

MINED LAND USE PLAN

*Wallis Sand & Gravel Mine
Johnson and Hanson Roads
Town of New Haven
Oswego County
State of New York*

Applicant:

W.D. Malone Trucking & Excavating

*708 County Route 7
Hannibal, New York 13074*

Prepared By:

ingalls

Ingalls & Associates, LLP
2603 Guilderland Avenue
Schenectady NY 12306
518-393-7725
518-393-2324 FAX

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1.00 INTRODUCTION

The following life of Mined Land-Use Plan (MLUP), including both the three (3) sheet plan set as well as written portions of the Mining and Reclamation Plans has been prepared for the proposed Wallis Mine Site. The Mining Narrative and MLUP include information taken from the “Mined Land Use Plan” narrative prepared by Thomas Giles, dated April 2010.

The proposed mine site is located on a 63.3 acre parcel owned by W.D. Malone Trucking and Excavating Inc., in the Town of New Haven, Oswego County. The site is situated northeast of the intersection of Johnson Road and Hanson Roads, approximately one mile west of the Village of Mexico. The entire life of mine boundary will be 36+/- acres. The site is accessed via a haul road off of Johnson Road.

Johnson and Hanson Roads are remote rural roads sparsely populated with farms and rural dwellings. The nearest residence to the west is approximately 210 feet from the LOM on the west side of Johnson Road. The nearest residence to the south is approximately 160 feet from the LOM on the north side of Hanson Road. There are several other residences adjacent to the mine site along the west side of Johnson Road and the south side of Hanson Road. There are no current dwellings within a quarter mile to the north and east of the mine site. There are no existing structures on the mining site.

The mined land use plan is being submitted as required by New York State Department of Environmental Conservation Mined-Land Reclamation Program as promulgated by the policy of New York State Environmental Conservation Law (ECL), Article 23, Title 27, and Part 420.

This report describes the proposed operation of mining sand and gravel at the subject property. Based on the USDA Resources Conservation Service Soil Survey, rich alluvial outwash deposit of intermingled sand and gravel materials, Alton soil series, exists within the 36+/- acre LOM. The applicant, W.D. Malone Trucking and Excavating Inc., is proposing to mine approximately 36 acres of 63+/- acre site. The mine site location is shown on the New Haven USGS topographic quadrangle provided on the Mining Plan.

The schedule of mining consists of the extraction of sand and gravel in four (4) phases. Phase 1, proposed to be completed during the 2012-2017 permit term, will consist of 10.5 acres and will begin at a previously mined area in the center of the site. This area was mined for sand and gravel at one time, but details of the former mine are unknown. Based on aerial photographs from the 1970's, these mining operations were conducted prior to 1975. The proposed mining operations will be in compliance with the all Town of New Haven regulations.

It is intended that reclamation will be carried out concurrently for the duration of the mining activities with areas being reclaimed as final elevations are reached. All mining is to remain outside the 100-year flood plain and NYSDEC Freshwater Wetlands associated

with the Butterfly Creek running parallel to the eastern boundary of the mine. Ultimately, all disturbed lands will be reclaimed in accordance with the Reclamation Map (with final grade contours) and the reclamation section of this report, creating a vacant parcel of open meadowland or productive pastureland.

2.00 LIFE OF MINING PLAN

2.01 Affected Land

As discussed above, the property was previously used for mining. A pre-1975 excavation area is located toward the center of the property. This area has been clearly shown on the Mining Plan, sheet 1 of 3 of the accompanying plan set. The land has also been exploited for logging. A NYS Freshwater Wetland (FWW NH-16) has been delineated within the southern portion of the site and shown on the Mining and Reclamation plans. All mining will be conducted outside of the wetlands and 100 feet buffer areas. A minimum 50' excavation setback from Johnson Road and 130' setback from Hanson Road has been provided.

Outside of the clearing associated with the previous mining operations, the site can be classified as wooded, with a mixture of mature and young forest.

The mining site is located on a somewhat terraced upland area of the Butterfly Creek and contains a deposit of well-graded sand and gravel formed by glacial outwash. The general nature of the topography surrounding the mining site ranges from gentle slopes on the north, west, south and middle of the site to moderately sloping terrain on the existing ridgeline sloping to the east towards the Butterfly Creek. Woods surround the mine site. The existing vegetation surrounding the entire mine will be maintained as a visual screen and noise barrier. The Butterfly Creek, which generally flows in a northerly direction, borders the site to the east. The creek flows into Lake Ontario, which is approximately 8 miles north of the site. At its closest point, mining operations will be greater than 250 feet from the Butterfly Creek.

The land is well drained to excessively drained, which is a common characteristic of the high permeability Alton soils. No mining shall occur below a level at least 5' above the annual high groundwater table. On November 14, 2011 deep test holes were conducted to properly determine the depth of the maximum annual water table and the composition of the minerals at various depths. Results of these test holes have been plotted on the accompanying cross sections. Based on the test pits, the groundwater table within the proposed mine area was determined to be slightly above the elevation of Butterfly Creek, which is approximately elevation 410+/- feet. Since groundwater conditions can fluctuate due to weather conditions and time of year, additional deep test holes or borings shall be conducted prior to commencement of mining activities each season to ensure required 5' separation is maintained between the mine floor depths and the maximum annual water table. A settling pond will be constructed in the center of the mine floor in order intercept

runoff associated with the mining operations. Some ponding may occur at times of heavy rains or spring thaws, but will quickly disperse through the well-drained soils. The size and elevation of the settling pond will need to be modified as the mining operations progress. The pond has been sized to safely handle the 100-year storm event. See drainage design calculations in Appendix A for further details.

2.02 Mineral Description and Mining Methodology

The mining operation is a surface unconsolidated mine for the purpose of extracting sand and gravel from an area containing intermingled glacial outwash deposits of the material. The sand and gravel mined is from glacial outwash and has been classified as Alton, Ira and Sodus Soils by the United States Department of Agriculture (USDA) Soil Conservation Service.

The Alton series is described as “Deep, well drained to somewhat excessively drained, moderately coarse textured soils. These soils formed in glaciofluvial sand and gravel deposits derived mainly from red and gray sandstone. They are nearly level to rolling. They are terraces, plains and remnant beach ridges, eskers and kames. In a representative profile, the surface layer is dark brown gravelly fine sandy loam 8 inches thick. The subsoil extends to a depth of 48 inches. The upper part is strong brown very gravelly loamy sand 12 inches thick. The substratum, to a depth of 62 inches, is stratified sand and gravel. Permeability is moderately rapid in the surface layer and subsoil and rapid in the substratum.”

The Ira series is described as “Deep, moderately well drained, moderately coarse textured soils that have a fragipan. These soils formed in glacial till derived mainly from sandstone. They are nearly level to moderately steep. They are on ridges and knolls and on the sides and tops of elongated hills on the till plain. In representative profile, the surface layer is dark grayish brown gravelly fine sandy loam 8 inches thick. The upper part of the subsoil is yellowish brown, very friable fine sandy loam 5 inches thick. This is underlain by a leached layer of light yellowish brown gravelly fine sandy loam 7 inches thick that has distinct mottles. The lower part of the subsoil is a very firm, dense fragipan of brown, mottled gravelly fine sandy loam 20 inches thick. The substratum, to a depth 50 inches, is a grayish brown gravelly fine sandy loam. Permeability is moderate above the fragipan and slow in the fragipan and substratum.”

Phase 1, proposed to be completed during the 2012-2017 permit term, will consist of 10.5 acres and will begin at a previously mined area in the center of the site. The uppermost 6 to 12 inches of topsoil originating from the uppermost 6 to 12 inches of topsoil (*O and A Soil Horizons*) found at the site prior to any disturbance will be stripped evenly and to the full depth and pushed up into a neat, continuous (*where possible*) and finished graded berms along the nearest final limit of mining but not within 25 feet of any property line or right-of-way. As demonstrated by the recently conducted test pits, an average of 12” of topsoil was found to be present above the underlying sand and gravel, while subsoil is negligible. Stripping will be limited to the area necessary for one season of mining in

order to help provide for visual screening and to limit the acreage exposed to wind and water erosion. All topsoil will be stored out of the way of ongoing mining and reclamation activities and will be stored in such a fashion to prevent degradation by multiple moving and/or mixing. All stripped topsoil will be stored in neat, continuous (*where possible*) and finish graded berms along the nearest final limit of mining-Life of Mine boundary area. All topsoil will be stabilized by planting with a conservation seed mixture that contains at least 2 legumes (*i.e. clover*) within 30 days of construction. All topsoil will be used exclusively for onsite reclamation within the limits of the life of mine area. All topsoil will remain within the life of mine area until utilized in reclamation. No designated cover material will be taken outside the life of mine area and no topsoil will be taken outside the life of mine area. A vegetative cover of the planted grasses will be continuously maintained on all topsoil berms/stockpiles until the time of reclamation. After construction there will be no disturbance to any topsoil berms/stockpiles without first notifying the MLRS in writing to enable Mining staff to become involved in the associated reclamation event. All topsoil stored for reclamation will not contain brush, trees, stumps, clay, silt, rock (*not found naturally in topsoil layers*), any non-soil materials or any other extraneous materials as these materials will interfere with reclamation. There will be no undermining of cover material resources (designated for reclamation) that have been stored in stockpiles and/or perimeter berms for use in reclamation. The active face will remain far enough away from all topsoil to make possible the safe recovery of these soils by heavy equipment.

The sand and gravel will then be removed via front-end loaders, dozers, and excavators, beginning at the lowest point of phase 1 and proceeding southerly and northerly, never proceeding deeper than an elevation of 425' +/- or within 5' of the groundwater table. The excavated sand and gravel material will then be loaded into a portable screen capable of producing no more than 150 cubic yards (c.y.) per hour for proper gradation. The portable screen is a shaker type and uses no wash water for processing. While it is anticipated that the location of the portable screener will be moved throughout the mining process, a 1000' buffer shall always be provided between the screener and the nearest sensitive receptor.

Since all equipment is portable, no equipment will remain on the site after mining activities are completed. The sand and gravel reserves are expected to be mined to the limits as shown on the Reclamation Plan map and to the depths indicated on the Grading Plan cross sections. During Phase 1, which will be concurrent with the initial Permit Term, the mine floor will be sloped towards the center of the mine.

The mine will be worked from the top toward the bottom as shown on the attached Mine Cross Section Plan. Mining will be done in this manner so that drainage can be routed toward the proposed settlement pond to be located at the center of mine.

Three (3) additional phases, to be conducted in future permit terms have been shown on the accompanying Mining plan and Sections. Since these future phases include varying

amounts of sand and gravel, the ultimate sequence of mining may be modified to address demands at that time.

All mine limits are indicated on the Mining Plan and Reclamation Plan. Additionally, a detailed "Schedule of Mining and Reclamation Events" is included in Section 3.00. To the maximum extent practicable, the plan will provide for mining and reclamation to proceed concurrently in phases.

It is proposed to utilize all materials removed during the mining process. The sand and gravel will be sold after screening and crushing, and the topsoil will be reused during the site's reclamation process.

2.03 Grading and Slope Requirements.

The perimeter of areas to be disturbed by mining shall not extend further than shown on the Mining Plan. All existing vegetation between the mining limits and property line shall remain undisturbed. The proposed grading, as shown on the Reclamation Plan, has been designed with maximum slopes to be 1 vertical: 2 horizontal. Typical sections can be found in the MLUP plan set.

Sufficient materials will be left in place in sloped areas (along the perimeter of this mine) to achieve the final approved grades without backfilling. There will be no mining below the grades shown on the approved maps and cross-sections in any area of this mine. There will be no backfilling in any mine floor area in order to achieve the final approved grades. There will be no storage, disposal and/or processing of materials originating from offsite sources.

2.04 Material Preparation and Processing Facilities

Material that is removed from the mined area will be loaded directly into trucks from the bank or initially stockpiled at the top of the mine face, and then loaded into trucks for removal off-site.

Processing on the site shall include screening and crushing of the mined product. All mining and mining related operations, including but not limited to excavating, mining, grading, processing, screening/crushing, sorting, loading, stockpiling operations, haulage operations, haul road improvements/construction, reclamation operations, maintenance operations, and so on, will be limited to the following hours and days: No mining and mining related operations, as outlined above, shall take place before 6 AM and no mining operations shall take place after 6 PM Monday through Saturday. There will be no mining or mining related activities taking place on Sundays, Memorial Day, July 4, Labor Day, Thanksgiving, and Christmas. In addition, there will be no operating of motorized equipment and no idling of any trucks parked inside or outside this mine (adjacent to this mine waiting for the mine to open), before 6AM and after 6PM Monday through Saturday. If any trucks arrive early (before 6AM), the driver(s) shall be advised

to immediately turn their engines off. No trucks shall be allowed to enter this mine before 6AM and after 6PM.

2.05 Storage and Disposition of Excavated Materials

All of the mined materials will be stockpiled within the life of mine designation and will vary in location due to the locale of the mining activities.

Brush and small trees shall be mulched on site, while larger trees shall be harvested for firewood or timber as appropriate. Any remaining stumps and slash will be temporarily stockpiled in stable areas and later buried on-site. All brush, trees, and stumps will be disposed of in Department approved areas (*if onsite disposal is proposed*) and will be disposed of according to Department approved specifications for burial – these materials will be compacted by heavy equipment, covered with at least 5 feet of clean cover material (*originating from the life of mine area*) and then again compacted by heavy equipment. There will be no burial of brush, trees, and/or stumps in any side slope area. Brush, trees, and stumps will be neatly piled in segregated areas (within 30 days of cutting/removal from the ground) until the time of disposal. No trees, brush or stumps will be cast down slope or left along haul roads or perimeter areas of this mine.

2.06 Haulageways and Equipment

An access road presently connects the mining site to Johnson Road. A gate will be installed at all entrances/exits to this mine and all gates will be kept locked during all times this mine is not in operation.

All haul roads will be sprayed with adequate amounts of water and/or Department approved dust palliatives (suppressants) as often as is necessary to effectively prevent dust. A minimum of 6 inches of crushed stone will be applied to all haul road areas where there is evidence of dust, water erosion, and/or unsafe conditions. Culverts will be constructed as needed to prevent erosion and/or unsafe conditions. Additional 6-inch layers of crushed stone will be applied on these haul road areas when the existing crushed stone layer is either filled up with sediments causing dust, or there is evidence of erosion and/or unsafe conditions. The surface of any paved road that intersects with the entrance/exit to the mine and the entrance/exit areas will be kept free of any spilled and/or tracked materials which can cause dust, slippery conditions or any other condition that is unhealthy or unsafe. Prior to the commencement of any mining or mining related activity under this permit, the sides of all haul roads leading to this mine will be cleared of any cut trees/associated stumps, will be finish graded (if tree/stump removal has been accomplished), will be seeded with a soil conservation seed mixture and will be mulched.

2.07 Drainage

A. General

Currently the majority of the site drains from west to east towards the Butterfly Creek and associated wetlands. The southwest portion of the site drains towards existing wetlands along the site's southwest boundary. Although limited, due to the permeable nature of the site soils, any stormwater runoff produced from higher elevations to the west of the mine will be routed around the perimeter of the active mine via diversion ditches into the stormwater management pond.

Once mining commences, runoff produced within the active mine limits will be directed internally to the proposed settling pond on the mine floor for subsurface infiltration. This pond has been designed to meet the requirements listed below by providing storage capacity for the 100-year storm event.

All drainage will remain 100% internal throughout the life of this mining operation. All drainage and water control features shall be constructed to the extent necessary to achieve this performance standard. There will be no discharge of waters to any area outside the limits of the lands to be affected by mining over the life of this mining operation. Surface water will not be allowed to drain in such a manner that siltation and/or sediment are carried outside the limits of the life of mine boundary, offsite onto neighboring properties or into any wetlands, streams, rivers or other water bodies.

All drainage from this mine will be directed into a settling pond/retention basin which will be constructed to the full specifications outlined below:

For mines greater than 5 acres in size – All settling ponds/retention basins and any other necessary drainage and water control features have been sized to accommodate at least a 100-year storm event of 24 hours duration. Additional (in addition to the total storage capacity required by a 100-year storm event of 24 hours duration) storage capacity will be added at the time of initial construction to ensure that the minimum capacity (capacity required by 100-year storm event of 24 hours duration) is maintained at all times when the settling pond(s)/retention basin(s) are filling up with sediment/fines. The settling ponds have also been conservatively designed with required storage volumes assuming minimal infiltration of 12 in/hour. See Appendix A for the drainage analysis, including sediment pond sizing. All settling ponds/retention basins, drainage ways and drainage and water control features will be finish graded, will be stabilized by the planting of conservation grasses, will be mulched, will be constructed to full specifications and will be completely functioning/operational before mining commences under this permit.

When sediment fills the settling pond/retention basin to the point where the appropriate operating capacity is reduced, then the permittee will remove the sediment within 15 days, restoring the appropriate operating capacity. As mining operations progress, the

size and elevation of the settling pond will need to be modified to account for the increase drainage area feeding to the pond. This maintenance requirement will be continuously in effect throughout the life of this mining operation. All sediment from settling ponds and retention ponds will be stored in an area where fines cannot erode by action of either wind or water and all sediment will be stored in an area where it cannot be carried to an area(s) outside the limits of the life of the mine.

B. Existing Conditions

Currently, runoff drains from the higher elevations of the site to the lower elevations internal to the site. No runoff enters the site from any off site sources.

C. Final Reclaimed Conditions

The proposed drainage conditions are shown on the Reclamation Plan and Cross-Sections within the accompanying plan set. Upon completion of mining activities, the former mine floor and slopes will be stabilized by grass. Any runoff produced post-reclamation within the LOM will be minimal and easily infiltrated into the reclaimed mine floor.

2.08 Pollution Control

A) Dust and Noise Control

Dust, noise and vibration are to be mitigated to the fullest extent possible so as to limit impacts on the surrounding environment.

All dust sources (specific and non-specific) such as haulageways, excavation, handling and stockpiles shall be controlled by watering and/or Department approved dust palliatives (suppressants) as needed; depending on weather and operating conditions. Additional dust reduction measures shall include immediate stabilization of stockpiles and berms by seeding and mulching, as well as reduced truck speed on haulageways.

A minimum of 6 inches of crushed stone will be applied to all haul road areas where there is evidence of dust, water erosion and/or unsafe conditions.

Any and all areas where topsoil, subsoil, clay, silt, erodible materials, and/or overburden are exposed to wind erosion causing dust will be seeded with a soil conservation seed mixture and mulched within 15 days. This proposal will also pertain to any and all areas where erodible materials are encountered as the result of incomplete/improper stripping.

In accordance with NYSDEC Program Policy titled "Assessing and Mitigating Noise Impacts", dated October 6, 2000, all applicable Best Management Practices (BMP's) shall be employed so as to limit noise from mining activities. Some of these noise abatement practices may include approved muffler systems on all equipment and perimeter berms with vegetation for further sound attenuation.

All screening plants will have rubber-lined chutes to reduce noise levels. All screening plants will be situated in a lower portion of the mine as far away from residences as possible.

B) Water Pollution Control

There is minimal off-site surface runoff that will be naturally diverted around the subject site. All final slopes, stockpiles, and berms shall be stabilized by immediately seeding and mulching them. Any runoff in the mine area will be contained within the site and ultimately directed to the proposed settling/infiltration pond (with no over flow) at the center of the mine floor. If necessary, additional erosion and sediment control measures such as silt fence on down gradient areas shall be used to control sedimentation during the reclamation phase. In addition, undisturbed natural berms shall be constructed along the perimeter of the LOM limits to ensure all surface runoff remains internal. The berms shall be subject to regular inspection and review to ensure its integrity and to confirm that no water is exiting over the berm and flowing down slope towards the adjacent wetlands and creek.

Additional protection of surface and groundwater will be achieved by prohibiting storage of chemicals, fuel, salts, pesticides, etc. on site. No burial of these materials or any other items shall be permitted on site. There will be no spillage of petroleum products of any kind. All petroleum products will be stored in locked and secure enclosures. All equipment will be kept free of oil leaks.

C) Visual Screening

The existing site can be classified as wooded with a mixture of young and mature trees of varying species. As shown on the mine sections, in order to provide the maximum amount of screening the proposed mining operations will begin at the center of the site and work outward. This process will create natural earthen berms as mining progresses below the vegetated mine perimeter. By working outward from the center of the mine, a natural vegetative shield will be provided throughout the life of mining activities.

3.00 SCHEDULE OF MINING EVENTS

MINING EVENT

Construct necessary settling/infiltration Pond

Begin mining of Phase 1

Complete mining of Phase 1

Begin mining of Phase 2*

Complete mining of Phase 2

Begin mining of Phase 3*

Complete mining of Phase 3

Begin mining of Phase 4*

Complete mining of Phase 4

* Three (3) additional phases, to be conducted in future permit terms have been shown on the accompanying Mining plan and Sections. Since these future phases include varying amounts of sand and gravel the ultimate sequence of mining may be modified to address demands at that time.

Note: All final reclamation activities are to be in accordance with the Reclamation Map. Please see Section 5.00 "Methods of Reclamation" for discussion of reclamation activities.

4.00 MINING NOTES

The following Notes shall apply to the mining operation:

- A. Mining and related activities shall occur only between 6:00 a.m. and 6:00p.m. Monday through Saturday. There shall be no activity on Sundays or legal holidays.
- B. Dust generated by mining activities and haul road use shall be controlled by water spray or by paving. Water shall be applied as often as needed to effectively prevent dust. All paved surfaces shall be swept as often as necessary to effectively prevent dust.
- C. There must be no disposal of landfill materials, trash or garbage, demolition debris, or other wastes in the mine unless the disposal is specifically detailed in the

approved mined land-use plan or is applied for and approved as an amendment to the plan and mining permit.

- D. There must be no storage of petrochemicals, chemicals, asphalt, asphalt mixtures/compounds, oil saturated solvents, pesticides, oils, herbicides, hazardous/toxic substances or petroleum products on the site unless the storage is approved amendment to the plan and mining permit. Any spillage or fuels, waste oils, other petroleum products, or hazardous materials or substances must be reported to the NYSDEC Spill Hot Line (1-800-457-7362) within 2 hours.
- E. Sufficient material will be retained on site for reclamation purposes.
- F. The permittee shall monument the ultimate limits of the mine and limits of all phases at all corners and regular 100 foot intervals with accurate, highly visible markers prior to the commencement of mining. The markers shall be maintained by the permittee throughout the life of the mine. The limits of the mine shall be determined by instrument.
- G. Permittee shall construct substantial barriers to motor vehicle access to be utilized when the mine is not operating in order to prevent dumping, noise, and damage to areas reclaimed or undergoing reclamation.
- H. All efforts must be taken to ensure no eroded material enters into any stream, watercourse, wetland or river or leaves the site to any adjacent land.

5.00 METHOD OF RECLAMATION

5.01 Progressive Rehabilitation

The reclamation process calls for mining and portions of the rehabilitation activities to be conducted concurrently. All side slopes will be reclaimed throughout each Phase, and any area of the mine that has reached final elevations shall be reclaimed as soon as possible, regardless of phase. Progressive rehabilitation will reduce environmental impacts, including any visual impacts. Reclamation will begin as each phase of the project is completed, and end before the next phase of the project is twenty-five percent (25%) completed.

As final excavation is completed, the mining side slopes shall be graded to an approximate 26.5° (1 vertical: 2 horizontal) slope or flatter and blended in with the undisturbed ground surrounding the mine area. The floor of the mine will be graded towards the center of the mine and floor at a slope of 0.50% or greater.

5.02 Grading and Slope Treatment

The reclamation plan has been designed such that the outer perimeter of the proposed mine shall remain essentially undisturbed. There shall be no disturbance beyond the mine

limits, with all existing grades and vegetation beyond the mine perimeter remaining intact.

The perimeter of areas to be disturbed by mining shall not extend further than shown on the Mining Plan (Life of Mine). All existing vegetation between the mining limits and property line shall remain undisturbed. The proposed grading, as shown of the Reclamation Plan and Cross-Sections, has been designed with maximum slopes to be 1 vertical: 2 horizontal.

No mining shall occur below a level at least 5' above the annual high groundwater table. Deep test holes or borings shall be progressed within the existing mine floor periodically in order to properly determine the depth of the maximum annual water table and the composition of the minerals at various depths. A minimum of 5 feet of permeable materials must be left above the elevation of the maximum annual water table as determined by these test holes or borings. This permeable layer is needed to provide for positive drainage, infiltration, facilitate subsurface flows, and to help prevent erosion and ponding.

All side slopes consisting of sand and gravel will be left no steeper than one vertical on two horizontal. All side slopes containing clay, silt, erodible materials or a combination thereof will be left no steeper than one vertical on three horizontal.

5.03 Disposal of Refuse Material

All refuse and personal property will be removed from the project site. Spoil and unused material stockpiles will be utilized during reclamation of the affected lands to blend areas of sharply contrasting slopes as previously described. If applicable, any off-site disposal will be performed in accordance with NYSDEC rules and regulations for solid waste management.

All machinery, equipment, tools and other personal property will be removed from the site when their intended function has been completed.

5.04 Drainage

As described in section 2.07 Drainage and 2.08 B) Water Pollution Control, the proposed drainage patterns will remain essentially the same as the existing drainage patterns within the mine area. Surface runoff will continue to be collected internally for infiltration within the mine floor. The site will be mined and reclaimed in such a manner as to ensure that unmined areas will exhibit consistently higher elevations than mined areas to provide positive drainage internally to the proposed settling pond and to avoid the accumulation of standing water.

The proposed topsoil berms and stockpiles will be vegetated after they are established to limit the erosion effects on them by wind and water. This proposal calls for proper

erosion and sediment control measures, including the maintenance of perimeter berms to keep all runoff internal to the mine site, thus, not allowing any runoff to leave the site. This berm, limiting potential erosion of any of the adjacent steeper slopes, will be blended into the final reclamations grades and included with site stabilization activities. Silt fence will be employed as necessary along down gradient positions until which time the perimeter stockpiles/earthen berms are stabilized by vegetative cover. A stabilized construction entrance will be maintained to help keep Johnson Road clean and free of dust. All final graded (reclaimed) areas will be immediately stabilized by seeding and mulching.

All diversion ditches and swales are to be maintained during the mining operations.

5.05 Revegetation

Following the final mining activities, replacement of topsoil during reclamation must be immediately seeded, fertilized, limed and mulched. The permittee must either obtain or follow specific rate recommendations from Oswego County Soil Conservation Service or use the following general recommendation:

a. Seed at 100 pounds per acre with a mixture that will provide an erosion resistant vegetative cover and will also provide for long-term productivity (legumes):

20%	Perennial Ryegrass
20%	Creeping Red Fescue
25%	Birdsfoot Trefoil
13%	Kentucky Blue Grass
17%	Annual Ryegrass
5%	White Clover

* These legumes must be inoculated at time of seeding. If seeding by hand use sticking agent, such as cola or milk to stick inoculate to seed. If seeding with hydroseeder, use 4 times the recommended rates of inoculate.

- b. Fertilize at 800 pounds per acre 10-10-10 fertilizer
- c. Mulch with hay or straw to cover 100% of the soil surface (2.5 tons per acre); and
- d. Lime per soil test results (SCS or private lab)

The permittee will give the Mined Land Reclamation Specialist (MLRS) written or verbal notice at least 15 days in advance of (prior to) each and every episode of reclamation including ripping of the final mine floor, replacement of the subsoil layer, replacement of the topsoil layer, seeding, application of fertilizer and mulching. This written notice will indicate the dates that reclamation is expected to take place.

All final mine floor areas will be ripped, plowed, disked, or similarly scarified to a depth of 12 inches in order to alleviate compaction prior to the replacement of subsoil and topsoil resources at the final stage of reclamation.

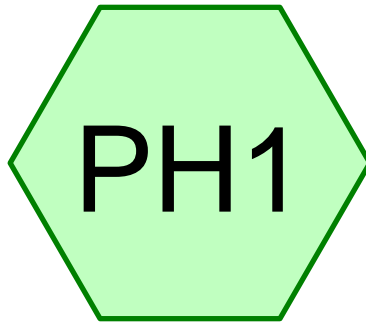
A minimum of 6 to 12 inches of topsoil (depending on the depth of topsoil indicated by detailed soils information and confirmation of this depth in the field) originating from the uppermost 6 to 12 inches of soil (O and A Soil Horizons) found at the site will be replaced over the subsoil layer.

The reclamation seeding mixture shall be consistent with the proposed land-use objective. The cover material utilized at reclamation will be fertile enough and possess the textural characteristics necessary to retain enough moisture to sustain the planted grasses. The permittee understands that the Mined Land Reclamation Specialist (MLRS) cannot accept any reclamation if there is evidence of more than 25% weed cover and/or rill/gully erosion.

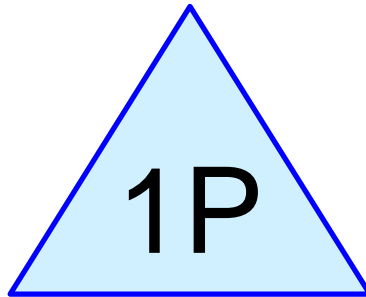
Any area left steeper than one vertical on four horizontal at the final stage of reclamation will be mulched within 15 days of final grading, seeding, liming, and fertilizing to protect all slopes from erosion. Mulch will be applied evenly at the rate of 2000 pounds per acre to help prevent erosion.

Reclamation work shall commence, and be completed, as rapidly as possible after the affected area becomes available. Upon completion of mining activities, the remaining restoration will be completed within one (1) year.

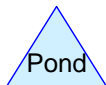
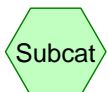
APPENDIX A:
DRAINAGE ANALYSIS



SC-201



PHASE 1 POND



Proposed Drainage

Prepared by Ingalls & Associates, LLP

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Type II 24-hr 100-Year Rainfall=4.80"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PH1: SC-201

Runoff Area=10.500 ac 0.00% Impervious Runoff Depth=2.46"
Flow Length=560' Tc=7.5 min CN=77 Runoff=42.90 cfs 2.150 af

Pond 1P: PHASE 1 POND

Peak Elev=424.17' Storage=33,618 cf Inflow=42.90 cfs 2.150 af
Outflow=4.99 cfs 2.154 af

Proposed Drainage

Prepared by Ingalls & Associates, LLP

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Type II 24-hr 100-Year Rainfall=4.80"

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Summary for Subcatchment PH1: SC-201

Runoff = 42.90 cfs @ 11.99 hrs, Volume= 2.150 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=4.80"

Area (ac)	CN	Description
10.500	77	Fallow, bare soil, HSG A
10.500		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	60	0.5000	4.21		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.80"
7.3	500	0.0050	1.14		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.5	560	Total			

Summary for Pond 1P: PHASE 1 POND

Inflow Area = 10.500 ac, 0.00% Impervious, Inflow Depth = 2.46" for 100-Year event
 Inflow = 42.90 cfs @ 11.99 hrs, Volume= 2.150 af
 Outflow = 4.99 cfs @ 12.41 hrs, Volume= 2.154 af, Atten= 88%, Lag= 25.4 min
 Discarded = 4.99 cfs @ 12.41 hrs, Volume= 2.154 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 424.17' @ 12.41 hrs Surf.Area= 17,849 sf Storage= 33,618 cf
 Flood Elev= 425.00' Surf.Area= 19,800 sf Storage= 49,167 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 51.6 min (881.4 - 829.8)

Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	49,167 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
422.00	13,200	0	0	13,200
425.00	19,800	49,167	49,167	19,938

Device	Routing	Invert	Outlet Devices
#1	Discarded	422.00'	12.000 in/hr Exfiltration over Wetted area

Discarded OutFlow Max=4.98 cfs @ 12.41 hrs HW=424.17' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 4.98 cfs)