01 / PRODUCT SPECIFICATION

Bioretention Soil Mix

Bioswale Mix | Engineered stormwater treatment media

SKU: BLND-SOL-BIOSWL-552 | Bulk material - cubic yard



Product texture photograph. Color and texture vary with moisture and production batch.

TerraBay Bioretention Soil Mix is a sand-and-compost media for the planted treatment zone of engineered stormwater facilities. It provides a permeable mineral framework and an organic component to support vegetation, moisture retention and filtration within a properly designed system.

Reported blend	Hydraulic design objective	Technical data dates
60% sand / 40% compost Measured by volume	**At least 5 inches/hour** Long-term, in-place objective	**October 26, 2026** Component and declaration forms

Intended applications

Bioretention basins, bioswales, rain gardens, stormwater planters and comparable low impact development facilities where the designer specifies sand-and-compost treatment media.

Document contents

Blend and hydraulic profile (p. 2); sand gradation (p. 3); compost physical properties (p. 4); maturity and hygiene (p. 5); nutrients (p. 6); installation (p. 7); quantity and handling (p. 8); approval and care (p. 9); glossary (p. 10).

02 / ENGINEERING PROFILE

Blend & hydraulic performance

Reported formulation and the evidence supporting its use

Constituent	Reported proportion	Form reference range
Sand component	60% by volume	60%-70% by volume
Compost component	40% by volume	30%-40% by volume

The reported formulation lies within both listed volumetric ranges. Volume percentages describe blending proportions; they are not mass percentages or a finished-mix organic matter result.

Production approach

The supplied mixing description records measured sand and compost quantities, batch sheets and mechanical loader blending on a hard surface. The intended product is a uniform blend. Field additions of topsoil, sand, compost, fertilizer or other amendments require review because they change the approved formulation.

Hydraulic target and documented status

Item	Available evidence / interpretation
Long-term infiltration objective	At least 5 in/hr (127 mm/hr). This is the regional in-place design objective.
Permeability statement	The blend declaration marks the at-least-5-in/hr requirement as passing.
Measured hydraulic result	No numerical finished-mix permeability result or laboratory permeability report is included in the supplied packet.
Vegetation support	The blend declaration marks plant-growth suitability as passing; component growth-screen results appear on page 5.
Finished-mix organic matter	No finished-mix organic matter test is supplied. The 57.5% result belongs to the compost component only.

Design implications

Media permeability does not establish native-soil infiltration capacity, facility storage, outlet capacity, drawdown time or pollutant-removal percentages. Those values depend on the completed facility and must come from the project design and accepted testing.

Testing route
The supplied form notes constant-head testing under ASTM D2434 for alternative mixes, using two specimens, a 6-inch mold and vacuum saturation. The project reviewer determines which verification route applies.

BASMAA Regional Biotreatment Soil Specification, April 18, 2016 - hydraulic objectives and submittal context.

03 / COMPONENT LABORATORY DATA

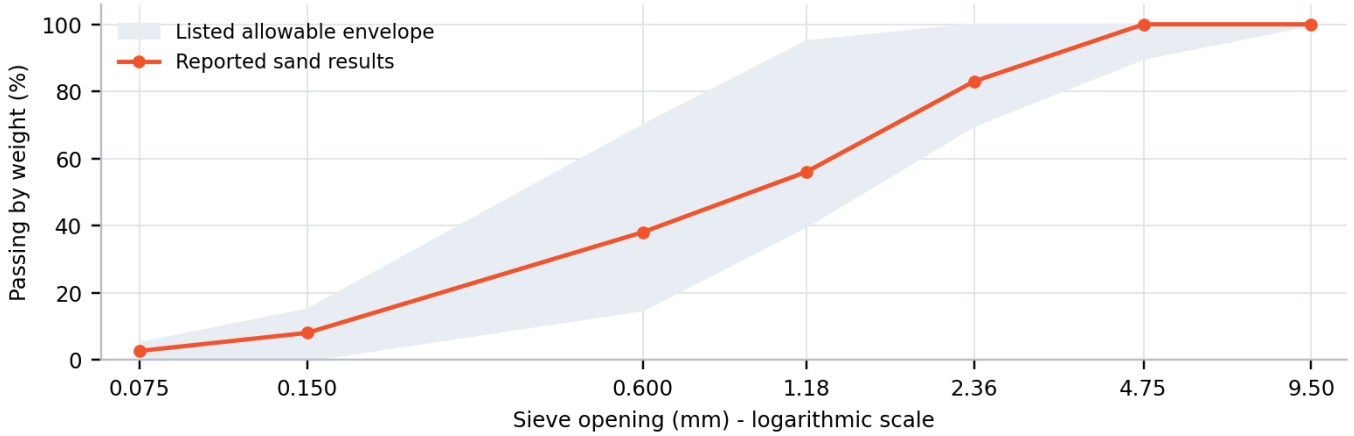
Sand gradation

Sand component only | Form dated Oct 6, 2026

Sieve	Opening (mm)	Reference passing	Reported passing	Comparison
3/8 inch	9.50	100%	100%	Within
No. 4	4.75	90%-100%	100%	Within
No. 8	2.36	70%-100%	83%	Within
No. 16	1.18	40%-95%	56%	Within
No. 30	0.600	15%-70%	38%	Within
No. 40 or No. 50	0.425 or 0.300	5%-55%	21%	Within
No. 100	0.150	0%-15%	8%	Within
No. 200	0.075	0%-5%	2.6%	Within

Percent passing is by weight. The source combines the No. 40 / No. 50 row and does not identify which sieve produced the 21% result. CT 202 is referenced on the sand form.

Sand particle-size distribution



The combined No. 40 / No. 50 result is excluded from the plot because its exact opening is not identified. Lines connect the remaining reported points; they are not additional test measurements.

Cleanliness and fines declarations

The sand form marks the material as free of deleterious wood, waste and coatings, and marks the fraction passing No. 200 as nonplastic. The reported 2.6% fines result is within the form limit of 5%. These statements describe the sand component rather than the finished blend.

04 / COMPONENT LABORATORY DATA

Compost physical properties

Compost component only | Analysis dated Oct 6, 2026

Property	Reference criterion	Reported result	Comparison
Organic matter	35%-75% of dry weight	57.5%	Within
Carbon-to-nitrogen ratio	15:1-25:1 on form	21:1	Within
Salinity / electrical conductivity	Less than 6.0 mmhos/cm	2.9 mmhos/cm	Within
pH	6.2-8.2	8.0	Within
Dry bulk density	500-1,100 dry lb/yd³	582 dry lb/yd³	Within
Moisture content	30%-55% of dry solids	43.8%	Within
Inert ingredients	Less than 1% by weight or volume	Less than 0.5%	Within

Units and reporting bases follow the supplied form. Inerts include materials such as plastic, glass and paper. The moisture basis is reproduced as stated; no wet-basis conversion has been assumed.

Compost particle-size distribution

Sieve	Reference passing by weight	Reported passing	Comparison
1 inch	99%-100%	100%	Within
1/2 inch	90%-100%	100%	Within
1/4 inch	40%-90%	88.6%	Within
No. 200	1%-10%	4.0%	Within

How to apply these results

The organic matter, density, pH, salinity and sieve results describe the compost before blending. They do not establish the same properties for the 60/40 finished media. In particular, 582 dry lb/yd³ must not be used to estimate a delivery load weight for the complete mix.

Finished-media testing
If the project requires mixed-media organic matter, pH, electrical conductivity, density or gradation, obtain tests on the finished blend. Component tests cannot substitute for those measurements.

05 / COMPOST PERFORMANCE SCREENS

Maturity, growth & hygiene

Reported compost test results and process declarations

Test	Reference criterion	Reported result	Comparison
Respiration / stability	Less than 8 mg CO_2-C/g OM/day	2.2 mg CO_2-C/g OM/day	Within
Ammonium / toxicity screen	Less than 500 ppm, dry basis	59 ppm, dry basis	Within
Seed germination	Greater than 80% of control	100% of control	Within
Plant trial response	Greater than 80% of control	100% of control	Within
Salmonella	Less than 3 MPN/4 g total solids	Less than 3 MPN/4 g total solids	Within

Meaning of the screening data

The reported respiration value satisfies the listed stability screen. The ammonium, germination and plant-trial entries satisfy the listed growth and toxicity-screen criteria. A 100% control comparison describes those test conditions; it is not a guarantee that every plant species will perform equally in every installation.

Compost process and appearance declarations

Record item	Status shown in the supplied forms
Feedstock category	Landscape/yard trimmings, grass clippings, food scraps and/or crop residues: permitted category checked as passing. Individual feedstock percentages are not given.
Appearance and odor	Dark brown, soil-like odor and absence of sour or putrid odor, recognizable grass/leaves and excessive heating are checked as passing.
Pathogen-reduction process	PFRP is checked as completed. The form gives a turned-windrow example of at least 55°C for 15 days with at least 5 turnings. Actual process logs are not included.
Trace-metal criterion	The source form marks the U.S. EPA 40 CFR 503 metals criterion as passing. No individual metal concentrations are supplied.

Entries without numerical results

Oxygen uptake, specific oxygen uptake, Dewar self-heating, stability index, ammonium-to-nitrate ratio and coliform bacteria are blank on the supplied forms. They are not reported here as zero, negative or tested. The form allows selected alternative stability, toxicity and pathogen indicators.

06 / COMPOST CHEMISTRY

Nutrient & mineral profile

Values characterize the compost component, before sand is added

Analyte / reporting form	Reported result	Reference criterion / role
Boron, total (B)	42 ppm	Less than 80 ppm; within listed limit
Total nitrogen (N)	1.2%	More than 0.9% preferred on form; above preference
Phosphorus, as P_2O_5	2.0%	No numerical limit specified on form
Potassium, as K_2O	1.1%	No numerical limit specified on form
Calcium (Ca)	3.3%	No numerical limit specified on form
Sodium (Na)	0.17%	No numerical limit specified on form
Magnesium (Mg)	0.64%	No numerical limit specified on form
Sulfur (S)	120 ppm	No numerical limit specified on form

Results are transcribed in the source units and chemical forms. Only ammonium is expressly labelled dry basis in its row; additional extraction methods and basis details are not supplied for every nutrient.

Interpreting the chemistry

Nutrients and plant nutrition. These are analytical values rather than guaranteed plant-available fertilizer rates. Nutrient availability depends on test method, mineralization, water chemistry and plant selection. A percentage on the compost form is not a finished-media percentage.

Phosphorus and potassium labels. The form reports P_2O_5 and K_2O. Those oxide-equivalent reporting forms should not be relabelled as elemental phosphorus or potassium. No elemental conversions are used in this sheet.

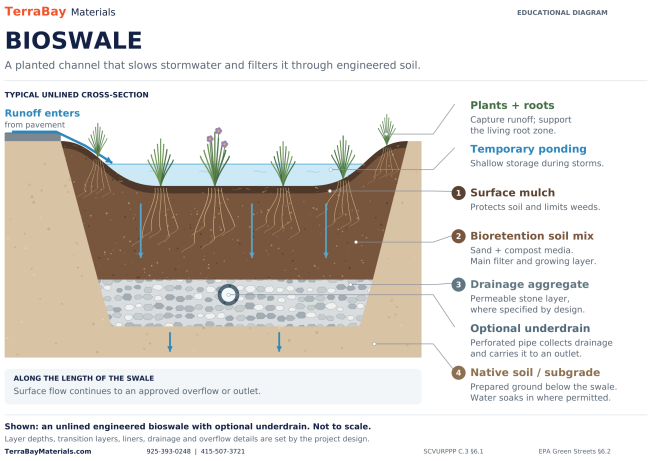
Blend calculations. Multiplying 57.5% organic matter or any nutrient percentage by 40% does not produce a defensible finished-mix mass concentration. The blend is proportioned by volume; the analytical concentrations and component densities use different bases.

Planting and amendment decisions

Use the approved planting plan and, where required, finished-media and irrigation-water testing to set amendment needs. Any proposed fertilizer, lime, sulfur, biochar or additional compost should be reviewed before application. The supplied packet provides no nutrient-leaching test or quantified pollutant-removal efficiency for the complete system.

07 / FIELD GUIDANCE

Installation & Protection



01 Approve and stage. Obtain material approval and current tests before delivery. Finish sediment-producing work upstream and keep construction runoff out of the treatment area.

02 Prepare the facility. Verify excavation, grades, utilities, drainage, outlet and liner details. For infiltrating facilities, protect the subgrade from compaction and scarify as specified. Have concealed work inspected before covering it.

03 Protect media quality. Use clean equipment and a clean staging area. Keep excavated clay, concrete washout, aggregate fines and debris out of both stockpiles and the facility. Do not install while media or subgrade is saturated.

04 Place in controlled lifts. Place evenly from outside the basin where practical. Follow the approved lift thickness and settling method; keep heavy equipment off treatment media. Do not apply a structural-fill compaction target unless the designer expressly requires it.

05 Settle and verify elevations. Use the approved wetting and settling procedure, then recheck treatment-media depth and finish elevation. Restore low areas with the approved blend. Keep the intended ponding and overflow space available.

06 Plant and finish. Install approved plants and mulch without mixing surface mulch into treatment media. Keep inlets, outlets, cleanouts and plant crowns clear. Open the facility to runoff after the contributing area is stabilized and required acceptance checks pass.

> **Regional placement example**
> SCVURPPP details illustrate three 6-inch lifts, wetted and supplemented as needed to reach an 18-inch final media depth. This is a regional example, not a prescribed depth for every TerraBay application.

SCVURPPP Green Stormwater Infrastructure Handbook, Part 2 - regional placement example;
SCVURPPP C.3 Stormwater Handbook, Chapter 6 - construction protection and facility context.

08 / QUANTITY & HANDLING

Takeoff, delivery & storage

Geometric volumes for planning - confirm installed quantities in the field

Volume formula
Cubic yards = treatment-media area (ft²) × media depth (inches) ÷ 324.
For rectangular areas: cubic yards = length (ft) × width (ft) × depth (inches) ÷ 324.

Coverage and volume table

Media depth	Area covered by 1 yd³	Volume for 100 ft²	Volume for 1,000 ft²
6 inches	54.0 ft²	1.85 yd³	18.52 yd³
12 inches	27.0 ft²	3.70 yd³	37.04 yd³
18 inches	18.0 ft²	5.56 yd³	55.56 yd³
24 inches	13.5 ft²	7.41 yd³	74.07 yd³
30 inches	10.8 ft²	9.26 yd³	92.59 yd³
36 inches	9.0 ft²	11.11 yd³	111.11 yd³

These values are calculated from geometric volume and rounded to two decimals. They exclude over-excavation, irregular geometry, settlement, handling loss, mulch and drainage aggregate. Depths are calculation examples, not facility design recommendations.

Worked example

A 20 ft × 30 ft treatment bed at 18 inches media depth requires **20 × 30 × 18 ÷ 324 = 33.33 yd³** of geometric media volume. If the project separately chooses a 10% purchasing allowance, the planning quantity is **36.67 yd³**. That allowance is illustrative, not a measured settlement factor for this material.

Delivery and storage practices

Before delivery: Confirm the approved material, project quantity, acceptance documents and a firm, accessible unloading area. Actual truck loads depend on legal payload, blend moisture and site access; do not use compost-only dry density to size loads.

At receipt: Compare the material with the approved sample; check uniformity, debris, unusual odor and saturated condition. Retain tickets identifying the TerraBay product, quantity, delivery date and project destination.

During storage: Segregate the approved mix from native soils and other materials. Use clean ground protection or a clean hard surface; protect from runoff, erosion and contamination. Avoid unnecessary handling and arrange timely placement.

09 / PROJECT ACCEPTANCE

Submittal & care requirements

Coordinate current documentation through TerraBay Materials

Approval item	Action before acceptance or delivery
Applicable specification	Confirm the jurisdiction, approved project detail and required testing route. The component values are compared with the ranges on the supplied 2016-based forms.
Current testing	Use results dated within 120 days before delivery when applying the BASMAA requirement.
Large project batches	For more than 100 yd³, the regional specification calls for batch-specific test results and certification.
Review sample	The regional specification calls for at least a one-gallon mixed-media sample for review.
Finished-mix properties	Request mixed-media organic matter testing; obtain hydraulic or other finished-mix results where the project requires them. No such numerical results are supplied in this packet.
Certifications and process records	Confirm current compost program status, laboratory qualifications and process evidence required by the reviewer. The supplied forms alone do not verify current enrollments or full test methods.

BASMAA means Bay Area Stormwater Management Agencies Association. Its 2016 compost specification excludes manure and biosolids; confirm accepted feedstocks and current compost documentation for the project.

Commercial source identities, contacts, signatures and report identifiers are intentionally omitted from this customer sheet. Route requests for project documentation through TerraBay; a permitting authority may require separate verification information.

Facility care after installation

Use the site-specific maintenance plan to set inspection timing and drawdown triggers. Keep inlets, overflows and cleanouts clear; remove litter and excess sediment; repair erosion; and replace failed vegetation. Maintain the approved media depth and surface treatment without compacting the bed.

Investigate persistent ponding, bypass, channeling, settlement or plant stress. Check sediment accumulation, compaction, outlet obstruction and the drainage system before selecting corrective work. Replacement media should match the approved blend; seek designer direction before changing composition or elevations.

BASMAA Regional Biotreatment Soil Specification, April 18, 2016 - current-test, sample and batch requirements.

SCVURPPP C.3 Stormwater Handbook, Chapters 6 and 8 - construction and maintenance guidance.

10 / PLAIN-LANGUAGE GUIDE

Understanding the specifications

Term	What it means in this sheet
Bioretention / BSM	A planted stormwater-treatment system / the engineered soil media inside it. The media is one part of the whole facility.
By volume / by weight	Space occupied by a material / its mass. A 60/40 volume blend does not imply a 60/40 weight blend.
Sieve / percent passing	A screen opening / the percentage of sample mass small enough to pass that screen. Smaller openings describe finer particles.
Fines / nonplastic	Small particles passing No. 200 / fines that do not show plastic behavior. Low sand fines help limit clogging potential.
Infiltration / permeability	Water entering a soil surface / water moving through soil. Lab permeability and field infiltration are related, but different measurements.
Organic matter / C:N	Decomposed organic material / carbon-to-nitrogen ratio. The listed 57.5% and 21:1 results describe compost only.
pH / EC	Acidity or alkalinity / electrical conductivity, a measure of soluble salts. 1 mmho/cm = 1 dS/m.
Dry bulk density / moisture	Dry mass per unit bulk volume / water content on the stated test basis. Neither gives a finished-mix truck weight by itself.
ppm / MPN / TS / OM	Parts per million / most probable number (a statistical bacteria estimate) / total solids / organic matter.
STA / TMECC / PFRP	Seal of Testing Assurance / compost test-method guidance / Process to Further Reduce Pathogens. These terms do not certify the complete stormwater facility.
Lift / subgrade / underdrain	A placed layer / prepared soil beneath the facility / a pipe system that conveys drainage where designed.

Product information and technical inquiries
TerraBayMaterials.com - Bioretention Soil Mix
925-393-0248 | 415-507-3721 | info@TerraBayMaterials.com

Disclaimer

This sheet is a TerraBay summary of supplied October 2026 component analyses and declarations, with general application guidance. It is not a laboratory certificate, a guarantee of present-batch values, a project design or an agency approval. Natural and processed materials vary by source batch, moisture, handling and installation. Component results must not be treated as finished-mix properties. The purchaser, designer and contractor must confirm current tests, suitability, applicable requirements and installed performance before use. Approved plans and jurisdictional requirements govern. No specific pollutant-removal efficiency, field infiltration rate, density, settlement or plant performance is warranted by this sheet.