

August 22, 2024

RE: Superior Silica Sands

Auburn Mine Mud Pond Capping

SEH No. 168386 14.00

Matt Thompson NR Region Program Manager Wisconsin Department of Natural Resources 1300 W Clairemont Ave Eau Claire, WI 54701

Dear Mr. Thompson:

Short Elliott Hendrickson Inc. (SEH®) on behalf of Superior Silica Sands (SSS) is submitting the enclosed drawings which detail the proposed approach to capping in place the former Auburn Mine Settling Ponds (referred to hereinafter as "mud ponds"). The enclosed Plan Sheets 1 through 9 illustrate proposed dewatering activities, capping earthwork, erosion control and restoration, and cross sections depicting finished slopes compared to existing conditions.

Generally, the proposed approach involves leaving the fines (for simplicity referred to as "mud" in this letter and on the plan sheets) generated from past sand washing in place and covering/capping with onsite soils to serve as a barrier between the mud and the final reclaimed surface. Previous sampling of the mud material indicated elevated levels of heavy metals particularly aluminum and arsenic. The latest sampling and assessment was documented in a report dated May 15, 2024 prepared by SEH and approved by WDNR on June 24, 2024.

Prior to any significant earthwork activities, water present within ponds 4, 5, and 6 will be dewatered. Ponds 1, 2, and 3 are currently dry. Dewatering will involve pumping the water over the exterior berm and onto an energy dissipator to reduce erosion at the outfall. Water will be discharged into existing ditches along the north or east sides, or both, of the exterior berm. Water will eventually flow toward an unnamed tributary of Trout Creek north of the mud ponds. Past water sampling where there is suspended sediment/particles has indicated total heavy metal concentrations above NR 140 Preventive Action Limits (PAL) or NR 140 Enforcement Standards (ES) for aluminum, arsenic, chromium, lead, and manganese. However, dissolved analyses for metals which removes suspended sediment and particles through filtering has indicated heavy metal concentrations to be well below NR 140 standards. SSS intends to implement a treatment system to treat the water prior to discharging overland. Sampling and monitoring of the outfall will be performed throughout the dewatering event to confirm and document the treatment system's effectiveness. The proposed dewatering and monitoring approach is presented on Plan Sheets 2 and 3.

Once dewatering is complete, capping earthwork activities can commence. The minimum cap thickness over the mud pond area will be 2-feet consisting of approximately 15-inches of B-horizon soils and 9-inches of A-horizon soils. This proposed soil layering approach is consistent with the approved reclamation plan. Final proposed topography of the capped area is shown on Plan Sheet 4. Final slopes

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will range between approximately 2% and 7% as shown on the cross sections of Plan Sheets 5 through 7. The final cap area will be restored using the same seed mixtures and methods as done so for reclamation of the greater mine site.

Capping soils will consist of B-horizon and A-horizon soils. B-horizon soils are fine-grain soils (silts and clays) that will be obtained from the existing pond berms. Per the January 9, 2012 design plans prepared by SEH for the settling ponds, the pond berms were proposed to be constructed of clay material. Berm soil above the in-place mud will be the primary source for B-horizon soils. A-horizon soils will consist of organic humus to promote vegetation and will be imported from an offsite source.

Mud within the ponds will be undisturbed except for a portion of the mud in ponds 1 and 2. A portion of the mud in ponds 1 and 2 is anticipated to be relocated into the lower elevation ponds 3, 4, 5 and/or 6 to create a more consistent final slope. The top of the mud surface in these ponds post relocation will be recorded by topographic survey to confirm minimum cap thickness is achieved. Once this mud is relocated, capping will commence by pushing out berm soils above the in-place mud and spreading overtop the mud. Earthwork balance calculations indicate the bulk of capping material (minus A-horizon topsoil) can be obtained from the pond berms above the top of mud. However, if additional material is needed, there is sufficient B-horizon soils stored in stockpiles onsite. It is anticipated that capping will progress from south to north. Erosion control BMPs will be implemented as shown on Plan Sheet 8 and 9. Pond 6 will be used as a temporary storm water basin/sediment trap as capping progresses north. A general sequence of capping activities is presented on Plan Sheet 3.

Once capping activities are complete and the site restored, land use will return to passive recreation as described in the approved reclamation plan. Please don't hesitate to contact me at rshimko@sehinc.com or swaughtal@sssand.com if you have any questions regarding the proposed mud pond capping activities.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.

Ryan Shimko, PE Engineer IV

(Lic. GA, IN, KY, TN, WI)

ris

Mud Pond Capping Drawings Landowner & Operator Acknowledgement of Plan

c: Scott Waughtal, Superior Silica Sands
 Brian Mittlestadt, Superior Silica Sands
 Trenton Shutter, Chippewa County Land Conservation & Forest Management
 Doug Nesja, DE Excavating
 Matt Appel, SEH

Landowner Acknowledgement

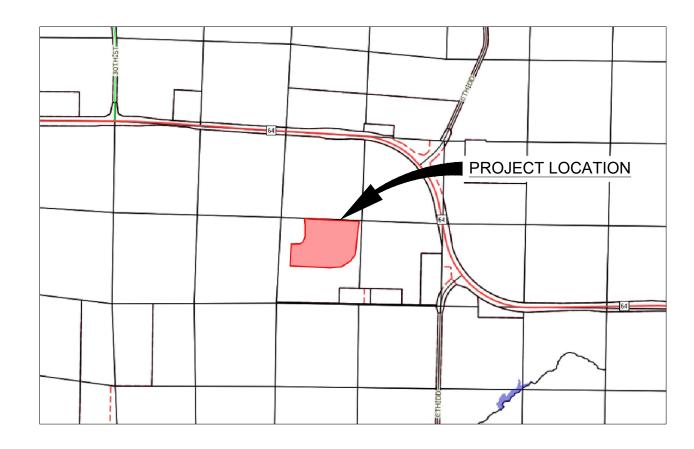
I have reviewed the Mud Pond Capping Plan for the non-metallic mine which is on land that I own or for land for which I am the authorized representative for the owner. I certify that I concur with the plan and will allow for its implementation. I agree to allow access by named lessee for mining and reclamation activities and Chippewa County and Wisconsin DNR for monitoring of site activities.					
Owner Name (Print)					
Owner Signature & Date					
Operator/Lessee Acknowledgement					
I have reviewed the Mud Pond Capping Plan for the non-metallic mine which I lease. I concur with the plan and I agree to implement it. I am authorized to represent the operator/lessee in these matters.					
Operator Name & Title (Print)					
Operator Signature & Date					

EXISTING PERMANENT EASEMENT HORIZONTAL CONTROL POINT BENCHMARK SURVEY MARKER SOIL BORING SANITARY SEWER AND MANHOLE FORCE MAIN AND LIFT STATION SANITARY SEWER SERVICE & CLEANOUT — WATER SERVICE AND CURB STOP BOX -■- STORM SEWER, MANHOLE AND CATCH BASIN ⊢⊠≕ GAS MAIN, VALVE, VENT AND METER BURIED FIBER OPTIC CABLE AND MANHOLE BURIED PHONE CABLE, PEDESTAL AND MANHOLE BURIED TV CABLE, PEDESTAL AND MANHOLE P-BUR BURIED ELECTRIC CABLE, PEDESTAL, MANHOLE, TRANSFORMER AND METER OVERHEAD WIRE, POLE AND GUY WIRE LIGHT POLE TRAFFIC SIGNAL STREET NAME SIGN SIGN (NON STREET NAME) ###################### RAILROAD TRACKS DECIDUOUS AND CONIFEROUS TREE BUSH / SHRUB AND STUMP O AXX EDGE OF WOODED AREA FENCE (UNIDENTIFIED) BARBED WIRE FENCE CHAIN LINK FENCE ELECTRIC WIRE FENCE WOOD FENCE WOVEN WIRE FENCE PLATE BEAM GUARDRAIL CABLE GUARDRAIL POST / BOLLARD **PROPOSED** — STREET CENTERLINE -- CONSTRUCTION LIMITS SANITARY SEWER, BULKHEAD AND MANHOLE - FORCE MAIN •CO SANITARY SERVICE AND CLEANOUT WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE WATER VALVE MANHOLE, REDUCER, BEND AND CROSS WATER SERVICE AND CURB STOP BOX STORM SEWER, MANHOLE AND CATCH BASIN CULVERT AND APRON ENDWALL --<---- DRAIN TILE —<-- DITCH / SWALE</pre> RIPRAP STREET NAME SIGN SIGN (NON STREET NAME) TO RETAINING WALL

SUPERIOR SILICA SANDS

CONSTRUCTION **PLANS FOR**

AUBURN MINE MUD POND FILL PLAN



PROJECT LOCATION

INDEX

EROSION CONTROL PLAN

GRADING PLAN

THIS PLAN CONTAINS 9 SHEETS.

DETAILS

SHEET NO.

DESCRIPTION

DEWATERING & CAPPING SEQUENCE OUTLINE

DEWATERING PLAN & EXISTING SITE



NEW AUBURN, WISCONSIN

MADISON, WI 53719-1137

PROJECT NO

JPPS 16838

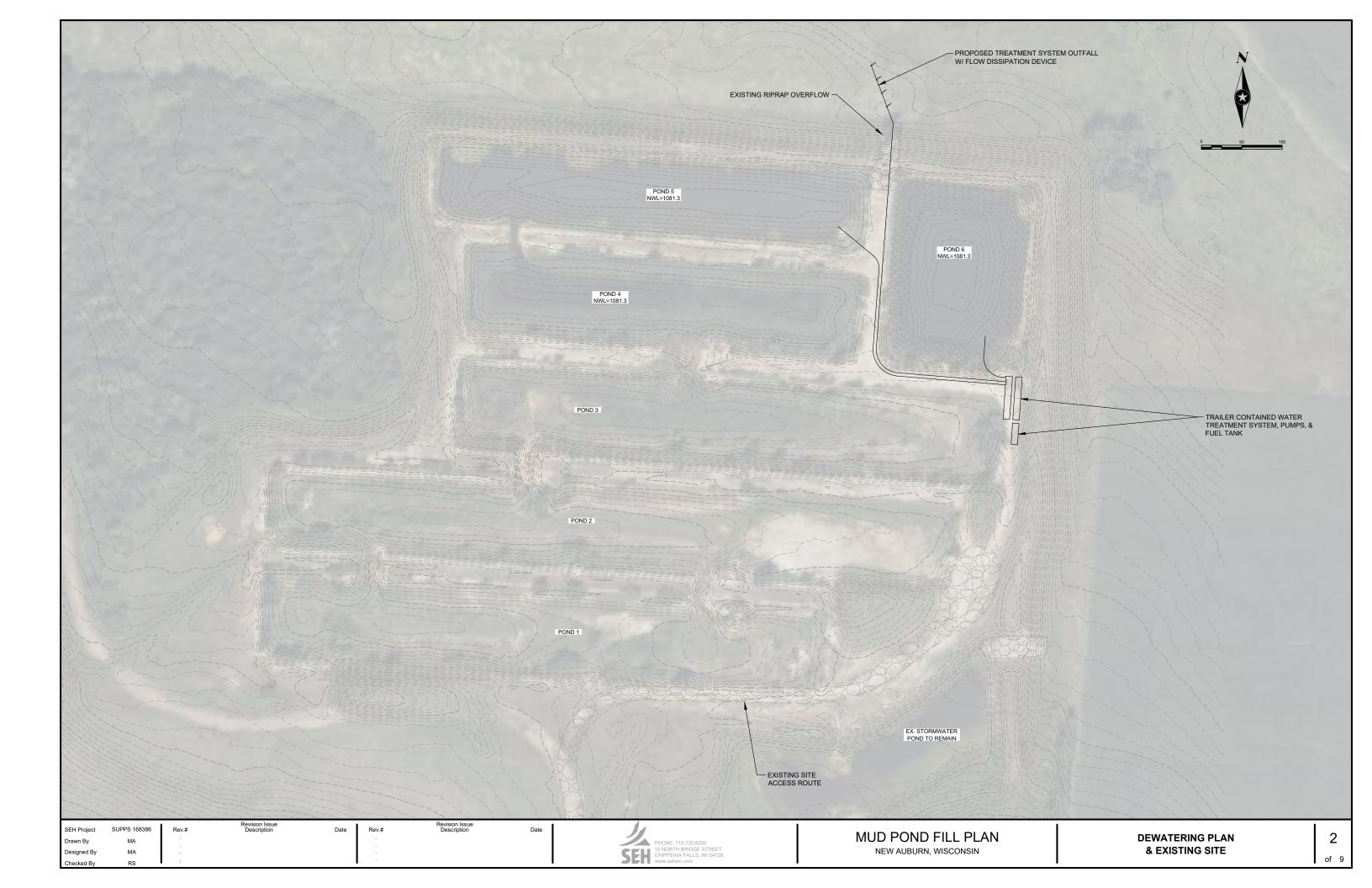
of 9

Know what's below. Call before you dig.

THE CONTRACTOR SHALL CALL THE WISCONSIN ONE CALL SYSTEM AT 811 BEFORE COMMENCING EXCAVATION.

THE SUBSURFACE UTILITY QUALITY INFORMATION IN THIS PLAN IS LEVEL D.

THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.



THE FOLLOWING IS THE PROPOSED WORK SEQUENCE TO CAP THE MUD PONDS IN PLACE:

- DEWATERING (SEE PROPOSED DEWATERING SAMPLING AND MONITORING SCHEDULE)
- 2. INSTALL PERIMETER EROSION CONTROLS.
- 3. REMOVE A PORTION OF MUD FROM PONDS 1 AND 2 AS SHOWN AND PLACE WITHIN PONDS 3, 4, 5 AND/OR 6 AS NEEDED. THE INTENT OF RELOCATING MUD FROM PONDS 1 AND 2 IS TO CREATE A CONSISTENT AND GRADUAL SLOPE ACROSS THE FINAL CAP FOOTPRINT. PLACE RELOCATED MUD EVENLY TO DESIRED GRADE WITHIN THE LOWER PONDS. CARE WILL BE TAKEN TO NOT COMMINGLE RELOCATED MUD FINES WITH CAPPING MATERIALS.
 - a. RECORD BY TOPOGRAPHIC SURVEY THE TOP OF MUD IN PONDS 1 AND 2 AFTER MUD REMOVAL IS COMPLETE AND AFTER MUD PLACEMENT IN PONDS 3 THROUGH 6 IS COMPLETE TO BE USED AS A BASELINE FOR DOCUMENTING CAP THICKNESS IN THESE AREAS.
- 4. SOIL WITHIN THE EXISTING POND BERMS ABOVE THE TOP OF MUD WILL BE USED FOR CAPPING MATERIAL, GRADE OUT MUD POND BERMS TO PLACE OVERTOP IN-PLACE MUD. MUD PONDS WILL BE CAPPED WORKING IN SEQUENTIAL ORDER OF POND NUMBERING. CARE WILL BE TAKEN TO NOT COMMINGLE CAPPING SOILS WITH THE UNDERLYING MUD FINES.
 - a. CAPPING MATERIAL WILL CONSIST OF B-HORIZON SOILS OBTAINED FROM THE POND BERMS AND A-HORIZON TOPSOIL PROVIDED FROM AN OFFSITE SOURCE
 - b. POND 6 WILL BE UTILIZED AS A TEMPORARY SEDIMENT BASIN/TRAP AS WORK PROGRESSES TO POND 6.
- 5. RESTORE PER THE APPROVED RECLAMATION PLAN.
- 6. PERFORM FINAL TOPOGRAPHIC SURVEY OF THE CAPPED AREA.
- 7. POST MINING LAND USE WILL BE PASSIVE RECREATION.

PROPOSED DEWATERING SAMPLING AND MONITORING SCHEDULE

OBJECTIVE:

DEWATER PONDS 4, 5, 6 TO CONSTRUCT AN EARTHEN CAP OVER PONDS 1 THROUGH 6. TREAT THE WATER PRIOR TO DISCHARGE TO REMOVE HEAVY METALS IN SUSPENSION AND SUSPENDED SOLIDS

OUTFALL & RECEIVING WATER:

THE OUTFALL OF THE TREATMENT SYSTEM WILL DISCHARGE TO AN UNNAMED TRIBUTARY OF TROUT CREEK. SEE PLAN VIEW FOR PROPOSED LOCATION OF THE TREATMENT SYSTEM OUTFALL. THE RECEIVING WATER IS TROUT CREEK.

DISCHARGE TREATMENT SYSTEM:

FILTERING IS PROPOSED TO BE IMPLEMENTED TO REMOVE HEAVY METALS IN SUSPENSION AND SUSPENDED SOLIDS PRIOR TO DISCHARGE. THE FILTERING SYSTEM IS ANTICIPATED TO CONSIST OF A COMBINATION OF BAG FILTERS AND ACTIVATED CARBON VESSELS. THE SYSTEM'S EFFECTIVENESS WILL BE EVALUATED THROUGH SAMPLING AND LABORATORY TESTING PRIOR TO DISCHARGING ANY WATER OFFSITE AND THROUGHOUT OPERATION AS INDICATED IN TABLE 1.

SAMPLING SCHEDULE:

SAMPLING OF THE TREATED DISCHARGE WATER WILL FOLLOW THE SCHEDULE OUTLINED BELOW.

- 1. AT STARTUP (SEE "STARTUP TESTING" IN TABLE 1)
- 2. FIRST FULLY OPERATIONALLY DAY AFTER STARTUP (SEE "1st DAY AFTER STARTUP" IN TABLE 1)
- 3. WEEKLY THEREAFTER (SEE REMAINDER OF DEWATERING EVENT IN TABLE 1)

SEE ALSO TABLE 2 IN "DAILY RECORDS" SECTION BELOW.

AFTER STARTUP TESTING HAS CONFIRMED SYSTEM EFFECTIVENESS, THE DEWATERING AND TREATMENT SYSTEM WILL OPERATE UNINTERRUPTED UNTIL DEWATERING IS COMPLETE. DEWATERING WILL NOT STOP TO AWAIT SAMPLING RESULTS FROM THE LABORATORY POST STARTUP. HOWEVER, IF LABORATORY RESULTS FROM SAMPLES COLLECTED POST STARTUP INDICATE EFFLUENT CONCENTRATIONS HAVE BEEN EXCEEDED, THE SYSTEM WILL BE SHUT DOWN UNTIL ADJUSTMENTS CAN BE MADE. THE SAMPLING SCHEDULE ABOVE WILL THEN RESTART AT THE BEGINNING WITH STARTUP TESTING.

Table 1 - Laboratory Monitoring Requirements & Effluent Limitations						
Parameter	Effluent Standar	Unit s	Startup Testing ⁽¹⁾	1st Day After Startup ⁽¹⁾⁽²⁾	Remainder of Dewatering Event ⁽³⁾	
	d	3	Sample Types & Locations			
Aluminum ⁽⁵⁾	40	μg/L	4 Grab Composite Samples (2 influent, 2 effluent)	2 Grab Composite (effluent only)	1 Weekly Grab	
Arsenic ⁽⁵⁾	1	μg/L			Composite (or at filter changeout	
Chromium ⁽⁵⁾	10	μg/L			whichever is more	
Lead ⁽⁵⁾	1.5	µg/L			frequent) Grab	
Manganese ⁽⁵⁾	60	μg/L			Sample + 1 Duplicate (effluent only)	
TSS - Max	40	mg/L	4 Grab Composite	2 Grab Composite (effluent only)	1 Weekly Grab Composite (or at filter changeout whichever is more	
TSS - Average	25	mg/L	Samples (2 influent, 2 effluent)		frequent) Grab Sample + 1 Duplicate (effluent only)	
рН ⁽⁴⁾ - Мах	9	s.u.	4 Grab	2 Grab (effluent only)	1 Weekly Grab Composite (or at filter changeout	
pH ⁽⁴⁾ - Min	6	s.u.	(2 influent, 2 effluent)		whichever is more frequent) Grab Sample + 1 Duplicate (effluent only)	

Notes

- (1) If one sample exceeds the effluent standard concentration for a parameter and the other does not, the average of the two will be used to determine if the effluent standard has been exceeded for that parameter.
- (2) One set of samples will be collected in the morning and the other will be collected in the afternoon.
- (3) The duplicate sample will be held at the laboratory pending analysis of the first sample. If the first sample indicates the effluent standard concentration for a parameter has been exceeded, the duplicate will be analyzed. The average of the first sample and duplicate will be used to confirm if exceedance has occurred.
- (4) pH will be analyzed in the field using a pH meter.
- (5) Metals will be analyzed by the laboratory for total metals analysis.

GRAB COMPOSITE SAMPLES

WHEN GRAB COMPOSITE IS LISTED AS THE SAMPLE TYPE, THE PERMITTEE SHALL CREATE GRAB COMPOSITE SAMPLES BY COMBINING AT LEAST 3 INDIVIDUAL GRAB SAMPLES OF EQUAL VOLUME TAKEN AT APPROXIMATELY 1-HOUR INTERVALS OVER A 3-HOUR PERIOD

START-UP TESTING:

START-UP TESTING WILL BE COMPLETED INITIALLY TO CONFIRM THE TREATMENT SYSTEM IS EFFECTIVE AT MEETING THE EFFLUENT CRITERIA LISTED IN TABLE 1. THE FOLLOWING GENERALLY OUTLINES THE STARTUP TESTING PROCESS:

- 1. TREATMENT SYSTEM SETUP
- 2. RUN TREATMENT SYSTEM FOR A MINIMUM 30 MINUTES AND COLLECT SAMPLES AS INDICATED IN TABLE 1. COMPOSITE SAMPLES WILL BE COLLECTED AT 1-HOUR INTERVALS OVER 3 HOUR PERIOD AS INDICATED ABOVE UNDER 'GRAB COMPOSITE SAMPLES." FOR EXAMPLE, GRAB COMPOSITE SAMPLES MAY CONSIST OF EQUAL ALIQUOTS COLLECTED AT TIME, T=0.5 HRS, 1.5 HRS, AND 2.5 HRS, AND/OR 1 HR, 2 HR, 3 HR.
- 3. ROUTE TREATED DISCHARGE WATER BACK TO PONDS OR A FRAC TANK UNTIL LABORATORY TESTING CAN CONFIRM SYSTEM MEETS EFFLUENT CRITERIA IN TABLE 1
- 4. SHUT DOWN SYSTEM UNTIL LABORATORY ANALYSIS CONFIRMS TREATMENT EFFICIENCY AND EFFLUENT CONCENTRATIONS. IF LABORATORY RESULTS INDICATE EFFLUENT CRITERIA NOT MET, ADJUST SYSTEM AND REPEAT STARTUP TESTING PROCEDURES.

1st DAY AFTER STARTUP:

THIS REFERS TO THE FIRST DAY THE SYSTEM IS FULLY OPERATIONAL AFTER STARTUP TESTING LAB RESULTS HAVE CONFIRMED THE TREATMENT SYSTEM CAN MEET THE EFFLUENT CRITERIA. TREATED DISCHARGE WATER SAMPLES WILL BE COLLECTED FOR THE PARAMETERS AT THE CORRESPONDING FREQUENCY INDICATED IN TABLE 1 UNDER "1st DAY AFTER STARTUP."

REMAINDER OF DEWATERING EVENT:

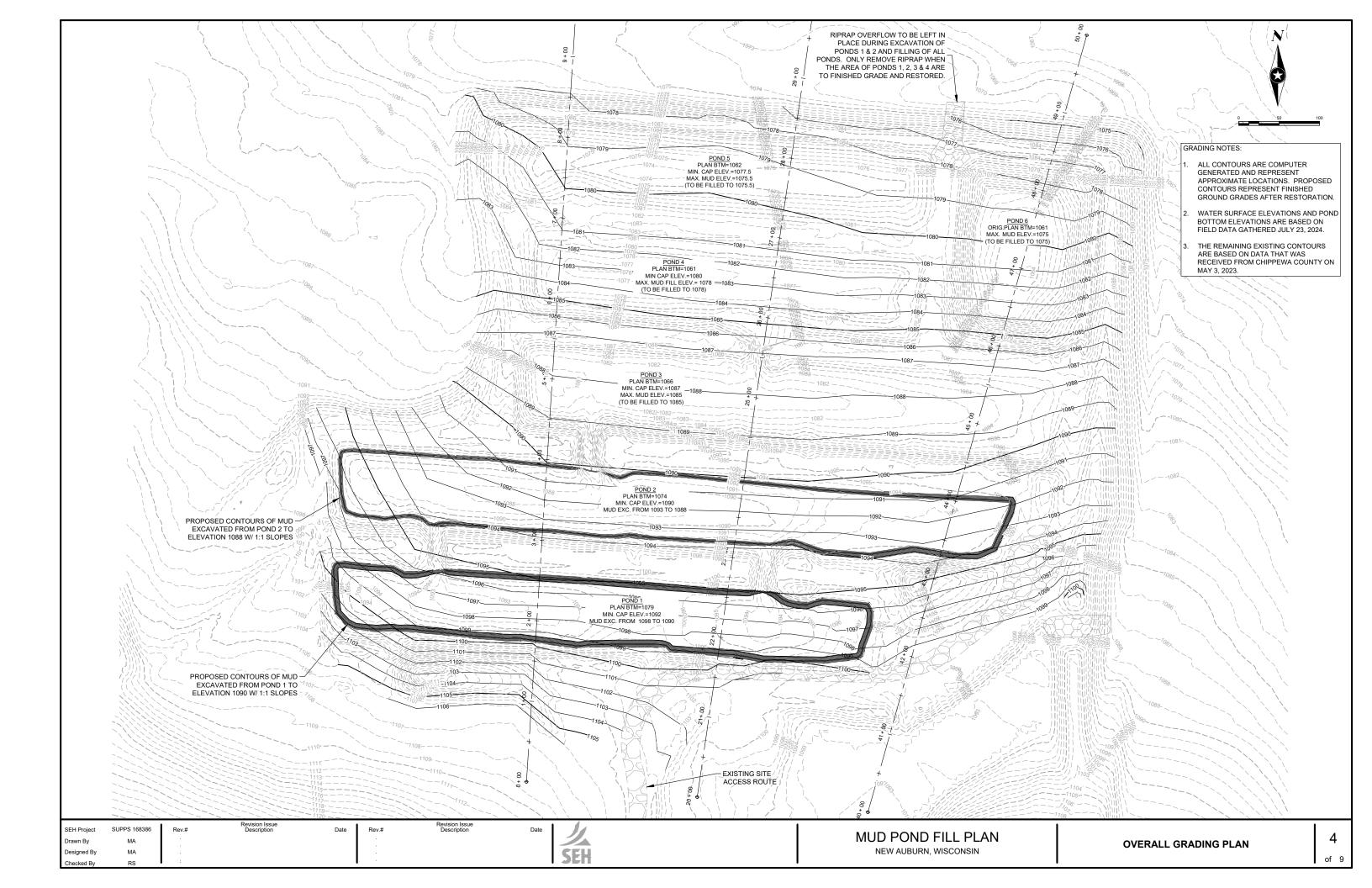
THEREAFTER, DISCHARGE SAMPLES WILL BE COLLECTED WEEKLY AS INDICATED IN TABLE 1. WEEKLY SAMPLING MEANS ONCE PER CALENDAR WEEK WHICH BEGINS ON SUNDAY AND ENDS ON SATURDAY. SHOULD WEEKLY SAMPLES INDICATE DISCHARGE IS NOT MEETING THE EFFLUENT CRITERIA, THE DUPLICATE SAMPLE WILL BE ANALYZED AND THE AVERAGE OF THE TWO RESULTS WILL BE USED TO DETERMINE IF EFFLUENT CRITERIA HAS BEEN MET OR IF ADJUSTMENTS TO THE TREATMENT SYSTEM ARE NEEDED AS PRESCRIBED IN "SAMPLING SCHEDULE" ABOVE.

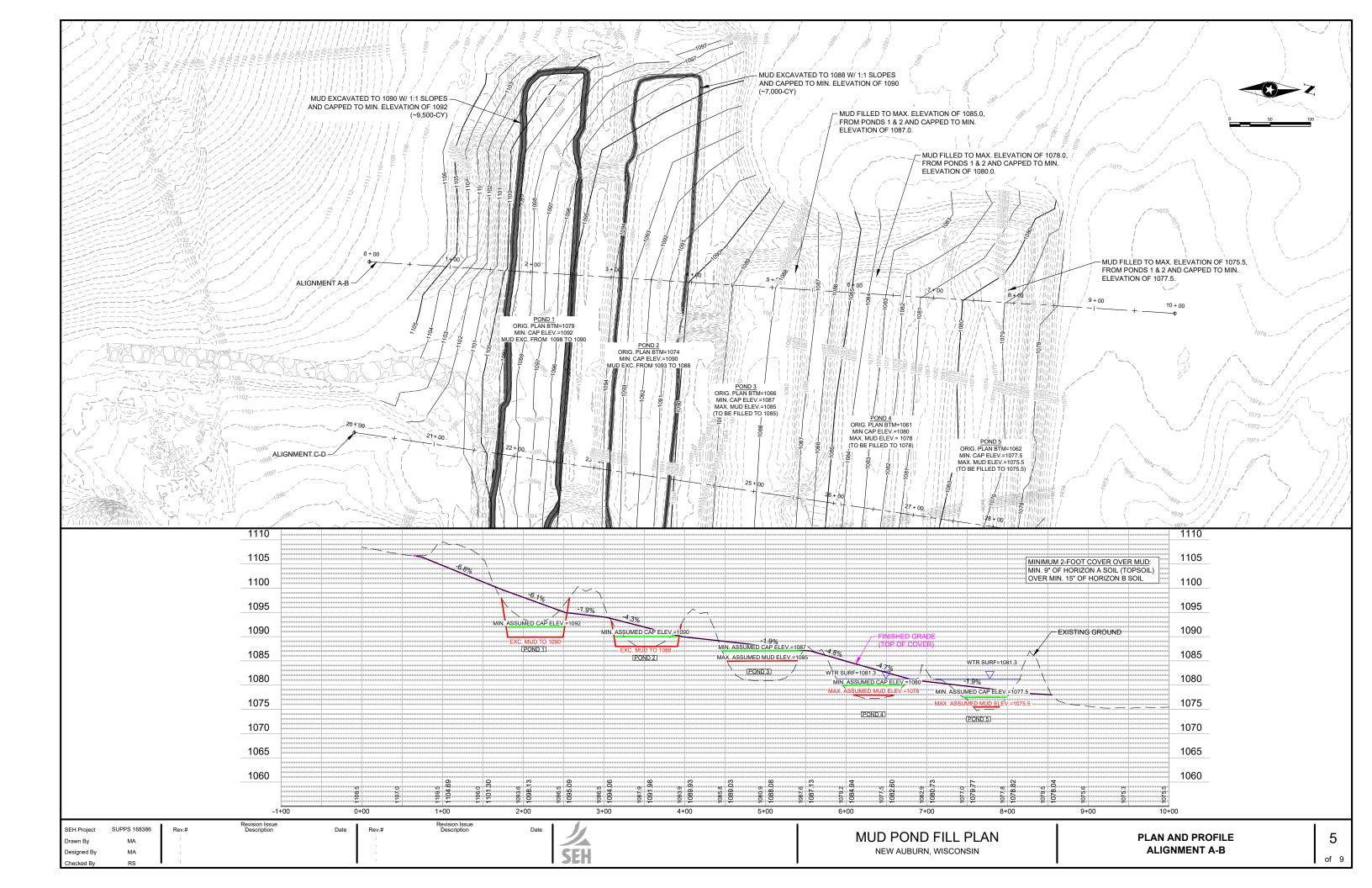
DAILY RECORDS:

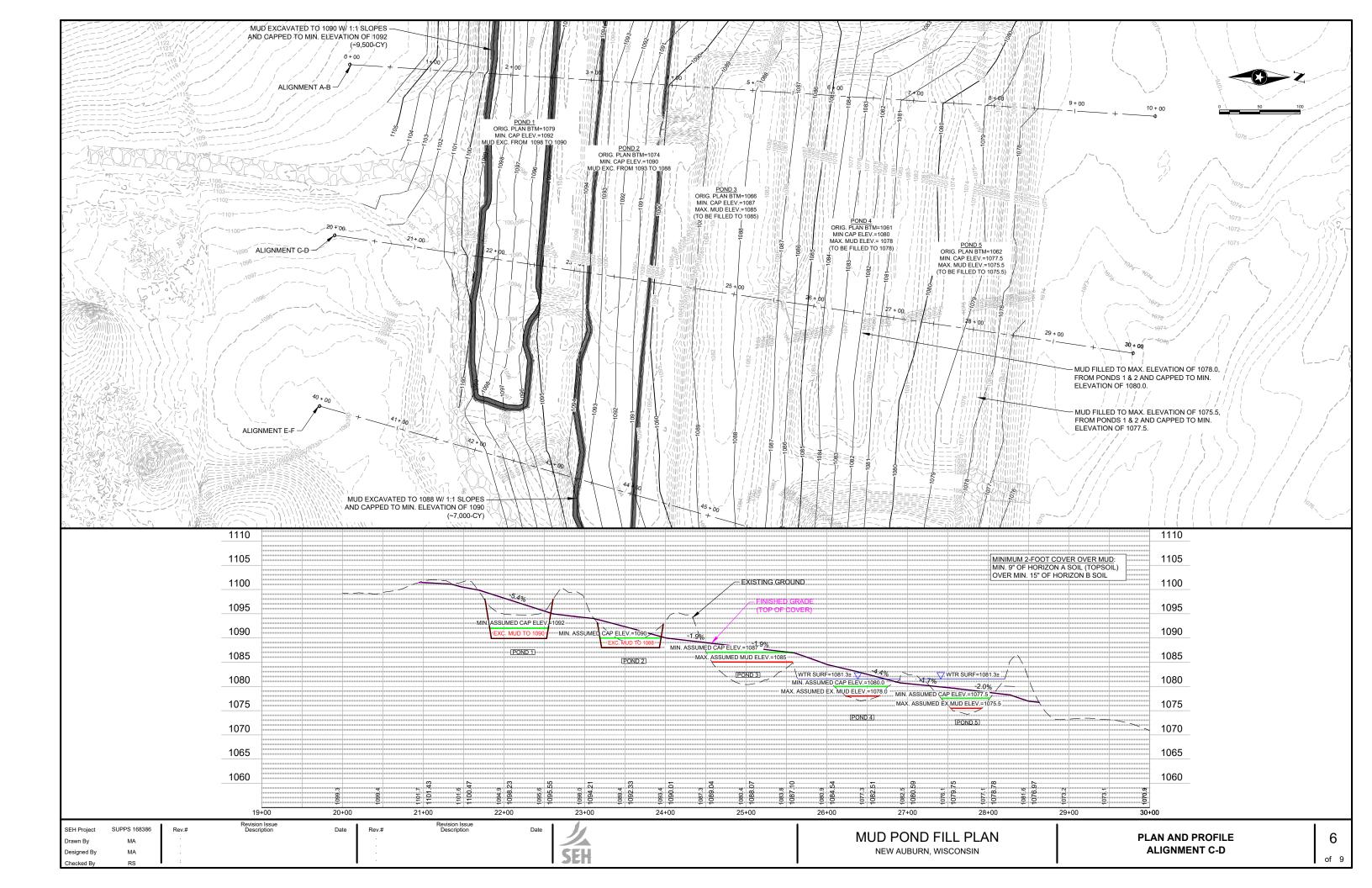
IN ADDITION TO LABORATORY TESTING, A DAILY INSPECTION LOG WILL BE KEPT EACH DAY THE SYSTEM IS OPERATIONAL. THE FOLLOWING MINIMUM PARAMETERS WILL BE RECORDED.

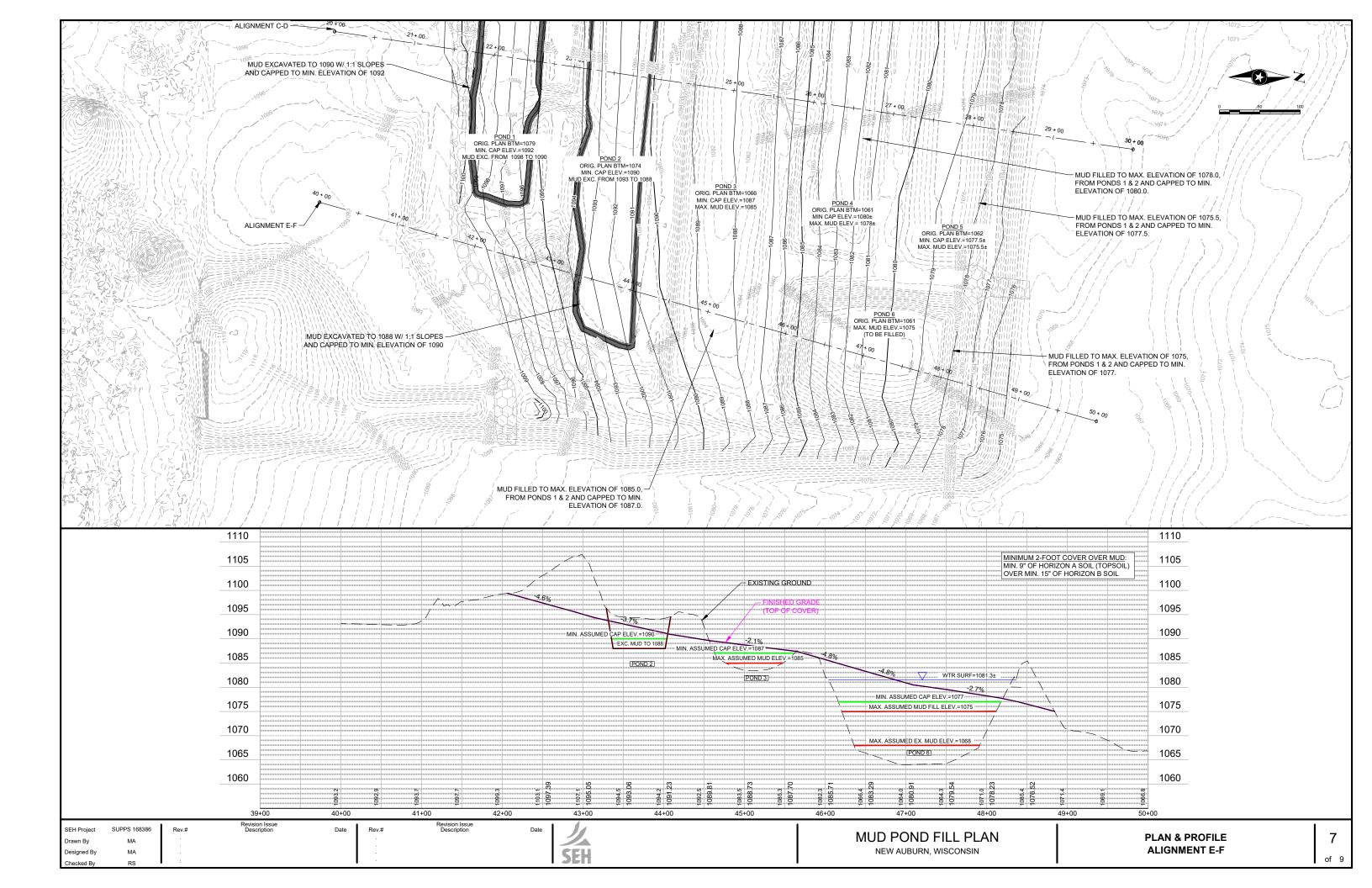
Table 2 - Daily Field Monitoring Requirements					
<u>Parameter</u>					
Flow Rate (gpm)					
Daily Discharge (gal)					
Temperature (°F)					
Color					
Odor					
Outfall Erosion & Corrective Action Taken					

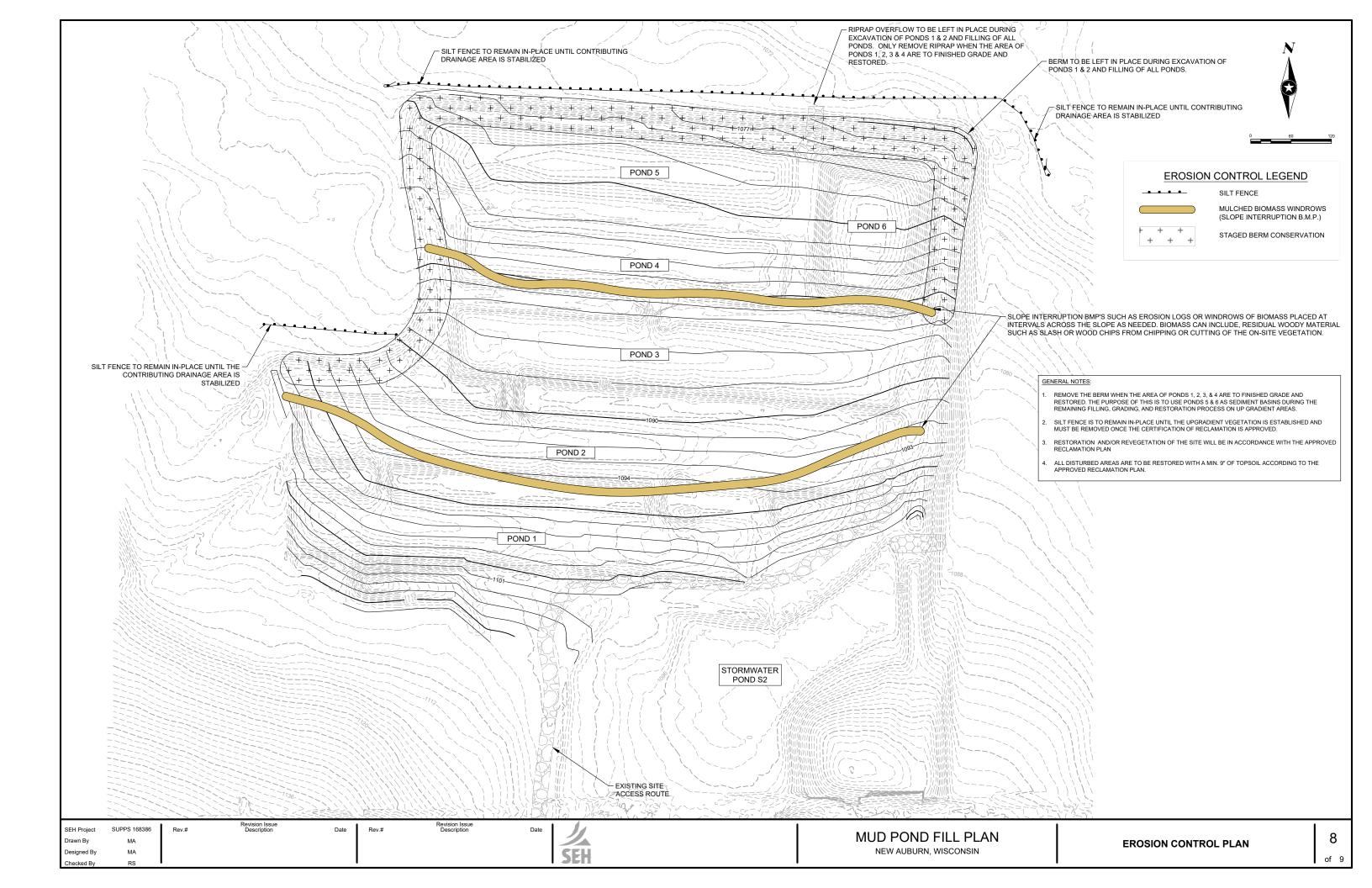


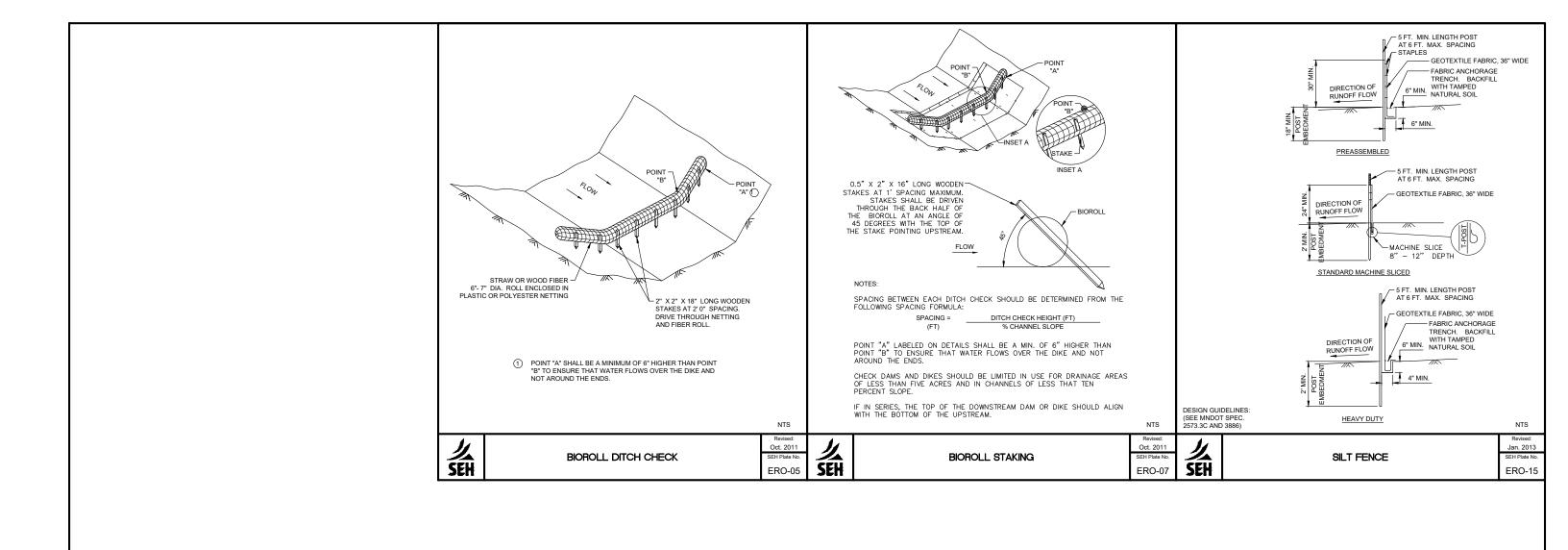












Revision Issue Description

Date

Rev.#

SUPPS 168386

MA

MA

Rev.#

SEH Project

Revision Issue Description

Date

Landowner Acknowledgement

I have reviewed the Mud Pond Capping Plan for the non-metallic mine which is on land that I own or for land for which I am the authorized representative for the owner. I certify that I concur with the plan and will allow for its implementation. I agree to allow access by named lessee for mining and reclamation activities and Chippewa County and Wisconsin DNR for monitoring of site activities.

Owner Signature & Date

Kevin Pietz 9/17/24

Owner Signature & Date

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Owner Signature & Date

Operator/Lessee Acknowledgement

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Scott Waughtal, CEO

Operator Name & Title (Print)

Operator Signature & Date

PMLU Definition and Cap Maintenance During Reclamation

The post-mining land use for the mud pond area is "passive recreation". Passive recreation is defined as a natural area used for recreation; such as but not limited to, bike riding, hiking, bird watching, hunting, or atv/utv use as long as use does not diminish or damage the cap. I understand to ensure human health safety and the preservation of the cap, the area over the mud ponds must be maintained and stabilized with the designated seed mix shown below.

Common Name	Scientific Name	Rooting Depth	
Annual Rye	Secale cereale	1.1 m 3.5'	
Timothy	Phleum Pratense	48" 3'	
Tall Fescue	Festuca arundinacea	150 cm 5'	
Switchgrass	Panicum virgatum	10'	
Big Bluestem	Andropogon gerardii	2.5 m 8.3'	
Canada Wild Rye	Elymus canadensis	2.5 m 8.3'	
Alsike Clover	Trifolium hybridum	20 cm (0.2m) 0.6'	
Red Clover	Trifolium hybridum	21 cm (0.2m) 0.6'	
Alfalfa	Medicago sativa	150 cm (1.5m) 5'	

I understand that during reclamation and until certification, this area cannot be used for pasturing of livestock, harvesting of crops, and any deep tillage, earthwork, or excavation of the area. Any erosion that occurs during reclamation will be repaired as soon as possible and an increased best management practice will be used to ensure the area is stabilized and the cap is maintained as specified in the "Auburn Mine Mud Pond Fill Plan". Any alteration of the area after reclamation certification will need approval by the WI DNR.

Operator:

Name:

Signature: Scott Waughtal, CEO

Date: 12/10/2024

Landowner

Name:

Date: 12-10-2