

**PROPOSED APPROACH FOR “PILOT” SOIL STOCKPILE SAMPLING EVENT
AND CONCEPTUAL SOIL MANAGEMENT PLAN**

Port Angeles Rayonier Mill Site

March 2013

Outlined below is a proposed approach for a “pilot” soil stockpile sampling event to assess concentrations of contaminants of potential concern (COPCs) in excavated soil that was stockpiled on the former Rayonier Mill property during the City of Port Angeles’ Combined Sewer Overflow (CSO) Phase 1 Upgrade Project. A decision protocol for evaluating the results also is included along with a conceptual soil management plan for review and feedback by the Washington Department of Ecology (Ecology). Additional soil characterization samples will be collected and analyzed prior to implementation of the final soil management plan.

A total of approximately 26,435 cubic yards of soil from the Rayonier property was excavated and stockpiled as part of the CSO project. In accordance with the Materials Management Plan (MMP) for the project, the stockpiled soils have been tentatively classified as follows:

- Type 1 – soil not exceeding screening levels for COPCs.
- Type 2A – soil with COPC concentrations that exceed screening levels by a factor of less than ten.
- Type 2B soil – soil with COPC concentrations that exceed screening levels by a factor of ten or greater.

These soils currently are stockpiled in 13 bins in two main areas (Area 1 and Area 2) as shown in Figure 1 (attached). Except for Bin 1-9, each soil bin holds approximately 2,000 to 3,000 cubic yards of soil. The presumed soil type in each bin, and the total number of bins and estimated volume by soil type, are summarized in the two tables below. The small volume of Type 1 soil currently in Bin 1-9 will be consolidated with Bin 1-1 prior to sampling, resulting in 12 stockpiles. As a result, Bin 1-9 is not listed in the table below.

Soil Type	No. of Bins	Cubic Yards (est.)
1	3	9,315
2A	7	12,127
2B	2	4,993
Total	12	26,435

Bin #	Soil Type
1-1	1
1-2	2B
1-3	2B
1-4	2A
1-5	2A
1-6	1



1-7	2A
1-8	1
2-1	2A
2-2	2A
2-3	2A
2-4	2A

Soil sampling and analysis for the pilot sampling event will be performed as follows:

- One five-point composite soil sample will be analyzed from each of the twelve soil stockpiles. The analytical laboratory will perform the sample compositing using five discrete subsamples collected in the field.
- The five discrete subsamples for each composite soil sample will be collected at approximately equidistant locations around the perimeter of each stockpile. The subsamples will be obtained from the sides of the stockpiles at an elevation of approximately 3 to 6 feet above the adjacent ground surface/stockpile pad.
- Clean hand tools (e.g., spade, stainless steel spoon, and/or trowel) will be used to dig a small hole approximately 1 foot deep in the side of the stockpile at each discrete sampling location. A small quantity of soil will be obtained from the bottom of the hole for field screening (sheen test), and additional soil for laboratory analysis will be placed in clean glass jars supplied by the laboratory. The jars will be labeled, stored on ice, and delivered to the laboratory under chain of custody. The laboratory will combine approximately equal quantities of soil from the discrete subsamples to form each five-point composite sample.
- All twelve (12) soil samples will be analyzed for semivolatile organic compounds, diesel- and heavy oil-range total petroleum hydrocarbons, polychlorinated biphenyls, and metals (antimony, arsenic, barium, cadmium, total chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc).
- Eight (8) soil samples will be analyzed for dioxins/furans as follows:
 - All three of the Type 1 soil samples.
 - Both of the Type 2B soil samples.
 - Three of the Type 2A soil samples.

The results will be compared to the lowest of the Volume I screening levels for the human health and terrestrial ecological pathways (the primary pathways of concern for the stockpiles) to determine whether the soil may meet the criteria for Type 1, Type 2A, or Type 2B. Based on the CSO alignment soil evaluation contained in Appendix A of the MMP, metals are the most likely COPCs to exceed human health and terrestrial ecological screening levels. If a given soil sample meets Type 2A or 2B criteria (i.e., exceeds screening levels), no further sampling of the associated stockpile will be performed and the stockpile will be designated as Type 2A or 2B, as appropriate based on the results. If a sample meets Type 1 criteria (i.e., no screening level exceedances), the scope of additional sampling to characterize the associated stockpile will be determined in discussion with Ecology.

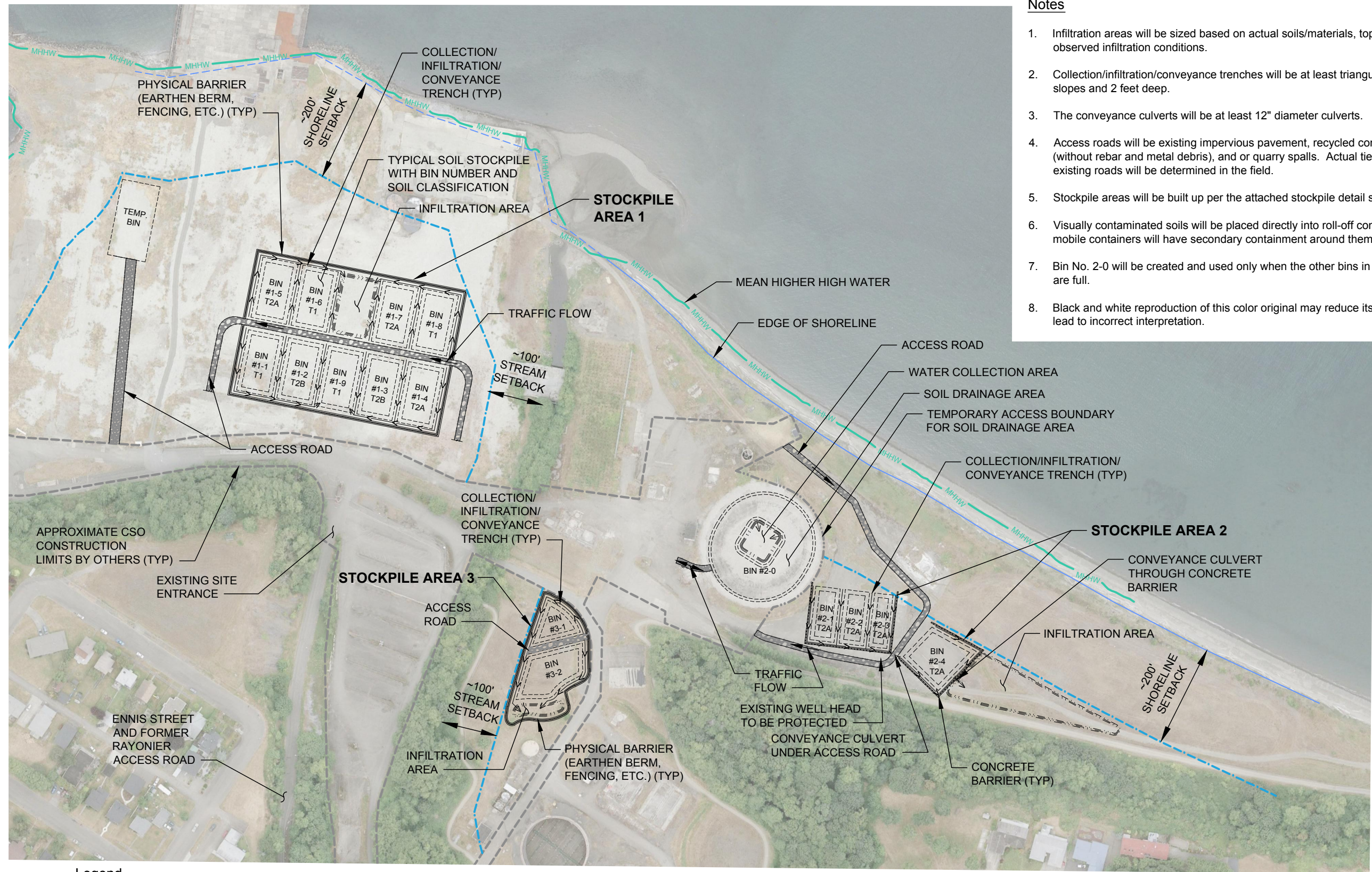


Conceptual Soil Management Plan

Figure 2 (attached) is a conceptual long-term soil management plan for review and feedback by Ecology. In general, the plan specifies that confirmed Type 2A or 2B soils will be graded within existing soil bin footprints to remove the gap between piles, sloped to promote drainage and hydroseeded. Long-term care and maintenance will consist of quarterly inspections for areas of significant erosion and cover integrity, mowing to prevent tree growth and maintenance of drainage areas for runoff containment.



LANDAU ASSOCIATES, INC. | V:\016042010.013\Figure 3 MHHW AsBuilt.dwg (A) *Figure 3* 2/4/2013



Notes

1. Infiltration areas will be sized based on actual soils/materials, topography, and observed infiltration conditions.
2. Collection/infiltration/conveyance trenches will be at least triangular with 2:1 side slopes and 2 feet deep.
3. The conveyance culverts will be at least 12" diameter culverts.
4. Access roads will be existing impervious pavement, recycled concrete rubble (without rebar and metal debris), and or quarry spalls. Actual tie-in locations to existing roads will be determined in the field.
5. Stockpile areas will be built up per the attached stockpile detail sketch.
6. Visually contaminated soils will be placed directly into roll-off containers. These mobile containers will have secondary containment around them during filling.
7. Bin No. 2-0 will be created and used only when the other bins in Stockpile Area 2 are full.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

- CSO Construction Limits
- Stream and Shoreline Setback
- MHHW Mean Higher High Water (Rayonier, 2012)
- Edge of Shoreline
- Drainage Channel and Flow Direction
- Proposed Access Road
- Temp. Access Boundary



Base map source: Google Earth

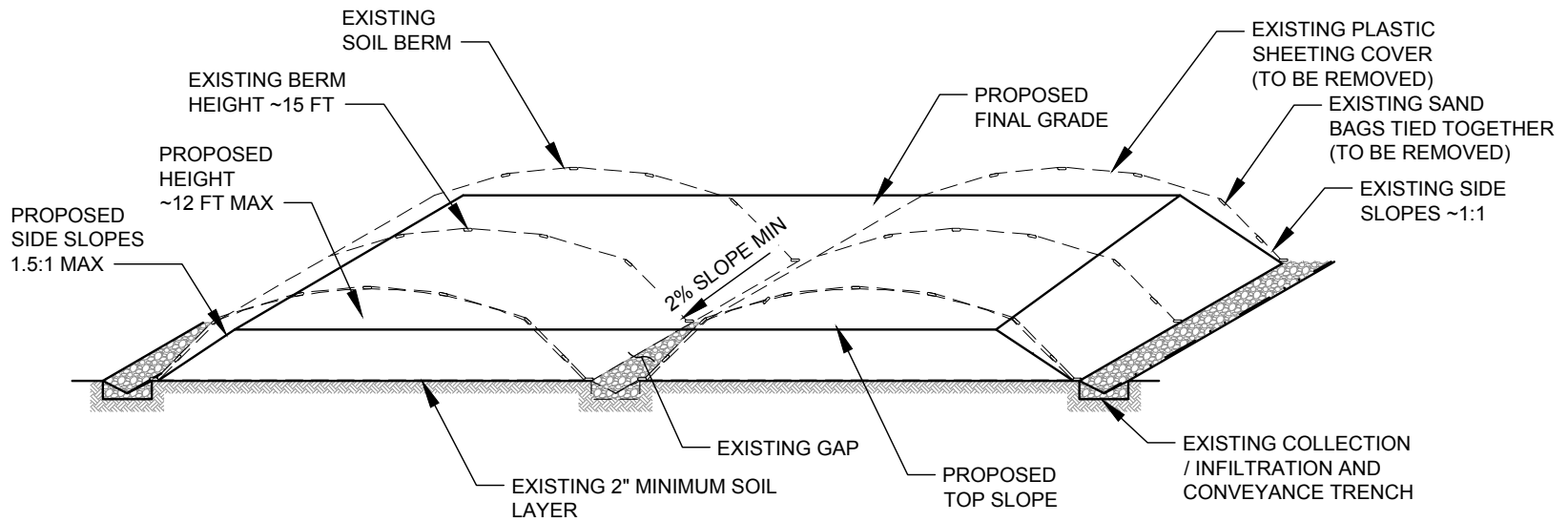
REVISIONS:	
DATE	02-04-2013 03-08-2013
BY	RCL RCL



Rayonier Properties Inc.
Former Mill Site
Port Angeles, Washington

**Product Staging / Storage Areas
Site Plan As-Built**

Figure
1



PERSPECTIVE PLAN VIEW - TYPICAL TYPE 2 SOIL STOCKPILE
NOT TO SCALE

CONSTRUCTION NOTES:

1. REMOVE SANDBAGS AND PLASTIC SHEETING.
2. GRADE EXISTING SOIL STOCKPILES WITHIN EXISTING SOIL BIN FOOTPRINT TO REMOVE GAP BETWEEN PILES. SLOPE 2% FOR DRAINAGE ACROSS THE TOP.
3. HYDROSEED COVER. TWO TIMES APPLICATION WITH LOW GROWTH COVER.
4. USE FIRE HYDRANT AND TEMPORARY SPRINKLERS FOR WATERING TO ESTABLISH VEGETATION GROWTH.
5. IF CHEMICAL CONCENTRATIONS FROM STOCKPILE SAMPLING RESULTS IN A STOCKPILE BEING CHARACTERIZED AS TYPE 2B SOIL, THEN THE STOCKPILE SURFACE WILL BE COVERED BY STRAW MATTING TO PREVENT SOIL LOSS VIA WINDBLOWN EROSION OR STOMWATER RUNOFF DURING THE HYDROSEEDING GRASS GROWTH PERIOD.

LONG-TERM CARE AND MAINTENANCE:

1. PERFORM QUARTERLY INSPECTIONS FOR AREAS OF SIGNIFICANT EROSION AND GRASS COVER INTEGRITY. MAINTAIN AS NEEDED.
2. MOW AS NEEDED TO PREVENT TREE GROWTH.
3. MAINTAIN DRAINAGE AREAS FOR RUNOFF CONTAINMENT.

DRAFT