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M e m o

To: Jean Firth, MEDEP
Hank Andolsek, MEDEP
Gordon Fuller, MEDEP

From: Jim Bouquet, P.E.

Project: Former Prime Tanning Facility

Date: January 6, 2011

RE: Preliminary Feasibility Study

Summit Environmental Consultants, Inc. (Summit) has prepared this Preliminary Feasibility Study (PFS) memorandum to address potential soil contamination beneath areas of the former Prime Tanning Facility (the Site) located at 20, 29, 34 and 35 Sullivan Street in Berwick, Maine (refer to Figure 1). The purpose of this study is to develop, evaluate and recommend soil cover options for the Site. Costs provided are based on estimates obtained from a limited number of sources; actual costs may vary based upon bid results.

Background

Environmental investigations of the Site include the following:

- *Phase I Environmental Site Assessment, Former Prime Tanning Company, 20, 29, 34, and 35 Sullivan Street, Berwick, Maine by Ransom Environmental Consultants, Inc. dated August 2, 2010.*
- *Phase II Environmental Site Assessment, Former Prime Tanning Company, 20, 29, 34, and 35 Sullivan Street, Berwick, Maine prepared by St. Germain-Collins dated October 15, 2010.*

This PFS is based on review of the above reports, and direction provided by the Maine Department of Environmental Protection (MEDEP).

Summit reviewed these reports to identify areas within the Site with the potential for soil contamination beneath building slabs. The review was limited to the area shown on Figure 1. The review considered historical building use, age, floor drains, use of adjacent buildings/areas, etc. Existing soil type was reported as well graded sand and gravel, with ground water elevation at three (3) to six (6) feet below ground surface. A summary of this review is presented in Table 1.

Table 1: Contamination Potential for Prime Tanning Site

Building/Area	Surface/Floor Area (square feet)	Potential for Subsurface Contamination	Reasoning for Increased Potential
Drying Area	5,000	Medium	Adjacent to parking area
Plating/Embossing	5,000	Medium	Adjacent to parking area
Finishing (north)	14,000	Medium	Adjacent to parking area
Shipping	9,000	Low	
Tank Farms	5,000	Medium	Nature of use
Research and development	4,000	Medium	Adjacent to parking area
Boiler Room	3,500	Medium	Fuel oil, Original Building, Parking
Maintenance Area	3,000	High	Past Use
Drying/Conditioning/Finishing	65,000	Low-Medium	
Oil Applicator	3,000	Low	
Wet Weigh Up	3,000	Low	
Coloring	3,000	Low	
Hot Stuffing	4,000	Medium	Use
Wet Blue Storage	2,500	Medium	Use
Dry Feed Weigh Up	2,500	Low-Medium	Use
Liquid Chemical Receiving	3,000	Low-Medium	Use
Virgin Dying Storage	3,500	Medium	Use
Blue Stock Storage	3,500	Medium	Use
Hazardous Waste Storage	3,500	Medium	Use
Mixing Room	3,000	Medium	Use
Sample Storage	3,000	Low-Medium	Use
Finishing (south)	4,500	Medium	Use
Carpenter Shop	3,000	Low	
Fork Lift Shop	4,000	Low	
Dry Chemical Storage	3,000	Low	
Wet Chemical Storage	5,000	Low	
Parking Area	190,000	High	Test Pit Sampling Results

Based on available information, Table 1 may represent the best case scenario for the site. Due to past uses, including, but not limited to, a tannery, a wool mill, a sash and door manufactory, a reed manufactory, a carriage manufactory and a shoe manufactory, contamination may be present beneath a majority of the site. As a result, sub-slab sampling is recommended for all buildings, including those areas identified in Table 1 with a low potential for subsurface contamination.

The remedial objectives are to cover those areas of the Site with potential for surface soil contamination following demolition of the buildings and foundation removal/backfill. As directed by MEDEP, the cover system will consist of a "marker layer" over the exposed soil surface, and placement/compaction of a 12-inch soil cover. The soil cover will consist of two (2) inch layer of topsoil over 10 inches of common borrow. The cover surface will be then be seeded and mulched.

MEDEP requested Summit consider two soil cover options. Option 1 is placing a soil cover over the entire Site (limits as indicated on Figure 1). Option 2 will provide for a soil cover over those portions of the Site with a higher potential for soil contamination, identified with a medium to high potential in Table 1 above.

Option 1: Covering the Entire Site

Under this Option, the entire Site within the limits shown on Figure 1 will be covered as described above. The estimated probable cost for this option is \$312,000. Table 2 summarizes the cost estimate for this option.

Table 2: Estimate of Probable Cost for Option 1 – Covering Entire Site

Work Item	Unit Cost	Unit	Quantity	Total
Mob/Demobilization	\$1,000	LS	3	\$3,000
Erosion and Sediment Control	\$3	LF	2700	\$8,100
Bulldozer and Operator				
Bulldozer and Operator	\$1,200	Day	25	\$30,000
Front End Loader and Operator	\$800	Day	25	\$20,000
Roller and Operator	\$600	Day	25	\$15,000
Marker Layer				
Marker Layer	\$0.15	SF	343,700	\$51,555
Furnish Common Borrow (10 inch lift)	\$8	CY	10,600	\$84,800
Furnish Loam (2 inch lift)	\$15	SY	2,200	\$33,000
Seed & Mulch	\$2,000	Acre	8	\$16,000
Subtotal				\$261,455
Contingency				
Contingency	10%	% Total		\$26,146
Health and Safety				
Health and Safety	\$2,000	LS	1	\$2,000
Work Plan Development				
Work Plan Development	\$95	Hour	40	\$3,000
Project Management & Oversight				
Project Management & Oversight	\$3,000	Weeks	5	\$15,000
Soil Testing				
Soil Testing	1%	Subtotal		\$2,615
Final Report				
Final Report	\$95	Hour	16	\$1,520
Subtotal				\$50,280
Total Estimated Cost				\$311,735
Say Estimated Total				\$312,000

LS = Lump Sum
Day = Work Day
CY = Cubic Yard
SF = Square Foot

Option 2: Targeted Area Cover

Individual areas/building locations of the Site with the higher potential for soil contamination are noted in Table 1. Option 2 provides for covering those areas of Site identified with “medium to high” potential for subsurface contamination in Table 1. The limit of the area to be covered under this option is shown on Figure 2. The estimated probable cost for this option is \$228,000. Table 3 summarizes the cost estimate for this option.

Table 3: Estimate of Probable Cost for Option 2 – Targeting Covering

Work Item	Unit Cost	Unit	Quantity	Total
Mob/Demobilization	\$1,000	LS	3	\$3,000
Erosion and Sediment Control	\$3	LF	2000	\$6,000
Bulldozer and Operator				
Bulldozer and Operator	\$1,200	Day	20	\$24,000
Front End Loader and Operator				
Front End Loader and Operator	\$800	Day	20	\$16,000
Roller and Operator				
Roller and Operator	\$600	Day	20	\$12,000
Marker Layer				
Marker Layer	\$0.15	SF	235,224	\$35,284
Furnish Common Borrow (10 inch lift)				
Furnish Common Borrow (10 inch lift)	\$8	CY	7,300	\$58,400
Furnish Loam (2 inch lift)				
Furnish Loam (2 inch lift)	\$15	SY	1,500	\$22,500
Seed & Mulch				
Seed & Mulch	\$2,000	Acre	5.5	\$11,000
Subtotal				\$188,184
Contingency				
Contingency	10%	% Total		\$18,818
Health and Safety				
Health and Safety	\$2,000	LS	1	\$2,000
Work Plan Development				
Work Plan Development	\$95	Hour	40	\$3,000
Project Management & Oversight				
Project Management & Oversight	\$3,000	Weeks	4	\$12,000
Soil Testing				
Soil Testing	1%	Subtotal		\$1,882
Final Report				
Final Report	\$95	Hour	16	\$1,520
Subtotal				\$39,220
Total Estimated Cost				\$227,404
Say Estimated Total				\$228,000

LS = Lump Sum
Day = Work Day
CY = Cubic Yard
SF = Square Foot

Summary

The estimates of probable costs for Options 1 and 2 are as follows:

Option 1: Cover Entire Site	\$312,000.
Option 2: Cover Areas with a Higher Potential for Soil Contamination	\$228,000.

Please feel free to contact either of us with questions concerning the respective soil cover options and/or associated costs.

Sincerely,

SUMMIT ENVIRONMENTAL CONSULTANTS, INC.



John K. Cressey
Project Manager



James W. Bouquet, P.E.
Principal Engineer

FIGURES