98	189013	189.23	0.306	-302.7	4008.8
19	490.99	167156	187.08	0.310	-249.9	3757.0
20	513.99	146764	184.92	0.314	-196.7	3508.0
21	537.00	127835	182.75	0.318	-143.4	3262.7
22	560.00	110370	180.56	0.323	-90.7	3022.7
23	576.67	98587	178.98	0.325	-72.9	2849.5
24	593.33	87482	177.39	0.326	-54.4	2676.1
25	610.00	77054	175.81	0.329	-35.2	2502.4
26	633.33	63596	173.61	0.332	-7.2	2259.3
27	656.67	51466	171.41	0.337	22.9	2015.6
28	680.00	40666	169.24	0.344	55.8	1771.4
29	703.33	31196	167.07	0.352	92.7	1526.8
30	726.67	23054	164.93	0.365	134.8	1282.1
31	750.00	16242	162.79	0.384	184.3	1038.8
32	773.33	10759	160.61	0.411	243.5	802.5
33	796.67	6606	158.23	0.447	308.0	597.5
34	820.00	3782	155.10	0.442	287.6	591.3
35	827.00	3194	153.88	0.397	177.8	760.0
36	827.50	3156	153.78	0.391	163.7	781.0
37	828.00	3063	153.73	0.393	166.0	768.7
38	839.00	1254	152.75	0.484	303.6	368.3
39	845.00	-0	153.00	0.000	0.0	0.0

NNSWC Landfill Expansion

Cross-Section: D

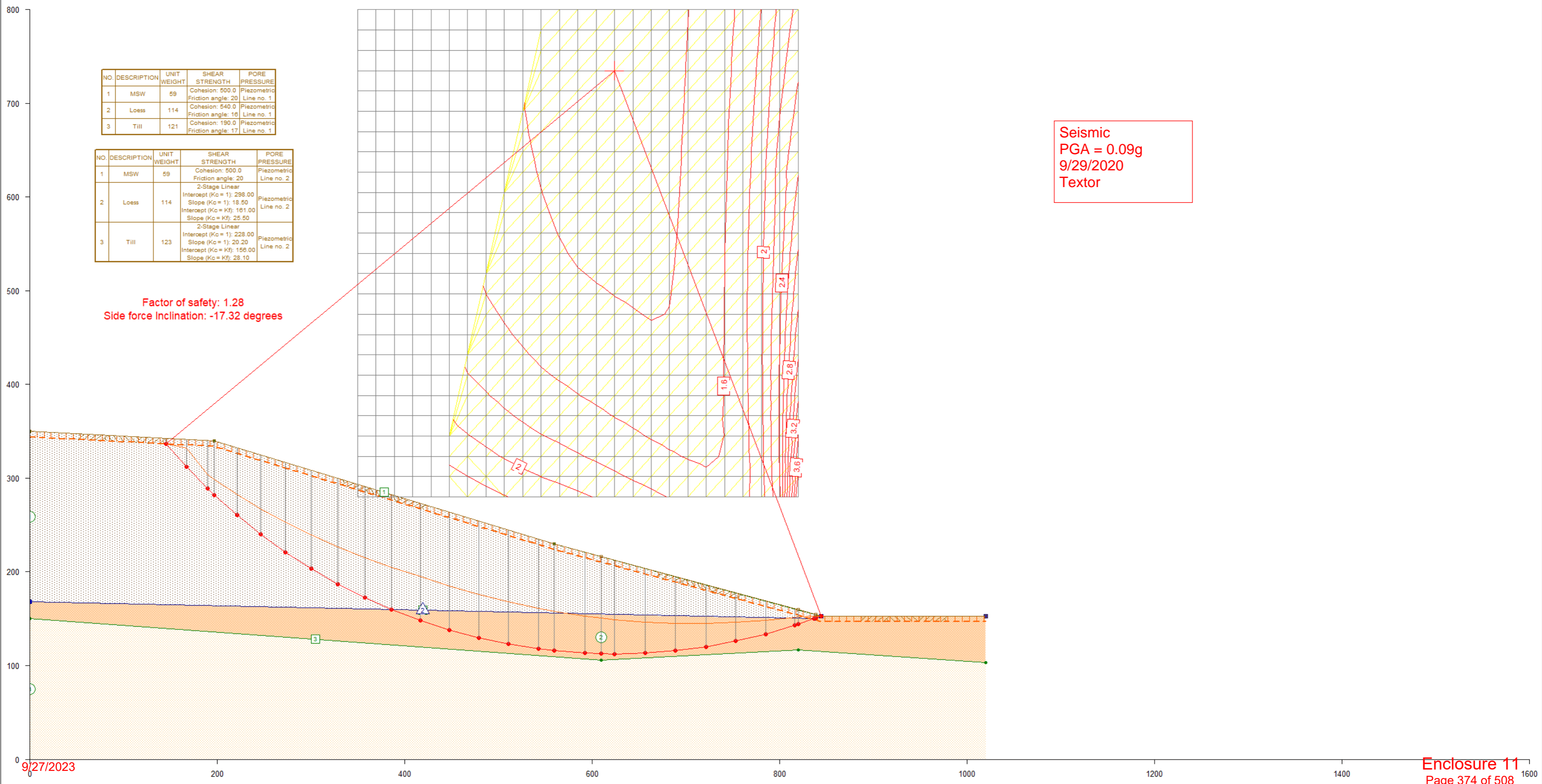
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Read end-of-file on input while looking for another command word.
End of input data assumed - normal termination.



Seismic
 PGA = 0.09g
 9/29/2020
 Textor

Factor of safety: 1.28
 Side force Inclination: -17.32 degrees

NO.	DESCRIPTION	UNIT WEIGHT	SHEAR STRENGTH	PORE PRESSURE
1	MSW	59	Cohesion: 500.0 Friction angle: 20	Piezometric Line no. 1
2	Loess	114	Cohesion: 540.0 Friction angle: 16	Piezometric Line no. 1
3	Till	121	Cohesion: 190.0 Friction angle: 17	Piezometric Line no. 1

NO.	DESCRIPTION	UNIT WEIGHT	SHEAR STRENGTH	PORE PRESSURE
1	MSW	59	Cohesion: 500.0 Friction angle: 20	Piezometric Line no. 2
2	Loess	114	2-Stage Linear Intercept (Kc = 1): 298.00 Slope (Kc = 1): 18.50 Intercept (Kc = Kf): 161.00 Slope (Kc = Kf): 25.50	Piezometric Line no. 2
3	Till	123	2-Stage Linear Intercept (Kc = 1): 228.00 Slope (Kc = 1): 20.20 Intercept (Kc = Kf): 156.00 Slope (Kc = Kf): 28.10	Piezometric Line no. 2

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GRAphics

HEAding follows -

NNSWC Landfill Evaluation - Section D Seismic
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PROfile lines

1 1 MSW
0 350
197 340
560 230
845 153

2 2 Loess
0 168
839 150
845 153
1020 153

3 3 Till
0 150.4
610 106
820 116.5
1020 102.9

MATERial properties

1 MSW
59 = unit weight
Conventional Shear Strength
500 20
Piezometric Line
1

2 Loess
114 = unit weight
Conventional Shear Strength
540 16
Piezometric Line
1

3 Till
121 = unit weight
Conventional Shear Strength
190 17
Piezometric Line
1

PIEzometric line

1 Piezometric Line
0 168
839 150
845 153
1020 153

Second Stage input activated

MATERial properties

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```
1 MSW
  59 = unit weight
  Conventional Shear Strength
    500 20
  Piezometric Line
    2
2 Loess
  114 = unit weight
  2-Stage Linear Strength Envelope
    298 18.5 161 25.5
  Piezometric Line
    2
3 Till
  123 = unit weight
  2-Stage Linear Strength Envelope
    228 20.2 156 28.1
  Piezometric Line
    2
```

```
PIEzometric line
  2 Piezometric Line
    0 168
    839 150
    845 153
    1020 153
```

```
LABel
NNSWC Landfill Evaluation - Section D Seismic
ANALYSIS/COMPUTATION
  Circular Search 2
    25 25
    350 280 350 800 820 800 820 280
    5 5
  Point
    845 153

  Minimum
    5000
  Crack
    6 D
  Seismic
    0.09
  Two-stage Computation
  Short
```

```
COMpute
```


NNSWC Landfill Expansion

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UTEXAS4 Output File

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TABLE NO. 1

COMPUTER PROGRAM DESIGNATION: UTEXAS4

Originally Coded By Stephen G. Wright

Version No. 4.1.0.8 - Last Revision Date: 11/9/2009

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NNSWC Landfill Expansion

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Conditions\Section D\Final\Section D Seismic.dat

NNSWC Landfill Evaluation - Section D Seismic
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TABLE NO. 3

* NEW PROFILE LINE DATA *

----- Profile Line No. 1 - Material Type (Number): 1 -----

Description: MSW

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	845.00	153.00

----- Profile Line No. 2 - Material Type (Number): 2 -----

Description: Loess

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

----- Profile Line No. 3 - Material Type (Number): 3 -----

Description: Till

Point	X	Y
1	0.00	150.40
2	610.00	106.00
3	820.00	116.50
4	1020.00	102.90

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Name of input data file:
Z:\Clients\ENS\NNSWC\122625_NNSWC2020MOD\Design\GeoTech\Working\Dsgn\Stability - Existing
Conditions\Section D\Final\Section D Seismic.dat

NNSWC Landfill Evaluation - Section D Seismic
#122625

TABLE NO. 4

* NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- DATA FOR MATERIAL NUMBER 1 -----

Description: MSW

Constant unit weight of soil (material): 59.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 500.0
Friction angle - - - - 20.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 2 -----

Description: Loess

Constant unit weight of soil (material): 114.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 540.0
Friction angle - - - - 16.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

----- DATA FOR MATERIAL NUMBER 3 -----

Description: Till

Constant unit weight of soil (material): 121.0

CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
Cohesion - - - - - 190.0
Friction angle - - - - 17.00 (degrees)

Pore water pressures are defined by a piezometric line.
Piezometric line number: 1
Negative pore water pressures are NOT allowed - set to zero.

NNSWC Landfill Expansion

Cross-Section: D

Case: Seismic

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UTEXAS4 Output File

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Z:\Clients\ENS\NNSWC\122625_NNSWC2020MOD\Design\GeoTech\Working\Dsgn\Stability - Existing
Conditions\Section D\Final\Section D Seismic.dat

NNSWC Landfill Evaluation - Section D Seismic
#122625

TABLE NO. 6

* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *

----- Piezometric Line Number 1 -----

Description: Piezometric Line
Unit weight of fluid (water): 62.4

Point	X	Y
1	0.00	168.00
2	839.00	150.00
3	845.00	153.00
4	1020.00	153.00

NNSWC Landfill Expansion

Cross-Section: D

Case: Seismic

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UTEXAS4 Output File

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Kc = Kf ENVELOPE:

Intercept of envelope ("d") - - - - - 156.0

Slope of envelope ("psi") - - - - - 28.10 (degrees)

Pore water pressures are defined by a piezometric line.

Piezometric line number: 2

Negative pore water pressures are NOT allowed - set to zero.

NNSWC Landfill Expansion

Cross-Section: D

Case: Seismic

Filename: 20200929 Profile D Seismic_output (textor).docx

UTEXAS4 Output File

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Conditions\Section D\Final\Section D Seismic.dat

NNSWC Landfill Evaluation - Section D Seismic
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TABLE NO. 16

* NEW ANALYSIS/COMPUTATION DATA *

Search will be conducted using a fixed grid.
Number of Points Across Grid: 25
Number of Points Up Grid: 25

Table with 3 columns: Grid Corner Number, X, Y. Rows 1-4 with coordinates (350.00, 280.00), (350.00, 800.00), (820.00, 800.00), (820.00, 280.00).

----- Control Parameters for Finding "Critical" Radius -----
Initial number of subdivisions between maximum and minimum
radius for finding a critical radius/radii: 5

Minimum radius increment for terminating subdivision of radii: 5.000

The following criteria will be used for determining
the maximum and minimum radii:
Point circles pass through - X: 845.00 Y: 153.00
Minimum weight required for computations to be performed: 5000

Depth of crack: 6.000
Seismic coefficient: 0.090
Seismic force acts at center of gravity.
Two-stage computations will be performed.
Automatic search output will be in short form.

The following represent default values or values that were previously defined:
Subtended angle for slice subdivision: 3.00(degrees)
There is no water in a crack.
Unit weight of water (or other fluid) in crack: 62.4
Search will be continued after the initial mode to find a most critical circle.
No restrictions exist on the lateral extent of the search.
No shear surfaces other than the most critical will be saved for display later.
Neither slope face was explicitly designated for analysis.
Radii for each grid point will be sorted in the order of increasing radius.
Critical circles for grid points will be output in the order of increasing factor of safety.
Standard sign convention used for direction of shear stress on shear surface.
Procedure of Analysis: Spencer

Iteration limit: 100
Force imbalance: 1.000000e-005 (fraction of total weight)
Moment imbalance: 1.000000e-005 (fraction of moment due to total weight)

NNSWC Landfill Expansion

Cross-Section: D

Case: Seismic

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UTEXAS4 Output File

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Initial trial factor of safety: 3.000

Initial trial side force inclination: 17.189 (degrees)

Minimum (most negative) side force inclination allowed in Spencer's procedure: -10.00

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Cross-Section: D

Case: Seismic

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UTEXAS4 Output File

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Z:\Clients\ENS\NNSWC\122625_NNSWC2020MOD\Design\GeoTech\Working\Dsgn\Stability - Existing
Conditions\Section D\Final\Section D Seismic.dat

NNSWC Landfill Evaluation - Section D Seismic
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TABLE NO. 26

* NEW, COMPUTED SLOPE GEOMETRY DATA *

These slope geometry were generated from the Profile Lines.

Point	X	Y
1	0.00	350.00
2	197.00	340.00
3	560.00	230.00
4	610.00	216.49
5	820.00	159.75
6	839.00	154.62
7	845.00	153.00
8	1020.00	153.00

NNSWC Landfill Expansion

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Case: Seismic

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Conditions\Section D\Final\Section D Seismic.dat

NNSWC Landfill Evaluation - Section D Seismic
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TABLE NO. 38

* FINAL SUMMARY OF COMPUTATIONS WITH FIXED-GRID *

Number of circles attempted: 625
Number of circles for which F calculated: 432
Circle with Lowest Factor of Safety:
 X coordinate for center: 624.17
 Y coordinate for center: 735.00
 Radius of circle: 622.488
Factor of safety: 1.283
Side force inclination: -17.32
Time Required for Computations: 0.0 seconds

NNSWC Landfill Expansion

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Case: Seismic

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21	672.99	114.64	232149	2	540.0	16.00	2428.5
	689.23	115.92					
22	705.39	118.05	200409	2	540.0	16.00	2172.6
	721.55	120.18					
23	737.57	123.15	162483	2	540.0	16.00	1811.5
	753.59	126.11					
24	769.43	129.92	118926	2	540.0	16.00	1346.2
	785.28	133.72					
25	800.90	138.35	70398	2	540.0	16.00	777.9
	816.53	142.98					
26	818.26	143.55	4735	2	540.0	16.00	430.3
	820.00	144.12					
27	828.52	147.08	13375	2	540.0	16.00	196.2
	837.04	150.04					
28	838.02	150.40	518	1	500.0	20.00	0.0
	839.00	150.76					
29	842.00	151.88	684	1	500.0	20.00	0.0
	845.00	153.00					

No water in crack.

NNSWC Landfill Expansion

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21	672.99	114.64	232149	2	2253.3	0.00	0.0
	689.23	115.92					
22	705.39	118.05	200409	2	2028.2	0.00	0.0
	721.55	120.18					
23	737.57	123.15	162483	2	1753.5	0.00	0.0
	753.59	126.11					
24	769.43	129.92	118926	2	1424.0	0.00	0.0
	785.28	133.72					
25	800.90	138.35	70398	2	1031.0	0.00	0.0
	816.53	142.98					
26	818.26	143.55	4735	2	782.3	0.00	0.0
	820.00	144.12					
27	828.52	147.08	13375	2	609.3	0.00	0.0
	837.04	150.04					
28	838.02	150.40	518	1	500.0	20.00	0.0
	839.00	150.76					
29	842.00	151.88	684	1	500.0	20.00	0.0
	845.00	153.00					

NNSWC Landfill Expansion

Cross-Section: D

Case: Seismic

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Conditions\Section D\Final\Section D Seismic.dat

NNSWC Landfill Evaluation - Section D Seismic
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TABLE NO. 55

* Check of Computations by Spencer's Procedure (Results are for the *
* critical shear surface in the case of an automatic search.) *

Summation of Horizontal Forces: 2.42782e-010

Summation of Vertical Forces: 2.85587e-010

Summation of Moments: -1.43070e-008

Mohr Coulomb Shear Force/Shear Strength Check Summation: 9.15175e-011

NNSWC Landfill Expansion

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 Conditions\Section D\Final\Section D Seismic.dat

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TABLE NO. 58

 * Final Results for Stresses Along the Shear Surface *
 * (Results are for the critical shear surface in the case of a search.) *

SPENCER'S PROCEDURE USED TO COMPUTE THE FACTOR OF SAFETY
 Factor of Safety: 1.283 Side Force Inclination: -17.32

----- VALUES AT CENTER OF BASE OF SLICE -----

Slice No.	X-Center	Y-Center	Total	Effective	Shear
			Normal Stress	Normal Stress	
1	156.63	324.35	435.7	435.7	513.4
2	178.76	300.45	1342.6	1342.6	770.6
3	193.57	285.50	1945.8	1945.8	941.7
4	209.14	271.34	2422.0	2422.0	1076.9
5	233.98	250.26	3099.8	3099.8	1269.2
6	259.88	230.50	3746.9	3746.9	1452.7
7	286.78	212.12	4354.6	4354.6	1625.1
8	314.61	195.18	4914.9	4914.9	1784.1
9	343.29	179.72	5420.0	5420.0	1927.4
10	372.11	166.04	5854.8	5854.8	2050.8
11	401.62	153.88	6484.8	6484.8	2136.0
12	432.34	143.03	7282.0	7282.0	2173.9
13	463.58	133.80	7926.0	7926.0	2192.0
14	495.26	126.22	8405.3	8405.3	2188.3
15	527.30	120.31	8708.2	8708.2	2160.7
16	551.70	116.80	8830.5	8830.5	2125.1
17	576.25	114.57	8837.2	8837.2	2078.3
18	601.25	113.00	8776.9	8776.9	2023.7
19	617.08	112.59	8666.3	8666.3	1979.0
20	640.46	112.94	8384.7	8384.7	1896.3
21	672.99	114.64	7822.9	7822.9	1756.4
22	705.39	118.05	7017.8	7017.8	1580.9
23	737.57	123.15	5952.0	5952.0	1366.8
24	769.43	129.92	4605.0	4605.0	1109.9
25	800.90	138.35	2951.0	2951.0	803.6
26	818.26	143.55	1910.7	1910.7	609.8
27	828.52	147.08	1206.9	1206.9	474.9
28	838.02	150.40	751.6	751.6	603.0
29	842.00	151.88	548.4	548.4	545.3

NNSWC Landfill Expansion

Cross-Section: D

Case: Seismic

Filename: 20200929 Profile D Seismic_output (textor).docx

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 Conditions\Section D\Final\Section D Seismic.dat

NNSWC Landfill Evaluation - Section D Seismic
 #122625

TABLE NO. 59

 * Final Results for Side Forces and Stresses Between Slices *
 * (Results are for the critical shear surface in the case of a search.) *

----- VALUES AT RIGHT SIDE OF SLICE -----

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	167.38	1728	331.84	0.671	113.8	-1.5
2	190.14	21287	304.03	0.296	-89.0	877.2
3	197.00	30003	298.72	0.286	-141.7	1133.0
4	221.28	66533	282.48	0.305	-150.1	1910.3
5	246.67	110227	267.31	0.321	-90.5	2569.1
6	273.09	158193	252.96	0.333	0.2	3146.6
7	300.48	207508	239.45	0.343	111.2	3649.4
8	328.75	255307	226.84	0.352	239.8	4074.0
9	357.83	298866	215.20	0.360	387.6	4411.7
10	386.40	334331	205.02	0.369	551.1	4643.1
11	416.83	367286	194.92	0.374	682.1	4913.3
12	447.84	397513	185.15	0.374	738.7	5285.8
13	479.32	420966	176.13	0.373	760.4	5677.4
14	511.21	434354	168.09	0.371	769.8	6031.2
15	543.40	435255	161.16	0.370	780.1	6307.2
16	560.00	430375	158.05	0.370	787.5	6409.7
17	592.49	409856	152.90	0.367	729.4	6522.8
18	610.00	392806	150.65	0.366	703.9	6520.1
19	624.17	376036	149.10	0.365	687.0	6481.8
20	656.75	328085	146.43	0.365	664.3	6257.6
21	689.23	269244	145.02	0.368	667.2	5826.7
22	721.55	203359	144.88	0.373	704.0	5163.1
23	753.59	135770	146.01	0.386	790.5	4235.0
24	785.28	73440	148.39	0.414	959.5	3000.1
25	816.53	25162	151.49	0.480	1196.0	1516.0
26	820.00	21107	151.97	0.502	1306.5	1270.9
27	837.04	6403	152.65	0.511	1278.7	1114.6
28	839.00	4651	152.80	0.529	1348.9	950.0
29	845.00	-0	153.00	0.000	0.0	0.0

Read end-of-file on input while looking for another command word.
 End of input data assumed - normal termination.

Unified Hazard Tool

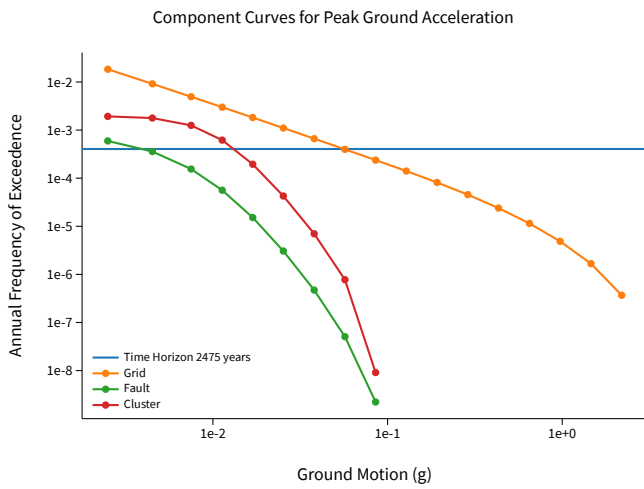
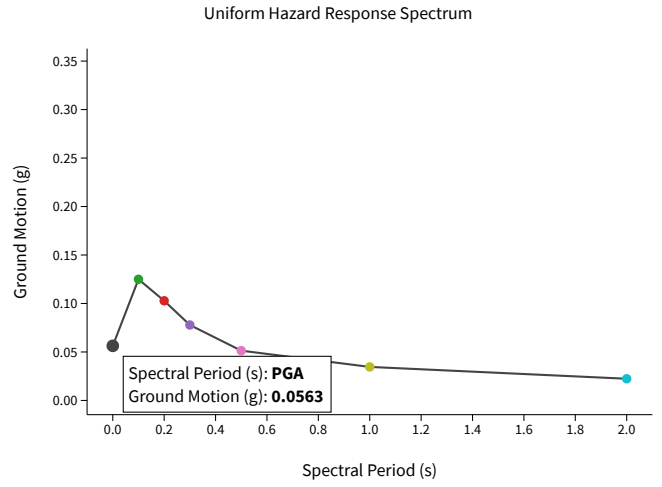
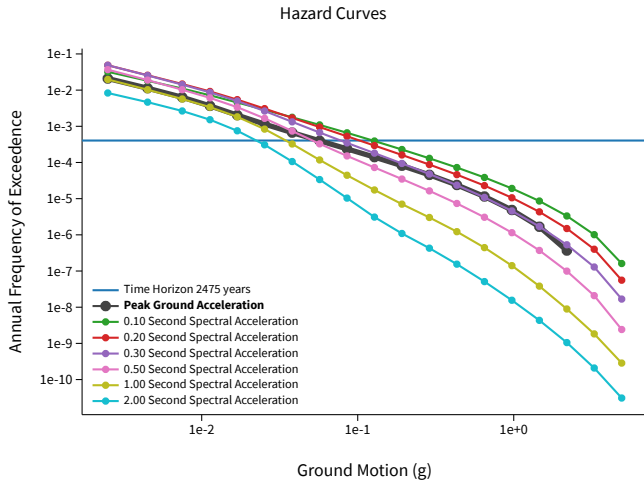


Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the [U.S. Seismic Design Maps web tools](#) (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

^ Input

Edition Dynamic: Conterminous U.S. 2014 (v...	Spectral Period Peak Ground Acceleration
Latitude Decimal degrees 41.785465	Time Horizon Return period in years 2475
Longitude Decimal degrees, negative values for western longitudes -97.0916	
Site Class 760 m/s (B/C boundary)	

^ Hazard Curve

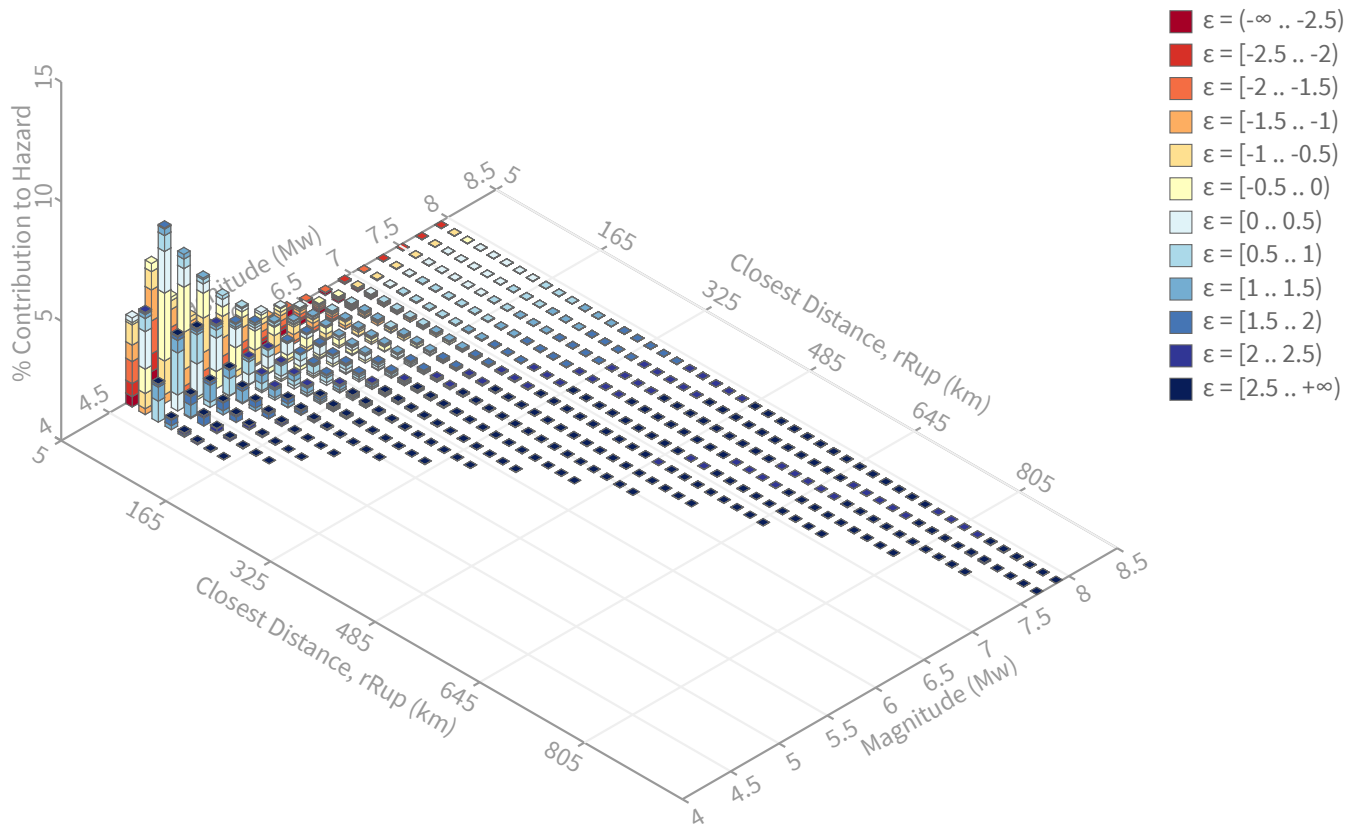


[View Raw Data](#)

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs

Exceedance rate: 0.0004040404 yr⁻¹

PGA ground motion: 0.056319493 g

Recovered targets

Return period: 2475.3467 yrs

Exceedance rate: 0.00040398381 yr⁻¹

Totals

Binned: 100 %

Residual: 0 %

Trace: 1.87 %

Mean (over all sources)

m: 5.47

r: 58.9 km

ε₀: -0.33 σ

Mode (largest m-r bin)

m: 4.9

r: 29.48 km

ε₀: -0.14 σ

Contribution: 7.34 %

Mode (largest m-r-ε₀ bin)

m: 4.9

r: 29.13 km

ε₀: -0.25 σ

Contribution: 2.84 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km

m: min = 4.4, max = 9.4, Δ = 0.2

ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)

ε1: [-2.5 .. -2.0)

ε2: [-2.0 .. -1.5)

ε3: [-1.5 .. -1.0)

ε4: [-1.0 .. -0.5)

ε5: [-0.5 .. 0.0)

ε6: [0.0 .. 0.5)

ε7: [0.5 .. 1.0)

ε8: [1.0 .. 1.5)

ε9: [1.5 .. 2.0)

ε10: [2.0 .. 2.5)

ε11: [2.5 .. +∞]

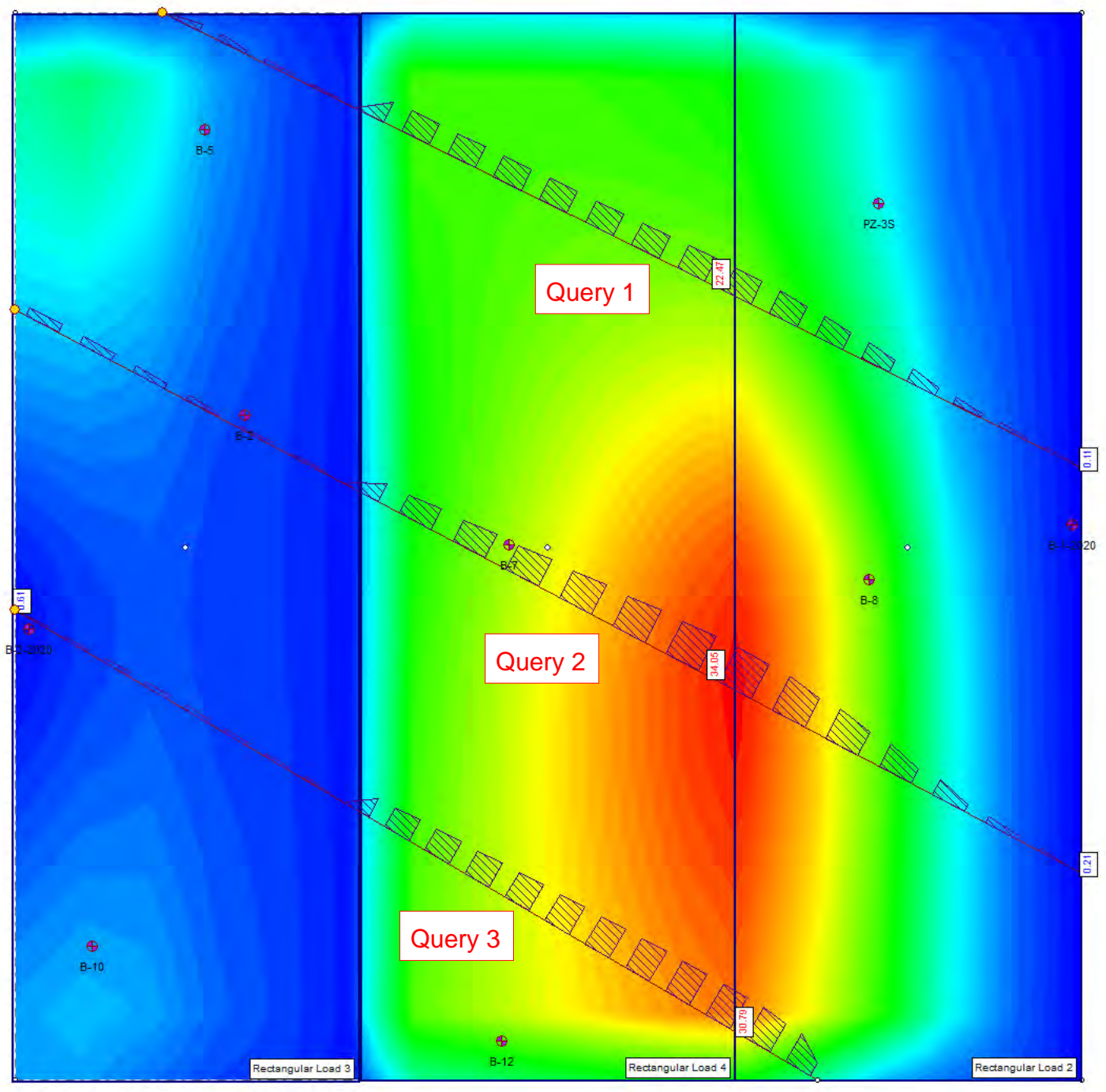
Deaggregation Contributors

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USGS Fixed Smoothing Zone 1 (opt)	Grid							38.34
PointSourceFinite: -97.092, 42.033		27.64	5.23	-0.67	97.092°W	42.033°N	360.00	4.16
PointSourceFinite: -97.092, 42.078		32.51	5.27	-0.43	97.092°W	42.078°N	360.00	3.12
PointSourceFinite: -97.092, 41.988		22.80	5.19	-0.98	97.092°W	41.988°N	360.00	3.10
PointSourceFinite: -97.092, 41.943		18.00	5.16	-1.39	97.092°W	41.943°N	360.00	2.88
PointSourceFinite: -97.092, 41.898		13.31	5.14	-1.95	97.092°W	41.898°N	360.00	2.52
PointSourceFinite: -97.092, 42.123		37.38	5.32	-0.23	97.092°W	42.123°N	360.00	2.49
PointSourceFinite: -97.092, 42.168		42.25	5.36	-0.07	97.092°W	42.168°N	360.00	2.31
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PointSourceFinite: -97.092, 41.853		8.92	5.13	-2.65	97.092°W	41.853°N	360.00	2.07
PointSourceFinite: -97.092, 42.258		51.97	5.46	0.19	97.092°W	42.258°N	360.00	1.67
PointSourceFinite: -97.092, 42.303		56.82	5.50	0.30	97.092°W	42.303°N	360.00	1.35
PointSourceFinite: -97.092, 42.393		66.51	5.60	0.46	97.092°W	42.393°N	360.00	1.12
SSCn Fixed Smoothing Zone 1 (opt)	Grid							38.34
PointSourceFinite: -97.092, 42.033		27.64	5.23	-0.67	97.092°W	42.033°N	360.00	4.16
PointSourceFinite: -97.092, 42.078		32.51	5.27	-0.43	97.092°W	42.078°N	360.00	3.12
PointSourceFinite: -97.092, 41.988		22.80	5.19	-0.98	97.092°W	41.988°N	360.00	3.10
PointSourceFinite: -97.092, 41.943		18.00	5.16	-1.39	97.092°W	41.943°N	360.00	2.88
PointSourceFinite: -97.092, 41.898		13.31	5.14	-1.95	97.092°W	41.898°N	360.00	2.52
PointSourceFinite: -97.092, 42.123		37.38	5.32	-0.23	97.092°W	42.123°N	360.00	2.49
PointSourceFinite: -97.092, 42.168		42.25	5.36	-0.07	97.092°W	42.168°N	360.00	2.31
PointSourceFinite: -97.092, 42.213		47.11	5.41	0.07	97.092°W	42.213°N	360.00	2.19
PointSourceFinite: -97.092, 41.853		8.92	5.13	-2.65	97.092°W	41.853°N	360.00	2.07
PointSourceFinite: -97.092, 42.258		51.97	5.46	0.19	97.092°W	42.258°N	360.00	1.67
PointSourceFinite: -97.092, 42.303		56.82	5.50	0.30	97.092°W	42.303°N	360.00	1.35
PointSourceFinite: -97.092, 42.393		66.51	5.60	0.46	97.092°W	42.393°N	360.00	1.12
USGS Adaptive Smoothing Zone 1 (opt)	Grid							11.55
SSCn Adaptive Smoothing Zone 1 (opt)	Grid							11.55

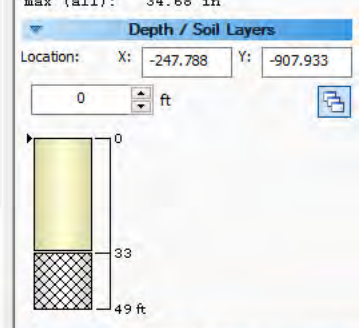
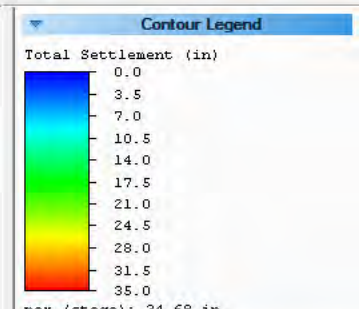
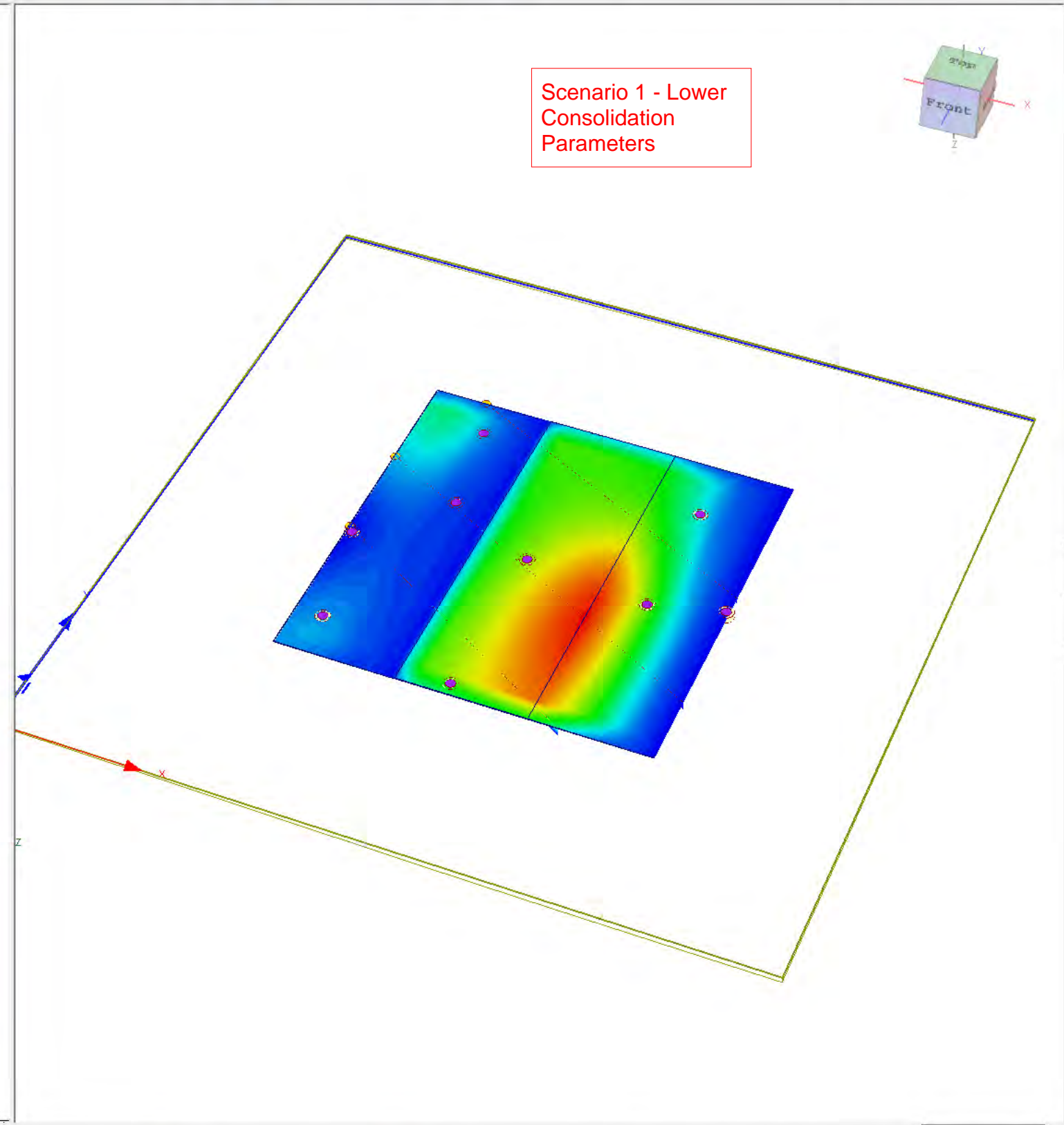
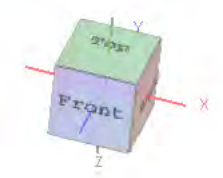


Client: NNSWC Page 11 of 11
Project: 122625 Date: 9/28/2020 Made by: Textor
NNWSC Landfill Expansion Checked by: _____
Slope Stability and Settlement Prelim: _____ Final: _____

Attachment E - Settlement

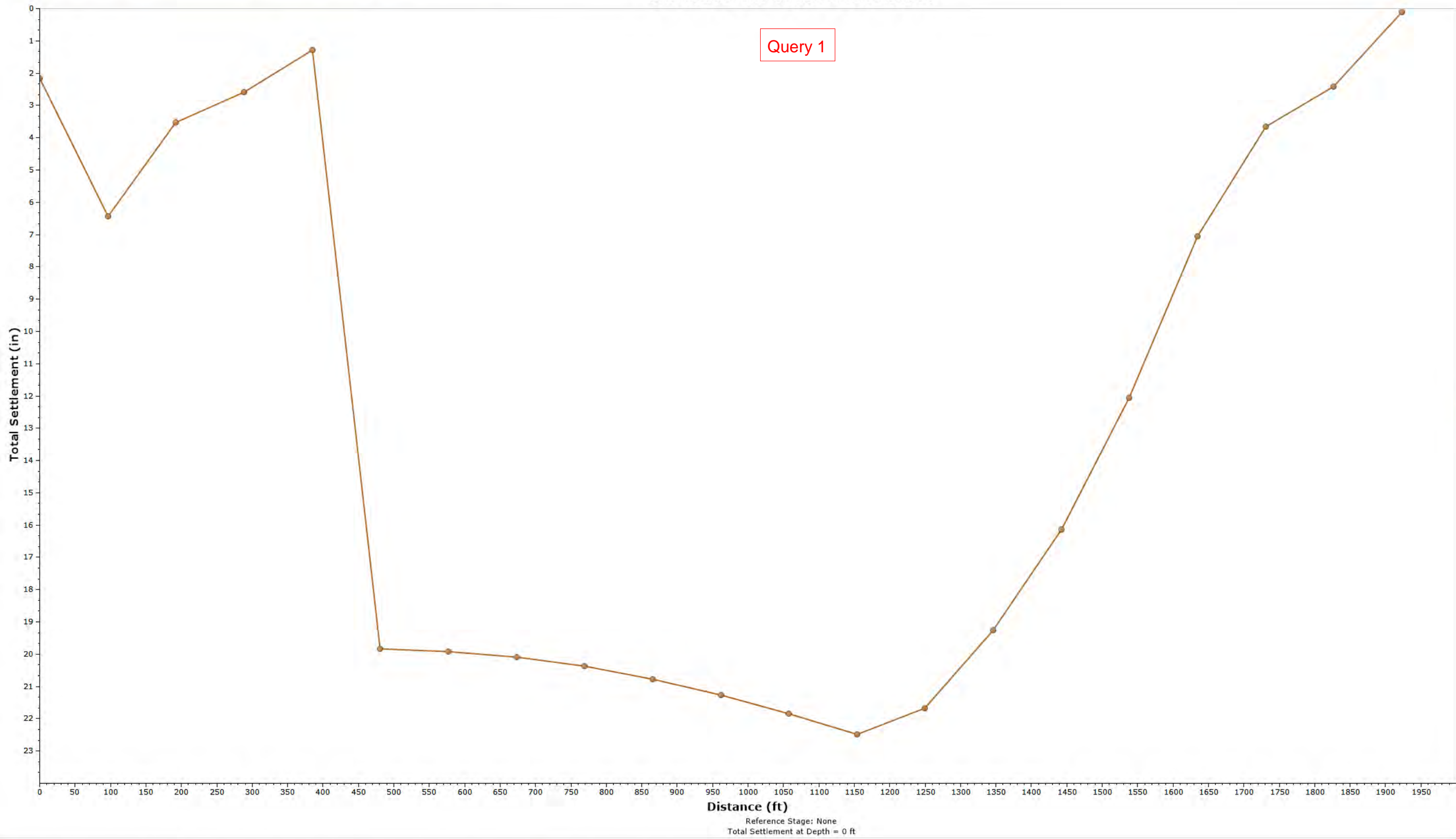


Scenario 1 - Lower Consolidation Parameters



- View Controls
- Line Queries
- Piezometric Lines
- Field Point Grid
- Deformed Contours
- Loads
- Soil Column
- Boreholes
- Draw Materials on all Queries

Distance vs. Total Settlement



Query 1

Query Line 1 (Stage 1)

Chart Controls

Defaults...

Titles

Chart Title Distance vs. Total Settlement
Footer, Line 1 Total Settlement at Depth = ...
Footer, Line 2 Reference Stage: None
Horizontal Axis Distance (ft)
Vertical Axis Total Settlement (in)

Markers and Lines

Show Point ... Yes
Show Labels No
Show Grid Li... No

Fonts

Title Font Verdana, 18, Bold
Footer Font Verdana, 8
Axes Font Verdana, 12, Bold
Axes Numb... Verdana, 8
Legend Font Verdana, 8
Value Labels... Verdana, 8

Legend

Show Legend Yes
Legend hori... Right outside
Legend vert... Center

Colors

Chart Backg...
Title Text C...
Grid Lines C...
Legend Bac...
Axes Color
Axes Text C...
Label Backg...
Label Text ...

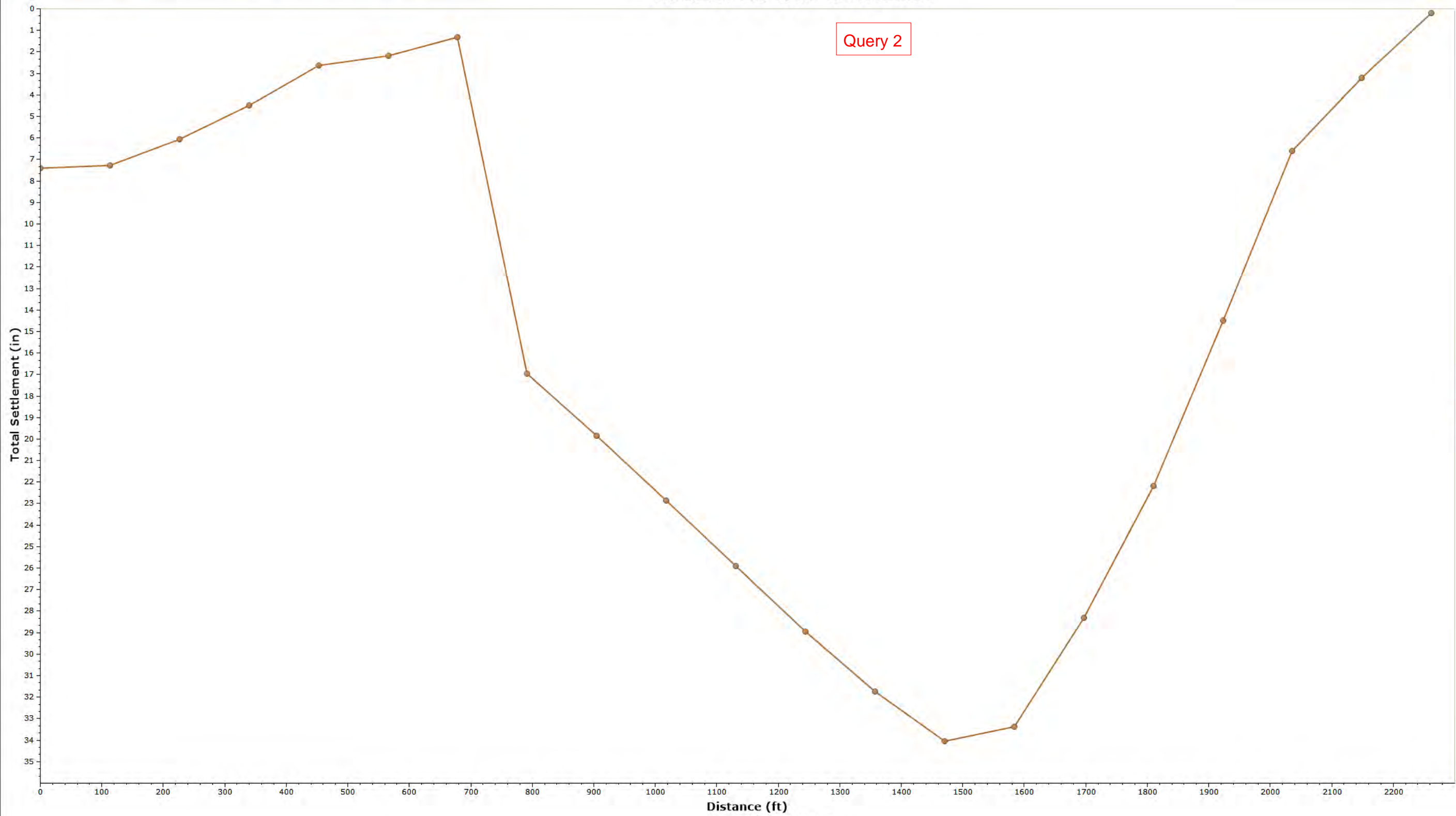
Axes

Logarithmic ... No
Logarithmic ... No
Reverse Ho... No
Reverse Ver... Yes
Swap Axes No
Horizontal M... 0
Horizontal M... 2000
Vertical Mini... 0
Vertical Max... 24

Soil Bands

Distance vs. Total Settlement

Query 2



Query Line 2 (Stage 1)

Chart Controls

Defaults...

Titles

Chart Title Distance vs. Total Settlement
Footer, Line 1 Total Settlement at Depth = ...
Footer, Line 2 Reference Stage: None
Horizontal Axis Distance (ft)
Vertical Axis Total Settlement (in)

Markers and Lines

Show Point ... Yes
Show Labels No
Show Grid Li... No

Fonts

Title Font Verdana, 18, Bold
Footer Font Verdana, 8
Axes Font Verdana, 12, Bold
Axes Numb... Verdana, 8
Legend Font Verdana, 8
Value Labels... Verdana, 8

Legend

Show Legend Yes
Legend hori... Right outside
Legend vert... Center

Colors

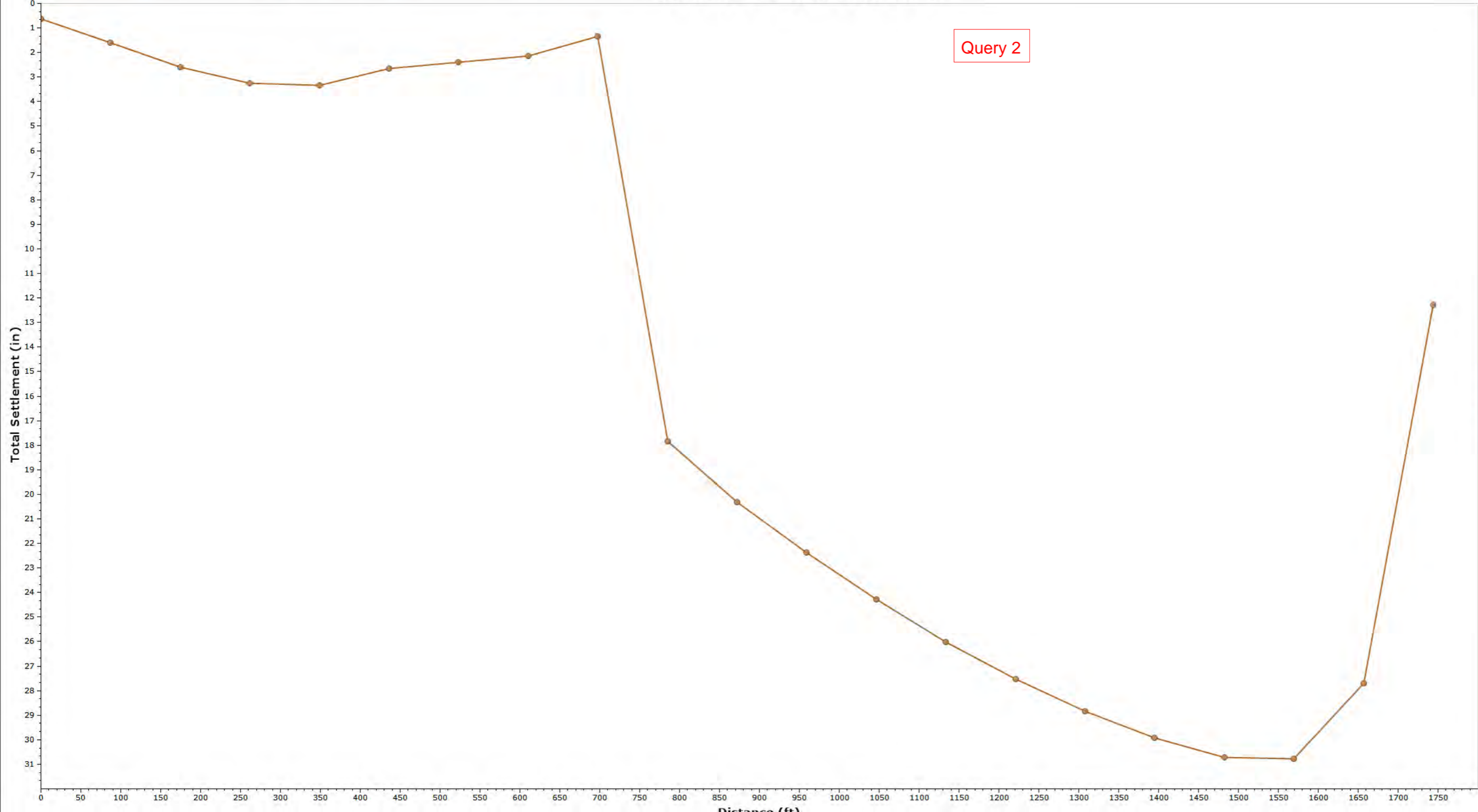
Chart Backg...
Title Text C...
Grid Lines C...
Legend Bac...
Axes Color
Axes Text C...
Label Backg...
Label Text ...

Axes

Logarithmic ... No
Logarithmic ... No
Reverse Ho... No
Reverse Ver... Yes
Swap Axes No
Horizontal M... 0
Horizontal M... 2300
Vertical Mini... 0
Vertical Max... 36

Soil Bands

Distance vs. Total Settlement



Query 2

Query Line 3 (Stage 1)

Chart Controls

Defaults...

Titles

Chart Title Distance vs. Total Settlement
Footer, Line 1 Total Settlement at Depth = ...
Footer, Line 2 Reference Stage: None
Horizontal Axis Distance (ft)
Vertical Axis Total Settlement (in)

Markers and Lines

Show Point ... Yes
Show Labels No
Show Grid Li... No

Fonts

Title Font Verdana, 18, Bold
Footer Font Verdana, 8
Axes Font Verdana, 12, Bold
Axes Numb... Verdana, 8
Legend Font Verdana, 8
Value Labels... Verdana, 8

Legend

Show Legend Yes
Legend hori... Right outside
Legend vert... Center

Colors

Chart Backg...
Title Text C...
Grid Lines C...
Legend Bac...
Axes Color
Axes Text C...
Label Backg...
Label Text ...

Axes

Logarithmic ... No
Logarithmic ... No
Reverse Ho... No
Reverse Ver... Yes
Swap Axes No
Horizontal M... 0
Horizontal M... 1800
Vertical Mini... 0
Vertical Max... 32

Soil Bands

Settle3 Analysis Information

NNSWC Landfill

Project Settings

Document Name	NNSWC Landfill_lower consol
Project Title	NNSWC Landfill
Author	Textor
Company	Burns & McDonnell
Date Created	9/28/2020, 1:47:46 PM
Stress Computation Method	Boussinesq
Minimum settlement ratio for subgrade modulus	0.9

Use average properties to calculate layered stresses

Improve consolidation accuracy

Ignore negative effective stresses in settlement calculations

Stage Settings

Stage #	Name
1	Stage 1

Results

Time taken to compute: 0.827822 seconds

Stage: Stage 1

Data Type	Minimum	Maximum
Total Settlement [in]	0	34.679
Total Consolidation Settlement [in]	0	34.679
Virgin Consolidation Settlement [in]	0	29.6952
Recompression Consolidation Settlement [in]	0	5.02985
Immediate Settlement [in]	0	0
Loading Stress ZZ [ksf]	-0.149402	11.201
Loading Stress XX [ksf]	-3.32198	21.6191
Loading Stress YY [ksf]	-7.25564	17.1292
Effective Stress ZZ [ksf]	-0.149375	14.18
Effective Stress XX [ksf]	-3.14441	21.6191
Effective Stress YY [ksf]	-7.25564	17.1292
Total Stress ZZ [ksf]	-0.149375	16.4676
Total Stress XX [ksf]	-3.14441	21.6191
Total Stress YY [ksf]	-7.25564	17.1292
Modulus of Subgrade Reaction (Total) [ksf/ft]	-1.05011	240.53
Modulus of Subgrade Reaction (Immediate) [ksf/ft]	0	0
Modulus of Subgrade Reaction (Consolidation) [ksf/ft]	-1.05011	240.53
Total Strain	-0.0108322	0.12451
Pore Water Pressure [ksf]	0	2.4336
Degree of Consolidation [%]	0	100
Pre-consolidation Stress [ksf]	5.2	14.1791
Over-consolidation Ratio	1	9589.5
Void Ratio	0.663431	0.920581
Hydroconsolidation Settlement [in]	0	0
Undrained Shear Strength	0	1.38203

Loads

1. Rectangular Load: "Rectangular Load 2"

Length	650 ft
Width	2000 ft
Rotation angle	0 degrees
Load Type	Flexible
Area of Load	1.3e+06 ft ²
Depth	0 ft
Installation Stage	Stage 1

Coordinates and Load

X [ft]	Y [ft]	Load Magnitude [ksf]
187.93	-980.156	11.2
837.93	-980.156	0
837.93	1019.84	0
187.93	1019.84	11.2

2. Rectangular Load: "Rectangular Load 3"

Length 650 ft
 Width 2000 ft
 Rotation angle 0 degrees
 Load Type Flexible
 Area of Load 1.3e+06 ft²
 Depth 0 ft
 Installation Stage Stage 1

Coordinates and Load

X [ft]	Y [ft]	Load Magnitude [ksf]
-1166.41	-981.797	11.2
-516.406	-981.797	0
-516.406	1018.2	0
-1166.41	1018.2	11.2

3. Rectangular Load: "Rectangular Load 4"

Length 700 ft
 Width 2000 ft
 Rotation angle 0 degrees
 Load Type Flexible
 Area of Load 1.4e+06 ft²
 Load 11.2 ksf
 Depth 0 ft
 Installation Stage Stage 1

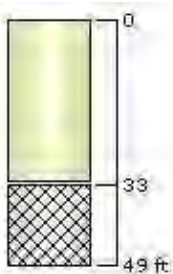
Coordinates

X [ft]	Y [ft]
-512.07	-980.156
187.93	-980.156
187.93	1019.84
-512.07	1019.84

Soil Layers

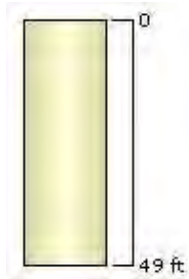
B-1-2020: (822.496, 60.2182)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	33	0



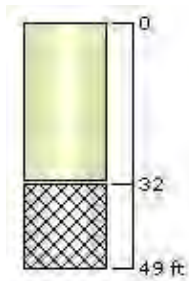
B-8: (441.284, -42.893)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	49	0



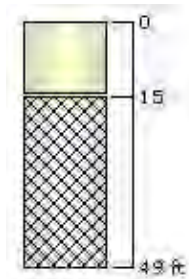
B-7: (-233.341, 22.6781)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	32	0



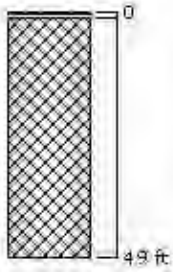
B-2: (-729.306, 264.932)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	15	0



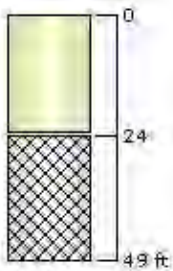
B-2-2020: (-1133.55, -134.67)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	1	0



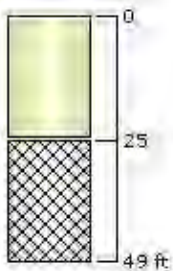
PZ-3S: (459.995, 661.964)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	24	0



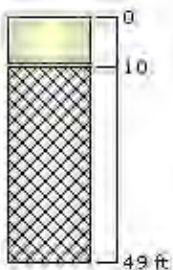
B-5: (-805.35, 800.205)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	25	0



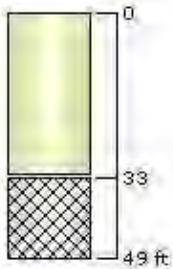
B-10: (-1016.43, -729.047)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	10	0



B-12: (-247.788, -907.933)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	33	0



Soil Properties

Property	Loess
Color	
Unit Weight [kips/ft ³]	0.114
Saturated Unit Weight [kips/ft ³]	0.114
K0	1
Primary Consolidation	Enabled
Material Type	Non-Linear
Cc	0.25
Cr	0.03
e0	0.9
Pc [ksf]	5.2
Undrained Su A [kips/ft ²]	0
Undrained Su S	0.2
Undrained Su m	0.8
Piezo Line ID	1

Groundwater

Groundwater method Piezometric Lines
 Water Unit Weight 0.0624 kips/ft³

Piezometric Line Entities

ID	Depth (ft)
1	10 ft

Query Lines

Line #	Query Line Name	Start Location	End Location	Horizontal Divisions	Vertical Divisions
1	Query Line 1	-885.244, 1021.43	838.629, 169.144	20	Auto: 49
2	Query Line 2	-1161.37, 465.727	838.629, -591.478	20	Auto: 37
3	Query Line 3	-1161.37, -97.1745	343.454, -978.572	20	Auto: 31

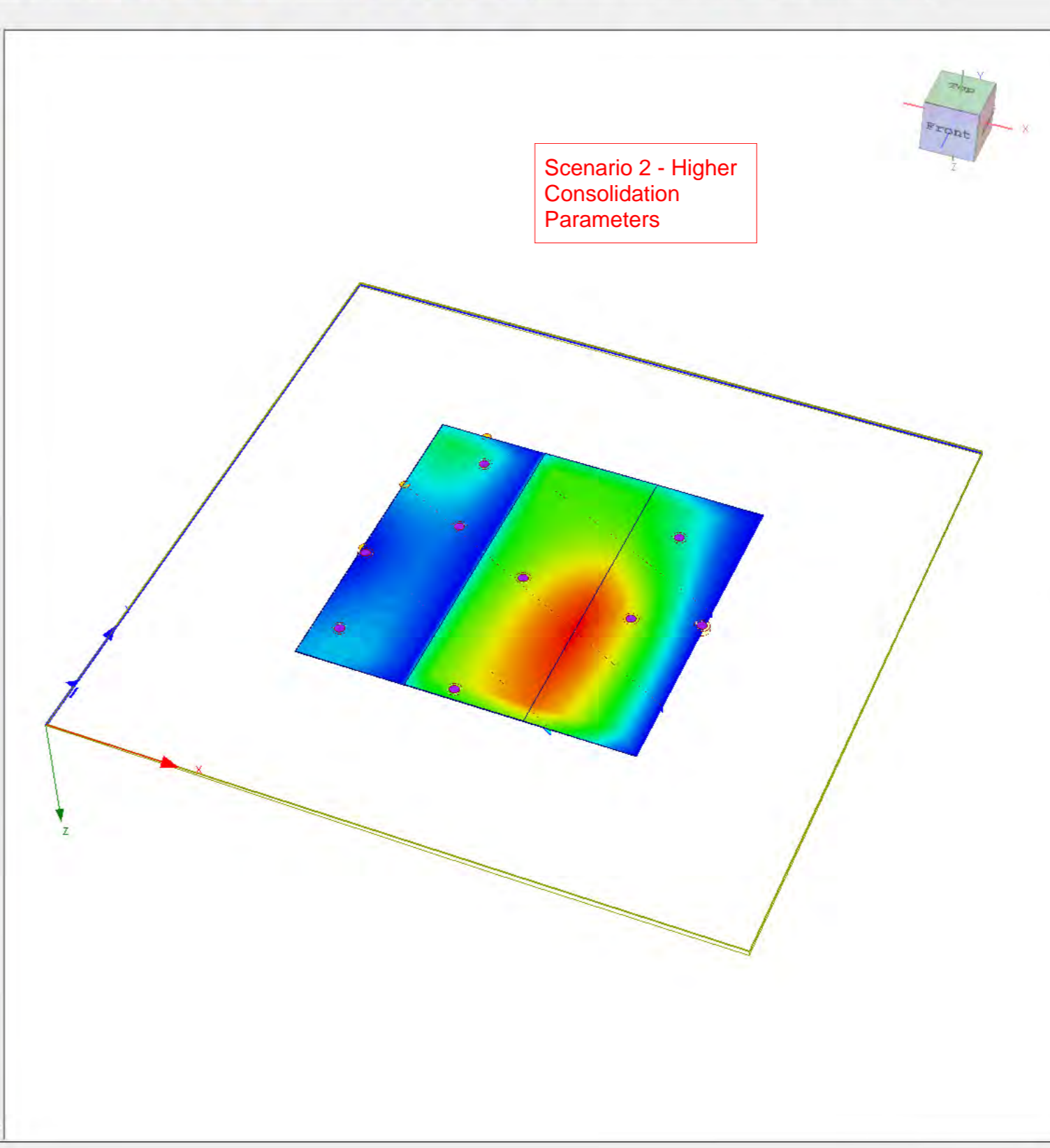
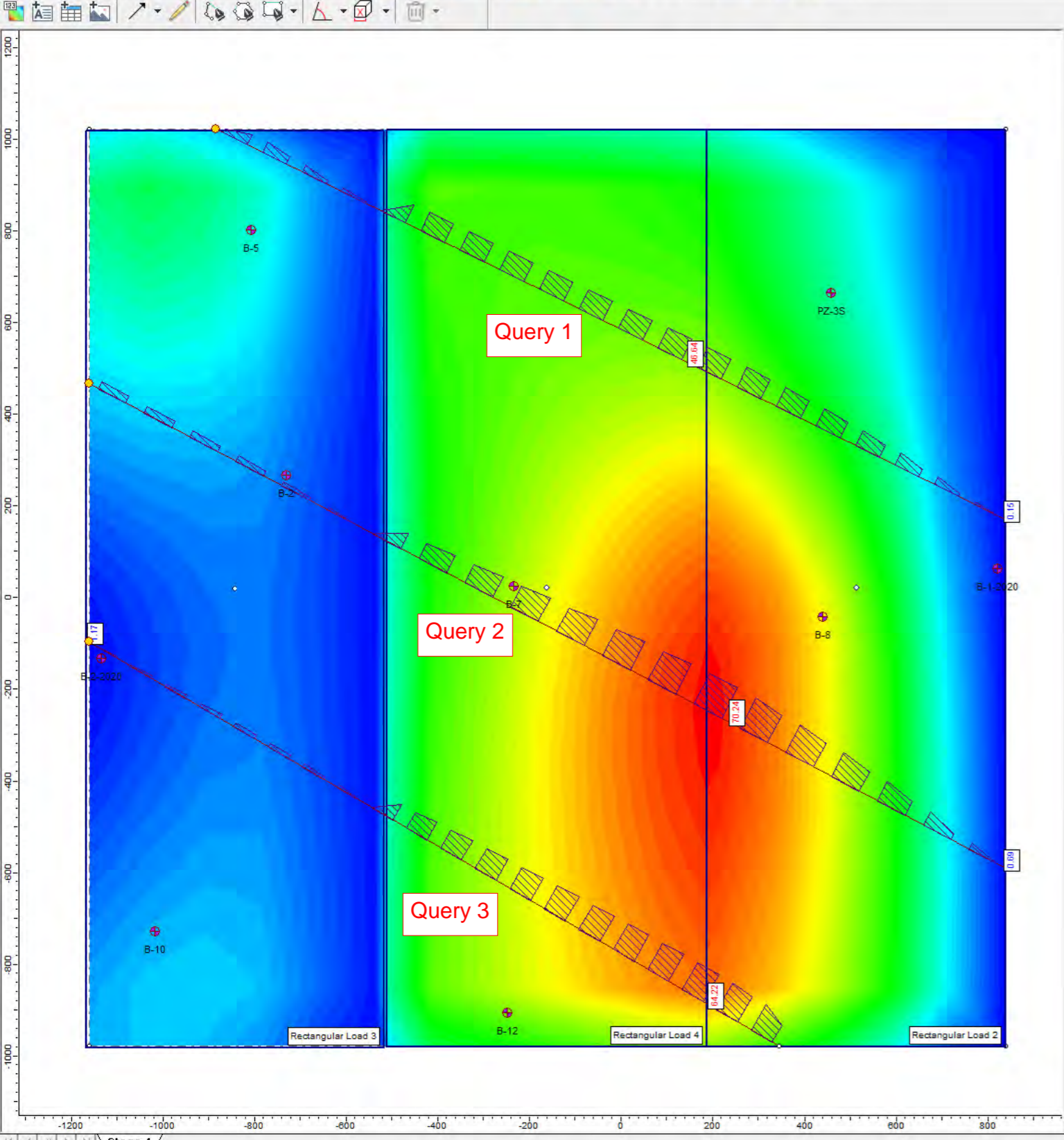
Field Point Grid

Number of points 373

Expansion Factor 1

Grid Coordinates

X [ft]	Y [ft]
1837.93	2019.84
1837.93	-1981.8
-2166.41	-1981.8
-2166.41	2019.84



Contour Legend

Total Settlement (in)

0.0
7.2
14.4
21.6
28.8
36.0
43.2
50.4
57.6
64.8
72.0

max (stage): 71.57 in
max (all): 71.57 in

Depth / Soil Layers

Location: X: -247.788 Y: -907.933

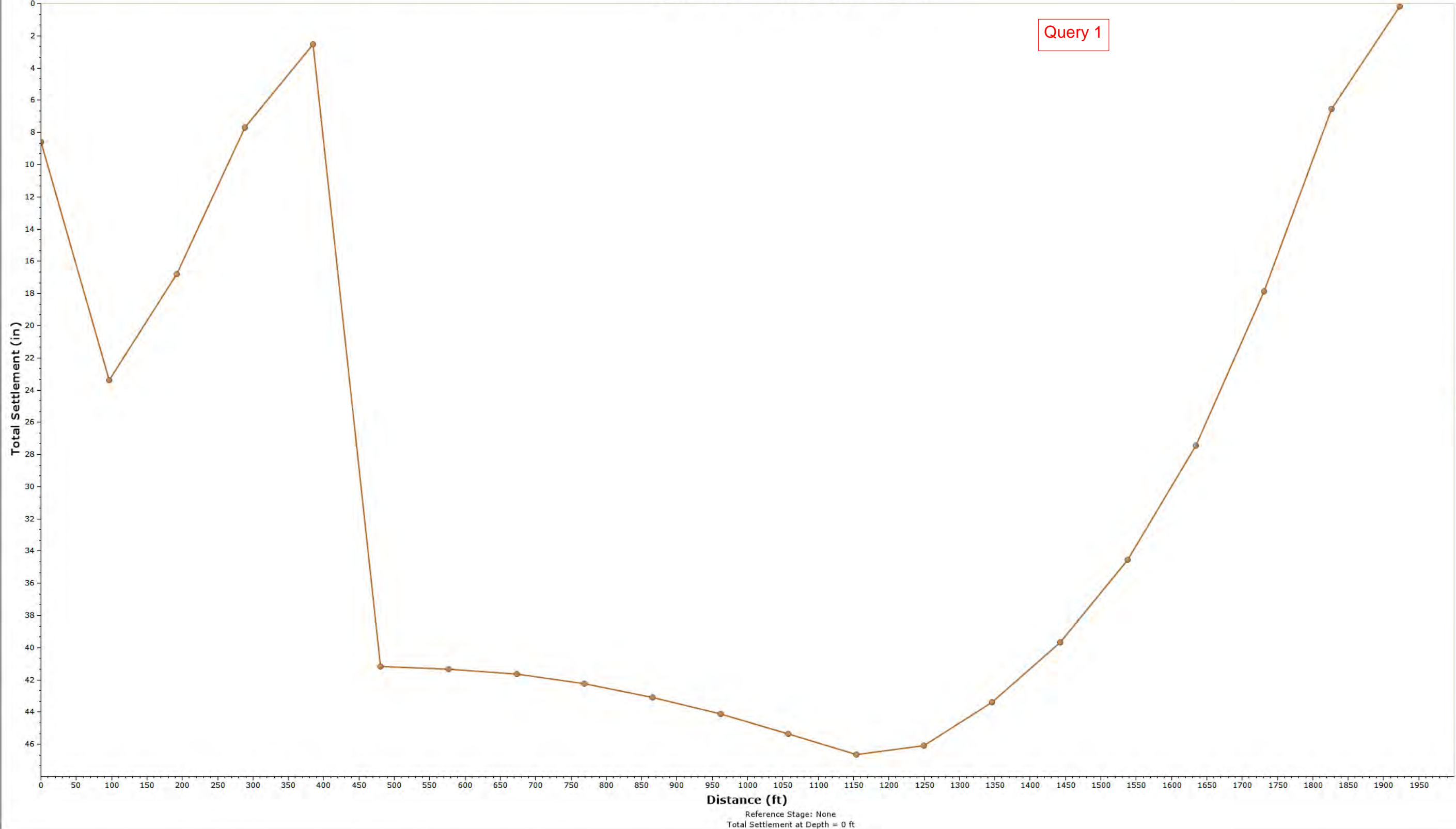
0 ft

0
33
49 ft

View Controls

- Line Queries
- Piezometric Lines
- Field Point Grid
- Deformed Contours
- Loads
- Soil Column
- Boreholes
- Draw Materials on all Queries

Distance vs. Total Settlement



Query 1

Query Line 1 (Stage 1)

Chart Controls

Defaults...

Titles

Chart Title Distance vs. Total Settlement
Footer, Line 1 Total Settlement at Depth = ...
Footer, Line 2 Reference Stage: None
Horizontal Axis Distance (ft)
Vertical Axis Total Settlement (in)

Markers and Lines

Show Point ... Yes
Show Labels No
Show Grid U... No

Fonts

Title Font Verdana, 18, Bold
Footer Font Verdana, 8
Axes Font Verdana, 12, Bold
Axes Numb... Verdana, 8
Legend Font Verdana, 8
Value Labels... Verdana, 8

Legend

Show Legend Yes
Legend hori... Right outside
Legend vert... Center

Colors

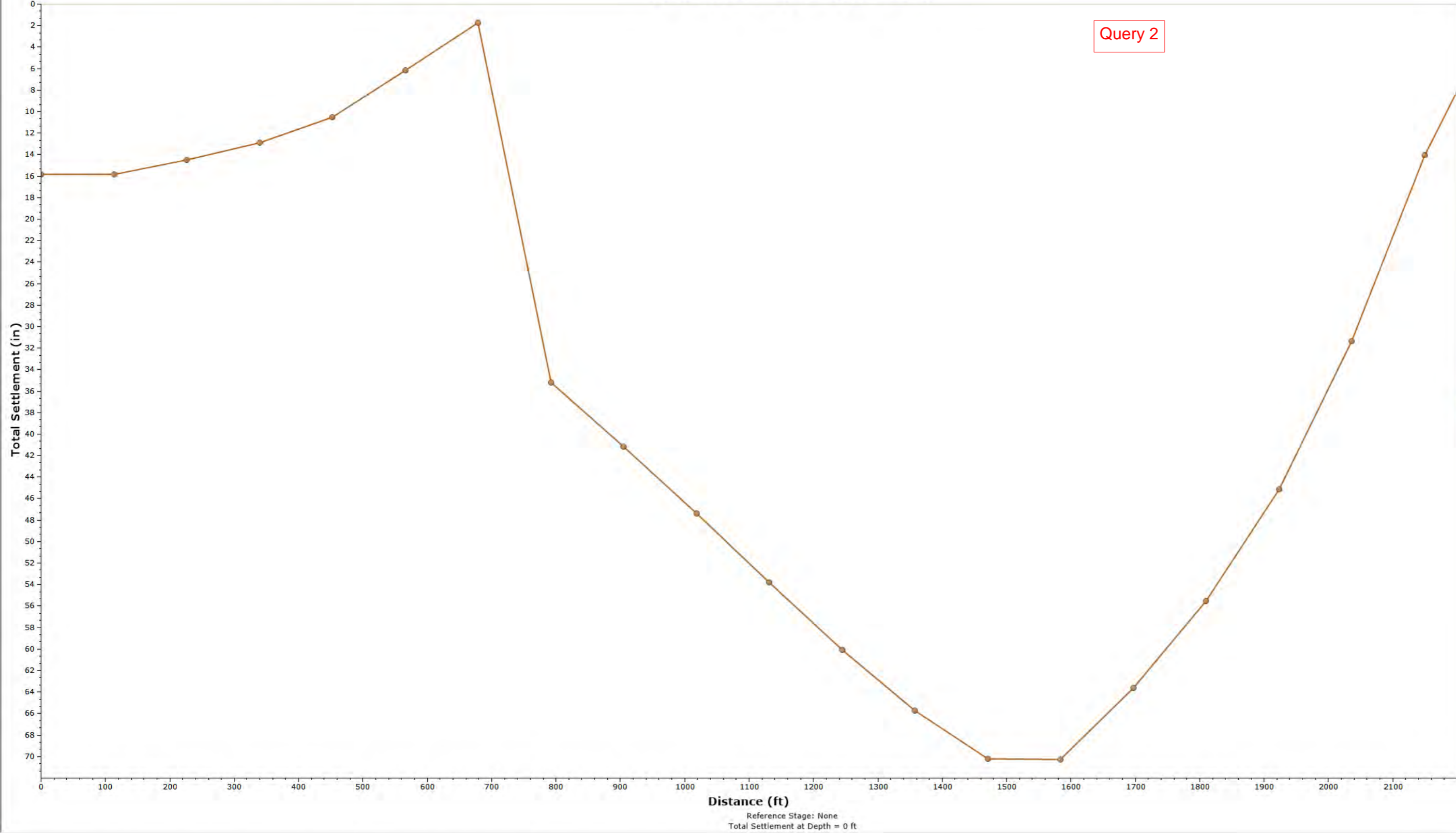
Chart Backg...
Title Text C...
Grid Lines C...
Legend Bac...
Axes Color
Axes Text C...
Label Backg...
Label Text ...

Axes

Logarithmic ... No
Logarithmic ... No
Reverse Ho... No
Reverse Ver... Yes
Swap Axes No
Horizontal M... -0
Horizontal M... 2000
Vertical Mini... 0
Vertical Max... 48

Soil Bands

Distance vs. Total Settlement



Query 2

Query Line 2 (Stage 1)

Chart Controls

Defaults...

Titles

Chart Title Distance vs. Total Settlement
Footer, Line 1 Total Settlement at Depth = ...
Footer, Line 2 Reference Stage: None
Horizontal Axis Distance (ft)
Vertical Axis Total Settlement (in)

Markers and Lines

Show Point ... Yes
Show Labels No
Show Grid Li... No

Fonts

Title Font Verdana, 18, Bold
Footer Font Verdana, 8
Axes Font Verdana, 12, Bold
Axes Numb... Verdana, 8
Legend Font Verdana, 8
Value Labels... Verdana, 8

Legend

Show Legend Yes
Legend hori... Right outside
Legend vert... Center

Colors

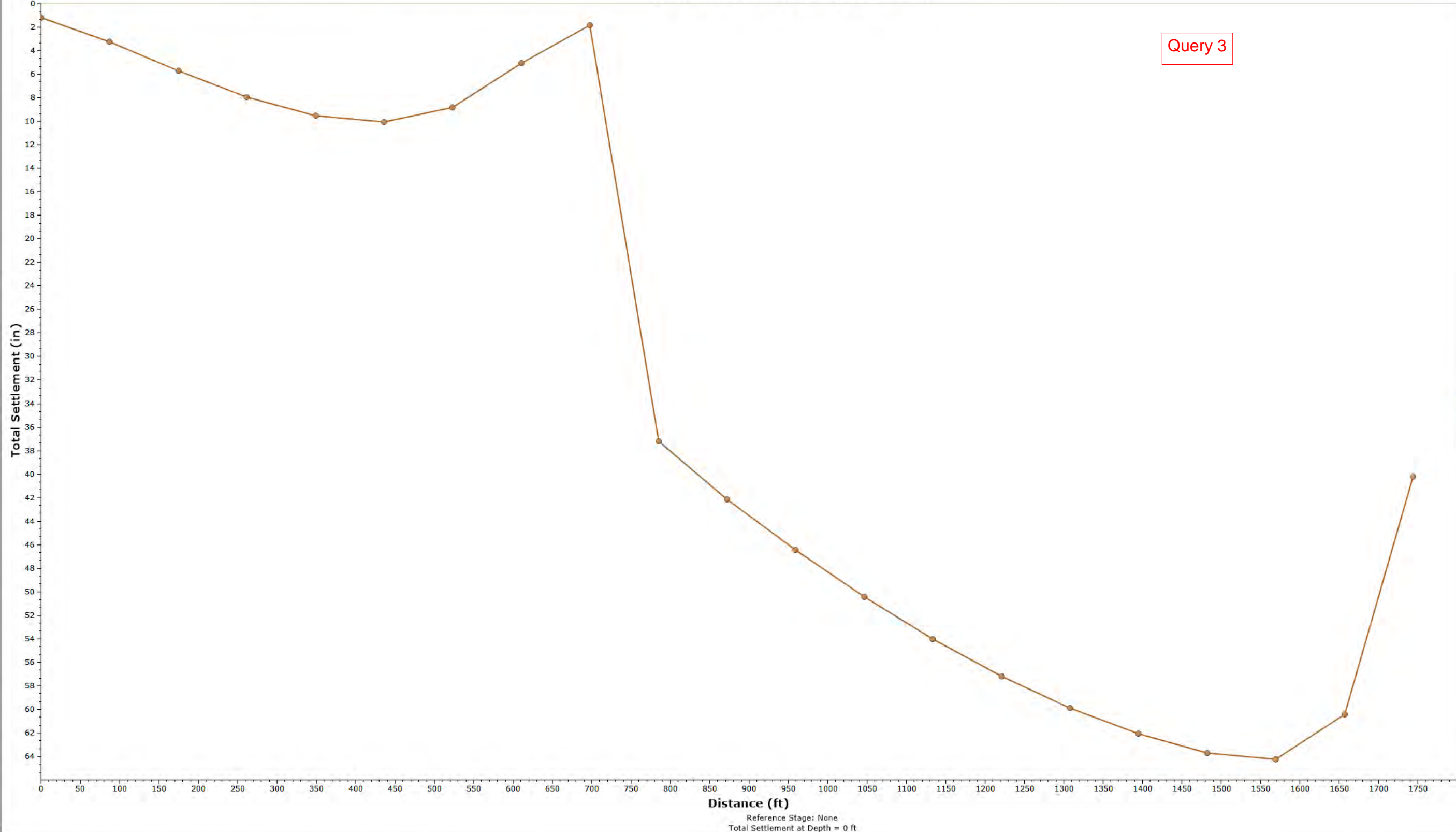
Chart Backg...
Title Text C...
Grid Lines C...
Legend Bac...
Axes Color
Axes Text C...
Label Backg...
Label Text ...

Axes

Logarithmic ... No
Logarithmic ... No
Reverse Ho... No
Reverse Ver... Yes
Swap Axes No
Horizontal M... 0
Horizontal M... 2200
Vertical Mini... 0
Vertical Max... 72

Soil Bands

Distance vs. Total Settlement



Query 3

Query Line 3 (Stage 1)

Chart Controls

Defaults...

Titles

Chart Title Distance vs. Total Settlement
Footer, Line 1 Total Settlement at Depth = ...
Footer, Line 2 Reference Stage: None
Horizontal Axis Distance (ft)
Vertical Axis Total Settlement (in)

Markers and Lines

Show Point ... Yes
Show Labels No
Show Grid Li... No

Fonts

Title Font Verdana, 18, Bold
Footer Font Verdana, 8
Axes Font Verdana, 12, Bold
Axes Numb... Verdana, 8
Legend Font Verdana, 8
Value Labels... Verdana, 8

Legend

Show Legend Yes
Legend hori... Right outside
Legend vert... Center

Colors

Chart Backg...
Title Text C...
Grid Lines C...
Legend Bac...
Axes Color
Axes Text C...
Label Backg...
Label Text ...

Axes

Logarithmic ... No
Logarithmic ... No
Reverse Ho... No
Reverse Ver... Yes
Swap Axes No
Horizontal M... 0
Horizontal M... 1800
Vertical Mini... 0
Vertical Max... 66

Soil Bands

Settle3 Analysis Information

NNSWC Landfill

Project Settings

Document Name	NNSWC Landfill_higher consol
Project Title	NNSWC Landfill
Author	Textor
Company	Burns & McDonnell
Date Created	9/28/2020, 1:47:46 PM
Stress Computation Method	Boussinesq
Minimum settlement ratio for subgrade modulus	0.9

Use average properties to calculate layered stresses

Improve consolidation accuracy

Ignore negative effective stresses in settlement calculations

Stage Settings

Stage #	Name
1	Stage 1

Results

Time taken to compute: 0.80128 seconds

Stage: Stage 1

Data Type	Minimum	Maximum
Total Settlement [in]	0	71.5678
Total Consolidation Settlement [in]	0	71.5678
Virgin Consolidation Settlement [in]	0	68.471
Recompression Consolidation Settlement [in]	0	3.09702
Immediate Settlement [in]	0	0
Loading Stress ZZ [ksf]	-0.149402	11.201
Loading Stress XX [ksf]	-3.32198	21.6191
Loading Stress YY [ksf]	-7.25564	17.1292
Effective Stress ZZ [ksf]	-0.149375	14.18
Effective Stress XX [ksf]	-3.14441	21.6191
Effective Stress YY [ksf]	-7.25564	17.1292
Total Stress ZZ [ksf]	-0.149375	16.4676
Total Stress XX [ksf]	-3.14441	21.6191
Total Stress YY [ksf]	-7.25564	17.1292
Modulus of Subgrade Reaction (Total) [ksf/ft]	-0.787582	125.765
Modulus of Subgrade Reaction (Immediate) [ksf/ft]	0	0
Modulus of Subgrade Reaction (Consolidation) [ksf/ft]	-0.787582	125.765
Total Strain	-0.014443	0.211389
Pore Water Pressure [ksf]	0	2.4336
Degree of Consolidation [%]	0	100
Pre-consolidation Stress [ksf]	2.6	14.1791
Over-consolidation Ratio	1	4794.75
Void Ratio	0.498361	0.927442
Hydroconsolidation Settlement [in]	0	0
Undrained Shear Strength	0	0.793766

Loads

1. Rectangular Load: "Rectangular Load 2"

Length	650 ft
Width	2000 ft
Rotation angle	0 degrees
Load Type	Flexible
Area of Load	1.3e+06 ft ²
Depth	0 ft
Installation Stage	Stage 1

Coordinates and Load

X [ft]	Y [ft]	Load Magnitude [ksf]
187.93	-980.156	11.2
837.93	-980.156	0
837.93	1019.84	0
187.93	1019.84	11.2

2. Rectangular Load: "Rectangular Load 3"

Length 650 ft
 Width 2000 ft
 Rotation angle 0 degrees
 Load Type Flexible
 Area of Load 1.3e+06 ft²
 Depth 0 ft
 Installation Stage Stage 1

Coordinates and Load

X [ft]	Y [ft]	Load Magnitude [ksf]
-1166.41	-981.797	11.2
-516.406	-981.797	0
-516.406	1018.2	0
-1166.41	1018.2	11.2

3. Rectangular Load: "Rectangular Load 4"

Length 700 ft
 Width 2000 ft
 Rotation angle 0 degrees
 Load Type Flexible
 Area of Load 1.4e+06 ft²
 Load 11.2 ksf
 Depth 0 ft
 Installation Stage Stage 1

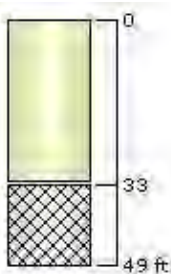
Coordinates

X [ft]	Y [ft]
-512.07	-980.156
187.93	-980.156
187.93	1019.84
-512.07	1019.84

Soil Layers

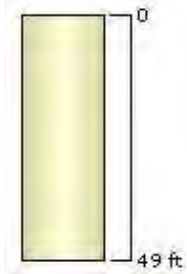
B-1-2020: (822.496, 60.2182)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	33	0



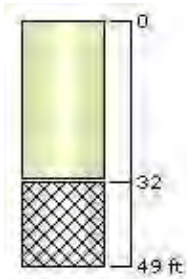
B-8: (441.284, -42.893)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	49	0



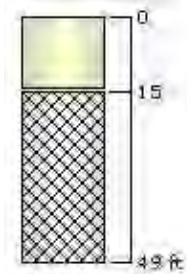
B-7: (-233.341, 22.6781)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	32	0



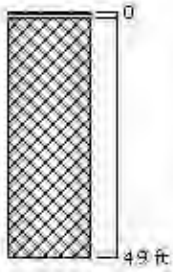
B-2: (-729.306, 264.932)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	15	0



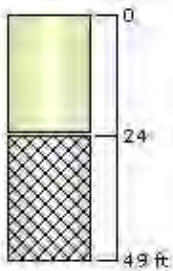
B-2-2020: (-1133.55, -134.67)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	1	0



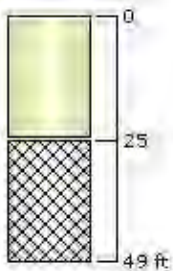
PZ-3S: (459.995, 661.964)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	24	0



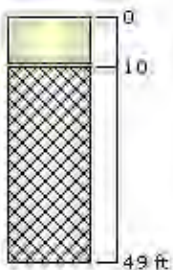
B-5: (-805.35, 800.205)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	25	0



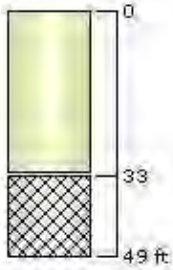
B-10: (-1016.43, -729.047)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	10	0




B-12: (-247.788, -907.933)

Layer #	Type	Thickness [ft]	Depth [ft]
1	Loess	33	0



Soil Properties

Property	Loess
Color	
Unit Weight [kips/ft ³]	0.114
Saturated Unit Weight [kips/ft ³]	0.114
K0	1
Primary Consolidation	Enabled
Material Type	Non-Linear
Cc	0.33
Cr	0.04
e0	0.9
Pc [ksf]	2.6
Undrained Su A [kips/ft ²]	0
Undrained Su S	0.2
Undrained Su m	0.8
Piezo Line ID	1

Groundwater

Groundwater method Piezometric Lines
 Water Unit Weight 0.0624 kips/ft³

Piezometric Line Entities

ID	Depth (ft)
1	10 ft

Query Lines

Line #	Query Line Name	Start Location	End Location	Horizontal Divisions	Vertical Divisions
1	Query Line 1	-885.244, 1021.43	838.629, 169.144	20	Auto: 49
2	Query Line 2	-1161.37, 465.727	838.629, -591.478	20	Auto: 37
3	Query Line 3	-1161.37, -97.1745	343.454, -978.572	20	Auto: 31

Field Point Grid

Number of points 373

Expansion Factor 1

Grid Coordinates

X [ft]	Y [ft]
1837.93	2019.84
1837.93	-1981.8
-2166.41	-1981.8
-2166.41	2019.84

Lower Consolidation
Query 1

Station	Original EL (ft)	Settlement (in)	Settlement (ft)	Final EL (ft)	Slope
0	650	22	1.83	648.17	
100	648	22	1.83	646.17	-0.020
200	646	22	1.83	644.17	-0.020
300	644	21	1.75	642.25	-0.019
400	642	18	1.50	640.50	-0.018
500	640	15	1.25	638.75	-0.018
600	638	11	0.92	637.08	-0.017
700	636	6	0.50	635.50	-0.016
800	634	4	0.33	633.67	-0.018
900	632	1	0.08	631.92	-0.018
					-0.018

Higher Consolidation
Query 1

Station	Original EL (ft)	Settlement (in)	Settlement (ft)	Final EL (ft)	Slope
0	650	45	3.75	646.25	
100	648	46	3.83	644.17	-0.021
200	646	46	3.83	642.17	-0.020
300	644	44	3.67	640.33	-0.018
400	642	42	3.50	638.50	-0.018
500	640	38	3.17	636.83	-0.017
600	638	31	2.58	635.42	-0.014
700	636	23	1.92	634.08	-0.013
800	634	15	1.25	632.75	-0.013
900	632	4	0.33	631.67	-0.011
					-0.016

Query 2

Station	Original EL (ft)	Settlement (in)	Settlement (ft)	Final EL (ft)	Slope
0	650	24	2.00	648.00	
100	648	26	2.17	645.83	-0.022
200	646	29	2.42	643.58	-0.023
300	644	32	2.67	641.33	-0.023
400	642	34	2.83	639.17	-0.022
500	640	35	2.92	637.08	-0.021
600	638	34	2.83	635.17	-0.019
700	636	30	2.50	633.50	-0.017
800	634	23	1.92	632.08	-0.014
900	632	18	1.50	630.50	-0.016
1000	630	12	1.00	629.00	-0.015
					-0.019

Station	Original EL (ft)	Settlement (in)	Settlement (ft)	Final EL (ft)	Slope
0	650	46	3.83	646.17	
100	648	52	4.33	643.67	-0.025
200	646	58	4.83	641.17	-0.025
300	644	64	5.33	638.67	-0.025
400	642	68	5.67	636.33	-0.023
500	640	70	5.83	634.17	-0.022
600	638	70	5.83	632.17	-0.020
700	636	62	5.17	630.83	-0.013
800	634	57	4.75	629.25	-0.016
900	632	49	4.08	627.92	-0.013
1000	630	36	3.00	627.00	-0.009
					-0.019

Query 3

Station	Original EL (ft)	Settlement (in)	Settlement (ft)	Final EL (ft)	Slope
0	650	23	1.92	648.08	
100	648	26	2.17	645.83	-0.023
200	646	27	2.25	643.75	-0.021
300	644	29	2.42	641.58	-0.022
400	642	30	2.50	639.50	-0.021
500	640	31	2.58	637.42	-0.021
600	638	30	2.50	635.50	-0.019
700	636	24	2.00	634.00	-0.015
					-0.020

Query 3

Station	Original EL (ft)	Settlement (in)	Settlement (ft)	Final EL (ft)	Slope
0	650	50	4.17	645.83	
100	648	54	4.50	643.50	-0.023
200	646	57	4.75	641.25	-0.023
300	644	60	5.00	639.00	-0.023
400	642	62	5.17	636.83	-0.022
500	640	64	5.33	634.67	-0.022
600	638	62	5.17	632.83	-0.018
700	636	54	4.50	631.50	-0.013
					-0.020

APPENDIX G – LANDFILL VOLUME AND SOIL CALCULATIONS

ATTACHMENT 1
Northeast Nebraska Solid Waste Coalition
Remaining Airspace Projections w/ Expansion - No Waste Change

4/9/2021
 by:PRF
 ck:LAR

MSW/Industrial Tonnage (Assumed) =	112,000	tons	Remaining Area Capacity
Predicted Future Generation Growth =	1.00%		Area 1/2/3/4/5 2,210,000
Aispace Utilization Factor (AUF) =	1,296	lb/cy	Area 6 PH 1 2,060,000
Ultimate Capacity without final cover and protective soil layer (waste + soil) =	17,530,000	cy	Area 6 PH 2 4,180,000
			Area 7 3,900,000
			Area 8 970,000
			Total 13,320,000

Year	Total Tonnage	Waste Annual MSW/Industrial Airspace Consumed (cy)	Waste Remaining Expansion Ultimate Capacity (cy)	Year End Remaining Cell Capacity	Active Area
2021	112,000	172,840	13,147,160	2,037,160	Area 1/2/3/4/5
2022	113,120	174,568	12,972,593	1,862,593	
2023	114,251	176,314	12,796,279	1,686,279	
2024	115,394	178,077	12,618,202	3,568,202	Area 6 PH 1
2025	116,548	179,857	12,438,345	3,388,345	
2026	117,713	181,656	12,256,689	3,206,689	
2027	118,890	183,473	12,073,216	3,023,216	
2028	120,079	185,307	11,887,909	2,837,909	
2029	121,280	187,160	11,700,748	2,650,748	
2030	122,493	189,032	11,511,716	2,461,716	
2031	123,718	190,922	11,320,794	2,270,794	
2032	124,955	192,832	11,127,962	2,077,962	
2033	126,204	194,760	10,933,203	1,883,203	
2034	127,466	196,707	10,736,495	1,686,495	
2035	128,741	198,675	10,537,821	1,487,821	
2036	130,029	200,661	10,337,159	1,287,159	
2037	131,329	202,668	10,134,491	1,084,491	
2038	132,642	204,695	9,929,797	879,797	
2039	133,969	206,742	9,723,055	673,055	
2040	135,308	208,809	9,514,246	464,246	
2041	136,661	210,897	9,303,349	253,349	
2042	138,028	213,006	9,090,343	40,343	
2043	139,408	215,136	8,875,207	4,005,207	Area 6 PH 2
2044	140,802	217,287	8,657,920	3,787,920	
2045	142,210	219,460	8,438,459	3,568,459	
2046	143,632	221,655	8,216,804	3,346,804	
2047	145,069	223,871	7,992,933	3,122,933	
2048	146,519	226,110	7,766,823	2,896,823	
2049	147,985	228,371	7,538,452	2,668,452	
2050	149,464	230,655	7,307,797	2,437,797	
2051	150,959	232,962	7,074,835	2,204,835	
2052	152,469	235,291	6,839,544	1,969,544	
2053	153,993	237,644	6,601,900	1,731,900	
2054	155,533	240,021	6,361,879	1,491,879	
2055	157,089	242,421	6,119,459	1,249,459	
2056	158,660	244,845	5,874,614	1,004,614	
2057	160,246	247,293	5,627,320	757,320	
2058	161,849	249,766	5,377,554	507,554	
2059	163,467	252,264	5,125,290	255,290	
2060	165,102	254,787	4,870,503	503	
2061	166,753	257,334	4,613,169	3,643,169	Area 7
2062	168,420	259,908	4,353,261	3,383,261	
2063	170,104	262,507	4,090,754	3,120,754	
2064	171,806	265,132	3,825,622	2,855,622	
2065	173,524	267,783	3,557,839	2,587,839	

2066	175,259	270,461	3,287,378	2,317,378
2067	177,011	273,166	3,014,212	2,044,212
2068	178,782	275,897	2,738,315	1,768,315
2069	180,569	278,656	2,459,658	1,489,658
2070	182,375	281,443	2,178,215	1,208,215
2071	184,199	284,257	1,893,958	923,958
2072	186,041	287,100	1,606,858	636,858
2073	187,901	289,971	1,316,887	346,887
2074	189,780	292,871	1,024,017	54,017
2075	191,678	295,799	728,217	728,217 Area 8
2076	193,595	298,757	429,460	429,460
2077	195,531	301,745	127,715	127,715
2078	197,486	304,762	-177,047	-177,047 Life Depleted May 2078
2079	199,461	307,810	-484,857	-484,857
2080	201,455	310,888	-795,745	-795,745

ATTACHMENT 2
Northeast Nebraska Solid Waste Coalition
Remaining Airspace Projections w/ Expansion - 20% Waste Decrease

4/9/2021
 by:PRF
 ck:LAR

MSW/Industrial Tonnage (Assumed) =	89,600	tons	Remaining Area Capacity
Predicted Future Generation Growth =	1.00%		Area 1/2/3/4/5 2,210,000
Airspace Utilization Factor (AUF) =	1,296	lb/cy	Area 6 PH 1 2,060,000
Ultimate Capacity without final cover and protective soil layer (waste + soil) =	17,530,000	cy	Area 6 PH 2 4,180,000
			Area 7 3,900,000
			Area 8 970,000
			Total 13,320,000

Year	Total Tonnage	Waste Annual MSW/Industrial Airspace Consumed (cy)	Waste Remaining Expansion Ultimate Capacity (cy)	Year End Remaining Cell Capacity	Active Area
2021	89,600	138,272	13,181,728	2,071,728	Area 1/2/3/4/5
2022	90,496	139,654	13,042,074	1,932,074	
2023	91,401	141,051	12,901,023	1,791,023	
2024	92,315	142,461	12,758,562	3,708,562	Area 6 PH 1
2025	93,238	143,886	12,614,676	3,564,676	
2026	94,171	145,325	12,469,351	3,419,351	
2027	95,112	146,778	12,322,573	3,272,573	
2028	96,063	148,246	12,174,327	3,124,327	
2029	97,024	149,728	12,024,599	2,974,599	
2030	97,994	151,226	11,873,373	2,823,373	
2031	98,974	152,738	11,720,635	2,670,635	
2032	99,964	154,265	11,566,370	2,516,370	
2033	100,964	155,808	11,410,562	2,360,562	
2034	101,973	157,366	11,253,196	2,203,196	
2035	102,993	158,940	11,094,256	2,044,256	
2036	104,023	160,529	10,933,727	1,883,727	
2037	105,063	162,134	10,771,593	1,721,593	
2038	106,114	163,756	10,607,837	1,557,837	
2039	107,175	165,393	10,442,444	1,392,444	
2040	108,247	167,047	10,275,397	1,225,397	
2041	109,329	168,718	10,106,679	1,056,679	
2042	110,422	170,405	9,936,275	886,275	
2043	111,527	172,109	9,764,166	714,166	
2044	112,642	173,830	9,590,336	540,336	
2045	113,768	175,568	9,414,767	364,767	
2046	114,906	177,324	9,237,444	187,444	
2047	116,055	179,097	9,058,346	8,346	
2048	117,216	180,888	8,877,458	4,007,458	Area 6 PH 2
2049	118,388	182,697	8,694,761	3,824,761	
2050	119,572	184,524	8,510,237	3,640,237	
2051	120,767	186,369	8,323,868	3,453,868	
2052	121,975	188,233	8,135,635	3,265,635	
2053	123,195	190,115	7,945,520	3,075,520	
2054	124,427	192,016	7,753,503	2,883,503	
2055	125,671	193,937	7,559,567	2,689,567	
2056	126,928	195,876	7,363,691	2,493,691	
2057	128,197	197,835	7,165,856	2,295,856	
2058	129,479	199,813	6,966,043	2,096,043	
2059	130,774	201,811	6,764,232	1,894,232	
2060	132,081	203,829	6,560,403	1,690,403	
2061	133,402	205,868	6,354,535	1,484,535	
2062	134,736	207,926	6,146,609	1,276,609	
2063	136,084	210,006	5,936,603	1,066,603	
2064	137,444	212,106	5,724,498	854,498	
2065	138,819	214,227	5,510,271	640,271	

2066	140,207	216,369	5,293,902	423,902	
2067	141,609	218,533	5,075,370	205,370	
2068	143,025	220,718	4,854,652	3,884,652	Area 7
2069	144,455	222,925	4,631,727	3,661,727	
2070	145,900	225,154	4,406,572	3,436,572	
2071	147,359	227,406	4,179,166	3,209,166	
2072	148,833	229,680	3,949,487	2,979,487	
2073	150,321	231,977	3,717,510	2,747,510	
2074	151,824	234,297	3,483,213	2,513,213	
2075	153,342	236,639	3,246,574	2,276,574	
2076	154,876	239,006	3,007,568	2,037,568	
2077	156,425	241,396	2,766,172	1,796,172	
2078	157,989	243,810	2,522,362	1,552,362	
2079	159,569	246,248	2,276,114	1,306,114	
2080	161,164	248,710	2,027,404	1,057,404	
2081	162,776	251,198	1,776,206	806,206	
2082	164,404	253,710	1,522,497	552,497	
2083	166,048	256,247	1,266,250	296,250	
2084	167,708	258,809	1,007,441	37,441	
2085	169,385	261,397	746,044	746,044	Area 8
2086	171,079	264,011	482,032	482,032	
2087	172,790	266,651	215,381	215,381	
2088	174,518	269,318	-53,937	-53,937	Life Depleted October 2088
2089	176,263	272,011	-325,948	-325,948	
2090	178,026	274,731	-600,679	-600,679	

ATTACHMENT 3
Northeast Nebraska Solid Waste Coalition
Remaining Airspace Projections w/ Expansion - 20% Waste Increase

4/9/2021
 by:PRF
 ck:LAR

MSW/Industrial Tonnage (Assumed) =	134,400	tons	Remaining Area Capacity	
Predicted Future Generation Growth =	1.00%		Area 1/2/3/4/5	2,210,000
Airspace Utilization Factor (AUF) =	1,296	lb/cy	Area 6 PH 1	2,060,000
Ultimate Capacity without final cover and protective soil layer (waste + soil) =	17,530,000	cy	Area 6 PH 2	4,180,000
			Area 7	3,900,000
			Area 8	970,000
			Total	13,320,000

Year	Total Tonnage	Waste Annual MSW/Industrial Airspace Consumed (cy)	Waste Remaining Expansion Ultimate Capacity (cy)	Year End Remaining Cell Capacity	Active Area
2021	134,400	207,407	13,112,593	2,002,593	Area 1/2/3/4/5
2022	135,744	209,481	12,903,111	1,793,111	
2023	137,101	211,576	12,691,535	1,581,535	
2024	138,472	213,692	12,477,843	3,427,843	Area 6 PH 1
2025	139,857	215,829	12,262,014	3,212,014	
2026	141,256	217,987	12,044,027	2,994,027	
2027	142,668	220,167	11,823,859	2,773,859	
2028	144,095	222,369	11,601,491	2,551,491	
2029	145,536	224,593	11,376,898	2,326,898	
2030	146,991	226,838	11,150,060	2,100,060	
2031	148,461	229,107	10,920,953	1,870,953	
2032	149,946	231,398	10,689,555	1,639,555	
2033	151,445	233,712	10,455,843	1,405,843	
2034	152,960	236,049	10,219,794	1,169,794	
2035	154,489	238,409	9,981,385	931,385	
2036	156,034	240,794	9,740,591	690,591	
2037	157,595	243,201	9,497,390	447,390	
2038	159,171	245,634	9,251,756	201,756	
2039	160,762	248,090	9,003,666	4,133,666	Area 6 PH 2
2040	162,370	250,571	8,753,095	3,883,095	
2041	163,994	253,076	8,500,019	3,630,019	
2042	165,633	255,607	8,244,412	3,374,412	
2043	167,290	258,163	7,986,249	3,116,249	
2044	168,963	260,745	7,725,504	2,855,504	
2045	170,652	263,352	7,462,151	2,592,151	
2046	172,359	265,986	7,196,165	2,326,165	
2047	174,082	268,646	6,927,520	2,057,520	
2048	175,823	271,332	6,656,187	1,786,187	
2049	177,582	274,046	6,382,142	1,512,142	
2050	179,357	276,786	6,105,356	1,235,356	
2051	181,151	279,554	5,825,802	955,802	
2052	182,962	282,349	5,543,453	673,453	
2053	184,792	285,173	5,258,280	388,280	
2054	186,640	288,025	4,970,255	100,255	
2055	188,506	290,905	4,679,350	3,709,350	Area 7
2056	190,391	293,814	4,385,536	3,415,536	
2057	192,295	296,752	4,088,784	3,118,784	
2058	194,218	299,720	3,789,065	2,819,065	
2059	196,160	302,717	3,486,348	2,516,348	
2060	198,122	305,744	3,180,604	2,210,604	
2061	200,103	308,801	2,871,803	1,901,803	
2062	202,104	311,889	2,559,913	1,589,913	
2063	204,125	315,008	2,244,905	1,274,905	
2064	206,167	318,158	1,926,747	956,747	
2065	208,228	321,340	1,605,407	635,407	

2066	210,311	324,553	1,280,853	310,853	
2067	212,414	327,799	953,055	953,055	Area 8
2068	214,538	331,077	621,978	621,978	
2069	216,683	334,388	287,590	287,590	
2070	218,850	337,732	-50,141	-50,141	Life Depleted November 2070
2071	221,039	341,109	-391,250	-391,250	
2072	223,249	344,520	-735,770	-735,770	

ATTACHMENT 4
Northeast Nebraska Solid Waste Coalition
Expansion Soil Balance Calculations

4/9/2021
 by:PRF
 ck:LAR

Available Soil		
NW Borrow Soil Volume (from surface)	309,481	CY
Soil Volume to be Excavated from Area 6 thru 8	1,839,091	CY
Total Available Soil =	2,148,571	CY

Net Fill Volume Total - cy

Soil Required		
Remaining Fill Volume (Areas 1-8)	13,320,000	CY
Remaining Daily and Intermediate Cover to be Placed (4:1 waste:soil ratio)	2,648,111.33	CY
Final Cover Volume (includes sand layer)	576,145	CY
Final Cover Placed to Date	0	CY
Sand Layer Final Cover Volume (to be imported)	-82,306	CY
Protective Cover Remaining to be Placed (Area 6 thru Area 8)	117,939	CY
Total Soil Required =	3,259,889	CY

Total Soil Available = 2,148,571 CY
 Total Soil Required for life of Landfill = 3,259,889 CY
Total Site Soil Balance = (1,111,318) CY

ATTACHMENT 5
Northeast Nebraska Solid Waste Coalition
Remaining Soil Projections w/ Expansion - No Waste Change

4/9/2021
 by:PRF
 ck:LAR

MSW/Industrial Tonnage (Assumed) = 112,000 tons
 Predicted Future Generation Growth = 1.00%
 Airspace Utilization Factor (AUF) = 1,296 lb/cy

		² Remaining Protective Cover Soil (CY)		Remaining Available Soil (CY)	
³ Remaining Final Cover Soil (CY)		Area 1/2/3/4/5	0	NW Borrow	309,481
Area 1-6 PH1	125,862	Area 6 PH 1	22,514	Area 1/2/3/4/5	0
Area 6 PH 2	110,473	Area 6 PH 2	46,276	Area 6 PH 1	187,578
Area 7	164,832	Area 7	33,830	Area 6 PH 2	788,070
Area 8	92,671	Area 8	15,319	Area 7	764,895
Total	493,839	Total	117,939	Area 8	98,547
				Total	2,148,571

1. Required daily and intermediate cover assumes a 4:1 waste:soil ratio.
2. Protective cover to be placed at the time of construction of the new Area. Reference remaining airspace projection calculations for Area construction timing details.
3. Final cover placement is sequenced to match construction of the new Area to maximize the usage of excavated soils.

Year	Total Tonnage	Waste Annual MSW/Industrial Airspace Consumed (CY)	Daily and Int. Cover Placed (CY) ¹	Final Cover Placed (CY) ³	Protective Cover Placed (CY) ²	Ultimate Remaining Available Soil	Year End Remaining Available Soil	Borrow Source
2021	112,000	172,840	34,362			2,114,209	153,216	Area 6 PH 1 Excavation
2022	113,120	174,568	34,705			2,079,504	118,511	
2023	114,251	176,314	35,052		22,514	2,021,937	60,944	Stockpile Remaining Area 6 PH 1 Excavation at NW Borrow
2024	115,394	178,077	35,403			1,986,534	335,022	NW Borrow
2025	116,548	179,857	35,757			1,950,777	299,265	
2026	117,713	181,656	36,115			1,914,663	263,150	
2027	118,890	183,473	36,476			1,878,187	226,674	
2028	120,079	185,307	36,840			1,841,347	189,834	
2029	121,280	187,160	37,209			1,804,138	152,625	
2030	122,493	189,032	37,581			1,766,557	115,044	
2031	123,718	190,922	37,957			1,728,600	77,087	
2032	124,955	192,832	38,336			1,690,264	38,751	
2033	126,204	194,760	38,720			1,651,544	788,102	Area 6 PH 2 Excavation
2034	127,466	196,707	39,107			1,612,437	748,995	
2035	128,741	198,675	39,498			1,572,939	709,497	
2036	130,029	200,661	39,893			1,533,047	669,604	
2037	131,329	202,668	40,292			1,492,755	629,312	
2038	132,642	204,695	40,695			1,452,060	588,618	

2039	133,969	206,742	41,102			1,410,958	547,516	
2040	135,308	208,809	41,513			1,369,446	506,003	
2041	136,661	210,897	41,928			1,327,518	464,075	
2042	138,028	213,006	42,347	125,862	46,276	1,113,033	249,590	Stockpile Remaining Area 6 PH 2 Excavation Off-Site
2043	139,408	215,136	42,771			1,070,262	722,125	Area 7 Excavation
2044	140,802	217,287	43,198			1,027,064	678,926	
2045	142,210	219,460	43,630			983,433	635,296	
2046	143,632	221,655	44,067			939,367	591,230	
2047	145,069	223,871	44,507			894,860	546,722	
2048	146,519	226,110	44,952			849,907	501,770	
2049	147,985	228,371	45,402			804,505	456,368	
2050	149,464	230,655	45,856			758,650	410,512	
2051	150,959	232,962	46,314			712,335	364,198	
2052	152,469	235,291	46,778			665,558	317,420	
2053	153,993	237,644	47,245			618,312	270,175	
2054	155,533	240,021	47,718			570,594	222,457	
2055	157,089	242,421	48,195			522,399	174,262	
2056	158,660	244,845	48,677			473,723	125,585	
2057	160,246	247,293	49,164			424,559	76,422	
2058	161,849	249,766	49,655			374,904	26,766	
2059	163,467	252,264	50,152			324,752	226,205	Area 6 PH 2 Excavation Stockpile
2060	165,102	254,787	50,653	110,473	33,830	129,795	31,248	
2061	166,753	257,334	51,160			78,635	78,635	Area 8 Excavation
2062	168,420	259,908	51,672			26,964	26,964	
2063	170,104	262,507	52,188			-25,225	-25,225	Soil Depleted July 2063
2064	171,806	265,132	52,710			-77,935	-77,935	
2065	173,524	267,783	53,237			-131,172	-131,172	
2066	175,259	270,461	53,770			-184,941	-184,941	
2067	177,011	273,166	54,307			-239,249	-239,249	
2068	178,782	275,897	54,850			-294,099	-294,099	
2069	180,569	278,656	55,399			-349,498	-349,498	
2070	182,375	281,443	55,953			-405,451	-405,451	
2071	184,199	284,257	56,512			-461,963	-461,963	
2072	186,041	287,100	57,078			-519,041	-519,041	
2073	187,901	289,971	57,648			-576,689	-576,689	
2074	189,780	292,871	58,225	164,832	15,319	-815,065	-815,065	
2075	191,678	295,799	58,807			-873,872	-873,872	
2076	193,595	298,757	59,395			-933,267	-933,267	
2077	195,531	301,745	59,989			-993,256	-993,256	
2078	197,486	304,762	25,391	92,671		-1,111,318	-1,111,318	Life Depleted May 2078

ATTACHMENT 6
Northeast Nebraska Solid Waste Coalition
Remaining Soil Projections w/ Expansion - 20% Waste Decrease

4/9/2021
 by:PRF
 ck:LAR

MSW/Industrial Tonnage (Assumed) = 89,600 tons
 Predicted Future Generation Growth = 1.00%
 Airspace Utilization Factor (AUF) = 1,296 lb/cy

		² Remaining Protective Cover Soil (CY)		Remaining Available Soil	
³ Remaining Final Cover Soil (CY)		Area 1/2/3/4/5	0	NW Borrow	309,481
Area 1-6 PH1	125,862	Area 6 PH 1	22,514	Area 1/2/3/4/5	0
Area 6 PH 2	110,473	Area 6 PH 2	46,276	Area 6 PH 1	187,578
Area 7	164,832	Area 7	33,830	Area 6 PH 2	788,070
Area 8	92,671	Area 8	15,319	Area 7	764,895
Total	493,839	Total	117,939	Area 8	98,547
				Total	2,148,571

1. Required daily and intermediate cover assumes a 4:1 waste:soil ratio.
2. Protective cover to be placed at the time of construction of the new Area. Reference remaining airspace projection calculations for Area construction timing details.
3. Final cover placement is sequenced to match construction of the new Area to maximize the usage of excavated soils.

Year	Total Tonnage	Waste Annual MSW/Industrial Airspace Consumed (CY)	Daily and Int. Cover Placed (CY) ¹	Final Cover Placed (CY) ³	Protective Cover Placed (CY) ²	Ultimate Remaining Available Soil	Year End Remaining Available Soil	Borrow Source
2021	89,600	138,272	27,489			2,121,082	160,088	Area 6 PH 1 Excavation
2022	90,496	139,654	27,764			2,093,317	132,324	
2023	91,401	141,051	28,042		22,514	2,042,761	81,768	Stockpile Remaining Area 6 PH 1 Excavation at NW Borrow
2024	92,315	142,461	28,322			2,014,439	362,926	NW Borrow
2025	93,238	143,886	28,606			1,985,833	334,320	
2026	94,171	145,325	28,892			1,956,942	305,429	
2027	95,112	146,778	29,181			1,927,761	276,248	
2028	96,063	148,246	29,472			1,898,289	246,776	
2029	97,024	149,728	29,767			1,868,522	217,009	
2030	97,994	151,226	30,065			1,838,457	186,944	
2031	98,974	152,738	30,365			1,808,092	156,579	
2032	99,964	154,265	30,669			1,777,422	125,910	
2033	100,964	155,808	30,976			1,746,447	94,934	
2034	101,973	157,366	31,285			1,715,161	63,649	
2035	102,993	158,940	31,598			1,683,563	32,050	
2036	104,023	160,529	31,914			1,651,649	788,206	Area 6 PH 2 Excavation
2037	105,063	162,134	32,233			1,619,415	755,973	
2038	106,114	163,756	32,556			1,586,859	723,417	

2039	107,175	165,393	32,881			1,553,978	690,536	
2040	108,247	167,047	33,210			1,520,768	657,325	
2041	109,329	168,718	33,542			1,487,226	623,783	
2042	110,422	170,405	33,878			1,453,348	589,905	
2043	111,527	172,109	34,216			1,419,131	555,689	
2044	112,642	173,830	34,559			1,384,573	521,130	
2045	113,768	175,568	34,904			1,349,669	486,226	
2046	114,906	177,324	35,253			1,314,415	450,973	
2047	116,055	179,097	35,606	125,862	46,276	1,106,671	243,229	Stockpile Remaining Area 6 PH 2 Excavation Off-Site
2048	117,216	180,888	35,962			1,070,710	728,933	Area 7 Excavation
2049	118,388	182,697	36,321			1,034,388	692,612	
2050	119,572	184,524	36,685			997,703	655,927	
2051	120,767	186,369	37,052			960,652	618,876	
2052	121,975	188,233	37,422			923,230	581,454	
2053	123,195	190,115	37,796			885,434	543,657	
2054	124,427	192,016	38,174			847,259	505,483	
2055	125,671	193,937	38,556			808,703	466,927	
2056	126,928	195,876	38,942			769,762	427,986	
2057	128,197	197,835	39,331			730,431	388,655	
2058	129,479	199,813	39,724			690,707	348,930	
2059	130,774	201,811	40,122			650,585	308,809	
2060	132,081	203,829	40,523			610,062	268,286	
2061	133,402	205,868	40,928			569,134	227,358	
2062	134,736	207,926	41,337			527,797	186,021	
2063	136,084	210,006	41,751			486,047	144,270	
2064	137,444	212,106	42,168			443,878	102,102	
2065	138,819	214,227	42,590			401,289	59,513	
2066	140,207	216,369	43,016			358,273	16,497	
2067	141,609	218,533	43,446	110,473	33,830	170,524	71,977	Area 6 PH 2 Excavation Stockpile
2068	143,025	220,718	43,880			126,644	28,097	
2069	144,455	222,925	44,319			82,325	82,325	Area 8 Excavation
2070	145,900	225,154	44,762			37,562	37,562	
2071	147,359	227,406	45,210			-7,648	-7,648	Soil Depleted November 2071
2072	148,833	229,680	45,662			-53,310	-53,310	
2073	150,321	231,977	46,119			-99,428	-99,428	
2074	151,824	234,297	46,580			-146,008	-146,008	
2075	153,342	236,639	47,046			-193,054	-193,054	
2076	154,876	239,006	47,516			-240,570	-240,570	
2077	156,425	241,396	47,991			-288,561	-288,561	
2078	157,989	243,810	48,471			-337,032	-337,032	
2079	159,569	246,248	48,956			-385,988	-385,988	
2080	161,164	248,710	49,445			-435,433	-435,433	
2081	162,776	251,198	49,940			-485,373	-485,373	
2082	164,404	253,710	50,439			-535,813	-535,813	
2083	166,048	256,247	50,944			-586,756	-586,756	

2084	167,708	258,809	51,453	164,832	15,319	-818,360	-818,360
2085	169,385	261,397	51,968			-870,328	-870,328
2086	171,079	264,011	52,487			-922,815	-922,815
2087	172,790	266,651	53,012			-975,827	-975,827
2088	174,518	269,318	42,819	92,671		-1,111,318	-1,111,318

Life Depleted October 2088

ATTACHMENT 7
Northeast Nebraska Solid Waste Coalition
Remaining Soil Projections w/ Expansion - 20% Waste Increase

4/8/2021
 by:PRF
 ck:LAR

MSW/Industrial Tonnage (Assumed) = 134,400 tons
 Predicted Future Generation Growth = 1.00%
 Airspace Utilization Factor (AUF) = 1,296 lb/cy

		² Remaining Protective Cover Soil (CY)		Remaining Available Soil	
³ Remaining Final Cover Soil (CY)		Area 1/2/3/4/5	0	NW Borrow	309,481
Area 1-6 PH1	125,862	Area 6 PH 1	22,514	Area 1/2/3/4/5	0
Area 6 PH 2	110,473	Area 6 PH 2	46,276	Area 6 PH 1	187,578
Area 7	164,832	Area 7	33,830	Area 6 PH 2	788,070
Area 8	92,671	Area 8	15,319	Area 7	764,895
Total	493,839	Total	117,939	Area 8	98,547
				Total	2,148,571

1. Required daily and intermediate cover assumes a 4:1 waste:soil ratio.
2. Protective cover to be placed at the time of construction of the new Area. Reference remaining airspace projection calculations for Area construction timing details.
3. Final cover placement is sequenced to match construction of the new Area to maximize the usage of excavated soils.

Year	Total Tonnage	Waste Annual MSW/Industrial Airspace Consumed (cy)	Daily and Int. Cover Placed (CY) ¹	Final Cover Placed (CY) ³	Protective Cover Placed (CY) ²	Ultimate Remaining Available Soil	Year End Remaining Available Soil	Borrow Source
2021	134,400	207,407	41,234			2,107,337	146,344	Area 6 PH 1 Excavation
2022	135,744	209,481	41,646			2,065,691	104,697	
2023	137,101	211,576	42,063		22,514	2,001,113	40,120	Stockpile Remaining Area 6 PH 1 Excavation at NW Borrow
2024	138,472	213,692	42,484			1,958,630	307,117	NW Borrow
2025	139,857	215,829	42,908			1,915,721	264,209	
2026	141,256	217,987	43,337			1,872,384	220,871	
2027	142,668	220,167	43,771			1,828,613	177,100	
2028	144,095	222,369	44,209			1,784,405	132,892	
2029	145,536	224,593	44,651			1,739,754	88,241	
2030	146,991	226,838	45,097			1,694,657	43,144	
2031	148,461	229,107	45,548			1,649,109	785,667	Area 6 PH 2 Excavation
2032	149,946	231,398	46,004			1,603,105	739,663	
2033	151,445	233,712	46,464			1,556,642	693,199	
2034	152,960	236,049	46,928			1,509,714	646,271	
2035	154,489	238,409	47,398			1,462,316	598,874	
2036	156,034	240,794	47,871			1,414,445	551,002	
2037	157,595	243,201	48,350			1,366,094	502,652	
2038	159,171	245,634	48,834	125,862	46,276	1,145,123	281,680	Stockpile Remaining Area 6 PH 2 Excavation Off-Site

2039	160,762	248,090	49,322			1,095,801	715,573	Area 7 Excavation
2040	162,370	250,571	49,815			1,045,985	665,758	
2041	163,994	253,076	50,313			995,672	615,445	
2042	165,633	255,607	50,817			944,855	564,628	
2043	167,290	258,163	51,325			893,531	513,303	
2044	168,963	260,745	51,838			841,693	461,465	
2045	170,652	263,352	52,356			789,336	409,109	
2046	172,359	265,986	52,880			736,456	356,229	
2047	174,082	268,646	53,409			683,048	302,820	
2048	175,823	271,332	53,943			629,105	248,878	
2049	177,582	274,046	54,482			574,623	194,395	
2050	179,357	276,786	55,027			519,596	139,368	
2051	181,151	279,554	55,577			464,018	83,791	
2052	182,962	282,349	56,133			407,885	27,658	
2053	184,792	285,173	56,694			351,191	252,644	Area 6 PH 2 Excavation Stockpile
2054	186,640	288,025	57,261	110,473	33,830	149,627	51,079	
2055	188,506	290,905	57,834			91,793	91,793	Area 8 Excavation
2056	190,391	293,814	58,412			33,380	33,380	
2057	192,295	296,752	58,996			-25,616	-25,616	Soil Depleted July 2057
2058	194,218	299,720	59,586			-85,203	-85,203	
2059	196,160	302,717	60,182			-145,385	-145,385	
2060	198,122	305,744	60,784			-206,169	-206,169	
2061	200,103	308,801	61,392			-267,561	-267,561	
2062	202,104	311,889	62,006			-329,567	-329,567	
2063	204,125	315,008	62,626			-392,193	-392,193	
2064	206,167	318,158	63,252			-455,445	-455,445	
2065	208,228	321,340	63,885			-519,329	-519,329	
2066	210,311	324,553	64,524	164,832	15,319	-764,004	-764,004	
2067	212,414	327,799	65,169			-829,173	-829,173	
2068	214,538	331,077	65,820			-894,993	-894,993	
2069	216,683	334,388	66,479			-961,472	-961,472	
2070	218,850	337,732	57,175	92,671		-1,111,318	-1,111,318	Life Depleted November 2070

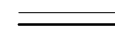


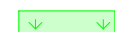


APPENDIX H – AREA CLOSURE SEQUENCING FIGURES



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  INTERMEDIATE COVER CONTOURS
-  FINAL COVER CONTOURS
-  ROAD/INTERMEDIATE COVER
-  PROPOSED FINAL COVER CLOSURE
-  PROPOSED EXISTING FINAL COVER
-  PROPOSED ACTIVE AREA

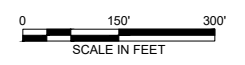
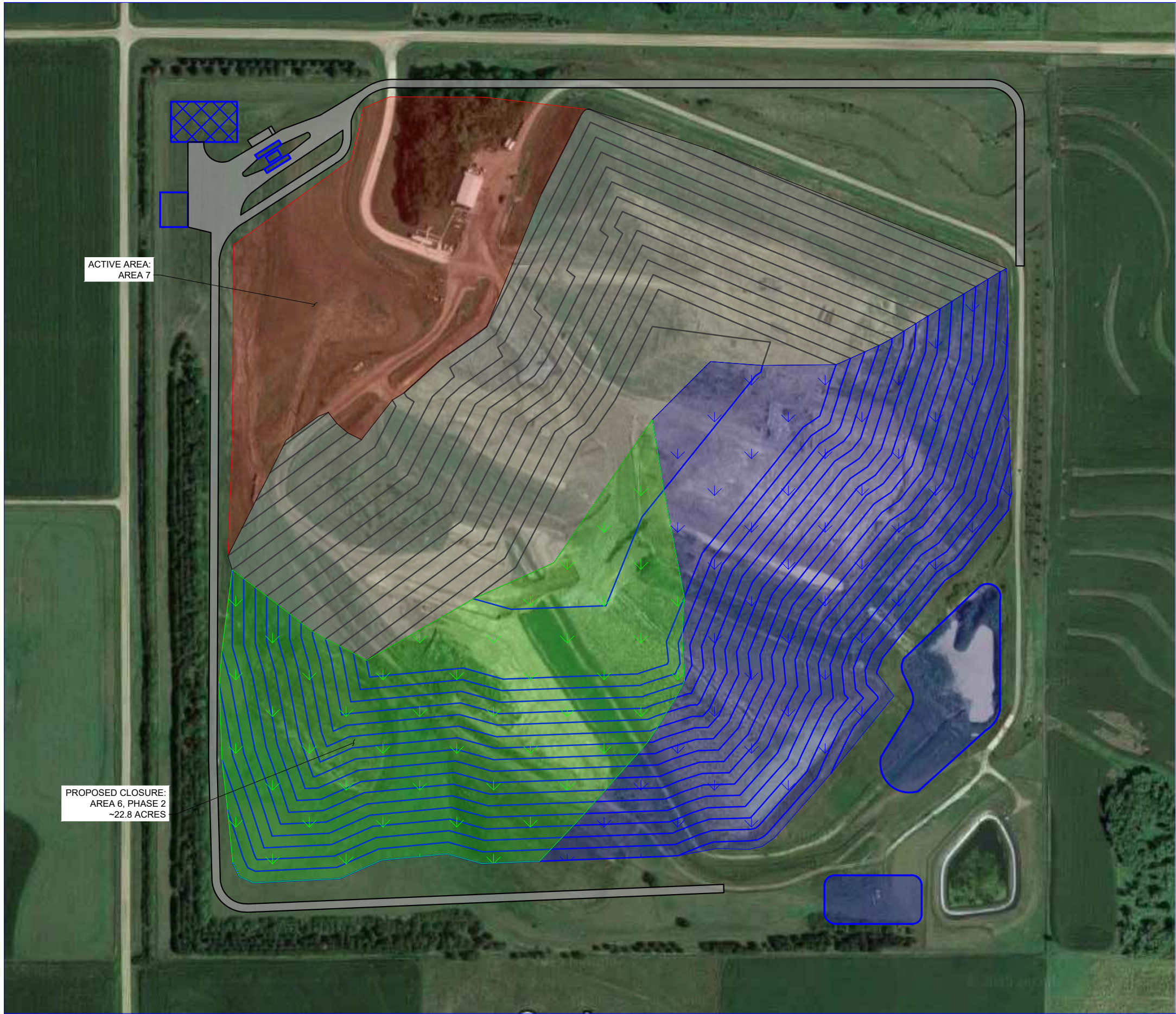








Figure 1
 NNSWC Regional Landfill
 Area Closure Sequencing
 Area 1-6, Phase 1



NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  INTERMEDIATE COVER CONTOURS
-  FINAL COVER CONTOURS
-  ROAD/INTERMEDIATE COVER
-  PROPOSED FINAL COVER CLOSURE
-  PROPOSED EXISTING FINAL COVER
-  PROPOSED ACTIVE AREA

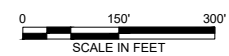
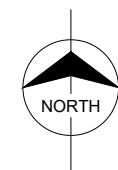
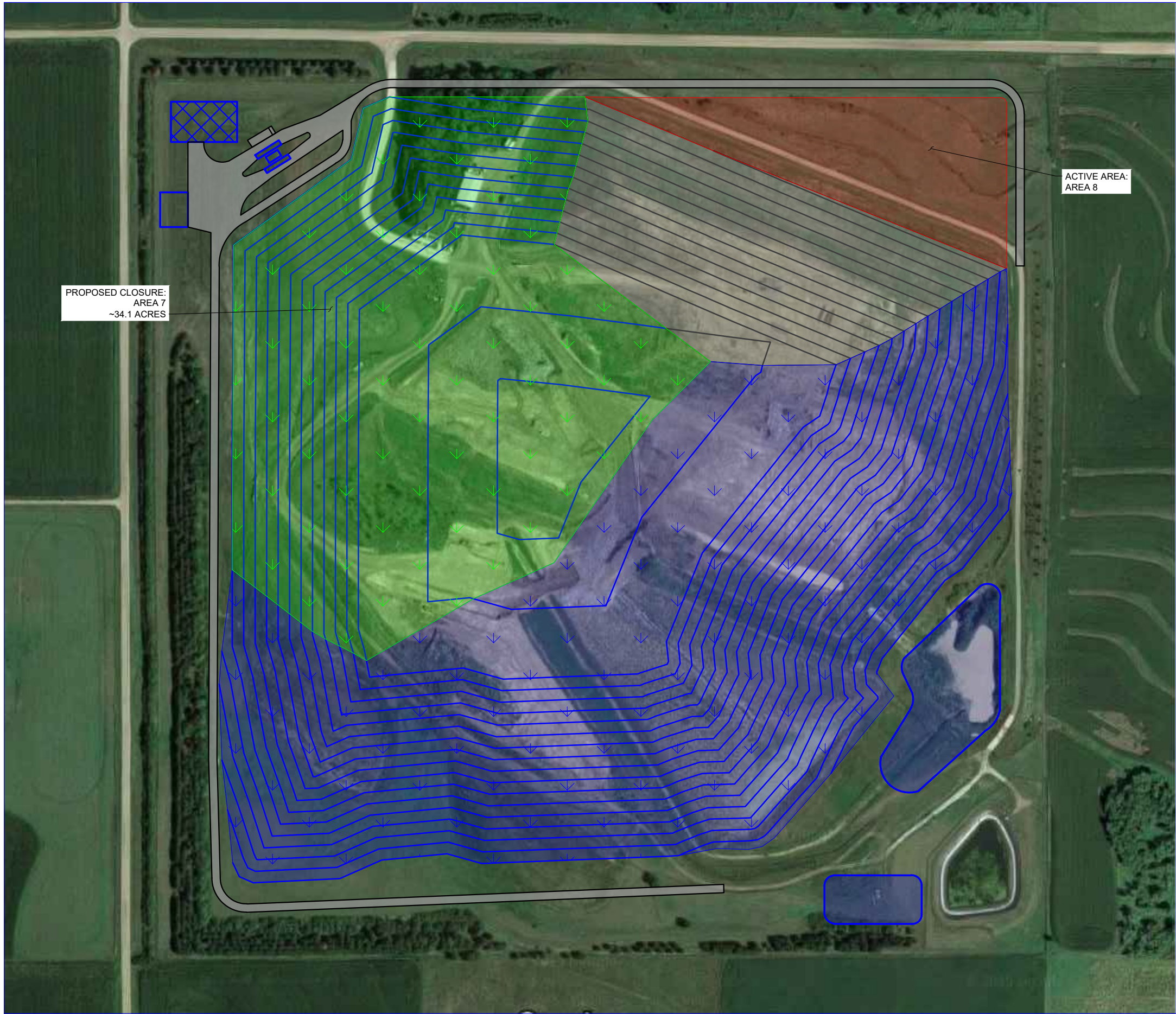


Figure 2
 NNSWC Regional Landfill
 Area Closure Sequencing
 Area 6, Phase 2






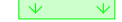


PROPOSED CLOSURE:
AREA 7
~34.1 ACRES

ACTIVE AREA:
AREA 8

NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  INTERMEDIATE COVER CONTOURS
-  FINAL COVER CONTOURS
-  ROAD/INTERMEDIATE COVER
-  PROPOSED FINAL COVER CLOSURE
-  PROPOSED EXISTING FINAL COVER
-  PROPOSED ACTIVE AREA

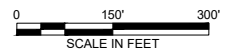
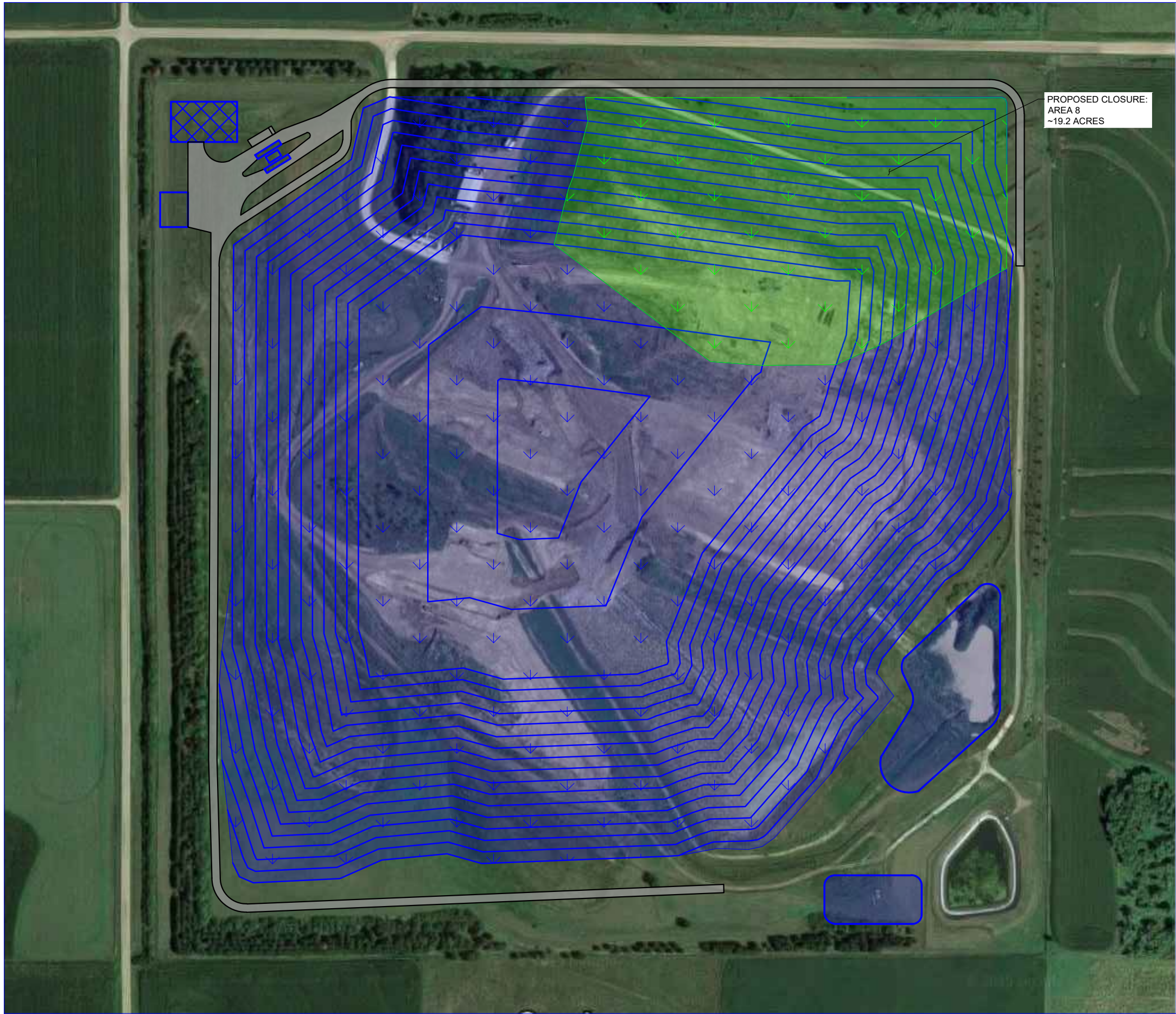


Figure 3
NNSWC Regional Landfill
Area Closure Sequencing
Area 7









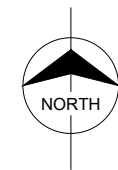
PROPOSED CLOSURE:
AREA 8
~19.2 ACRES

NOTES

1. EXISTING CONDITIONS BASED ON 2019 GOOGLE EARTH AERIAL.
2. PROPOSED CONTOURS SHOWN ARE TOP OF FINAL COVER. CONTOUR INTERVAL IS 10-FEET.

LEGEND

-  INTERMEDIATE COVER CONTOURS
-  FINAL COVER CONTOURS
-  ROAD/INTERMEDIATE COVER
-  PROPOSED FINAL COVER CLOSURE
-  PROPOSED EXISTING FINAL COVER
-  PROPOSED ACTIVE AREA



0 150' 300'
SCALE IN FEET



Figure 4
NNSWC Regional Landfill
Area Closure Sequencing
Area 8

APPENDIX I – ALTERNATIVE LANDFILL COVER ACAP STUDY



U.S. EPA Contaminated Site Cleanup Information (CLU-IN)

[CLU-IN | Databases](#) | [Alternative Landfill Cover Project Profiles](#) | [Capillary Barrier ET Covers at Douglas County Recycling and Disposal Facility, Bennington, NE](#)

Alternative Landfill Cover Project Profiles

Capillary Barrier ET Covers at Douglas County Recycling and Disposal Facility, Bennington, NE

- [Home](#)
- [Search Profiles](#)
- [Submit a New Profile](#)
- [Update an Existing Profile](#)
- [Description of Web Site](#)
- [Disclaimer](#)
- [More Information on MSW Final Covers](#)

Last Updated: September 5, 2008

Site Information

Site Name, Location: Douglas County Recycling and Disposal Facility, Bennington, NE USA
(EPA Region 7)

Site Type: MSW landfill

Superfund Site: No

Federal Facility: No

Bottom liner: Yes Climate: Mesic climate where evapotranspiration generally exceeds precipitation. Warm summers, cool winters, and moderate rainfall. Summer rains account for 75% of annual precipitation. Average annual snowfall is 32 inches. Annual Precipitation: 28 inches

Project Information

Project Name: Capillary Barrier ET Covers at Douglas County Recycling and Disposal Facility, Bennington, NE

Project Scale: Demonstration

Demonstration Program: Alternate Cover Assessment Program (ACAP)

Project Status: Installed

Date Installed: August 2000

Project Description/ Purpose: This project compares three designs: 2 capillary barrier ET covers and 1 RCRA D (composite barrier) cover. The purpose of this project is to determine whether the percolation rates for the capillary barrier ET covers are either less than 0.12 in/year or the percolation rate for the RCRA D cover. This project is included in the ACAP.

Monitoring System: Lysimeter constructed as 33-foot by 66-foot "bathtub" lined with a linear-low density polyethylene (LLDPE) geomembrane and geocomposite drainage layer. Lysimeter connected to flow monitoring system for percolation and runoff. Water content reflectometers used to measure soil moisture. Heat dissipation units to measure soil matric potential and soil temperature. Groundwater monitoring wells are also used.

There are 2 different covers at this project.

Cover 1 Information

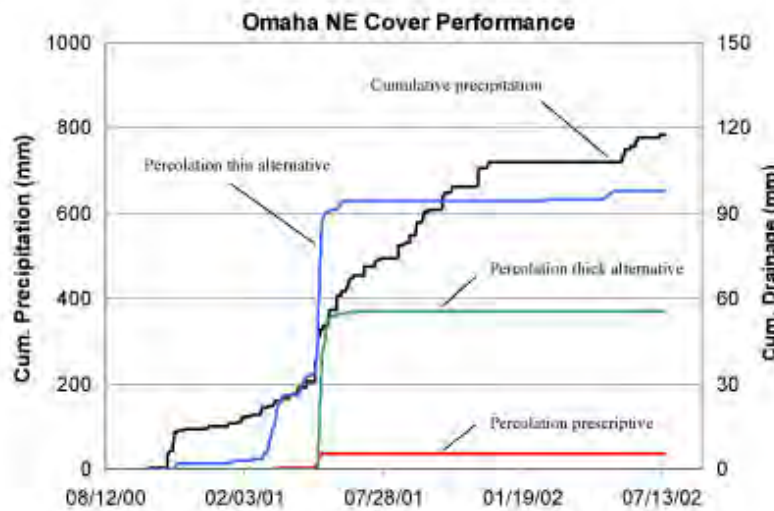
Cover Type: Capillary Barrier Evapotranspiration
Cover Number: 1
Design of Cover: From surface downward: 6 inches of topsoil, 18 inches of moderately compacted silty clay, and 6 inches of sand
Types of Vegetation: Mixture of local warm and cool season grasses
Cover Installation: Topsoil and silty clay obtained from nearby borrow area. Soil lifts were compacted to 85% per standard Proctor.
Drainage Layer: No
Biointrusion Layer: No
Gas Collection Layer: No
Water Balance Model: UNSAT-H
Modeling Results: Annual percolation over a 7-year period was estimated at 0.008 in/year. Annual percolation over a 7-year period for the RCRA cover was 0.0006 in/year.

Per NDEE required permeability no greater than 1×10^{-5} cm/s

6.44×10^{-10} cm/s

Performance Data Available: Yes

Summary and Description of Performance Data: The figure below shows the actual performance results for this cover during the period from October 2000 to July 2002. The percolation (infiltration) during the first year shown was 100 mm/yr, relative to precipitation of 600 mm/yr. The infiltration during the second year shown was negligible (10 months), relative to precipitation of 200 mm/yr. This figure was excerpted from the following source document, Alternative Cover Assessment Program, 2002 Annual Report, Desert Research Institute, available at <http://www.acap.dri.edu/>.



3.17×10^{-7} cm/s

Figure 29. Cover performance at Omaha NE.

Comments: Below the cover is a root barrier zone, a lightweight non-woven geotextile studded with nodules that slowly release trifluralin to inhibit and redirect root growth rather than killing it. The following items will require regulatory approval: 1) an equivalence criterion of 3.0 mm/yr or the flux recorded on a prescriptive test pad, whichever is greater; 2) a 2-year test period; 3) permission to irrigate with well water or leachate.

Reference(s) Bolen, M.M. and others. 2001. Alternative Cover Assessment Program: Phase II Report. University of Wisconsin-Madison. Geo Engineering Report 01-10. Madison, WI. September.

Personal communication between Danielle Gratton, Tetra Tech EM Inc., and Bill Albright, Desert Research Institute. February 14, 2002.

HDR Engineering, Inc., and Daniel B. Stephens & Associates. 2000. Alternative Cover Design Report for Waste Management of Nebraska, Inc., Douglas County Recycling and Disposal Facility, Bennington Nebraska. April.

Benson, C., and others. 2002. "Evaluation of Final Cover Performance: Field Data from the Alternative Cover Assessment Program (ACAP)." Proceedings, WM 2002 Conference, Tucson, AZ. February 24-28, 2002.

Cover 2 Information

- Cover Type:** Capillary Barrier Evapotranspiration
- Cover Number:** 2
- Design of Cover:** From surface downward: 6 inches of topsoil, 30 inches of moderately compacted silty clay, and 6 inches of sand
- Types of Vegetation:** Mixture of local warm and cool season grasses
- Cover Installation:** Topsoil and silty clay obtained from nearby borrow area. Soil lifts were compacted to 85% per standard proctor.
- Drainage Layer:** No
- Biointrusion Layer:** No
- Gas Collection Layer:** No
- Water Balance Model:** UNSAT-H
- Modeling Results:** Annual percolation over a 7-year period was estimated at 0.008 in/year. Annual percolation over a 7-year period for the RCRA cover was 0.0006 in/year.

1.74 x 10⁻⁷ cm/s

negligible

Performance Data Available: Yes

Summary and Description of Performance Data: The figure below shows the actual performance results for this cover during the period from October 2000 to July 2002. The percolation (infiltration) during the first year shown was 55 mm/yr, relative to precipitation of 600 mm/yr. The infiltration during the second year shown was negligible (10 months), relative to precipitation of 200 mm/yr. This figure was excerpted from the following source document, Alternative Cover Assessment Program, 2002 Annual Report, Desert Research Institute, available at <http://www.acap.dri.edu/>.

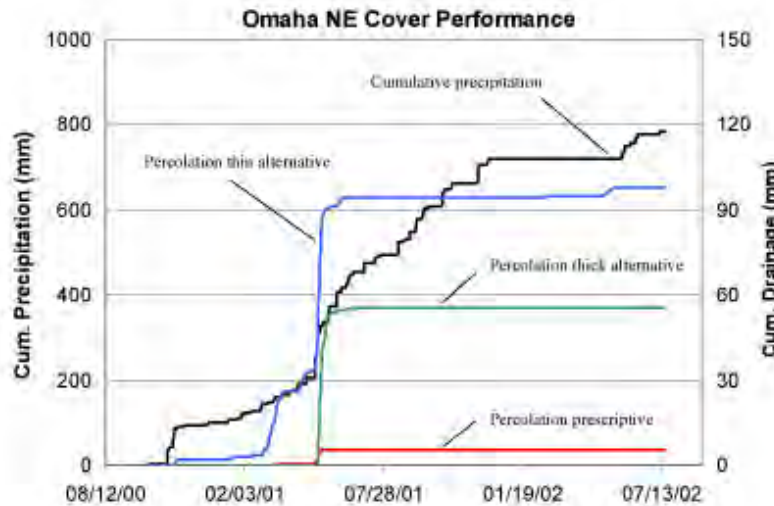


Figure 29. Cover performance at Omaha NE

Comments: Below the cover is a root barrier zone, a lightweight non-woven geotextile studded with nodules that slowly release trifluralin to inhibit and redirect root growth rather than killing it. The following items will require regulatory approval: 1) an equivalence criterion of 3.0 mm/yr or the flux recorded on a prescriptive test pad, whichever is greater; 2) a 2-year test period; 3) permission to irrigate with well water or leachate.

Reference(s) Bolen, M.M. and others. 2001. Alternative Cover Assessment Program: Phase II Report. University of Wisconsin-Madison. Geo Engineering Report 01-10. Madison, WI. September.

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HDR Engineering, Inc., and Daniel B. Stephens & Associates. 2000. Alternative Cover Design Report for Waste Management of Nebraska, Inc., Douglas County Recycling and Disposal Facility, Bennington Nebraska. April.

Benson, C., and others. 2002. "Evaluation of Final Cover Performance: Field Data from the Alternative Cover Assessment Program (ACAP)." Proceedings, WM 2002 Conference, Tucson, AZ. February 24-28, 2002.

Point(s) of Contact _____

Primary Contact

Organization: Nebraska Department of Environmental Quality
Name: NDEQ Main Office
Address: 1200 "N" Street, Suite 400 PO Box 98922 Lincoln, Nebraska 68509
Phone: 402-471-2186
Fax: 402-471-2909
Email: NDEQ.moreinfo@Nebraska.gov
Web Address: www.deq.state.ne.us/

Secondary Contact

Organization: Waste Management Inc.
Name: Ken Mertl, District Manager
Address: 14320 North 216th Street, Bennington, NE 68007
Phone: 402-478-5196
Fax: 402-478-5150
Email: Kmertl@wm.com
Web Address: www.wm.com

[RETURN TO LIST](#)

[Top of Page](#)

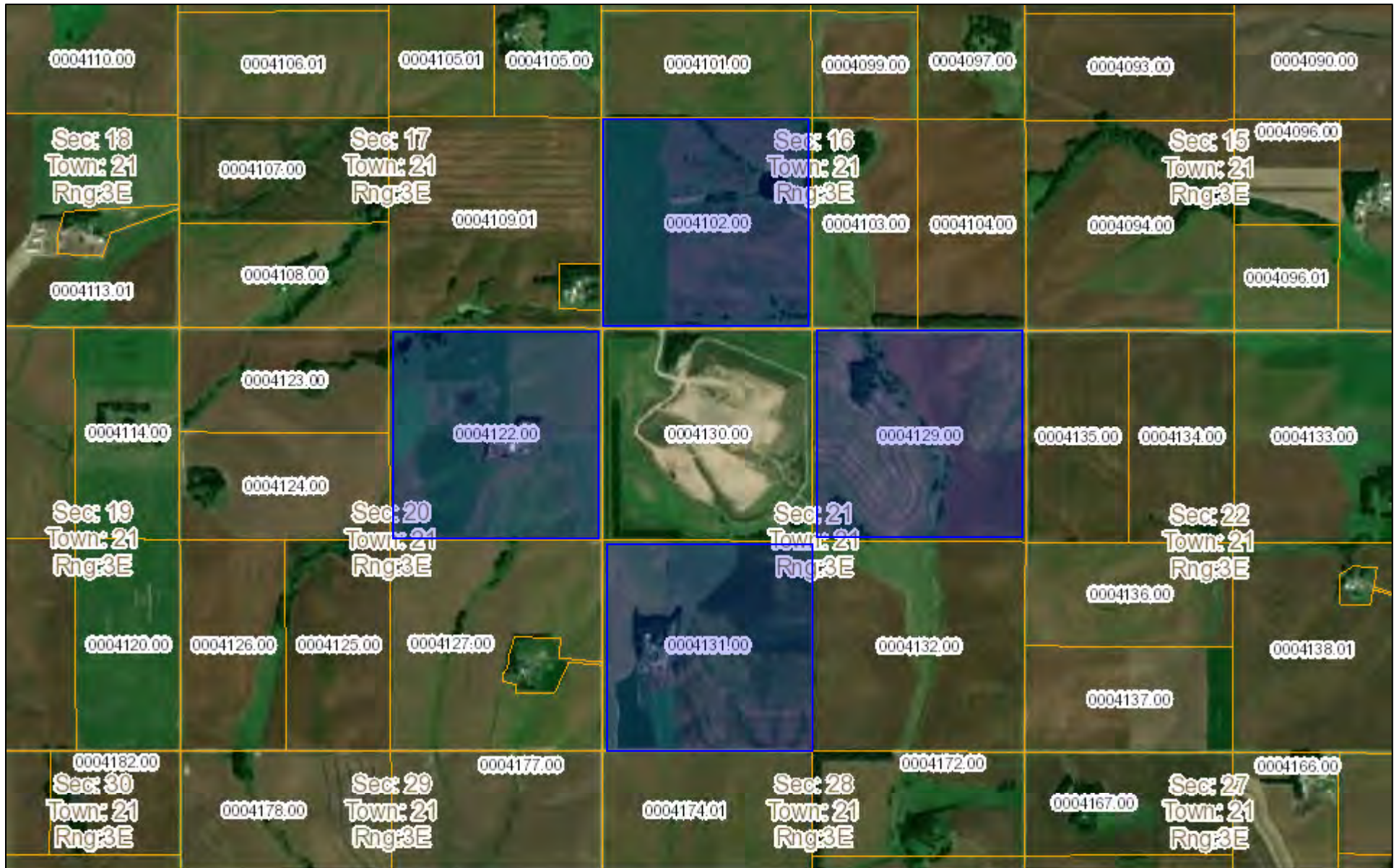
http://clu-in.org/products/altcovers/usersearch/lf_details.cfm?Project_ID=45

Last updated on Friday, September 16, 2016

Alternative Landfill Cover Project Profiles Disclaimer

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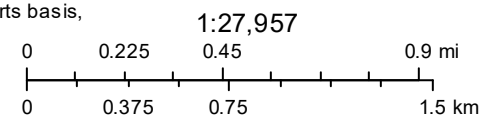
APPENDIX J – ADJACENT PROPERTY OWNERS



April 23, 2021

- Parcels
- Sections

DISCLAIMER: This map is not intended for conveyances, nor is it a legal survey. The information is presented on a best-efforts basis, and should not be relied upon for making financial, survey, legal or other commitments.



Sections

T	R	SEC	ORIG_FID
21	3E	16	364

Parcels

PID	OwnerName	PropertyAddress	OwnerAddress	LegalDesc
0004102.00	HAMERNIK, THOMAS M & CHARLES A & MICHAEL P HAMERNIK, TIC		C/O SHIRLEY J HAMERNIK P O BOX 326 CLARKSON NE 68629- 0326	16-21-3 E SW 16-21-3 MAPLE CREEK PRECINCT 160 ACRES LIFE ESTATE-SHIRLEY J HAMERNIK

Sections

T	R	SEC	ORIG_FID
21	3E	21	382

Parcels

PID	OwnerName	PropertyAddress	OwnerAddress	LegalDesc
0004129.00	DOERNEMANN, JARETT LEE & KATHLEEN A, JTWROS, ETAL	57270 825 RD HOWELLS	P O BOX 221 CLARKSON NE 68629	21-21-3 E NE 21-21-3 MAPLE CREEK PRECINCT 160 ACRES UND 1/2 INT=WELLS CREEK FARM,LLC

Sections

T	R	SEC	ORIG_FID
21	3E	21	382

Parcels

PID	OwnerName	PropertyAddress	OwnerAddress	LegalDesc
0004131.00	VRBICKY, THOMAS	57217 824 RD CLARKSON	57217 824 RD CLARKSON NE 68629-2970	21-21-3 E SW 21-21-3 MAPLE CREEK PRECINCT 160 ACRES

Sections

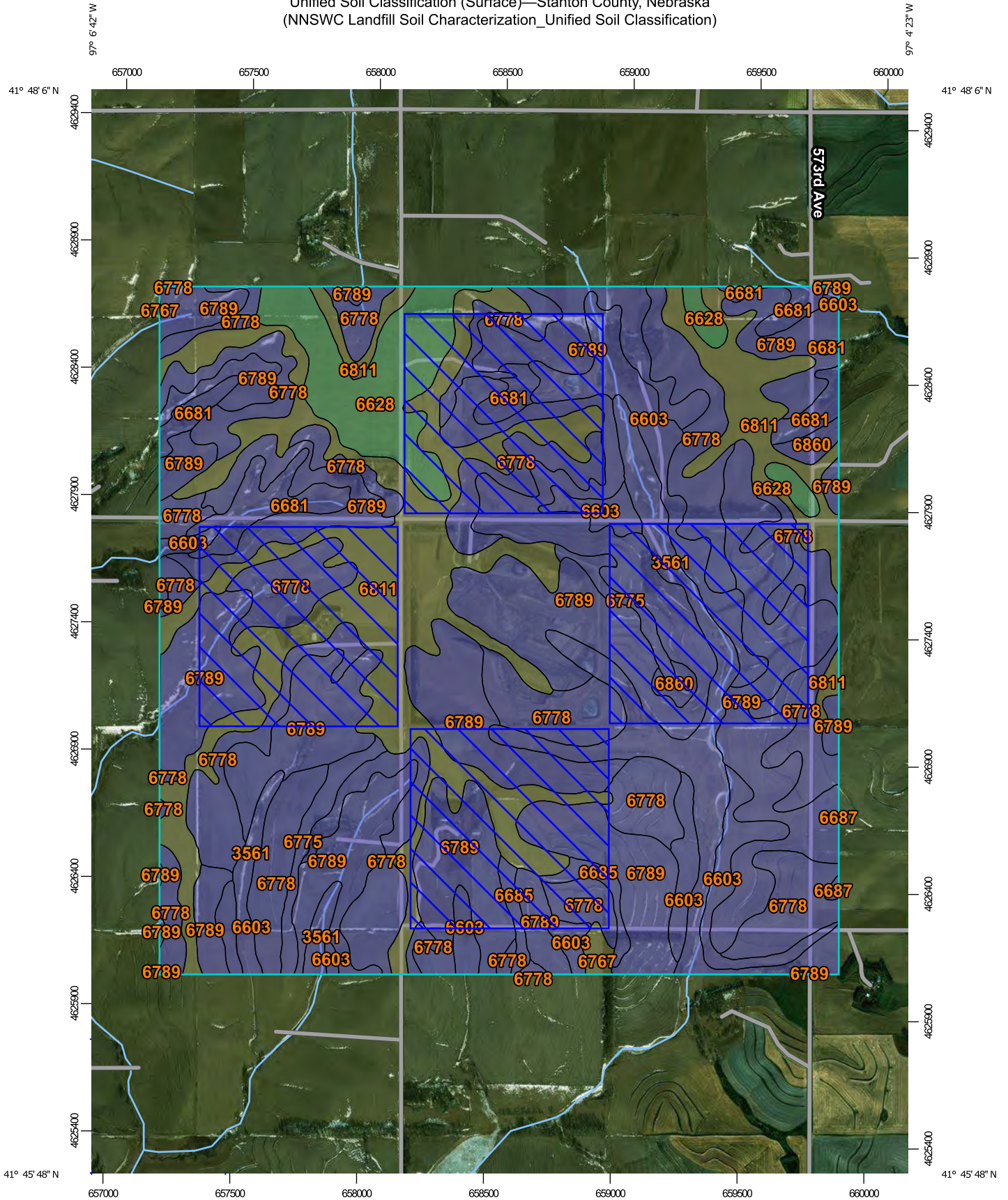
T	R	SEC	ORIG_FID
21	3E	20	383

Parcels

PID	OwnerName	PropertyAddress	OwnerAddress	LegalDesc
0004122.00	KING, AMBER L	82471 572 AVE CLARKSON	C/O MARY VRBICKY 82471 572 AVE CLARKSON NE 68629	20-21-3 E NE 20-21-3 MAPLE CREEK PRECINCT 160 ACRES LIFE ESTATE TO MARY P VRBICKY

APPENDIX K – NRCS SOILS MAP AND CLASSIFICATIONS

Unified Soil Classification (Surface)—Stanton County, Nebraska
 (NNSWC Landfill Soil Characterization_ Unified Soil Classification)




Map Scale: 1:20,700 if printed on A portrait (8.5" x 11") sheet.



Unified Soil Classification (Surface)—Stanton County, Nebraska
(NNSWC Landfill Soil Characterization_ Unified Soil Classification)


MAP LEGEND









Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

-  CH
-  CL
-  CL-A (proposed)
-  CL-K (proposed)
-  CL-ML
-  CL-O (proposed)
-  CL-T (proposed)
-  GC
-  GC-GM
-  GM
-  GP
-  GP-GC
-  GP-GM
-  GW
-  GW-GC
-  GW-GM
-  MH
-  MH-A (proposed)
-  MH-K (proposed)
-  MH-O (proposed)
-  MH-T (proposed)
-  ML









































-  ML-A (proposed)
-  ML-K (proposed)
-  ML-O (proposed)
-  ML-T (proposed)
-  OH
-  OH-T (proposed)
-  OL
-  PT
-  SC
-  SC-SM
-  SM
-  SP
-  SP-SC
-  SP-SM
-  SW
-  SW-SC
-  SW-SM
-  Not rated or not available

Soil Rating Lines


-  CH
-  CL
-  CL-A (proposed)
-  CL-K (proposed)
-  CL-ML
-  CL-O (proposed)
-  CL-T (proposed)
-  GC
-  GC-GM
-  GM
-  GP
-  GP-GC
-  GP-GM
-  GW
-  GW-GC
-  GW-GM
-  MH
-  MH-A (proposed)
-  MH-K (proposed)
-  MH-O (proposed)
-  MH-T (proposed)
-  ML
-  ML-A (proposed)
-  ML-K (proposed)
-  ML-O (proposed)
-  ML-T (proposed)
-  OH
-  OH-T (proposed)
-  OL
-  PT
-  SC
-  SC-SM
-  SM

-  SP
-  SP-SC
-  SP-SM
-  SW
-  SW-SC
-  SW-SM
-  Not rated or not available

Soil Rating Points

-  CH
-  CL
-  CL-A (proposed)
-  CL-K (proposed)
-  CL-ML
-  CL-O (proposed)
-  CL-T (proposed)
-  GC
-  GC-GM
-  GM
-  GP
-  GP-GC
-  GP-GM
-  GW
-  GW-GC
-  GW-GM
-  MH
-  MH-A (proposed)
-  MH-K (proposed)
-  MH-O (proposed)
-  MH-T (proposed)
-  ML
-  ML-A (proposed)
-  ML-K (proposed)
-  ML-O (proposed)
-  ML-T (proposed)
-  OH
-  OH-T (proposed)
-  OL
-  PT
-  SC
-  SC-SM
-  SM
-  SP
-  SP-SC
-  SP-SM
-  SW
-  SW-SC
-  SW-SM
-  Not rated or not available






Water Features

 Streams and Canals

Transportation

 Rails

MAP INFORMATION

-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Stanton County, Nebraska
Survey Area Data: Version 20, Jun 10, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 19, 2015—Mar 8, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Unified Soil Classification (Surface)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3561	Hobbs silt loam, 0 to 2 percent slopes, occasionally flooded, cool	CL	105.7	5.9%
6603	Alcester silty clay loam, 2 to 6 percent slopes	CL	113.2	6.3%
6628	Belfore silty clay loam, 0 to 2 percent slopes	CH	86.1	4.8%
6681	Crofton silt loam, 17 to 30 percent slopes, eroded	CL	54.0	3.0%
6685	Crofton silt loam, 2 to 6 percent slopes, eroded	CL	12.8	0.7%
6687	Crofton silt loam, 6 to 11 percent slopes, eroded	CL	0.9	0.0%
6767	Nora silty clay loam, 6 to 11 percent slopes	MH	4.6	0.3%
6775	Nora-Crofton complex, 2 to 6 percent slopes, eroded	CL	23.1	1.3%
6778	Nora-Crofton complex, 6 to 11 percent slopes, eroded	CL	400.5	22.3%
6789	Crofton-Nora complex, 11 to 17 percent slopes, eroded	CL	680.9	37.9%
6811	Moody silty clay loam, 2 to 6 percent slopes	MH	302.4	16.8%
6860	Crofton silt loam, 8 to 17 percent slopes, eroded	CL	10.4	0.6%
Totals for Area of Interest			1,794.7	100.0%

Description

The Unified soil classification system classifies mineral and organic mineral soils for engineering purposes on the basis of particle-size characteristics, liquid limit, and plasticity index. It identifies three major soil divisions: (i) coarse-grained soils having less than 50 percent, by weight, particles smaller than 0.074 mm in diameter; (ii) fine-grained soils having 50 percent or more, by weight, particles smaller than 0.074 mm in diameter; and (iii) highly organic soils that demonstrate certain organic characteristics. These divisions are further subdivided into a total of 15 basic soil groups. The major soil divisions and basic soil groups are determined on the basis of estimated or measured values for grain-size distribution and Atterberg limits. ASTM D 2487 shows the criteria chart used for classifying soil in the Unified system and the 15 basic soil groups of the system and the plasticity chart for the Unified system.

The various groupings of this classification correlate in a general way with the engineering behavior of soils. This correlation provides a useful first step in any field or laboratory investigation for engineering purposes. It can serve to make some general interpretations relating to probable performance of the soil for engineering uses.

For each soil horizon in the database one or more Unified soil classifications may be listed. One is marked as the representative or most commonly occurring. The representative classification is shown here for the surface layer of the soil.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

APPENDIX L – RNG FEASIBILITY EVALUATION

Memorandum



Date: 7/26/2021
To: Rob Mercer
From: Luke Rodig, PE
Subject: NNSWC Landfill Master Plan
RNG Feasibility Evaluation
Project No. 124922

1.0 Renewable Natural Gas Feasibility Evaluation

As part of the development of this Master Plan, the NNSWC requested that Burns & McDonnell perform a high level feasibility evaluation to determine if using landfill gas (LFG) to produce Renewable Natural Gas (RNG) could be an economically viable option in the future. The RNG would potentially be used for commercial purposes (sale to a gas utility for subsequent sale to their customer base as renewable natural gas), or as a transportation fuel as part of the United States Environmental Protection Agency's (EPA's) Renewable Fuel Standards (RFS) Program. Injection into a local utility pipeline was assumed to be required for both potential end markets. Upgrading LFG to RNG has potential to generate considerable revenue from multiple streams but will require investment in new infrastructure and ongoing operating costs, as described herein.

As a baseline, Burns & McDonnell assumed a LFG collection rate of 1,000 standard cubic feet per minute (scfm). For the Landfill, LFG collection at or above 1,000 scfm occurs in the year 2049 based on current projections of waste and LFG generation. For reference, the estimated LFG collection rate for 2021 is approximately 558 scfm.

Since this baseline scenario occurs approximately 30 years from the development of this Master Plan, it is important to acknowledge that valuations of RNG and associated incentives are dynamic in nature. Ten years ago, there were only a handful of RNG projects that were in operation and today there are over 160 projects in operation, with many more in various stages of development. We recommend that the NNSWC revisit this analysis in the next 3-5 years, given the dynamic nature of the RNG markets.

The overall analysis including capital costs, operations costs, and revenues have been developed assuming this project starts in 2021 with the assumption that there is 1,000 scfm available, as there is not a good way to accurately project what market conditions will look like in 2049.

1.1 Concept Plant Site and Pipeline

According to the National Pipeline Mapping System (NPMS), the nearest potential transmission pipeline tie-in location is estimated to be approximately 13.5 miles northwest of the Landfill in the city of Stanton, Nebraska. The plant would likely be located on the northwest corner of the site since that area has been allocated to a blower flare skid in the future. Further analysis regarding the best pipeline route and connection option will require discussions and negotiations with the natural gas pipeline company or companies. Preliminary routes will need to be

developed to minimize land acquisition, with installation occurring within previously established public right-of-ways to the extent practicable.

A virtual pipeline could also be evaluated as an option to transport the RNG. A virtual pipeline involves compressing or liquefying RNG into mobile containers which are then loaded onto transport trucks. The RNG is then transported to the nearest pipeline tie-in location and the RNG can be decompressed or gasified to necessary pipeline standards. This system could reduce capital costs but would increase operation costs because of the need for additional operators and specialized equipment.

1.2 Financial Analysis

The following sections summarize capital costs, annual operational costs, and the annual operating revenue, the primary components of a preliminary 10-year pro forma developed for the project. It should be noted that numerous assumptions and variables were used to develop the financial information presented herein. Given the early stage of the concept development, the financial analysis presented herein should be considered as a preliminary order of magnitude assessment.

1.3 Capital Costs

Estimated costs for a typical RNG processing equipment is based on recent quotations for similar sized projects. Burns & McDonnell's construction design-build estimators prepared opinions of probable construction costs for the new pipeline, other components of the system, and the balance of plant construction. Indirect costs were also applied as a percent of the construction costs as shown in Table 1 below. Due to several components of the system that could vary greatly depending on several factors that have yet to be determined, a low-end estimate and a high-end estimate are presented in Table 1. The low and high-cost values presented should not be viewed as a range but rather two distinct scenarios, both with a +/- 50% cost confidence, as typical for this level of project definition.

Table 1: Capital Cost Opinion

Capital Cost Opinion	Low	High
Biogas Upgrading System	\$2,295,000	\$2,295,000
Nitrogen Reduction Unit	\$1,000,000	\$3,250,000
De-Oxygenation Catalyst	\$500,000	\$995,000
Regenerative Thermal Oxidizer	\$195,000	\$195,000
Compressor Station, Meter Station & Pipeline	\$18,240,147	\$18,240,147
Balance of Plant	\$1,956,000	\$1,956,000
Estimated Construction Costs	\$24,186,147	\$26,931,147
Startup (2.5%)	\$604,654	\$673,279
Engineering (10%)	\$2,418,615	\$2,693,115
Construction Management (12%)	\$2,902,338	\$3,231,738
Contingency (10% Low, 30% High)	\$2,418,615	\$8,079,344
Total Capital Costs	\$32,530,368	\$41,608,622

*Capital costs assume a landfill gas collection and control system will be installed by 2049.

1.4 Operating Costs

Operating costs include plant labor, utilities, plant maintenance costs, pipeline tariff, and professional services. Operating costs have been estimated at just over \$1.1M in 2021 USD per year starting in year 2049 and increasing with inflation.

1.5 Operating Revenue

When compared to other end markets, the transportation fuel market currently generates the highest revenues associated with RNG. The operating revenues assume NNSWC would market the RNG for transportation fuel in the future. It should be noted that the current subsidies that are creating the renewable fuel market may not exist in their current form in the future, but there are likely to be incentives available for beneficial use of LFG.

The NNSWC’s estimated operating revenue for this project consists of three potential streams including the sale of the gas commodity itself to the natural gas pipeline owner, the sale of Renewable Identification Numbers (RINs) associated with the RNG (as part of the RFS program), and the state credits associated with the use of the RNG as a transportation fuel. In this evaluation, the RNG is assumed to be used as a transportation fuel in California with revenue realized through the California Low Carbon Fuel Standard (LCFS) Program. A brief background description of the RFS and LCFS programs are provided below:

- The Renewable Fuel Standard (RFS): The RFS is a federal program administered by the United States Environmental Protection Agency (EPA) that requires a certain volume of renewable fuel to replace or reduce the quantity of petroleum-based transportation fuel. EPA uses RINs to track renewable transportation fuels. The RIN is attached to the

physical gallon of renewable fuel as it is transferred to a fuel blender. Landfill gas is considered a cellulosic biofuel under this program.

- The California low-carbon fuel standard (LCFS): The LCFS is a program administered by the California Air Resources Board (CARB) to reduce greenhouse gas emissions in transportation fuels. Landfill gas produced at the facility qualifies as an eligible source provided it is used as a transportation fuel in California.

The projected annual revenue in year one of operation (assumed to be 2049) is estimated at \$5.5M and remains somewhat constant assuming no change in current market prices. A breakdown of the year one projected amount by revenue stream is given below.

- Sale of Gas: \$560K
- Sale of RINs: \$3.3M
- LCFS Credits: \$1.6M

1.7 Preliminary Pro Forma

Using the values described above projected over a 10-year period, Burns & McDonnell developed a simple economic model that allows consideration of various cost and price point variables. Tables 2 and 3 below show the net cash flow for the “Low” Capital Cost Scenario and the “High” Capital Cost Scenario, respectively with RIN and LCFS credit prices at approximately current rates. Tables 2 and 3 below show a simple payback matrix for the “Low” capital cost scenario and the “High” capital cost scenario, respectively. These tables are intended to demonstrate the degree of sensitivity of the project financial results to RIN values and LCFS credit values, key variables of the model. The maximum, minimum, median, and mean values indicated in the tables are based on the monthly prices over the last 2 years. Scenarios in which payback was not achieved in the 10-year duration of the model reflect a >10 value, indicating greater than 10 years.

Table 2: Simple Payback Matrix (“Low” Capital Cost Scenario)

*values shown are in years to payback

		LCFS Credit Values				
		\$206.00	\$190.00	\$196.50	\$196.66	\$0.00
RIN Values		2-Yr Max.	2-Yr Min.	2-Yr Median	2-Yr Mean	None
\$2.61	2-year Max.	4.2	4.3	4.2	4.2	5.3
\$0.65	2-year Min.	>10.0	>10.0	>10.0	>10.0	>10.0
\$1.34	2-year Median	7.3	7.5	7.4	7.4	>10.0
\$1.43	2-year Mean	6.9	7.1	7.0	7.0	>10.0
\$0.00	None	>10.0	>10.0	>10.0	>10.0	>10.0

Table 3: Simple Payback Matrix (“High” Capital Cost Scenario)

*values shown are in years to payback

		LCFS Credit Values				
		\$206.00	\$190.00	\$196.50	\$196.66	\$0.00
RIN Values		2-Yr Max.	2-Yr Min.	2-Yr Median	2-Yr Mean	None
\$2.61	2-year Max.	5.3	5.4	5.4	5.4	6.7
\$0.65	2-year Min.	>10.0	>10.0	>10.0	>10.0	>10.0
\$1.34	2-year Median	9.3	9.5	9.4	9.4	>10.0
\$1.43	2-year Mean	8.8	9.0	9.0	9.0	>10.0
\$0.00	None	>10.0	>10.0	>10.0	>10.0	>10.0

1.8 Summary and Recommendations

The preliminary pro forma indicated this project has potential to be financially beneficial for the NNSWC. In the “Low” capital cost scenario payback is possible in around 7.4 years and is under 10 years for the “High” scenario assuming there is a 1,000 scfm of LFG available. Based on current estimated LFG flow rate, the estimated project payback period is greater than 10 years.

The revenue stream estimates are also critical to the preliminary financial analysis. The RFS administrative decisions made by the EPA have a significant impact on RIN prices. Recent indications are that the RFS program will be extended for several years, however as with most financial markets, RIN price futures remain uncertain. The California LCFS credit prices have been on a steady incline over the last two years and although no indications point to changes for the program, credit prices are likewise susceptible to impact by government policy and market forces. Natural gas is a widely used commodity for which demand appears stable in the near term while supply and pricing are susceptible to variation in market conditions. Given the volatility of the RNG market, it is in the best interest of the NNSWC to re-evaluate the development of a RNG project in three to five years.

*Burns & McDonnell’s cost estimates, analyses, and recommendations presented in this study are based on our professional experience and judgment, as well as external sources and assumptions. The low and high cost values presented should not be viewed as a range but rather two distinct scenarios, both with a +/- 50% cost confidence as typical for this level of project definition. Burns & McDonnell does not guarantee that actual values or scenarios will not differ from those presented upon implementation. Further evaluation of certain information, assumptions, and scenarios is recommended.



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Burns & McDonnell
6909 S. Lyncrest Place, Suite 120
Sioux Falls, SD 57108
☎ 605-271-4097
www.burnsmcd.com

AGREEMENT

THIS AGREEMENT is made and entered into this _____ day of _____, 2023, by and between the Northeast Nebraska Solid Waste Coalition, hereinafter referred to as "COALITION" and Stanton County, Nebraska, hereinafter referred to as "COUNTY", WITNESSETH:

WHEREAS, the COALITION is a legal entity created by agreement pursuant to the Nebraska Interlocal Cooperation Act; and

WHEREAS, the COUNTY is a political subdivision of the State of Nebraska; and

WHEREAS, the COALITION is at the present time operating a landfill on real estate located in Stanton County which is described as the Northwest Quarter of Section 21, Township 21 North, Range 3 East of the 6th P.M., Stanton County, Nebraska; and

WHEREAS, the COALITION is desirous of amending the May 28, 1993 agreement with COUNTY to reflect current operation of the Coalition landfill.

NOW, THEREFORE, in consideration of the foregoing recitals, and the terms and conditions hereinafter set forth, the parties hereto agree as follows:

1. The May 28, 1993 agreement **and amendments thereto** is replaced in its entirety by this agreement as of the effective date of this agreement.

2. COALITION agrees to require that all trucks transporting solid waste to the landfill site must utilize the road running from Highway 15 west to the entrance located on the north side of the landfill site both when loaded and when empty.

3. COALITION agrees to make Cash-in-Lieu of Tax payments to political subdivisions based upon ~~the comparable~~ agricultural value of the ~~property prior to the acquisitions surrounding real estate for and construction for each year of the landfill agreement~~. However, it is agreed that no Cash-in-Lieu of Tax payments shall be made to Stanton County or to any other political subdivision with which COALITION has an agreement for which compensation is being paid by the COALITION to a political subdivision for services being rendered to COALITION. In computing the amount of the Cash-in-Lieu payments provided for in this paragraph the valuation shall be adjusted annually so as to be consistent with other similar agricultural land the applicable tax rates shall be equal to the actual tax rate of each political subdivision to which a Cash-in-Lieu of Tax payment is being made. Payments provided for in this paragraph shall be payable in perpetuity by COALITION.

4. COALITION agrees to pay to COUNTY an annual host fee equal to \$.820819 for each ton of refuse deposited in said landfill or the sum of ~~\$85,081~~ 90,000.00 per year, whichever is greater. COALITION shall pay host fee to the COUNTY on a quarterly basis based on the number of tons of waste deposited in the landfill in the previous quarter. A determination shall be made each calendar year as to whether there are additional monies owed to COUNTY so that the payments made for the calendar year total ~~\$85,081~~ at least \$ 90,000.00. If additional payments are necessary, they should be made by COALITION to COUNTY as part of the next quarterly payment otherwise owed by COALITION to COUNTY. The parties agree that the host fee provided for herein shall be subject to an adjustment January 1, 2026 and shall be adjusted every 53 years thereafter. The adjustment to the fee paid per ton, or to the base fee provided for without regard to the amount of solid waste disposed of in the landfill, shall be made in an amount equal to the sum of the changes in the Consumer Price Index as determined by the United States Department of Commerce ~~for the 5 years~~ since the last adjustment through January 1, 2026 and every three years thereafter. The host fee provided herein shall be paid so long as the landfill located on the property described herein remains open and is accepting solid waste for disposal. The fees herein are given to COUNTY for road construction and maintenance, equipment usage, man power and supervision. Litter control shall be provided on surrounding land and on trucking routes as needed. All trucks/trailers delivering by Coalition solid waste to landfill shall be equipped with approved Nebraska Department of Roads cover tarps and shall be used and in place upon any such trucks entering Stanton County with solid waste. All trucks/trailers used shall be leak proof to prevent spilling of solids or liquids.

5. COALITION will continue to allow for an additional voting member of the COALITION Board to be selected by the Stanton County Board of Commissioners with such member being a resident-owner of real property located in Maple Creek Township.

6. It is agreed that no solid waste shall be accepted for disposal in the landfill that has previously been deposited in an existing landfill. No hay or hazardous waste shall be accepted for disposal.

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8. COALITION agrees that all members of the COALITION shall be located within Nebraska and within fifty-five (55) miles of the landfill site described herein. In the event the majority of the area of any county or municipality is located within fifty-five (55) miles of the landfill site, then the entire county or municipality shall be eligible for membership in COALITION. See Attachment "A" for the area eligible for COALITION membership.

IN WITNESS WHEREOF, the parties have executed the foregoing Agreement in duplicate the day and year first above written.

NORTHEAST NEBRASKA SOLID WASTE
COALITION, a Legal Entity Created by
Agreement Pursuant to the Nebraska Interlocal
Cooperation Act

By _____
Corey Granquist, Chairman

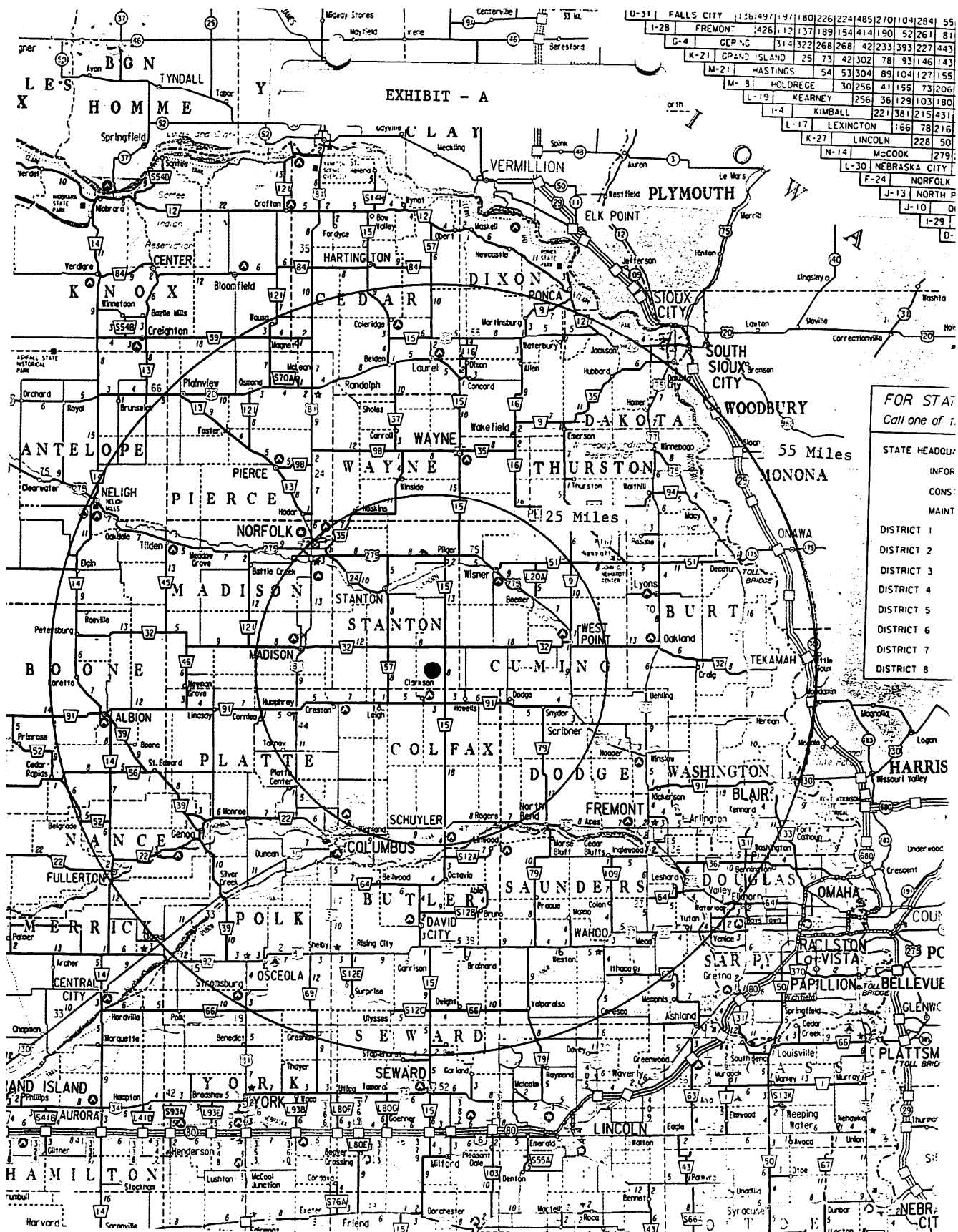
STANTON COUNTY, NEBRASKA, a Political
Subdivision of the State of Nebraska

ATTEST:

Chairman, County Board

County Clerk

(S E A L)



U-31	FALLS CITY	156	49	19	180	226	224	485	270	104	284	55
I-28	FREMONT	426	12	137	189	154	414	190	52	26	81	
G-4	GEPHARD	314	322	268	268	42	233	393	227	443		
K-21	GRAND ISLAND	25	73	42	302	78	93	146	143			
M-21	HASTINGS	54	53	304	89	104	127	155				
M-3	HOLDREGE	30	256	41	155	73	206					
L-19	KEARNEY	256	36	129	103	180						
I-3	KIMBALL	221	38	215	431							
L-17	LEXINGTON	166	78	216								
K-27	LINCOLN	228	50									
N-14	MACCOCK	279										
L-30	NEBRASKA CITY											
F-24	NORFOLK											
J-13	NORTH PLATTE											
J-10	OSAGE											
I-29	PLATTE											
D-												

FOR STATE HEADQUARTERS
Call one of the following:

STATE HEADQUARTERS: INFO, CONSERVATION, MAINTENANCE

DISTRICT 1
DISTRICT 2
DISTRICT 3
DISTRICT 4
DISTRICT 5
DISTRICT 6
DISTRICT 7
DISTRICT 8

Stanton County Commissioners

Board of Commissioners

Douglas Huttman - Dist #1

Dennis Kment - Dist #2

Chairman

Duane Rehak - Dist #3

County Clerk

Wanda Heermann

August 21, 2023

Randy Gates

Sent via email: RGates@norfolkne.gov

RE: SOLID WASTE COALITION

Dear Randy and Solid Waste Coalition,

After careful consideration, we think the Coalition should retain the membership requirement. In the event of a disaster, the more members, the better in our opinion.

We realize that exceptions will be made on occasion, but membership should be in the Agreement. Otherwise the last amended version is acceptable.

Thank you.

Sincerely,



Stanton County Commissioners

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IN WITNESS WHEREOF, the parties have executed the foregoing Agreement in duplicate the day and year first above written.

NORTHEAST NEBRASKA SOLID WASTE
COALITION, a Legal Entity Created by
Agreement Pursuant to the Nebraska Interlocal
Cooperation Act

By _____
Corey Granquist, Chairman

STANTON COUNTY, NEBRASKA, a Political
Subdivision of the State of Nebraska

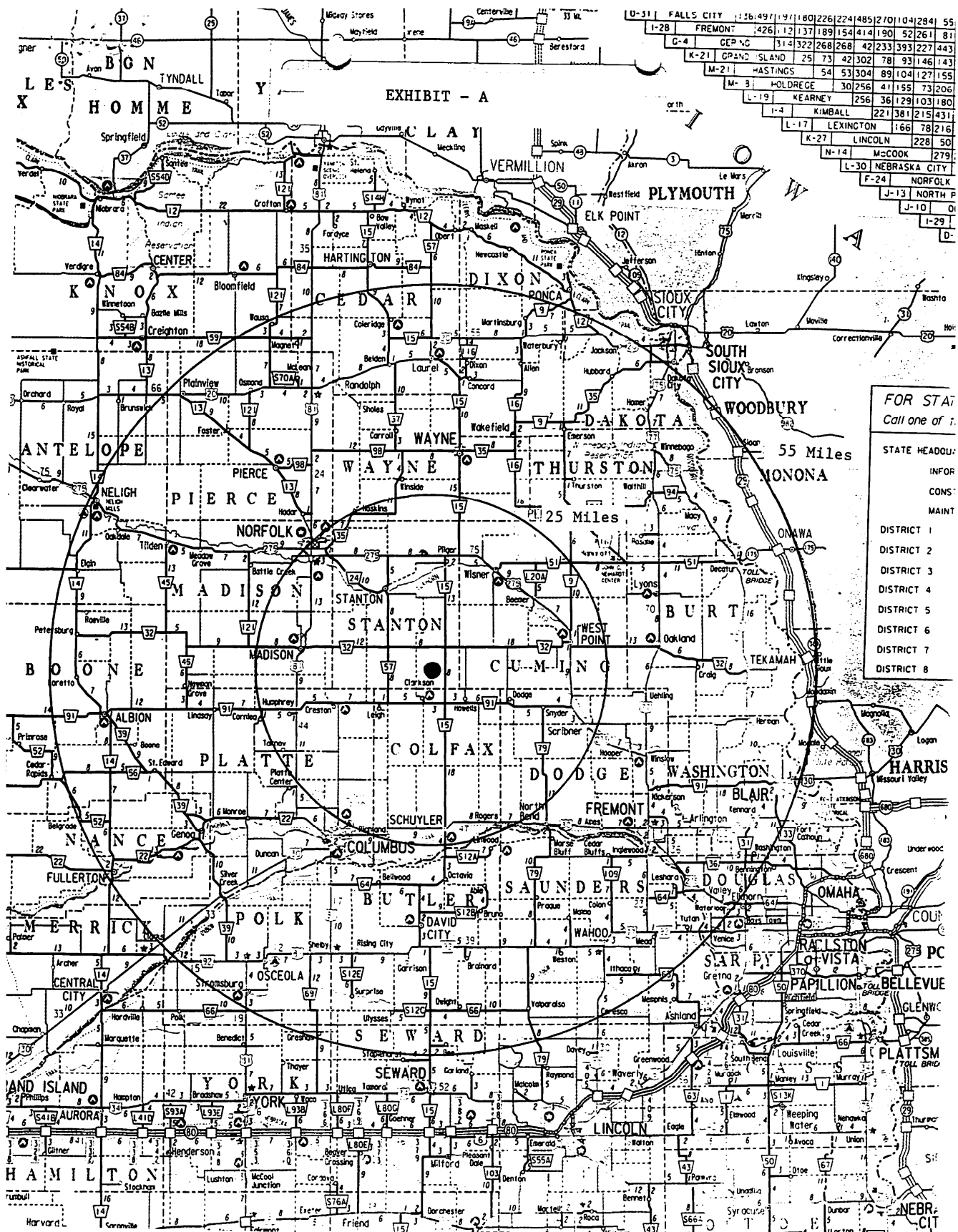
ATTEST:


Chairman, County Board 9-18-2023


County Clerk

(SEAL)





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L-30	NEBRASKA CITY											
F-24	NORFOLK											
J-13	NORTH P											
J-10	O											
I-29	D											

FOR STATE
Call one of the

STATE HEADQUARTERS
INFORMATION
CONSULTATION
MAINTENANCE

DISTRICT 1
DISTRICT 2
DISTRICT 3
DISTRICT 4
DISTRICT 5
DISTRICT 6
DISTRICT 7
DISTRICT 8

AMENDED AND RESTATED BYLAWS OF
NORTHEAST NEBRASKA SOLID WASTE COALITION
ADOPTED BY RESOLUTION OF THE BOARD ON SEPTEMBER 27, 2023

ARTICLE I
Membership

Section 1: All applications for membership in the Northeast Nebraska Solid Waste Coalition ("Coalition") shall be received by the Secretary of the Board of Directors ("Board"), and accepted by the Board subject to the provisions set forth in the Interlocal Solid Waste Management Agreement ("Agreement"), as amended from time to time.

ARTICLE II
BOARD OF DIRECTORS

Section 1: The business of the Coalition shall be conducted by the Board, which shall have the powers and duties vested in it by law and the Agreement. The Board shall be made up of the following members of the Coalition:

- a) A representative from each of the three (3) largest municipalities;
- b) A single representative which shall rotate annually, for all other members excluding representatives in a) and c) of this Section.
- c) A representative from the township where the solid waste disposal facility is located, currently Maple Creek Township.

Directors referred to in a) above shall be appointed by resolution of the local subdivision of the government which they represent. Said subdivision may name an alternate member to act and vote in the absence of the political subdivision's named representative. Each Director shall serve at the pleasure of the subdivision of government which is responsible for the appointment.

The Director referred to in b) above shall be selected as provided for in Article IV Section 1.

The Director referred to in c) above shall be selected by the Stanton County Board of Commissioners as provided for in the Host Agreement with Stanton County.

Section 2: The Board shall elect from their membership a chairperson and a vice chairperson. A secretary and a treasurer shall be selected by the Board. The secretary and treasurer so selected shall be a member of the Board or an elected official or employee of a political subdivision which is a member of the Coalition. Such officer shall serve so long as he or she remains a Director or an elected official or employee of a political subdivision which is a member of the Coalition or until his or her successor in office is chosen, whichever shall occur first.

Section 3: A quorum of the Board shall be constituted when sixty percent (60%) of the combined population of all of the Coalition members are represented by Directors in attendance. The determination of whether the requirement for a quorum has been met shall be based on the respective populations for the various Coalition members as determined from data compiled for the most recent final decennial census and excluding from the census for each member of the Coalition which is a county the population of each city or village within such county.

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Section 5: The Coalition shall normally pay claims semi-monthly. At least one week before claims are paid, the Treasurer shall email all Board members a list of claims to be paid. If a Board member requests a claim not be paid, the claim will be placed on the agenda for the next Board meeting for consideration by the entire Board.

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Section 5: The Secretary shall be responsible for recording the vote at the meetings of the Board and preparing minutes of meetings.

Section 6: The Treasurer shall have custody of all monies belonging to the Coalition. He or she shall keep complete accounts and shall present written financial statements at each Board and annual member meeting. Such financial statements shall include a general ledger showing all claims paid. He or she shall be bonded or carry equivalent insurance coverage provided by the Coalition. Expenditures shall be made only by the Treasurer as specified in Article II Section 5 of these bylaws. The Treasurer shall have all monies belonging to the Coalition either deposited in a bank depository designated by the Board or invested as authorized by the Board. The Treasurer shall be responsible for the Coalition's compliance with submission of budget statements in accordance with Nebraska Revised Statutes section 13-2025.01.

Section 7: In case of the absence of any officer or for any other reason that the Board may deem sufficient, the Board may delegate, for the time being, the powers or duties of such officer to any other officer or to any director.

ARTICLE IV MEETINGS

Section 1: The annual meeting of the members of the Coalition shall be held ~~immediately before the first Board meeting of each fiscal year at a time to be determined by the Board.~~ Notice of the annual meeting shall state the time and place thereof, shall be given to each member's representative, by mail or electronic mail at least seven (7) days before the meeting, and shall comply with the requirements set forth in the Nebraska Open Meetings Act, Neb. Rev. Stat. §§ 84-1407, *et. seq.* ("Act"), as applicable. Each member's representative shall be appointed by resolution of the local subdivision of the government, which they represent. Such subdivision may name an alternate member to act and vote in the absence of the political subdivision's named member representative. For items requiring a vote of the members of the Coalition, each member of the Coalition shall have one vote.

The primary purpose of the annual member meeting shall be to select the rotating Board member. Any member representative can nominate a candidate (including themselves) for the rotating Board member, excluding Board members referred to in Article II Section 1 a) and c). If no representative nominations are received, the rotating Board member position will remain vacant until the next annual member meeting.

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two (2) days before the meeting, and shall also comply with the requirements set forth in the Act, as applicable.

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1. Call to order.
2. Inform the public of the location of the Open Meetings Act.
2. Recording of members present.
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4. Reports of Board, Officers, and Committees.
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8. Adjournment.

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ARTICLE V FISCAL YEAR

Section 1: The fiscal year of the Coalition shall end on September 30.

ARTICLE VI AMENDMENT

Section 1: The Bylaws of the Coalition may be amended by resolution of the Board.

RESOLUTION NO. 2023-2

WHEREAS, on May 21, 2020 the Northeast Nebraska Solid Waste Coalition Board, approved Authorization No. 52 with Burns & McDonnell for development of a Master Plan for the Coalition landfill; and

WHEREAS, the Master Plan included a review of the Coalition Bylaws.

NOW THEREFORE, in consideration of the foregoing recitals, the Board of Directors of the Northeast Nebraska Solid Waste Coalition hereby adopts the attached Amended and Restated Bylaws of the Northeast Nebraska Solid Waste Coalition.

PASSED AND APPROVED this 27th day of September, 2023.

ATTEST:

Coalition Secretary

Coalition Chairman

(SEAL)

Approved as to form: _____
Coalition Attorney

AMENDED AND RESTATED BYLAWS OF
NORTHEAST NEBRASKA SOLID WASTE COALITION
ADOPTED BY RESOLUTION OF THE BOARD ON SEPTEMBER 27, 2023

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ARTICLE VI AMENDMENT

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RESOLUTION NO. 2023-3-_____

WHEREAS, the Northeast Nebraska Solid Waste Coalition, hereinafter referred to as "Coalition", is an Agency created pursuant to the Nebraska Interlocal Cooperation Act; and

WHEREAS, a majority of the Board of Directors of the Coalition, acting pursuant to that certain Third Amended and Restated Interlocal Solid Waste Management Agreement ("Agreement") dated October 1, 2023, desire to adopt the resolutions set forth herein and declare them to be in full force and effect; and

WHEREAS, the Coalition Board complied with the Open Meetings Act, Neb. Rev. Stat. §§ 84-1407 *et. seq.* and the Agreement, by providing advance notice of its intent to adopt rates for various classes of users of the Facility, as that term is defined in the Agreement.

NOW THEREFORE, in consideration of the foregoing recitals, the Board of Directors of the Northeast Nebraska Solid Waste Coalition hereby adopts the following Resolutions:

BE IT RESOLVED by the Board of the Northeast Nebraska Solid Waste Coalition, that the Directors approve and authorize the rates and classes in the attached Exhibit "A", pursuant to their authority in Section 8 of the Agreement, for the Coalition members ~~and non-members~~ who wish to utilize the Facility.

BE IT FURTHER RESOLVED, that the rates and classes in the attached Exhibit "A" are effective on and after January 1, 2024, ~~2023~~, subject to adjustments by the Board from time to time.

PASSED AND APPROVED this 27th day of September, 2023.

ATTEST:

Coalition Secretary

Chairman

(SEAL)

Approved as to form: _____
Coalition Attorney

EXHIBIT "A"

<p>Member rate for "qualifying waste" direct to landfill.</p> <p>Qualifying waste is waste not compatible with transfer station operations as determined by the site manager.</p>	<p>\$24/ton plus inspection fee</p>
<p>Member transfer stations to landfill.</p> <p>A member transfer station is a transfer station owned by a member, or a transfer station approved by the Coalition that is located in the jurisdiction of a Coalition member.</p>	<p>\$24/ton</p>
<p>Non-member transfer station to landfill.</p>	<p>\$79/ton plus inspection fee</p>
<p>Non-transfer station and non-qualifying waste to landfill</p>	<p>\$88.8079/ton plus inspection fee</p>
<p>City of Clarkson "good neighbor" MSW direct to landfill</p>	<p>\$24/ton plus inspection fee</p>
<p>Minimum charge</p>	<p>Fee for one ton of applicable waste plus any applicable inspection or administrative fee</p>
<p>Landfill Inspection Fee</p> <p>Charged to all loads not going through Member transfer station.</p>	<p>\$8 per load</p>
<p>Administrative Fee</p> <p>The landfill operator charges the Coalition for equipment used to assist with difficult to unload waste. The landfill operator also charges the Coalition on a tonnage basis to handle special waste. The Coalition passes these charges on to landfill customers plus an administrative fee to cover Coalition billing and collection cost.</p>	<p>\$2/ton for special waste</p> <p>\$2 for each equipment use fee</p>
<p>Equipment Use Fee or special waste fee</p>	<p>Amount the landfill operator charges the Coalition plus the Coalition's Administrative Fee</p>

Non-Typical Waste

Any non-typical waste load may be subject to rejection as determined by Site Manager. **Wind turbine blades are not accepted.**

Fee based on airspace usage as estimated by the Site Manager

RESOLUTION NO. 2023-3

WHEREAS, the Northeast Nebraska Solid Waste Coalition, hereinafter referred to as "Coalition", is an Agency created pursuant to the Nebraska Interlocal Cooperation Act; and

WHEREAS, a majority of the Board of Directors of the Coalition, acting pursuant to that certain Third Amended and Restated Interlocal Solid Waste Management Agreement ("Agreement") dated October 1, 2023, desire to adopt the resolutions set forth herein and declare them to be in full force and effect; and

WHEREAS, the Coalition Board complied with the Open Meetings Act, Neb. Rev. Stat. §§ 84-1407 *et. seq.* and the Agreement, by providing advance notice of its intent to adopt rates for various classes of users of the Facility, as that term is defined in the Agreement.

NOW THEREFORE, in consideration of the foregoing recitals, the Board of Directors of the Northeast Nebraska Solid Waste Coalition hereby adopts the following Resolutions:

BE IT RESOLVED by the Board of the Northeast Nebraska Solid Waste Coalition, that the Directors approve and authorize the rates and classes in the attached Exhibit "A", pursuant to their authority in Section 8 of the Agreement, for the Coalition members who wish to utilize the Facility.

BE IT FURTHER RESOLVED, that the rates and classes in the attached Exhibit "A" are effective on and after January 1, 2024, subject to adjustments by the Board from time to time.

PASSED AND APPROVED this 27th day of September, 2023.

ATTEST:

Coalition Secretary

Chairman

(SEAL)

Approved as to form: _____
Coalition Attorney

EXHIBIT "A"

<p>Member rate for "qualifying waste" direct to landfill.</p> <p>Qualifying waste is waste not compatible with transfer station operations as determined by the site manager.</p>	<p>\$24/ton plus inspection fee</p>
<p>Member transfer stations to landfill.</p> <p>A member transfer station is a transfer station owned by a member, or a transfer station approved by the Coalition that is located in the jurisdiction of a Coalition member.</p>	<p>\$24/ton</p>
<p>Non-transfer station and non-qualifying waste to landfill</p>	<p>\$88.80/ton plus inspection fee</p>
<p>Minimum charge</p>	<p>Fee for one ton of applicable waste plus any applicable inspection or administrative fee</p>
<p>Landfill Inspection Fee</p> <p>Charged to all loads not going through Member transfer station.</p>	<p>\$8 per load</p>
<p>Administrative Fee</p> <p>The landfill operator charges the Coalition for equipment used to assist with difficult to unload waste. The landfill operator also charges the Coalition on a tonnage basis to handle special waste. The Coalition passes these charges on to landfill customers plus an administrative fee to cover Coalition billing and collection cost.</p>	<p>\$2/ton for special waste</p> <p>\$2 for each equipment use fee</p>
<p>Equipment Use Fee or special waste fee</p>	<p>Amount the landfill operator charges the Coalition plus the Coalition's Administrative Fee</p>
<p>Non-Typical Waste</p> <p>Any non-typical waste load may be subject to rejection as determined by Site Manager. Wind turbine blades are not accepted.</p>	<p>Fee based on airspace usage as estimated by the Site Manager</p>



**NORTHEAST NEBRASKA SOLID WASTE COALITION
AUTHORIZATION NO. 57
For
PROFESSIONAL SERVICES
To
BURNS & McDONNELL ENGINEERING COMPANY, INC.**

In accordance with the AGREEMENT for PROFESSIONAL ENGINEERING SERVICES dated March 8, 1993, (hereinafter called AGREEMENT) between the Northeast Nebraska Solid Waste Coalition (hereinafter called NNSWC/CLIENT) and Burns & McDonnell Engineering Company, Inc. (hereinafter called ENGINEER), CLIENT hereby authorizes ENGINEER to proceed with the following services:

1. Project Summary

ENGINEER understands that the CLIENT desires to expand the existing municipal solid waste (MSW) landfill to fulfill future disposal needs. The proposed landfill expansion (Expansion) will consist of a combined horizontal expansion of approximately 25-acres and a vertical expansion of up to 60-feet to the existing NNSWC MSW Landfill. The Expansion will primarily be located southwest, northwest, and northeast of the existing landfill footprint. CLIENT has requested ENGINEER support efforts in permitting and associate permit level design of the NNSWC MSW Landfill Expansion in anticipation of construction at a later date. This Authorization includes the hydrogeologic investigation work, locational criteria review, ecological studies, NDEE pre-meeting and review, and permit modification application associated with the Expansion of the NNSWC MSW Landfill.

2. Scope of Services:

The Scope of Services to be provided by ENGINEER in connection with this Authorization, is as follows:

Task 1.0 – Hydrogeologic Investigation

The hydrogeologic investigation services include the following subtasks:

1. Hydrogeologic Investigation Work Plan

ENGINEER will develop a hydrogeologic investigation work plan to detail a scope for the field work required to determine the applicability of the Expansion to Nebraska Department of Environment and Energy (NDEE) Title 132, Chapter 3 regarding the minimum groundwater separation requirements and obtain information regarding the Expansion soils and bedrock. ENGINEER will initiate a call with NDEE to discuss the work plan and verify the requirements of the investigation. The work plan shall be submitted to NDEE for approval prior to commencing field activities.

2. Hydrogeologic Investigation Field Work

ENGINEER will retain a subcontractor to perform soil boring and laboratory testing associated with the subsurface investigation in accordance with the Hydrogeologic Investigation Work Plan submitted to and approved by NDEE as part of Task 1.1. The information gathered will be used to develop a hydrogeologic investigation report that will be provided for permit documents and be utilized to govern the excavation grades as

well as the geotechnical calculations for the Expansion. For purposes of developing the scope and budget for this task, the following assumptions have been made for the subsurface investigation work:

- Five (5) soil borings to an average depth of 70 feet below ground surface (bgs)
 - Split spoon soil samples will be collected continuously to end of each soil boring
- At the above soil boring locations, the following monitoring wells will be installed:
 - One (1) permanent monitoring well
 - Up to four (4) temporary monitoring wells or piezometers
 - Groundwater monitoring wells will be installed in accordance to NDEE regulations
 - Slug testing will be performed at up to five (5) of the installed well locations
- The following laboratory analysis will be conducted for soil samples collected from the borings:
 - 10 grain size/hydrometer analysis and soil classification descriptions
 - Up to four (4) standard proctor samples with Atterberg limits
 - Eight (8) hydraulic conductivity tests on suitable clay liner material
- Based on the pre-existing deep monitoring wells at the Site, it is assumed only shallow soil borings will be required.
- A Burns & McDonnell representative will be on-site during the investigation for oversight and documentation of the soil borings and well installations.

3. Hydrogeologic Investigation Reporting

ENGINEER will develop a Hydrogeologic Investigation Report to determine the applicability of the Expansion to NDEE Title 132, Chapter 3 regarding the minimum groundwater separation requirements and report the information regarding the proposed expansion soils and bedrock. The Hydrogeologic Investigation Report will be provided for permit documents and be utilized in geotechnical calculations for the proposed NNSWC MSW Landfill Expansion and associated infrastructure. The report will summarize findings from the hydrogeological investigation, previous investigations, and publically available information.

Task 2.0 – Locational Criteria

ENGINEER will perform a desktop review of the Expansion’s applicability to locational criteria described in NDEE Title 132, Chapter 3.

Locational criteria desktop review includes the review of publically available information and previously submitted information regarding:

- Current and projected water usage;
- Surface water proximity and potential impacts;
- Existing surface and groundwater quality;
- Surrounding land use and population density;
- Highway right-of-ways;
- Airport proximity;
- Floodplain locations; and

- Unstable areas such as within proximity to fault lines, seismic impact zones, and karst terranes.

Conformance to these locational criteria will be outlined in a memorandum to be submitted to CLIENT and will be included in the permit application submittal to the NDEE.

Task 3.0 – Ecological Surveys

In addition to the desktop review of locational criteria described above, ENGINEER will perform a wetland delineation and threatened and endangered species evaluation of the Expansion. The ecological surveys include the following subtasks:

1. Wetlands and Waterbodies

ENGINEER will conduct a wetland delineation to assess the Expansion and evaluate the presence/absence and extent of potential wetlands and other waters of the U.S. on-site which may have the potential to be impacted by the Expansion. ENGINEER will summarize the findings in a summary report suitable for submittal to the United States Army Corps of Engineers (USACE) for permitting purposes, if necessary. The wetland review will be focused on the approximate 2.5-acre forested area directly north of the existing scale area which is included in the proposed Expansion. This task will include the following subtasks:

- Desktop Survey
- On-site wetland delineation of the Expansion
- Preparation of a wetland delineation report documenting the findings from the survey

a. Desktop Survey

A desktop review will be conducted to identify site topography, hydric soils, vegetative cover, and the potential presence of wetlands or other waters of the US. This review will involve downloading and reviewing available GIS data for the Survey Area, including applicable 7.5-minute topographic maps, National Wetland Inventory (NWI) maps, National Hydrography Dataset (NHD), county soil surveys, Soil Survey Geographic (SSURGO) digital data, and available aerial photography, including National Agricultural Imagery Program (NAIP) aerial photography to determine the presence of wetlands within the Expansion.

b. On-site Wetland Delineation

The on-site wetland delineation will be conducted by a wetland scientist with a global positioning system (GPS) to identify and record the boundaries of wetlands and other water bodies that may be present. These areas will be delineated in accordance with the guidelines of the 1987 Corps of Engineers Wetlands Delineation Manual (1987 Manual), the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Regional Supplement), and other USACE guidance regarding the jurisdictionality of wetlands and watercourses. The wetland delineation will occur within the normal growing season (approximately April 15 - November 15). As part of the delineation process, ENGINEER will collect information on hydric soils, wetland hydrology, and upland and wetland vegetation. Information collected during the desktop study will be confirmed during the on-site wetland delineation. Hydrologic connectivity between delineated wetland features and

surface waters will be determined and documented. The boundaries of the observed wetlands and other waters of the U.S. will be surveyed using a sub-meter-accurate GPS unit. Location information and boundaries of delineated wetlands and waters of the U.S. will be provided electronically in a shapefile or AutoCAD format to allow the project team to identify potential design and construction changes to avoid and minimize impacts.

c. Wetland Delineation Report

ENGINEER will prepare a wetland delineation letter report to document the results of the desktop survey and on-site wetland delineation efforts. The wetland delineation letter report will include a project description, purpose and need, discussions of background data, survey methodology, and survey results. Figures will be prepared to incorporate the background data and to illustrate the location and extent of any identified jurisdictional areas. Additionally, routine wetland determination data forms (from the Regional Supplement) and natural color photographs of the project delineation will be included. In accordance with ENGINEER's quality review policy, a quality review will be completed by one of our certified Professional Wetland Scientists, before submitting an electronic draft letter report to CLIENT for review and one round of comments. Once the final comments are received and addressed, ENGINEER will finalize the report and provide one electronic copy (in PDF format) to CLIENT.

2. Threatened & Endangered Species

ENGINEER's environmental scientists and wildlife biologists will complete an online review of federal and state protected species as well as a GIS/desktop analysis, and an on-site habitat assessment of the Expansion. The online review and an on-site habitat assessment efforts will be completed to evaluate the Expansion for habitat that may be capable of supporting protected species such as the federally protected northern long-eared bat (*Myotis septentrionalis*), western prairie fringed orchid (*Platanthera praeclara*), bald eagles (*Haliaeetus leucocephalus*), and concentrations of migratory birds.

The on-site habitat assessment will be conducted by ENGINEER's threatened and endangered species specialist and occur concurrently with the wetland delineation. Any potential protected species habitat will be delineated using a sub-meter-accurate GPS unit and documented with natural color photographs. The on-site habitat assessment will be consistent with federal guidelines for evaluating the presence of suitable habitat for the northern long-eared bat; however, it is assumed that species-specific surveys requiring a state or federal scientific collecting permit will not be required, thus are not included in this scope of work.

Data collected during the desktop online review and on-site habitat assessment will be used to prepare agency correspondence letters to the U.S. Fish and Wildlife Service, Nebraska Ecological Studies Field office, and the Nebraska Game and Parks Commission to solicit their input on the development of the NNSWC MSW Landfill

Expansion. Site-specific information, including GIS maps and photographs, will be provided in a habitat assessment letter report that will be suitable for submittal to the USFWS and the Nebraska Game and Parks Commission for their review and concurrence.

Task 4.0 – NDEE Permit Modification Pre-Application Meeting

ENGINEER will facilitate and attend a permit modification pre-application meeting with NNSWC and NDEE to discuss the contents of the NNSWC MSW Landfill Expansion concept and gain understanding and consensus from all parties on the major design components of the Expansion prior to submitting a permit modification application.

Task 5.0 – Title 132 Solid Waste Permit Modification Application

ENGINEER will prepare the NDEE Title 132 Solid Waste Permit Modification Application (Permit Application) package for the NNSWC MSW Landfill Expansion. The primary components of the Permit Application include:

- NDEE Permit Application forms
- Permit Application Report
- Permit Drawings
- Permit Appendices and Calculations

The Permit Application Report will consist of updating text narrative describing the locational criteria, site design, construction quality control, operations, closure/post-closure, and financial assurance of the Expansion.

ENGINEER will update the complete set of Permit Drawings for the Expansion. It is anticipated the drawing set will include the following sheets:

- Cover/Index Sheet (including Legend, Abbreviations, and Legal Description)
- Site Vicinity Map
- Existing Conditions
- Total Site Development Plan
- Final Cover Closure Plan
- Landfill Cross Sections
- Landfill Details
- Gas Venting System Plan and Details
- Leachate Sewer Profiles
- Groundwater Drainage System Plan and Details

ENGINEER will review and update the applicable Permit Appendices and Calculations as required for the Permit Application submittal. It is anticipated the following Appendices will be updated:

- Hydrogeologic Investigation Report
- Corps of Engineers Wetlands Letters and Jurisdictional Wetlands Determination Report
- Site Locational Criteria Figures
- Site Settlement Calculations
- Slope Stability Calculations
- Groundwater Drainage System Control Report and Monitoring Plan

- Surface Water Calculations
- Leachate Transmission Calculations
- Leachate Sewer and Leachate Collection Pipe Sizing Calculations
- HELP Model Calculations
- Site Volume Calculations
- Landfill Final Cover Hydraulic Calculations
- Seeding Plan
- Soil Loss Prevention Plan
- Operations Plan
- Site Development Plan
- Landfill Gas Plan
- Closure/Post-Closure Plan

As part of the Task 5.0 work, ENGINEER has included two (2) site visits to field verify existing conditions and review key design components with CLIENT.

ENGINEER will prepare and submit a draft Permit Application package to CLIENT for review. ENGINEER will facilitate and attend a review meeting to discuss and resolve CLIENT comments. All applicable CLIENT comments will be incorporated into a final Permit Application package for submittal to the NDEE for review.

Task 6.0 – Response to NDEE Review Comments

ENGINEER will respond to one set of NDEE review comments on the submitted Permit Application. CLIENT approval of the level of effort will be provided prior to addressing comments. Hours and cost included in this Scope of Services for this task are a not to exceed value and may be adjusted based on actual level of effort required for response.

3. Assumptions:

In addition to the assumptions provided above, ENGINEER has made the following additional assumptions:

- ENGINEER assumes that CLIENT will provide full access to the landfill property as needed.
- ENGINEER assumes 8 hours to respond to comments from NDEE regarding the hydrogeologic investigation work plan.
- ENGINEER assumed a direct geotechnical subconsultant and laboratory cost allowance of \$48,000 for the hydrogeologic investigation. Actual costs will be dependent on the approved hydrogeologic investigation work plan.
- ENGINEER assumes the field work associated with the hydrogeologic investigation and monitoring well installation will be performed in a single mobilization over approximately six (6) days. Actual time will be dependent on weather, site, and subsurface conditions.
- ENGINEER will submit hard copies of the monitoring well installation documentation and Hydrogeologic Investigation Report to NDEE in the requested quantity.

- ENGINEER has not included any wetland mitigation permitting effort in this scope of services. If wetland mitigation is required, ENGINEER will submit an Amendment to CLIENT for additional wetland mitigation support services for approval.
- ENGINEER has assumed CLIENT will directly pay for any permit application fees associated with the scope of services.
- ENGINEER assumes that CLIENT will provide all available information required for preparation of the Permit Application in a timely manner.
- ENGINEER has assumed two (2) representatives to attend meetings in-person, and one (1) other representative attending virtually.
- ENGINEER will submit up to two (2) hard copies of the draft Permit Application package to CLIENT.
- ENGINEER will prepare up to a total of seven (7) hard copies of the final Permit Application package for distribution to NDEE and CLIENT.
- ENGINEER has assumed up to 80 professional hours for addressing NDEE review comments on the submitted Permit Application.
- ENGINEER assumes the scope of services will be completed throughout 2023 and 2024 for Tasks 1.0 – 5.0. Task 6.0 will be dependent on NDEE review period. Interim task completion dates will be established as mutually agreed upon by CLIENT and ENGINEER throughout completion of services.

4. Compensation:

CLIENT shall compensate ENGINEER for providing the Scope of Services as set forth herein in accordance with the terms of the existing Agreement on a time and materials basis based on the ENGINEER’s current rate sheet (BMR23-5). The cost initially authorized for the Scope of Services is Three Hundred Seventy Thousand Eight Hundred Dollars (\$370,800.00), but is not a guaranteed maximum; provided, however, ENGINEER shall not exceed such amount without written approval of CLIENT. A detailed breakdown of estimated hours and costs for each task is attached for reference. A summary of the estimated cost for each task is provided in the below table:

Task 1: Hydrogeologic Investigation	\$123,100.00
Task 2: Locational Criteria	\$ 10,900.00
Task 3: Ecological Surveys	\$ 17,600.00
Task 4: NDEE Permit Modification Pre-Application Meeting	\$ 6,000.00
Task 5: Title 132 Solid Waste Permit Modification Application	\$195,700.00
Task 6: Response to NDEE Review Comments	<u>\$ 17,500.00</u>
Total	\$370,800.00



IN WITNESS WHEREOF, the parties have made and executed this Authorization as of the date written below.

AUTHORIZATION NO. 57

CLIENT: Northeast Nebraska Solid Waste Coalition

CONSULTANT: Burns & McDonnell Engineering Company, Inc.

By: _____

By:  _____

Name: _____

Name: Spencer Cronin

Title: _____

Title: Regional Manager, Environmental Services

Date: _____

NNSWC Landfill Expansion Permitting

Sub-Task

1: Hydro Investigation	2: Locational Criteria	3: Ecological Surveys	4: NDEE Pre-Permit Mtg	5: Permit Application	6: Response to NDEE
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Labor

Job Title	Name	RT/OT	Level	Rate
PM		RT	13	\$260.00
APM / Lead Eng		RT	11	\$213.00
Assist Eng		RT	8	\$144.00
QR		RT	17	\$275.00
Geotech		RT	14	\$267.00
Assist Geologist		RT	9	\$172.00
Senior Geo		RT	12	\$238.00
Assoc Support		RT	15	\$269.00
Staff Support		RT	10	\$196.00

Expenses

Description	Unit	Price per Unit
Technology Fee	hour	\$9.95
Lodging	person night	\$150.00
Food	person day	\$45.00
Vehicle Rental	day	\$90.00
Personal Mileage	mile	\$0.655
Field Supplies	day	\$20.00

Subcontractors

(Markup if selected on Set-up

Subcontractor Labor/Expense Sheet	Bid	Markup %
Drilling / Lab	48000	10

Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
20.0	\$5,200.00	8.0	\$2,080.00	4.0	\$1,040.00	10.0	\$2,600.00	80.0	\$20,800.00	20.0	\$5,200.00
90.0	\$19,170.00	8.0	\$1,704.00	18.0	\$3,834.00	10.0	\$2,130.00	120.0	\$25,560.00	24.0	\$5,112.00
60.0	\$8,640.00	38.0	\$5,472.00	32.0	\$4,608.00		\$0.00	360.0	\$51,840.00	32.0	\$4,608.00
2.0	\$550.00		\$0.00		\$0.00		\$0.00	4.0	\$1,100.00		\$0.00
4.0	\$1,068.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
120.0	\$20,640.00		\$0.00	34.0	\$5,848.00		\$0.00	24.0	\$4,128.00		\$0.00
40.0	\$9,520.00		\$0.00		\$0.00		\$0.00	20.0	\$4,760.00		\$0.00
2.0	\$538.00	4.0	\$1,076.00	4.0	\$1,076.00	3.0	\$807.00	24.0	\$6,456.00	6.0	\$1,614.00
	\$0.00		\$0.00		\$0.00		\$0.00	360.0	\$70,560.00		\$0.00

Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
338.0	\$3,363.10	58.0	\$577.10	92.0	\$915.40	23.0	\$228.85	992.0	\$9,870.40	82.0	\$815.90
5.0	\$750.00		\$0.00	1.0	\$150.00		\$0.00	1.0	\$150.00		\$0.00
5.0	\$225.00		\$0.00	1.0	\$45.00		\$0.00	2.0	\$90.00		\$0.00
5.0	\$450.00		\$0.00	1.0	\$90.00		\$0.00	2.0	\$180.00		\$0.00
	\$0.00		\$0.00		\$0.00	360.0	\$235.80		\$0.00		\$0.00
9.0	\$180.00		\$0.00		\$0.00		\$0.00	10.0	\$200.00	7.5	\$150.00

Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
1	\$52,800.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00

Total Costs (Sum of Labor, Expense, and Subcontractors)

	\$123,094.10	\$10,909.10	\$17,606.40	\$6,001.65	\$195,694.40	\$17,499.90	\$370,805.55
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Totals



**NORTHEAST NEBRASKA SOLID WASTE COALITION
AUTHORIZATION NO. 61
For
PROFESSIONAL SERVICES
To
BURNS & McDONNELL ENGINEERING COMPANY, INC.**

2023 Title V Air Permit Renewal

In accordance with the AGREEMENT for PROFESSIONAL ENGINEERING SERVICES dated March 8, 1993, (hereinafter called AGREEMENT) between the Northeast Nebraska Solid Waste Coalition (hereinafter called CLIENT) and Burns & McDonnell Engineering Company, Inc. (hereinafter called ENGINEER), CLIENT hereby authorizes ENGINEER to proceed with the following services:

1. Scope of Services:

The Scope of Services to be provided by ENGINEER in connection with this Authorization, is as follows:

Task 1.0 – Title V Permit Renewal

ENGINEER will prepare a Nebraska Department of Environment and Energy (NDEE) Title V Permit Renewal Application for the NNSWC Landfill, which will consist of the following:

- a) Updated emission source calculations.
- b) Prepare a Permit Application Report Narrative to describe sources of emissions and list applicable emissions calculation methodologies used to develop a facility's Potential-to-Emit.
- c) Incorporate minor administrative updates such as Permit contact changes and address updates.
- d) Prepare NDEE application forms.

The permit renewal application package will be submitted to the CLIENT for review and for signatures. ENGINEER will submit the final application to NDEE by October 6, 2023 based on receiving required information and signatures from the CLIENT.

2. Compensation:

CLIENT shall compensate ENGINEER for providing the Scope of Services as set forth herein in accordance with the terms of the existing Agreement on a time and materials basis based on the ENGINEER's current rate sheet (BMR23-5) for an initially authorized amount of Eight Thousand Nine Hundred dollars (\$8,900) but is not a guaranteed maximum; provided, however, ENGINEER shall not exceed such amount without written approval of CLIENT.



IN WITNESS WHEREOF, the parties have made and executed this Authorization as of the date written below.

AUTHORIZATION NO. 61

CLIENT: Northeast Nebraska Solid Waste Coalition

ENGINEER: Burns & McDonnell Engineering Company, Inc.

By: _____

By: Luke Rodig

Name: _____

Name: Luke Rodig

Title: _____

Title: Department Manager, Environmental

Date: _____