Investigation and Sampling Report
Winthrop Commerce Center LUST Site
Haefele Damage Claim
October 2006

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Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
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Introduction

The purpose of this investigation was to provide data on the existence of any persisting #6 fuel oil contamination at the Haefele shoreline that might affect the real value of the property in support of an appraisal of the property and determination of compensable damages. The specific objectives and planned methods are described in *Sampling And Analysis Plan*
Haefele Property Winthrop Commerce Center LUST Site(A-157-05)(2006)(Appendix D).

Tuesday October 24, 2006

Sean Dougherty (Geology Technician II) and John Beane (Senior Geologist) arrived at the site at about 10:40. The vehicle was parked in the Haefele yard and staff walked down to the lake shore carrying the necessary equipment. The day was overcast but dry. The purpose of the day's activity was to survey the sampling grid and mark it with pin flags for sampling that was scheduled to take place on Saturday (10/28/06). The first 30 minutes were used to simply look for property boundary markers and to observe the occurrence and distribution of oil staining and contamination along the shoreline on the subject property and on properties to the south. Several locations were identified where multiple oil stains occurred on a single tree trunk at different elevations. Clumps of leaves and stems cemented together by heavy oil were observed on the ground surface and cemented to tree trunks, as if rafts of oily flotsam had washed ashore at the time of the discharge. Two newly placed apparent corner pins (steel pipes) were found that appear to mark the western corners of Lot 41 (Figure 1).

The shoreline sampling grid was established by marking twenty-foot increments north along the shoreline beginning at the southern steel pin. Because the southern pin does not appear to be the southern boundary of the Haefele property, the grid may have missed the southern sixty feet or so of the Haefele shoreline. Pin flags were placed along the shoreline at twenty-foot intervals and they were marked with the distance north of the southern steel pin (Figure 2; SL-60=shoreline 60 feet).

The elevation of the highest oil stains on nine trees were estimated relative to an arbitrary datum (a stump surface) and relative to that day's lake level using a builders sight level. The purpose of estimating the oil stain elevations was to determine the highest level that

may have been contaminated by floating oil, which would be the highest water level that occurred during the discharge episode before booms were deployed to limit the oil migration. The results of this exercise are listed in Table 1. The two highest elevations were occurrences of hardened black residue on the ground surface (OS-4 and OS-5). After their elevations were measured it was apparent that they were more than a foot higher than any of the oil-stained rings on trees. Reexamination of the material at OS-4 and OS-5 raised some doubt about whether it was really oil. Because 1) they were on the ground surface and subject to possible movement, 2) they were not positively identified as oil and 3) they were not within the elevation range based on oil stains on the trees, OS-4 and OS-5 are considered as outliers and were not used to infer the highest level of floating oil. Six well defined stains on trees (OS-1, OS-2, OS-3, OS-8, OS-10 and OS-11) that were the uppermost stain if there were multiple stains, all clustered about 2.25 feet above lake level. That was the elevation selected to mark out as the lake's high-stand during the oil discharge episode.

Table 1. Measured Elevations of Oil Stains			
Tuesday, October 24, 2006			
Feature	Elev. WRT/B.M.	Elev. Above Lake Surface	Comments
Stump Surface	0.0	2.66	Arbitrary benchmark
Lake Surface	-2.7	0.00	
OS-1	-0.4	2.28	Stained ring on tree
OS-2	-0.5	2.17	Stained ring on tree
OS-3	-0.5	2.18	Stained ring on tree
OS-4	1.0	3.68	Black residue on ground surface
OS-5	0.8	3.48	Black residue on ground surface
OS-6	-0.7	1.94	Stained ring on tree
OS-7	-0.8	1.91	Stained ring on tree
Lake Surface @ OS-7	-2.7	-0.02	
OS-8	-0.4	2.23	Stained ring on tree
OS-9	-1.4	1.30	Twigs and leaves stuck together by oil
Lake Surface @ OS-10	-2.7	0.00	
OS-10	-0.3	2.36	Stained ring on tree
OS-11	-0.4	2.25	Stained ring on tree

Pin flags were used to mark the 2.25 foot contour along the shoreline immediately north of the "For Sale" sign, and in a separate location near SL-340 and SL-360. The ground surface and tree trunks below that elevation were examined for visible oil contamination. In addition to rings on trees, the oil occurred in clumps of debris (twigs, leaf stems and leaves) that were stuck together by the oil and on the surface of floating debris such as soft drink bottles. On some trees the oil had glued twigs and stems to the bark of the tree.

Small oil sheens, perhaps ten centimeters in diameter, were observed on the surface of the lake. They appeared to have surfaced near the Haefele property.

Monday October 30, 2006

Sean Dougherty and I arrived on site at about 11:00 A.M. It was apparent that the lake level had risen several inches due to the storm on Saturday October 28th. I collected soil samples while Sean documented the locations using the global positioning system (GPS).

Four soil samples were collected for laboratory analysis for polynuclear aromatic hydrocarbon (PAH) analysis. The samples were collected from the very shallowest soils, one inch or less in depth, to limit dilution of any potential contamination by mixing in clean soil from deeper levels. Targeting shallow soil also had the advantage of sampling the soil that users of the property would be most likely to come into contact with.

OS-9 (oil stain number nine) was not so much a soil sample as a sample of leaf litter that had been heavily contaminated with black oil (location shown in Figure 3). Its elevation was about 1.3 feet above summer lake level, or about a foot below the high-water oil stains on the trees. It appeared to be a raft of floating leafy debris that had been stuck together by the floating oil. Shiny and tacky oil surfaces could be found by turning the material over and pulling it apart. I broke up some of the debris and packed it into the sample jar, being sure to include many oily surfaces. This sample was intended to represent *known contamination* with which to compare samples in which the oil was less evident or not apparent at all.

SS-1 (soil sample number one) was collected about 15 feet west of OS-9. The location was just below the 2.25' contour that marked the high water during the spill. It was a wind-swept northwest-facing location where the leaf litter comprised trigs and hemlock needles (Appendix B). Oil stains were evident on twigs in the litter and there appeared to be clumps of black oil on the surface. The upper 1 inch of the soil, mostly litter and duff, was mixed in a stainless steel bowl and sub-sampled into the sample jar. Due to the visual evidence of oil, contamination was expected in SS-1.

SS-2 was collected from a "random" location below the 2.25 foot contour where the mineral soil (topsoil) was exposed at the surface. No visual evidence of oil was noted at SS-2. Again, the upper 1" of soil was mixed in a stainless steel bowl and sub-sampled into the sample jar.

SS-3 was collected from a northwest facing hummock about 20 feet inland from the shore, about 6 inches below the 2.25 foot contour, where no visual evidence of oil was noted. The upper 1" was all duff and tree roots.

Transfer tests were conducted on eight prominent oil stains by pressing filter paper firmly against the stain for thirty seconds. The filter papers were collected and the degree of transfer was qualitatively evaluated in the comfort of the office (Table 2). Photographs of the filter papers are attached as Appendix C.

Table 2. Oil Stain Transfer Test Summary		
Photographs in Appendix C		
Location	Transfer (Y/N)	Comments
OS-1	N	
OS-2	N	Transfer to glove by rubbing stain
OS-6	Y	Two 1 mm stains transferred
OS-7	N	
OS-8	N	
OS-9	Y	Oil coated debris (see lab analysis)
OS-10	N	
OS-11	N	

Tuesday October 31, 2006

Sean and I arrived at about 10:00 A.M. and carried our equipment down to the lake. The weather was mostly cloudy, about 48°, and calm. There were no waves on the lake. We brought a 12 foot canoe, a petit ponar grab sampler for collecting the sediment samples, and a garden rake for disturbing the bottom sediments.

We launched the canoe between SL-60 and SL-80, and worked north along the shoreline. The plan was to disturb the bottom at 2-, 4- and 6-foot depths every twenty feet along the shoreline to see if sunken oil could be mobilized to produce a sheen on the surface. It should be noted at the outset that we observed several oily sheens that spontaneously surfaced during the time we were sampling. Although we did not see the oil arrive at the surface, the sheens deformed and dispersed quickly enough (several minutes) that they could not have floated in from any significant distance. They had to have surfaced locally near the Haefele property. Data on the attempts to mobilize oil and produce a sheen are tabulated in Table 3. Locations of the attempts are shown on Figure 4, with the locations of observed sheens shown in light green. The sheen mobilization tests were stopped before the completion of all the locations specified in the work plan because it became clear that sunken oil was rather common along the Haefele shoreline, and that it was in fact possible to mobilize a sheen by disturbing the bottom sediments.

Table 3. Sheen Mobilization Test Summary				
				Tuesday, October 31, 2006
Shoreline position	Distance from shore	Water Depth	Sheen (Y/N)	
SL-060	8	4	N	
SL-060	14	6	N	
SL-080	6	2	N	
SL-080	12	4	Y	Several thin 1" clots
SL-080	20	5.5	N	

SL-100	12	4	Y	A thin wisp
SL-100	25	6	N	
SL-120	6	2	Y	Small wisps (water sample taken)
SL-120	12	4	Y	3 millimeter clots
SL-120	35	6	N	
SL-140	20	4	N	
SL-140	30	4	N	
SL-140	50	6	N	
SL-160	6	2	Y	Small clots
SL-160	30	4	Y	
SL-160	50	6	N	
SL-180	6	2	Y	Oily sheen with nucleus (water sample taken)
SL-180	50	5.5	N	
SL-200	6	2	N	
SL-200	50	4	N	Sheen noted in same location about 2 minutes later
SL-200	100	5	N	

Four bottom sediment samples were collected for laboratory analysis for PAH compounds. Sample locations were chosen to be within the general area where sheens were noted. Sheens were mobilized by the grab sampler at three of the four sediment sampling locations. Field data on the sediment samples is compiled in Table 4. Locations are shown on Figure 5. Analytical results are listed following the text (Table 5) and the laboratory analytical reports are attached as Appendix A.

Table 4. Summary of Field Data for Sediment Samples

Sample	Water Depth (ft)	Description
SL180-SED	3	Gray and brown organic-rich silt and sand with broken glass and waterlogged leaves, sheen mobilized by sampler
SL140-SED	3	Gray and brown organic-rich silt and sand, sheen mobilized by sampler
SL120-SED	4	Dark gray silt and fine sand, sheen mobilized by sampler
SL100-SED	5	Organic-rich silt and fine sand

After sampling I paddled south along the shoreline in an effort to discover the southern limit of oil staining on the trees. The southern limit of observed oil stains is shown on Figure 1, about 350 feet south of the southern steel boundary pin. Oil stains became thinner south of the Haefele property, but showed up at several levels on the shoreline trees. The shoreline is very flat and swampy north of the Haefele property. The oil stains

were not confined to the shoreline trees there, but were scattered back into the brushy undergrowth away from the shore.

Analytical Results

Fuels oils are mixtures of many different hydrocarbon compounds. Number six fuel oil is the high boiling point range and high-molecular weight mixture that fails to boil during the distillation process at the refinery. It is called residual oil because it is the unrefined residue. There are hundreds, and perhaps thousands, of different compounds in #6 fuel oil, and each batch from each refinery is a somewhat different mixture. The compounds in fuel oils that have received enough regulatory scrutiny to have screening levels assigned to them are some of the polynuclear aromatic hydrocarbons (PAHs). Remedial action guidelines are not exactly cleanup levels. They are used to determine whether a site merits further investigation and evaluation for remediation, and that is how they will be used here. Generally, if representative or worst case samples have contaminant concentrations that are consistently below the remedial action guidelines, then no further investigation or remediation would be required. The analytes listed in Table 5 are PAHs.

The remedial action guideline for PAHs is related to one specific PAH compound, benzo (a) pyrene. It is a rather common contaminant and it is thought to be the most toxic of the group. In an effort to take into account some of the other toxic PAH compounds a *benzo (a) pyrene toxicity equivalent concentration* has sometimes been calculated. The calculation for one sample is shown in Table 6 and the benzo (a) pyrene equivalent concentrations for all of the samples are listed in Table 6. The Maine DEP remedial action guideline for residential property for benzo (a) pyrene in soil is 2 milligrams per kilogram based on the hazard of ingestion.

Table 6. Benzo (a) pyrene toxicity equivalent concentrations

Calculation shown for OS-9			
Compound	Concentration (mg/kg)	Toxicity Multiplier	B(a)P Equivalent (mg/kg)
Benzo(a)pyrene	1.2	1	1.2
Benzo(a)anthracene	0.91	0.1	0.091
Benzo(b)fluoranthene	0.33	0.1	0.033
Benzo(k)fluoranthene	0.38	0.01	0.0038
Chrysene	2	0.001	0.002
Dibenzo(a,h)anthracene	0.5	1	0.5
Ideno(1,2,3-c,d)pyrene	0.5	0.1	0.05
Total BAP Equivalent			1.88

The reporting limit was used in lieu of the concentration for those analytes with concentrations below reporting limits.
All concentrations in this table are in milligrams per kilogram (ppm). Microgram per kilogram values like those listed in Table 5 are one thousand times the same concentrations expressed in milligrams per kilogam. That is, 1200 micrograms per kilogram (1200 ppb) equals 1.2 milligrams per kilogram (1.2 ppm).

Sample	B(a)P (mg/kg)	B(a)P TEC (mg/kg)	
OS-9	1.2	1.9	
SS-1	0.98	1.6	
SS-2	<0.1	0.67	
SS-3	0.35	0.96	

The PAH compounds are regulated characteristic constituents of fuel oils, but their occurrence is not limited to fuel oils. They are byproducts of combustion of all carbon-based fuels, especially soot-producing combustion like that in diesel engines. Thus, it is reasonable to expect some level of anthropogenic background of combustion-derived PAH contamination that is not related to the fuel oil spill. Sedimentation from nearby Route 202, with its heavy diesel truck traffic, and from Winthrop city streets which wash directly into the upper bay of Annabessacook Lake make elevated PAH background all the more likely. Unfortunately, little data exist on PAH background in Maine lake bottom sediments and surficial soils. If the soil and sediment PAH concentrations had been above the regulatory action guidelines it would have been necessary to collect background samples for comparison.

Soil Sample OS-9 is the "worst case" sample. It has a benzo (a) pyrene concentration of 1.2 mg/kg (1200 ug/kg or micrograms per kilogram), and a benzo (a) pyrene toxicity equivalent concentration of 1.9 mg/kg. Both are below the remedial action guideline for soil of 2 mg/kg. Sample OS-9 was made up totally of leaves, stems, twigs and oil, and it was fresh enough to give a positive result on the filter paper transfer test (Appendix C). All other samples contained less visible oil or no visible oil at all.

Soil sample SS-1 was from the duff layer in a windy location swept clan of deciduous leaves (see photo in Appendix B). There were black oil stains on some of the twigs and conifer needles on the ground surface. The PAH concentrations are in similar proportions to those in OS-9, but at about two thirds of the concentration values. SS-1 has a benzo (a) pyrene concentration of 0.98 mg/kg (980 ug/kg or micrograms per kilogram), and a benzo (a) pyrene toxicity equivalent concentration of 1.6 mg/kg. Both are below the remedial action guideline for soil of 2 mg/kg.

The PAH concentrations in SS-2 were so small that they were mostly below their respective detection limits. SS-2 was collected were there was no duff and the topsoil was exposed at the surface. These results provide some indication that the topsoil below the duff is not appreciably contaminated with fuel oil and PAH.

The PAH contamination in SS-3 is similar to that in SS-1, but at about a third or a half of the concentrations in SS-1.

The four shallow-water bottom sediment samples fall neatly into two compositional pairs. The PAH concentrations of SL-140SED and SL-180SED are nearly identical, and the PAH concentrations of SL-100SED and SL-120SED are nearly identical to each other (Table 5). The PAH concentrations of SL-100SED and SL120SED are a little more than twice those of SL-140SED and SL-180SED and it appears that the increase may be largely explainable by the addition of oil, using OS-9 as a model oil composition. SS-140SED and SL-180SED may or may not represent background PAH concentrations (uncontaminated by the recent oil discharge). The range of PAH concentrations in the shallow lake-bottom sediments is similar to the range in the forest duff/leaf litter samples (OS-9, SS-1, SS-3).

Four attempts were made to characterize the chemical composition of sheens mobilized by intentional disturbance of the bottom sediments in shallow water. In all four cases the sheens were captured in 1 liter amber bottles normally used for semi-volatile organic water samples. The oil comprising the sheens was not abundant enough in one liter water samples to be detected by the laboratory at microgram per liter (ppb) levels for PAHs or at 50 micrograms per liter for Diesel Range Organics (DRO). This result does not mean that the observed sheens were not oil, but it does indicate the mobile droplets of oil than rise to the surface of the lake are rather small.

Conclusions and Interpretations

Many, and perhaps most, of the questions that this study was designed to answer were answered by observations in the field, without the information provided by the laboratory analyses. The laboratory analyses have shed some light on the magnitude of any problems that may remain.

The first objective of the investigation was to evaluate the degree to which separate phase petroleum residues can be transferred from soils, vegetation and bottom sediments by casual contact to people and pets using the area for recreation. The answer comes from several lines of observation and reasoning. Firstly, Sean and I spent a few hours at the site on three separate days in late October, and we did not come away with oil stains on our clothing or shoes. We observed dozens of oil stains on leaves, stems, twigs, plastic litter that washed onto the shore during the oil slick, and on the trunks of trees. In all but one case the oil stains were dry and hardened, without detectable tackiness. Only at OS-9 could appreciable oil be transferred by contact with pressure (Appendix C), without also rubbing the stain, but that was after the clump of leaves and stems had been pulled apart to reveal fresher oil surfaces. Those freshly exposed surfaces were tacky. Millimeter-

sized black stains were transferred by pressure at OS-6 (Appendix C). Rubbing any of the dried oil stains with a plastic sampling glove would transfer some of the dried oil to the glove (OS-2 photo, Appendix C). Finally, sheens that were observed are clear evidence that there was oil on the bottom of the lake in shallow water near the Haefele shoreline. All of the sheens that were seen as evidence of this oil on the bottom were small, discrete and discontinuous. The sheens were in the order of five inches in diameter or less, down to fractions of an inch in diameter. The scale of the oil sheens observed was more consistent with sunken waterlogged oily debris than with "tar balls" or such larger aggregations of sunken oil. Thus, casual recreation on land is not very likely to result in appreciable transfer of oil to persons or pets although small stains are certainly possible. Swimmers would be likely to mobilize small oily sheens and to swim through them.

The locations of oil contamination on land are limited to elevations below about 2.25 ft. above the summer lake level. That level is marked by the most prominent oil stains on the trees along the shoreline. Field observations convincingly showed that oil stains occur mostly at the 2.25 contour, but can occur at any level below that. Locations within that area that might be expected to be more abundantly oil-stained would be west or northwest facing slopes that are directly exposed to the lake. It appears that the floating oil adhered to other floating debris in the freshet including leaves, twigs and anthropogenic trash which then blew onto the shore along with floating free oil. The oil occurs as stains and coatings on surfaces. Representative PAH concentrations in soil are listed in Table 5 (SS-1, SS-2 and SS-3). The concentrations of regulated PAH compounds in the samples are below the regulatory action guidelines, even in samples intentionally biased toward contamination (SS-1 and OS-9).

The distribution of oil contamination on the bottom of the lake is less easily inferred. Sunken oil appears to have deposited on the lake bottom by adhering to floating debris that then became waterlogged and sank. If that model is accurate, then the oil would be distributed haphazardly on the bottom, depending on where the debris sank and on where it might have been moved by wave action and littoral currents. Six small oil sheens were created by disturbing the bottom sediments at twenty-one locations in shallow water along the shore (28%). Thus, the oil appears to be widely distributed but not particularly abundant at any given location.

The oil coatings and stains on shore have dried and hardened due to selective evaporation of the most volatile constituent compounds and leaching (dissolution) of the most soluble compounds. Those weathering processes will continue to break down the oil over the years, but it will be progressively slower as the volatile and soluble constituents are depleted, until a hardened tar-like residue remains. Old oil-stained plastic trash on the Haefele property served as examples of the endpoint of this process. In particular a dish detergent bottle, half buried in the forest soil and photodegraded so that the exposed half was largely broken away, had an oil coating that showed how it had floated on the lake during an earlier oil discharge event (photograph in Appendix C). The residue that remains has been exposed to weathering for decades. It is hard and dry, but it hasn't disappeared. The threat that oil contamination from the 2005 discharge will be

transferred to people and pets using the area for recreation is already small, and it will continue to diminish as the seasons pass.

The prognosis for natural cleanup of the subaqueous oil contamination is less certain. The fact that sheens continue to surface spontaneously from the bottom means that the reservoir of submerged contamination is continuously diminishing. It is not possible to predict how long that process and other dispersion and weathering processes will require to mitigate the nuisance oil sheens.

Table 5. Analytical results from October 2006 Sampling
Winthrop Commerce Center LUST Site
Haefele Damage Claim

Sample	Date	Matrix	DRO	2-Methylna phthalene	Acenaph thene	Acenaph thylene	Anthra cene	Benzo(a) anthra cene	Benzo (a) pyrene	Benzo(b) fluoran thene	Benzo (g,h,i) perylene	Benzo(k) fluoran thene	Chrysene	Dibenzo (a,h) anthra cene	Fluoran thene	Fluorene	Naph thalene	Phenan threne	Pyrene	2-Chloro naph thalene	Indeno (1,2,3-cd) pyrene
SL-100-SED	10/31/06	Sediment	NA	<100	<100	340	250	790	1200	1800	1000	570	1200	<500	1900	<100	<100	700	1500	5j	910
SL-120-SED	10/31/06	Sediment	NA	<100	<100	340	240	810	1200	1700	950	590	1100	<500	1800	<100	<100	730	1500	<100	<500
SL-140-SED	10/31/06	Sediment	NA	<100	<100	100	110	340	480	750	<500	230	470	<500	1200	<100	<100	340	650	<100	<500
SL-180-SED	10/31/06	Sediment	NA	<100	<100	<100	140	440	460	680	<500	240	500	<500	1100	600	<100	<100	760	<100	<500
SL-120-2	10/31/06	Water	NA	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1
SL-140-3	10/31/06	Water	NA	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1
SL-140-4	10/31/06	Water	NA	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1
SL-180-2	10/31/06	Water	NA	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1
SL-180-3	10/31/06	Water	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OS-9	10/31/06	Soil	NA	<100	170	380	420	910	1200	330	<500	380	2000	<500	1600	260	<100	590	2300	<100	<500
SS-1	10/31/06	Soil	NA	<100	<100	<100	150	480	980	610	<500	790	1300	<500	1000	<100	<100	210	1300	<100	<500
SS-2	10/31/06	Soil	NA	<100	<100	<100	<100	<100	<100	<100	<500	<100	<100	<500	120	<100	<100	<100	<100	<100	<500
SS-3	10/31/06	Soil	NA	<100	<100	<100	<100	210	350	390	<500	370	350	<500	700	<100	<100	370	460	5j	<500

NA - Sample not analyzed for listed parameter
Concentrations for sediment and soil samples are in micrograms per kilogram (ug/kg, parts per billion, ppb).
Concentrations of water samples are in micrograms per liter (ug/l, parts per billion, ppb)

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Figures

Figure 1 Location of Haefele Property (Lot 40).

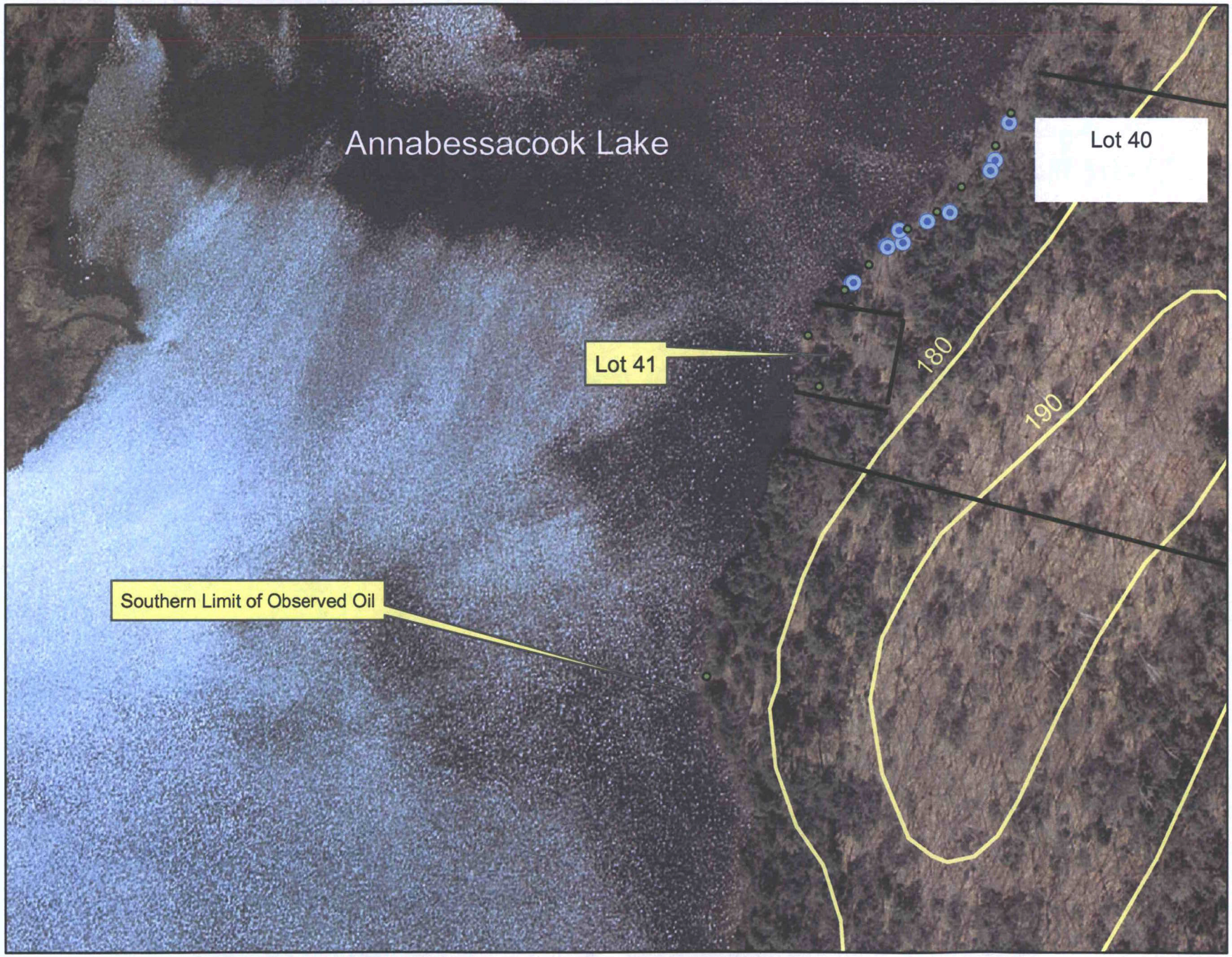


Figure 2. Location of shoreline sampling grid

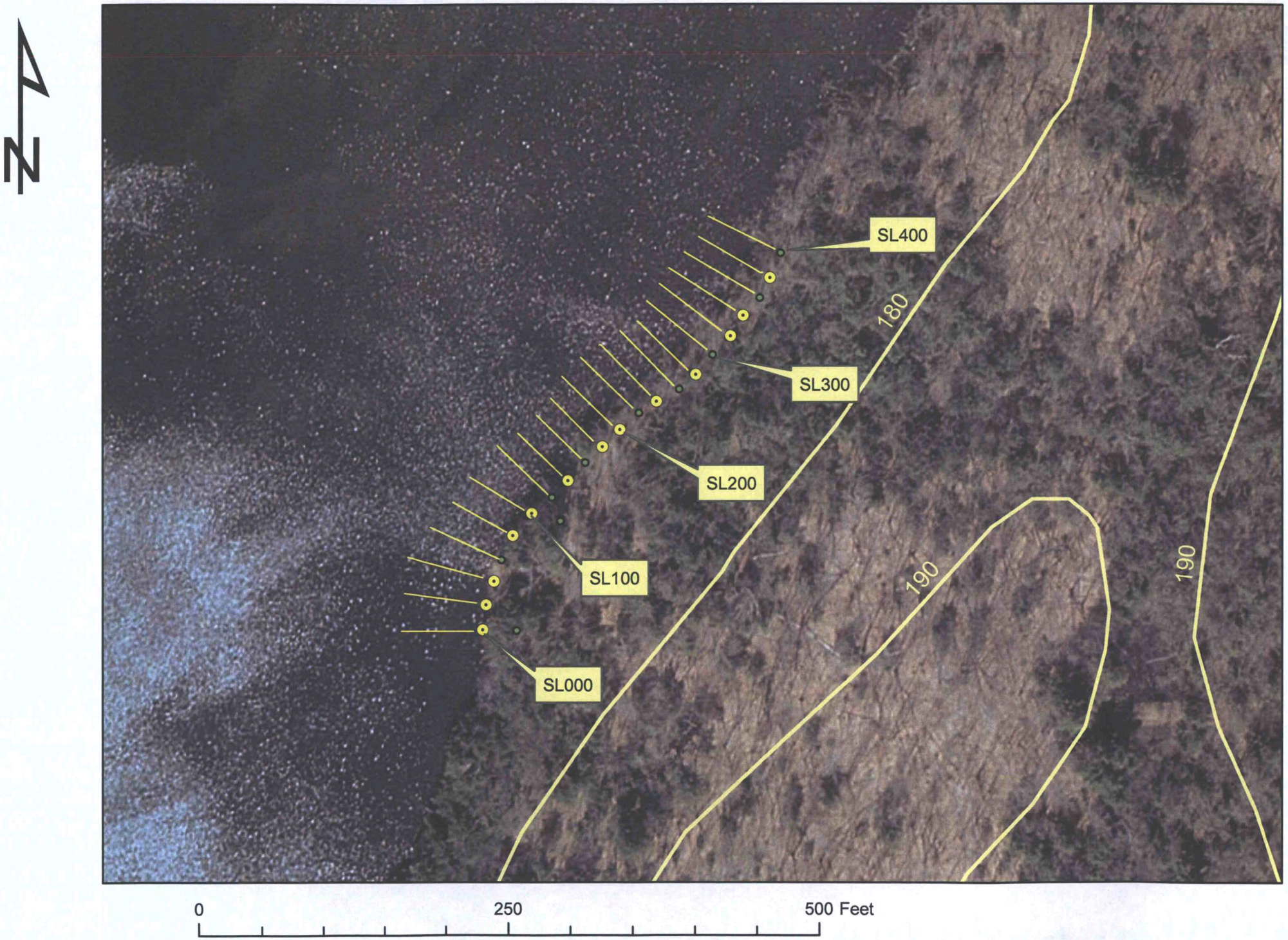


Figure 3. Locations of oil stains (OS) and soil samples

Figure 4. Locations of Sheen Mobilization Tests.

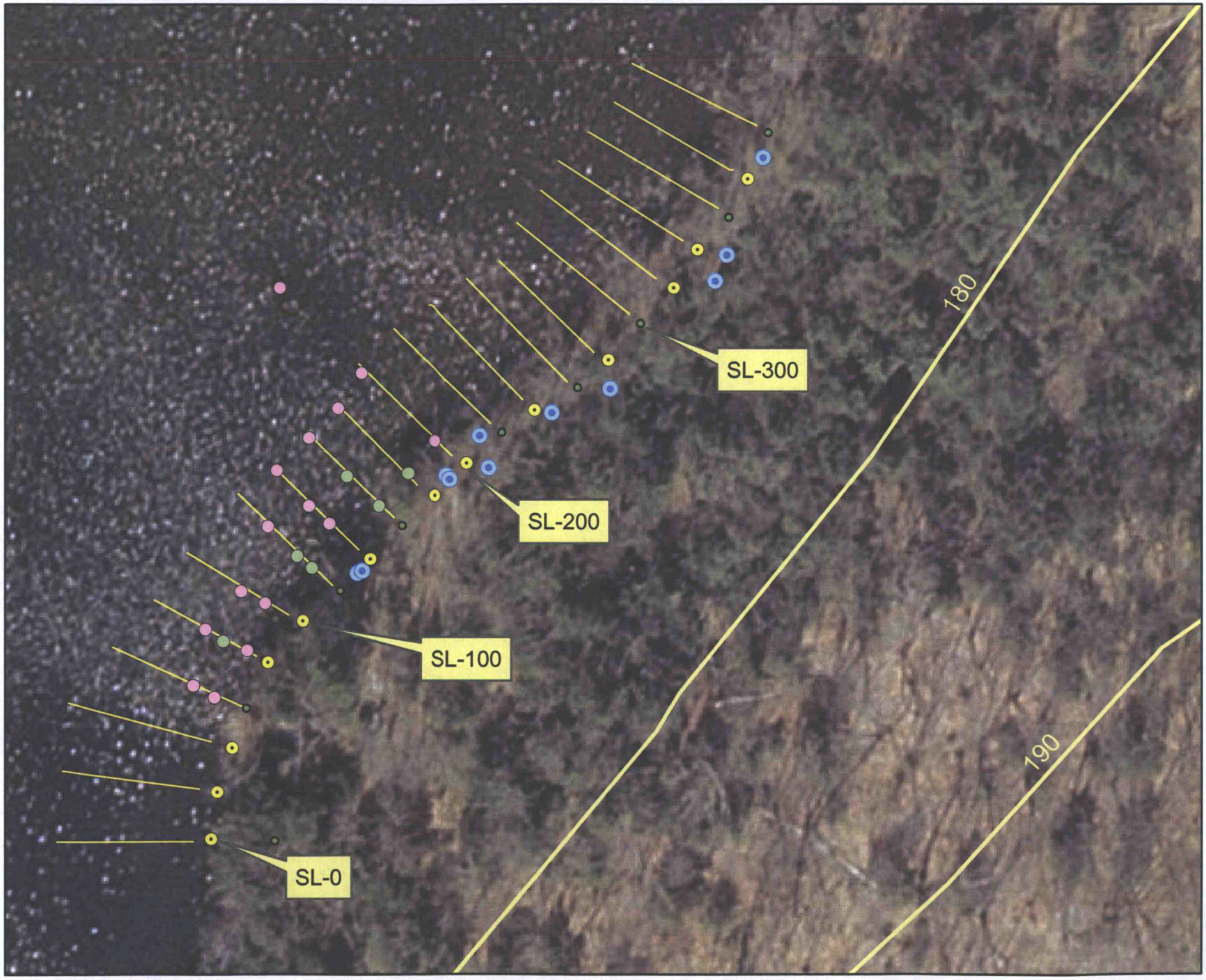
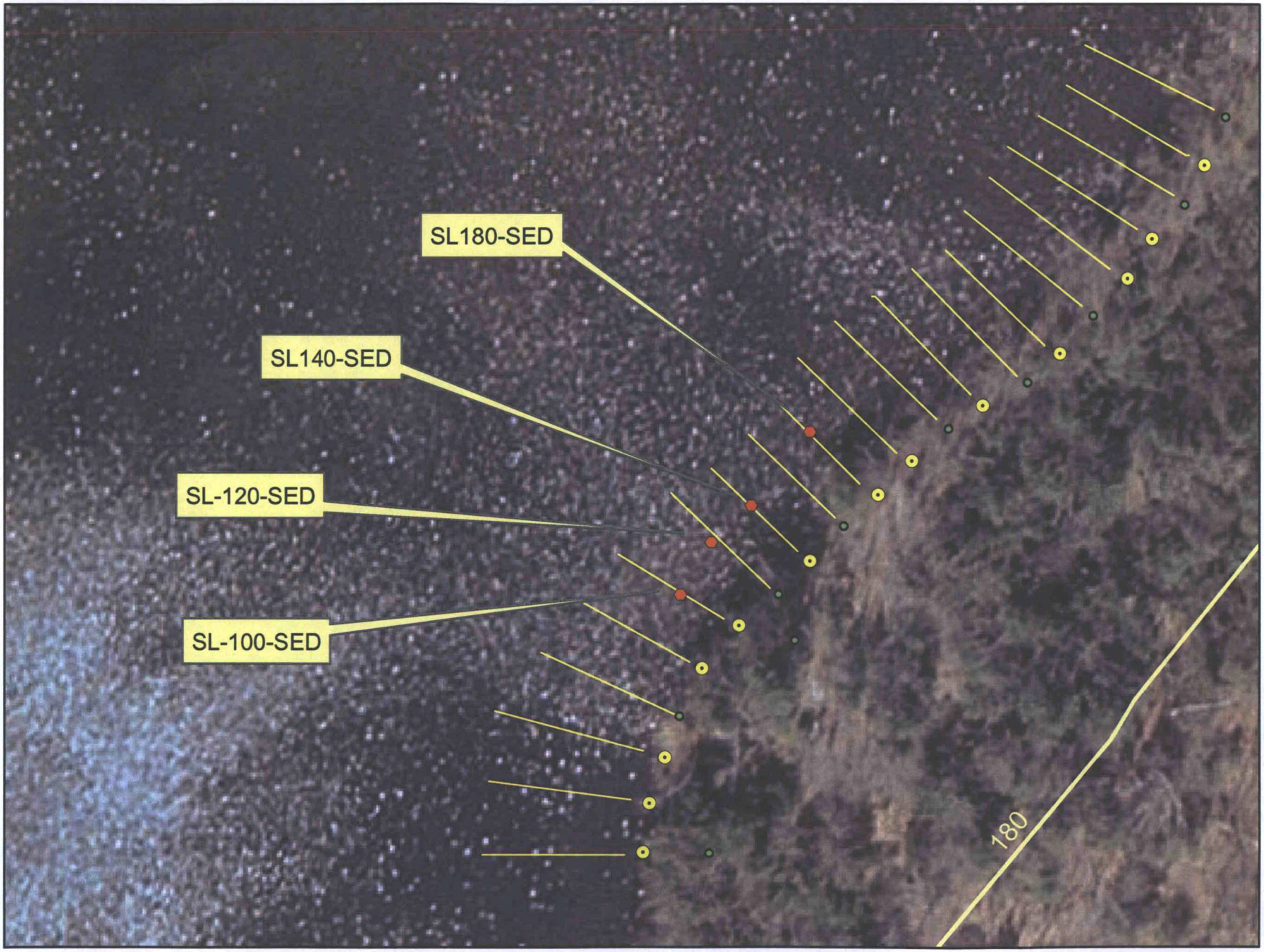


Figure 5. Locations of sediment samples



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Appendix A
Laboratory Analytical Reports

SL-100-SEO

MAINE HEALTH AND ENVIRONMENTAL
TESTING LABORATORY
221 State Street, Station #12
Department of Health and Human Services
Augusta, Maine 04333
Tel. No. 207-287-1716
Fax. No. 207-287-6832

PUBLIC HETL

Logged: 11/1/2006 11:55:00AM

Folder/ Invoice # B037283

Office Use Only:
Summary
DEPP

Released: 11/20/2006

Case #:

JOHN BEANE
DEPT OF ENVIRONMENTAL PROTECTION
17 SHS
AUGUSTA ME 04333 **Fax#:**

Project Name: WINTHROP COMMERCE CENTER

No. of Samples in Folder 13

B037283001, B037283002, B037283003
B037283004, B037283005, B037283006
B037283007, B037283008, B037283009
B037283010, B037283011, B037283012
B037283013

FILE COPY

CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation , and holding times, unless otherwise indicated.

John A. Krueger, Director Richard French, Quality Assurance Officer

If we can be of further assistance to you, Please Call us at 287-1716

Approved by:

CC:

11/20/2006 1:23:07PM

Continued from Previous Page HETL Sample Number: **B037283001**

HETL Sample Number: B037283001 Default Description: **SL-100-SED**

Matrix: **SOLID** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/06/2006**

Preparation Method: 8270 Soxhlet **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/02/2006	2:30 PM			

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<100	ug/kg	100		
Acenaphthene	<100	ug/kg	100		
Acenaphthylene	340	ug/kg	100		Ach
Anthracene	250	ug/kg	100		Ach
Benzo(a)anthracene	790	ug/kg	100		Ach
Benzo(a)pyrene	1200	ug/kg	100		Ach
Benzo(b)fluoranthene	1800	ug/kg	100		Ach
Benzo(g,h,i)perylene	1000	ug/kg	500		Ach
Benzo(k)fluoranthene	570	ug/kg	100		Ach
Chrysene	1200	ug/kg	100		Ach
Dibenzo(a,h)anthracene	<500	ug/kg	500		
Fluoranthene	1900	ug/kg	100		Ach
Fluorene	<100	ug/kg	100		
Naphthalene	<100	ug/kg	100		
Phenanthrene	700	ug/kg	100		Ach
Pyrene	1500	ug/kg	100		Ach
2-Chloronaphthalene	5.0	ug/kg	100		J
Indeno(1,2,3-cd)pyrene	910	ug/kg	500		Ach

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	61.0			23	120	LoRec
2-Fluorobiphenyl	76.0			30	115	LoRec
2-Fluorophenol	0.00			25	121	LoRec
Phenol-d5	0.00			24	113	LoRec
2,4,6-Tribromophenol	0.00			19	122	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	92.0			18	137	LoRec

Continued from Previous Page HETL Sample Number: **B037283001**

Continued from Previous Page HETL Sample Number: **B037283001**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
"**ug/Kg**" = Micrograms per Kilogram; "**PPM**" = Parts per Million; "**NTU**" = Nephelometric Turbidity Units;

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RL-Reporting Limit, the lowest concentration which can be reliably reported on a routine basis
"**<**" = Less than "**>**" = Greater than

Note: Results below the advisory limit, including < and K are considered satisfactory for that parameter.

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A-157-05 SL-120-SEO 10/31/06 23

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Department of Health and Human Services
Augusta, Maine 04333
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Fax. No. 207-287-6832

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JOHN BEANE
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17 SHS
AUGUSTA ME 04333 **Fax#:**

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Project Name: WINTHROP COMMERCE CENTER

Released: 11/20/2006

No. of Samples in Folder 13

Case #:

B037283001, B037283002, B037283003
B037283004, B037283005, B037283006
B037283007, B037283008, B037283009
B037283010, B037283011, B037283012
B037283013

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CERTIFICATION

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John A. Krueger, Director Richard French, Quality Assurance Officer

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Continued from Previous Page HETL Sample Number: **B037283002**

HETL Sample Number: B037283002 Default Description: **SL-120-SED**

Matrix: **SOLID** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/06/2006**

Preparation Method: 8270 Soxhlet **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/02/2006	2:30 PM			

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<100	ug/kg	100		
Acenaphthene	<100	ug/kg	100		
Acenaphthylene	340	ug/kg	100		**Ach**
Anthracene	240	ug/kg	100		**Ach**
Benzo(a)anthracene	810	ug/kg	100		**Ach**
Benzo(a)pyrene	1200	ug/kg	100		**Ach**
Benzo(b)fluoranthene	1700	ug/kg	100		**Ach**
Benzo(g,h,i)perylene	950	ug/kg	500		**Ach**
Benzo(k)fluoranthene	590	ug/kg	100		**Ach**
Chrysene	1100	ug/kg	100		**Ach**
Dibenzo(a,h)anthracene	<500	ug/kg	500		
Fluoranthene	1800	ug/kg	100		**Ach**
Fluorene	<100	ug/kg	100		
Naphthalene	<100	ug/kg	100		
Phenanthrene	730	ug/kg	100		**Ach**
Pyrene	1500	ug/kg	100		**Ach**
2-Chloronaphthalene	<100	ug/kg	100		
Indeno(1,2,3-cd)pyrene	<500	ug/kg	500		

Surrogate Analytes (added as part of testing to verify performance)	**Result**	**Amount**	**% Rec**	**Low % Rec**	**High % Rec**	**Qualifiers**
Nitrobenzene-d5	82.0			23	120	LoRec
2-Fluorobiphenyl	101			30	115	LoRec
2-Fluorophenol	0.00			25	121	LoRec
Phenol-d5	0.00			24	113	LoRec
2,4,6-Tribromophenol	0.00			19	122	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	109			18	137	LoRec

Continued from Previous Page HETL Sample Number: **B037283002**

Continued from Previous Page HETL Sample Number: **B037283002**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
"**ug/Kg**" = Micrograms per Kilogram; "**PPM**" = Parts per Million; "**NTU**" = Nephelometric Turbidity Units;

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"**<**" = Less than ">" = Greater than

Note: Results below the advisory limit, including < and K are considered satisfactory for that parameter.

Disclaimer

SL-140-SEO

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17 SHS
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Project Name: WINTHROP COMMERCE CENTER

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B037283013

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CERTIFICATION

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John A. Krueger, Director Richard French, Quality Assurance Officer

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Continued from Previous Page HETL Sample Number: **B037283003**

HETL Sample Number: B037283003 Default Description: **SL-140-SED**

Matrix: **SOLID** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/06/2006**

Preparation Method: 8270 Soxhlet **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/02/2006	2:30 PM			

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<100	ug/kg	100		
Acenaphthene	<100	ug/kg	100		
Acenaphthylene	100	ug/kg	100		**Ach**
Anthracene	110	ug/kg	100		**Ach**
Benzo(a)anthracene	340	ug/kg	100		**Ach**
Benzo(a)pyrene	480	ug/kg	100		**Ach**
Benzo(b)fluoranthene	750	ug/kg	100		**Ach**
Benzo(g,h,i)perylene	<500	ug/kg	500		
Benzo(k)fluoranthene	230	ug/kg	100		**Ach**
Chrysene	470	ug/kg	100		**Ach**
Dibenzo(a,h)anthracene	<500	ug/kg	500		
Fluoranthene	1200	ug/kg	100		**Ach**
Fluorene	<100	ug/kg	100		
Naphthalene	<100	ug/kg	100		
Phenanthrene	340	ug/kg	100		**Ach**
Pyrene	650	ug/kg	100		**Ach**
2-Chloronaphthalene	<100	ug/kg	100		
Indeno(1,2,3-cd)pyrene	<500	ug/kg	500		

Surrogate Analytes (added as part of testing to verify performance)	**Result**	**Amount**	**% Rec**	**Low % Rec**	**High % Rec**	**Qualifiers**
Nitrobenzene-d5	74.0			23	120	LoRec
2-Fluorobiphenyl	89.0			30	115	LoRec
2-Fluorophenol	0.00			25	121	LoRec
Phenol-d5	0.00			24	113	LoRec
2,4,6-Tribromophenol	0.00			19	122	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	97.0			18	137	LoRec

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Continued from Previous Page HETL Sample Number: **B037283003**

Continued from Previous Page HETL Sample Number: **B037283003**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
"**ug/Kg**" = Micrograms per Kilogram; "**PPM**" = Parts per Million; "**NTU**" = Nephelometric Turbidity Units;

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All solid results on a "**Dry Weight**" basis

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RL-Reporting Limit, the lowest concentration which can be reliably reported on a routine basis
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Project Name: WINTHROP COMMERCE CENTER

Released: 11/20/2006

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Case #:

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B037283007, B037283008, B037283009
B037283010, B037283011, B037283012
B037283013

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John A. Krueger, Director Richard French, Quality Assurance Officer

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Continued from Previous Page HETL Sample Number: **B037283004**

HETL Sample Number: B037283004 Default Description: **SL-180-SED**

Matrix: **SOLID** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/06/2006**

Preparation Method: 8270 Soxhlet **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/02/2006	2:30 PM			

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<100	ug/kg	100		
Acenaphthene	<100	ug/kg	100		
Acenaphthylene	<100	ug/kg	100		
Anthracene	140	ug/kg	100		Ach
Benzo(a)anthracene	440	ug/kg	100		Ach
Benzo(a)pyrene	460	ug/kg	100		Ach
Benzo(b)fluoranthene	680	ug/kg	100		Ach
Benzo(g,h,i)perylene	<500	ug/kg	500		
Benzo(k)fluoranthene	240	ug/kg	100		Ach
Chrysene	500	ug/kg	100		Ach
Dibenzo(a,h)anthracene	<500	ug/kg	500		
Fluoranthene	1100	ug/kg	100		Ach
Fluorene	600	ug/kg	100		Ach
Naphthalene	<100	ug/kg	100		
Phenanthrene	<100	ug/kg	100		
Pyrene	760	ug/kg	100		Ach
2-Chloronaphthalene	<100	ug/kg	100		
Indeno(1,2,3-cd)pyrene	<500	ug/kg	500		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	87.0			23	120	LoRec
2-Fluorobiphenyl	106			30	115	LoRec
2-Fluorophenol	0.00			25	121	LoRec
Phenol-d5	0.00			24	113	LoRec
2,4,6-Tribromophenol	0.00			19	122	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	136			18	137	LoRec

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Continued from Previous Page HETL Sample Number: **B037283004**

Continued from Previous Page HETL Sample Number: **B037283004**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
"**ug/Kg**" = Micrograms per Kilogram; "**PPM**" = Parts per Million; "**NTU**" = Nephelometric Turbidity Units;

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Winthrop Comm. FAH 10/31/06 35

A-157-05

SL-120-2

MAINE HEALTH AND ENVIRONMENTAL
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Augusta, Maine 04333
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17 SHS
AUGUSTA ME 04333 **Fax#:**

Project Name: WINTHROP COMMERCE CENTER

No. of Samples in Folder 13

B037283001, B037283002, B037283003
B037283004, B037283005, B037283006
B037283007, B037283008, B037283009
B037283010, B037283011, B037283012
B037283013

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CERTIFICATION

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John A. Krueger, Director Richard French, Quality Assurance Officer

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CC:

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Continued from Previous Page HETL Sample Number: **B037283005**

HETL Sample Number: B037283005 Default Description: SL-120-2

Matrix: **NP-H20** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/03/2006**

Preparation Method: 8270 Sep Fun Liq Liq **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<1	ug/L	1.0		
Acenaphthene	<1	ug/L	1.0		
Acenaphthylene	<1	ug/L	1.0		
Anthracene	<1	ug/L	1.0		
Benzo(a)anthracene	<1	ug/L	1.0		
Benzo(a)pyrene	<1	ug/L	1.0		
Benzo(b)fluoranthene	<1	ug/L	1.0		
Benzo(g,h,i)perylene	<5	ug/L	5.0		
Benzo(k)fluoranthene	<1	ug/L	1.0		
Chrysene	<1	ug/L	1.0		
Dibenzo(a,h)anthracene	<5	ug/L	5.0		
Fluoranthene	<1	ug/L	1.0		
Fluorene	<1	ug/L	1.0		
Naphthalene	<1	ug/L	1.0		
Phenanthrene	<1	ug/L	1.0		
Pyrene	<1	ug/L	1.0		
2-Chloronaphthalene	<1	ug/L	1.0		
Indeno(1,2,3-cd)pyrene	<5	ug/L	5.0		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	80.1			35	114	LoRec
2-Fluorobiphenyl	90.7			43	116	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	106			33	141	LoRec

Continued from Previous Page HETL Sample Number: **B037283005**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
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A-157-05
SL-140-3

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AUGUSTA ME 04333 **Fax#:**

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Project Name: WINTHROP COMMERCE CENTER

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B037283010, B037283011, B037283012
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John A. Krueger, Director Richard French, Quality Assurance Officer

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Approved by:

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Continued from Previous Page HETL Sample Number: **B037283006**

HETL Sample Number: B037283006 Default Description: **SL-140-3**

Matrix: **NP-H20** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/03/2006**

Preparation Method: 8270 Sep Fun Liq Liq **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<1	ug/L	1.0		
Acenaphthene	<1	ug/L	1.0		
Acenaphthylene	<1	ug/L	1.0		
Anthracene	<1	ug/L	1.0		
Benzo(a)anthracene	<1	ug/L	1.0		
Benzo(a)pyrene	<1	ug/L	1.0		
Benzo(b)fluoranthene	<1	ug/L	1.0		
Benzo(g,h,i)perylene	<5	ug/L	5.0		
Benzo(k)fluoranthene	<1	ug/L	1.0		
Chrysene	<1	ug/L	1.0		
Dibenzo(a,h)anthracene	<5	ug/L	5.0		
Fluoranthene	<1	ug/L	1.0		
Fluorene	<1	ug/L	1.0		
Naphthalene	<1	ug/L	1.0		
Phenanthrene	<1	ug/L	1.0		
Pyrene	<1	ug/L	1.0		
2-Chloronaphthalene	<1	ug/L	1.0		
Indeno(1,2,3-cd)pyrene	<5	ug/L	5.0		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	75.2			35	114	LoRec
2-Fluorobiphenyl	82.2			43	116	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	104			33	141	LoRec

Continued from Previous Page HETL Sample Number: **B037283006**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
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A-157-05

SL-140-4

MAINE HEALTH AND ENVIRONMENTAL
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JOHN BEANE
DEPT OF ENVIRONMENTAL PROTECTION
17 SHS
AUGUSTA ME 04333 **Fax#:**

Project Name: WINTHROP COMMERCE CENTER

No. of Samples in Folder 13

B037283001, B037283002, B037283003
B037283004, B037283005, B037283006
B037283007, B037283008, B037283009
B037283010, B037283011, B037283012
B037283013

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CERTIFICATION

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John A. Krueger, Director Richard French, Quality Assurance Officer

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11/20/2006 1:23:07PM

Continued from Previous Page HETL Sample Number: **B037283007**

HETL Sample Number: B037283007 Default Description: SL-140-4

Matrix: **NP-H20** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **8270C** Analyst: **JIM EATON** Analysis Datetime: **11/03/2006**

Preparation Method: 8270 Sep Fun Liq Liq **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<1	ug/L	1.0		
Acenaphthene	<1	ug/L	1.0		
Acenaphthylene	<1	ug/L	1.0		
Anthracene	<1	ug/L	1.0		
Benzo(a)anthracene	<1	ug/L	1.0		
Benzo(a)pyrene	<1	ug/L	1.0		
Benzo(b)fluoranthene	<1	ug/L	1.0		
Benzo(g,h,i)perylene	<5	ug/L	5.0		
Benzo(k)fluoranthene	<1	ug/L	1.0		
Chrysene	<1	ug/L	1.0		
Dibenzo(a,h)anthracene	<5	ug/L	5.0		
Fluoranthene	<1	ug/L	1.0		
Fluorene	<1	ug/L	1.0		
Naphthalene	<1	ug/L	1.0		
Phenanthrene	<1	ug/L	1.0		
Pyrene	<1	ug/L	1.0		
2-Chloronaphthalene	<1	ug/L	1.0		
Indeno(1,2,3-cd)pyrene	<5	ug/L	5.0		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	76.6			35	114	LoRec
2-Fluorobiphenyl	83.1			43	116	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	103			33	141	LoRec

Continued from Previous Page HETL Sample Number: **B037283007**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
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A-157-05
SL-180-2

MAINE HEALTH AND ENVIRONMENTAL
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221 State Street, Station #12
Department of Health and Human Services
Augusta, Maine 04333
Tel. No. 207-287-1716
Fax. No. 207-287-6832

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JOHN BEANE
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17 SHS
AUGUSTA ME 04333 **Fax#:**

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Project Name: WINTHROP COMMERCE CENTER

Released: 11/20/2006

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Continued from Previous Page HETL Sample Number: **B037283008**

HETL Sample Number: B037283008 Default Description: **SL-180-2**

Matrix: **NP-H20** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/03/2006**

Preparation Method: 8270 Sep Fun Liq Liq **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<1	ug/L	1.0		
Acenaphthene	<1	ug/L	1.0		
Acenaphthylene	<1	ug/L	1.0		
Anthracene	<1	ug/L	1.0		
Benzo(a)anthracene	<1	ug/L	1.0		
Benzo(a)pyrene	<1	ug/L	1.0		
Benzo(b)fluoranthene	<1	ug/L	1.0		
Benzo(g,h,i)perylene	<5	ug/L	5.0		
Benzo(k)fluoranthene	<1	ug/L	1.0		
Chrysene	<1	ug/L	1.0		
Dibenzo(a,h)anthracene	<5	ug/L	5.0		
Fluoranthene	<1	ug/L	1.0		
Fluorene	<1	ug/L	1.0		
Naphthalene	<1	ug/L	1.0		
Phenanthrene	<1	ug/L	1.0		
Pyrene	<1	ug/L	1.0		
2-Chloronaphthalene	<1	ug/L	1.0		
Indeno(1,2,3-cd)pyrene	<5	ug/L	5.0		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	78.2			35	114	LoRec
2-Fluorobiphenyl	86.4			43	116	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	118			33	141	LoRec

Continued from Previous Page HETL Sample Number: **B037283008**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
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A-157-06

SL-180-3

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Project Name: WINTHROP COMMERCE CENTER

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Continued from Previous Page HETL Sample Number: **B037283009**

HETL Sample Number: B037283009 Default Description: **SL-180-3**

Matrix: **NP-H20** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/31/2006** Time: **10:30:00**

Method: **ME 4.1.25** Analyst **JOHN MARTHA** Analysis Datetime: **11/03/2006**

Preparation Method: DRO Sep Fun Liq Liq **Prepared by:** JOHN MARTHA

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/01/2006	12:00	980 ml	<2	1.0 ml

Analyte	Result	Units	RL	MCL	Qualifiers
DRO	<50	ug/L	50	50	

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
o-terphenyl	20.7	20.0	103.5	50	150	

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Continued from Previous Page HETL Sample Number: **B037283009**

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AUGUSTA ME 04333 **Fax#:**

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Continued from Previous Page HETL Sample Number: **B037283010**

HETL Sample Number: B037283010 Default Description: **OS-9**

Matrix: **SOLID** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/30/2006** Time: **11:12:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/06/2006**

Preparation Method: 8270 Soxhlet **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/02/2006	2:30 PM			

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<100	ug/kg	100		
Acenaphthene	170	ug/kg	100		Ach
Acenaphthylene	380	ug/kg	100		Ach
Anthracene	420	ug/kg	100		Ach
Benzo(a)anthracene	910	ug/kg	100		Ach
Benzo(a)pyrene	1200	ug/kg	100		Ach
Benzo(b)fluoranthene	330	ug/kg	100		Ach
Benzo(g,h,i)perylene	<500	ug/kg	500		
Benzo(k)fluoranthene	380	ug/kg	100		Ach
Chrysene	2000	ug/kg	100		Ach
Dibenzo(a,h)anthracene	<500	ug/kg	500		
Fluoranthene	1600	ug/kg	100		Ach
Fluorene	260	ug/kg	100		Ach
Naphthalene	<100	ug/kg	100		
Phenanthrene	590	ug/kg	100		Ach
Pyrene	2300	ug/kg	100		Ach
2-Chloronaphthalene	<100	ug/kg	100		
Indeno(1,2,3-cd)pyrene	<500	ug/kg	500		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	87.0			23	120	LoRec
2-Fluorobiphenyl	91.0			30	115	LoRec
2-Fluorophenol	0.00			25	121	LoRec
Phenol-d5	0.00			24	113	LoRec
2,4,6-Tribromophenol	0.00			19	122	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	177			18	137	LoRec

Continued from Previous Page HETL Sample Number: **B037283010**

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Continued from Previous Page HETL Sample Number: **B037283010**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
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SS-2

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17 SHS
AUGUSTA ME 04333 **Fax#:**

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Project Name: WINTHROP COMMERCE CENTER

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Continued from Previous Page HETL Sample Number: **B037283012**

HETL Sample Number: B037283012 Default Description: SS-2

Matrix: **SOLID** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/30/2006** Time: **11:50:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/06/2006**

Preparation Method: 8270 Soxhlet **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/02/2006	2:30 PM			

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<100	ug/kg	100		
Acenaphthene	<100	ug/kg	100		
Acenaphthylene	<100	ug/kg	100		
Anthracene	<100	ug/kg	100		
Benzo(a)anthracene	<100	ug/kg	100		
Benzo(a)pyrene	<100	ug/kg	100		
Benzo(b)fluoranthene	<100	ug/kg	100		
Benzo(g,h,i)perylene	<500	ug/kg	500		
Benzo(k)fluoranthene	<100	ug/kg	100		
Chrysene	<100	ug/kg	100		
Dibenzo(a,h)anthracene	<500	ug/kg	500		
Fluoranthene	120	ug/kg	100		Ach
Fluorene	<100	ug/kg	100		
Naphthalene	<100	ug/kg	100		
Phenanthrene	<100	ug/kg	100		
Pyrene	<100	ug/kg	100		
2-Chloronaphthalene	<100	ug/kg	100		
Indeno(1,2,3-cd)pyrene	<500	ug/kg	500		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	65.0			23	120	LoRec
2-Fluorobiphenyl	79.0			30	115	LoRec
2-Fluorophenol	0.00			25	121	LoRec
Phenol-d5	0.00			24	113	LoRec
2,4,6-Tribromophenol	0.00			19	122	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	94.0			18	137	LoRec

Continued from Previous Page HETL Sample Number: **B037283012**

Continued from Previous Page HETL Sample Number: **B037283012**

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Continued from Previous Page HETL Sample Number: **B037283011**

HETL Sample Number: B037283011 Default Description: SS-1

Matrix: **SOLID** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/30/2006** Time: **11:40:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/06/2006**

Preparation Method: 8270 Soxhlet **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/02/2006	2:30 PM			

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<100	ug/kg	100		
Acenaphthene	<100	ug/kg	100		
Acenaphthylene	<100	ug/kg	100		
Anthracene	150	ug/kg	100		Ach
Benzo(a)anthracene	480	ug/kg	100		Ach
Benzo(a)pyrene	980	ug/kg	100		Ach
Benzo(b)fluoranthene	610	ug/kg	100		Ach
Benzo(g,h,i)perylene	<500	ug/kg	500		
Benzo(k)fluoranthene	790	ug/kg	100		Ach
Chrysene	1300	ug/kg	100		Ach
Dibenzo(a,h)anthracene	<500	ug/kg	500		
Fluoranthene	1000	ug/kg	100		Ach
Fluorene	<100	ug/kg	100		
Naphthalene	<100	ug/kg	100		
Phenanthrene	210	ug/kg	100		Ach
Pyrene	1300	ug/kg	100		Ach
2-Chloronaphthalene	<100	ug/kg	100		
Indeno(1,2,3-cd)pyrene	<500	ug/kg	500		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	94.0			23	120	LoRec
2-Fluorobiphenyl	112			30	115	LoRec
2-Fluorophenol	0.00			25	121	LoRec
Phenol-d5	0.00			24	113	LoRec
2,4,6-Tribromophenol	0.00			19	122	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	120			18	137	LoRec

Continued from Previous Page HETL Sample Number: **B037283011**

Continued from Previous Page HETL Sample Number: **B037283011**

Units & Measurement

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B037283004, B037283005, B037283006
B037283007, B037283008, B037283009
B037283010, B037283011, B037283012
B037283013

FILE COPY

CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation , and holding times, unless otherwise indicated.

John A. Krueger, Director Richard French, Quality Assurance Officer

If we can be of further assistance to you, Please Call us at 287-1716

Approved by:

CC:

11/20/2006 1:23:07PM

Continued from Previous Page HETL Sample Number: **B037283013**

HETL Sample Number: B037283013 Default Description: **SS-3**

Matrix: **SOLID** Sample Point:

Sampler: JOHN BEANE Sample Date: **10/30/2006** Time: **12:06:00**

Method: **8270C** Analyst **JIM EATON** Analysis Datetime: **11/06/2006**

Preparation Method: 8270 Soxhlet **Prepared by:** JIM EATON

Date Prepared	Time Prepared	Amount Extracted	Extraction pH	Final Amount of Extract
11/02/2006	2:30 PM			

Analyte	Result	Units	RL	MCL	Qualifiers
2-Methylnaphthalene	<100	ug/kg	100		
Acenaphthene	<100	ug/kg	100		
Acenaphthylene	<100	ug/kg	100		
Anthracene	<100	ug/kg	100		
Benzo(a)anthracene	210	ug/kg	100		Ach
Benzo(a)pyrene	350	ug/kg	100		Ach
Benzo(b)fluoranthene	390	ug/kg	100		Ach
Benzo(g,h,i)perylene	<500	ug/kg	500		
Benzo(k)fluoranthene	370	ug/kg	100		Ach
Chrysene	350	ug/kg	100		Ach
Dibenzo(a,h)anthracene	<500	ug/kg	500		
Fluoranthene	700	ug/kg	100		Ach
Fluorene	<100	ug/kg	100		
Naphthalene	<100	ug/kg	100		
Phenanthrene	370	ug/kg	100		Ach
Pyrene	460	ug/kg	100		Ach
2-Chloronaphthalene	5.0	ug/kg	100		J
Indeno(1,2,3-cd)pyrene	<500	ug/kg	500		

Surrogate Analytes (added as part of testing to verify performance)	Result	Amount	% Rec	Low % Rec	High % Rec	Qualifiers
Nitrobenzene-d5	92.0			23	120	LoRec
2-Fluorobiphenyl	114			30	115	LoRec
2-Fluorophenol	0.00			25	121	LoRec
Phenol-d5	0.00			24	113	LoRec
2,4,6-Tribromophenol	0.00			19	122	LoRec
2-Fluoroaniline	0.00			0	100	
Terphenyl-d14	124			18	137	LoRec

Continued from Previous Page HETL Sample Number: **B037283013**

Continued from Previous Page HETL Sample Number: **B037283013**

Units & Measurement

"**mg/L**" = Milligrams per liter; "**ug/L**" = Micrograms per Liter; "**mg/Kg**" = Milligrams per Kilogram;
"**ug/Kg**" = Micrograms per Kilogram; "**PPM**" = Parts per Million; "**NTU**" = Nephelometric Turbidity Units;

The MCL, Maximum Contaminant Level is listed for comparing your results with recommended levels.
In the "**Qualifier**" column, **an " * " is placed to indicate any results that exceed this MCL.**

If there are no " * " in the "Qualifier" column, your water is considered satisfactory for those tests.

All solid results on a "**Dry Weight**" basis

NC = Not confirmed **NQ** = Not Quantitated **NA** = Not Analyzed **J** = Approximately **U** = Undetected **R** = Rejected

RL-Reporting Limit, the lowest concentration which can be reliably reported on a routine basis
"**<**" = Less than "**>**" = Greater than

Note: Results below the advisory limit, including < and K are considered satisfactory for that parameter.

Disclaimer

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State of Maine
Health and Environmental Testing Lab
221 State Street Station #12 Augusta, ME 04333-0012
Phone (207) 287 – 2727 Fax (207) 287-4525

Chain - of - Custody

B037283

Sample Date: 10/31/06
Town/County: Winthrop/Kennebec
Project Name: Winthrop Commerce Center

Company: Maine DEP	Appropriation/PO# 014 06A 1517 · 442	Compliance sample Y / N
Contact: John E. Beane	Bill To: John Beane MDEP	Copy To:
Address: SHS #17	Address: SHS #17	Address
Phone: 287-7635 Fax:	Phone: Fax:	Phone: Fax:
e-Mail address:	e-Mail address:	e-Mail address

Sample ID	Sample time	Preservation	Container vol	Container type	Quantity	Grab or Composite	Matrix: Ground Water / Waste Water / Drinking Water / Solids / Other	Analyses Required		HETL Number
SL-100-SED		–			1	G	S	PAHS	~~8~~ 8270C	B037283-001
SL-120-SED					1	G				002
SL-140-SED										003
SL-180-SED										004
SL-120-2		No	1L	HDPE	1	G	Surface Water	PAHW	8270C	005
SL-140-3										006
SL-140-4										007
SL-180-2										008
SL-180-3								DROW		009

Notes: Expected contaminant #6 Fuel oil. Water samples are lake water with oily sheen.

Sampled By: John E. Beane	Date/Time 11/1/06	Received By: [signature]	Date/Time 11/01/06 11:45
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Rush (Yes or No)	Fax Results (Yes or No)	Custody seal intact (Yes or No)	Temperature on Arrival 4 °C

If the sample is deemed hazardous it may be returned to the client at your expense for proper disposal
By signing this Chain-of-Custody you agree that the limit of The HETL's liability to be the cost of the analytical fees in question

rev 5/17/05

FILE COPY

State of Maine
Health and Environmental Testing Lab
221 State Street Station #12 Augusta, ME 04333-0012
Phone (207) 287 – 2727 Fax (207) 287-4525

Chain - of - Custody

B037283

Sample Date: 10/30/06
Town/County: Winthrop/Kennebec
Project Name: Winthrop Commerce Center

Company: Maine DEP	Appropriation/PO# 014 06A 1517 442	Compliance sample Y / N
Contact: John E. Beane	Bill To: John Beane	Copy To:
Address: SHS # 17	Address:	Address
Phone: 287-7635 Fax:	Phone: Fax:	Phone: Fax:
e-Mail address:	e-Mail address:	e-Mail address

Sample ID	Sample time	Preservation	Container vol	Container type	Quantity	Grab or Composite	Matrix: Ground Water / Waste Water / Drinking Water / Solids / Other	Analyses Required	HETL Number
OS-9	11:12	No			1	G	Soil	PAHS - 8270C	B037283-010
SS-1	11:40	↓			1	G	↓	↓	011
SS-2	11:50	↓			1	G	↓	↓	012
SS-3	12:06	↓			1	G	↓	↓	013

Notes:

Sampled By John E. Beane Date/Time 11/1/06 Received By [signature] Date/Time [illegible]

Relinquished By Date/Time Received By Date/Time

Relinquished By Date/Time Received By Date/Time

Rush (Yes or No) | Fax Results (Yes or No) | Custody seal intact (Yes or No) | Temperature on Arrival 4 °C

If the sample is deemed hazardous it may be returned to the client at your expense for proper disposal
By signing this Chain-of-Custody you agree that the limit of The HETL's liability to be the cost of the analytical fees in question

rev 5/17/05

Investigation and Sampling Report
Winthrop Commerce Center LUST Site
Haefele Damage Claim

Appendix B
Selected Field Photographs

OS-9

Transfer Test – OS-9

SS-1

SS-1

SS-2

SS-3

SS-3

Transfer Test – OS-1

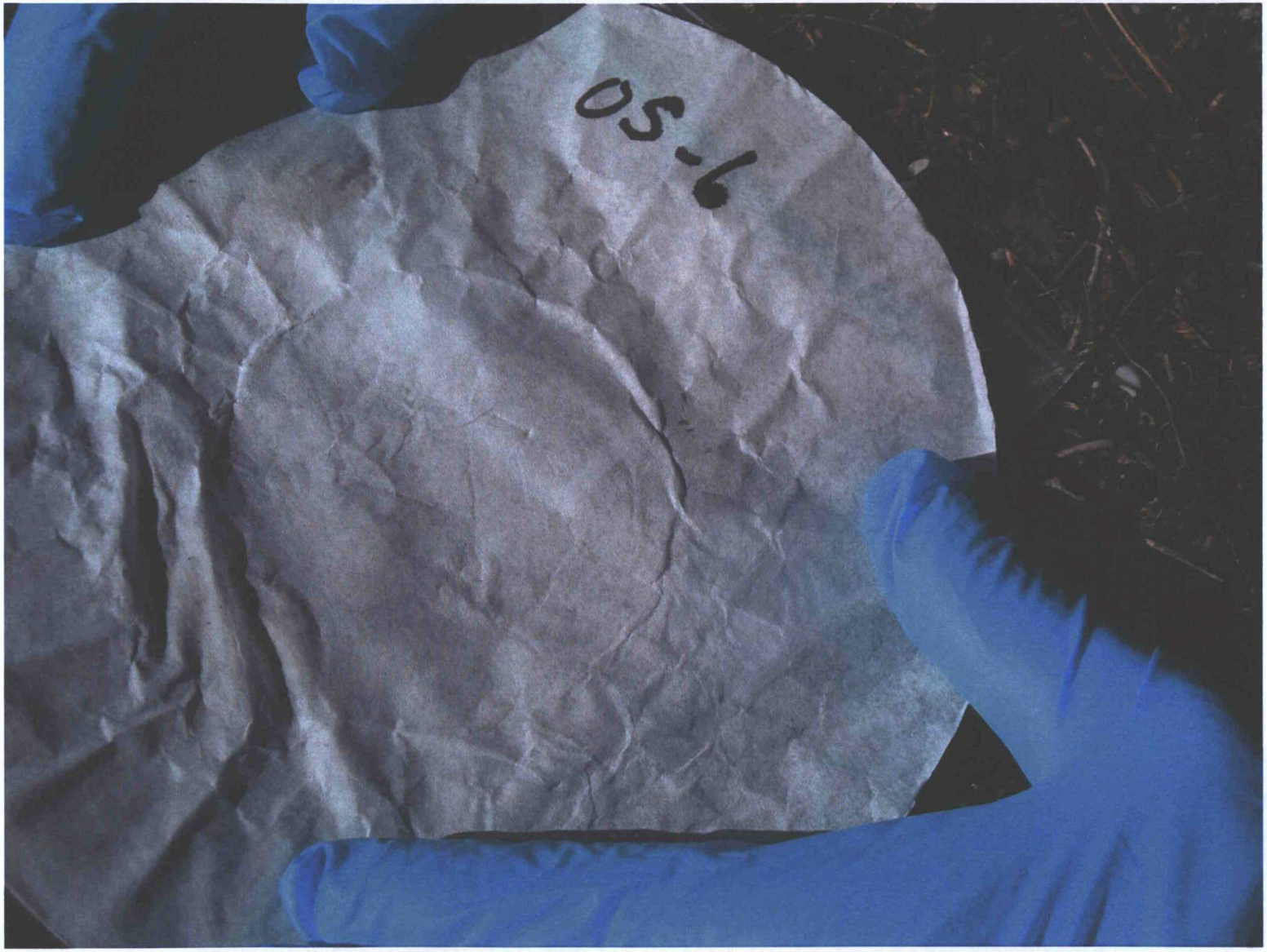
Oil stain on tree

Applying transfer test at OS-2

Oil stain (OS-2) on birch tree

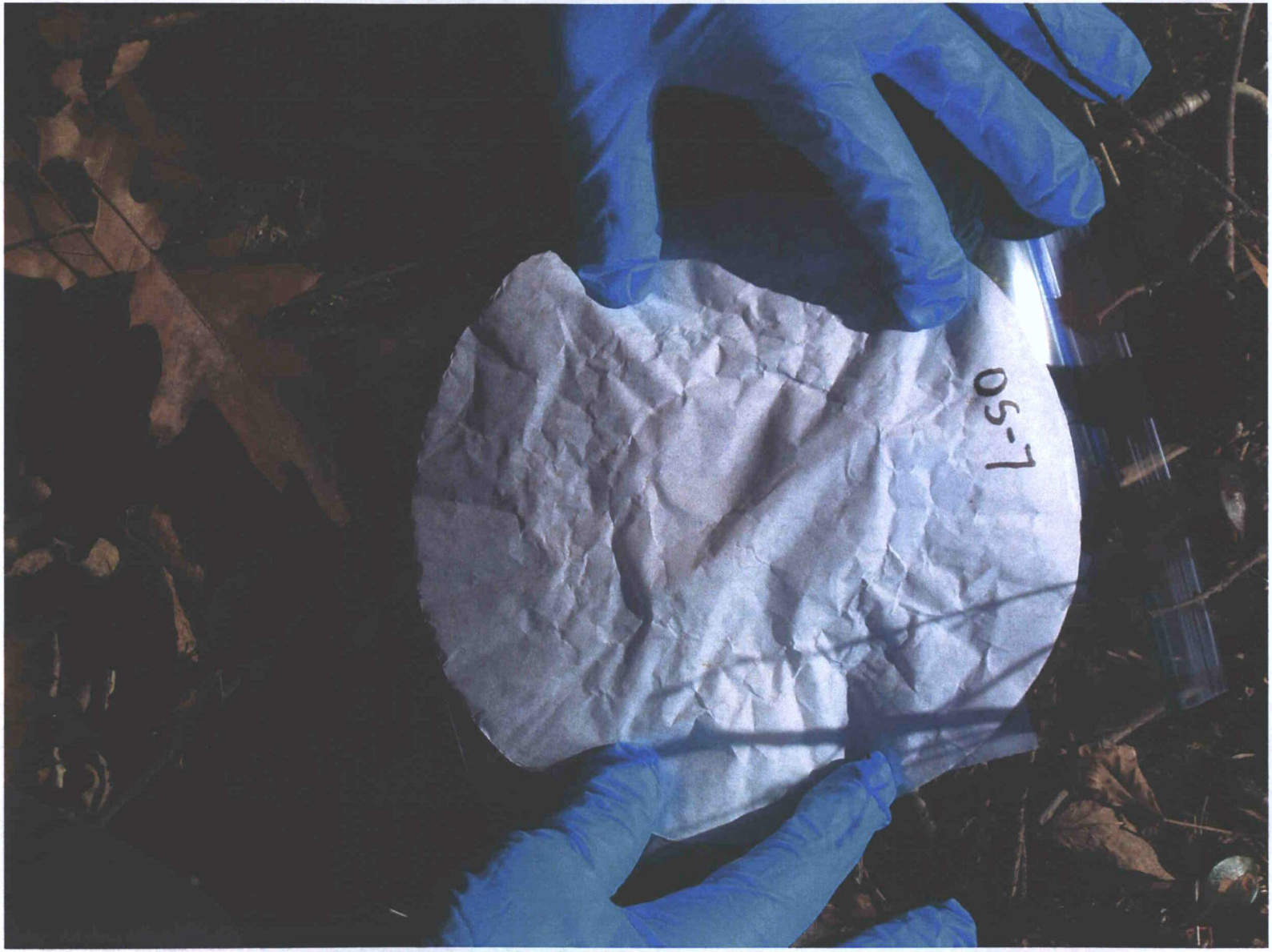
Oil stain (OS-2) on birch tree

Transfer Test – OS-2



Transfer Test – OS-6

Location of OS-7



Transfer test at OS-7

Oil stain on tree

Oil stain (OS-11) on tree

Oil stain (OS-11) on tree

Oil stains at multiple levels on shoreline trees south of Haefele property

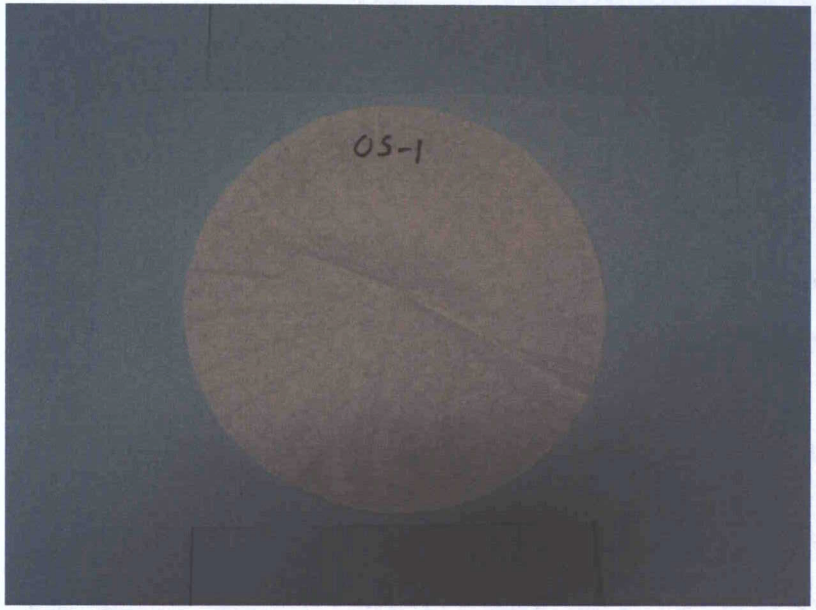
Oil stain on trees around SL-80. Note prominent single stain level at high water level.

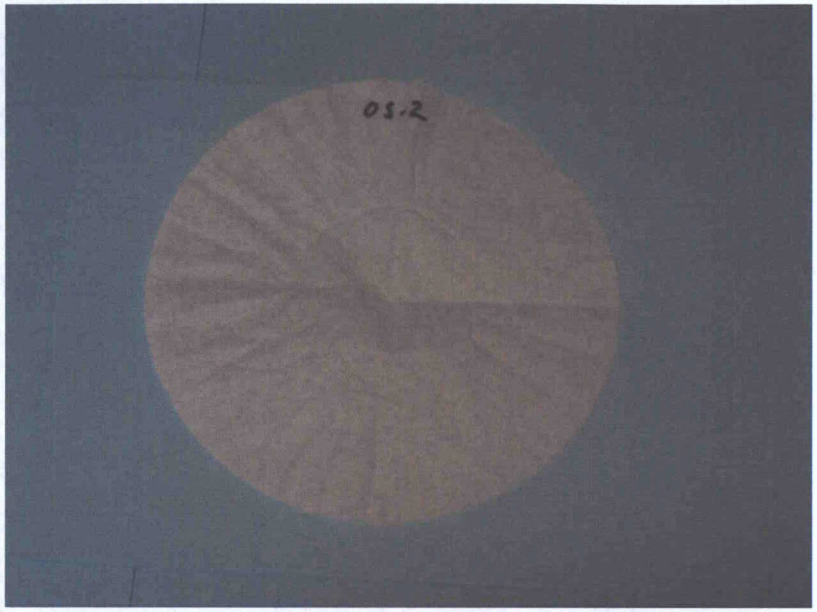
Oil stain on trees at SL-80. Note evergreen needles adhering to oil. Oil is no longer tacky.

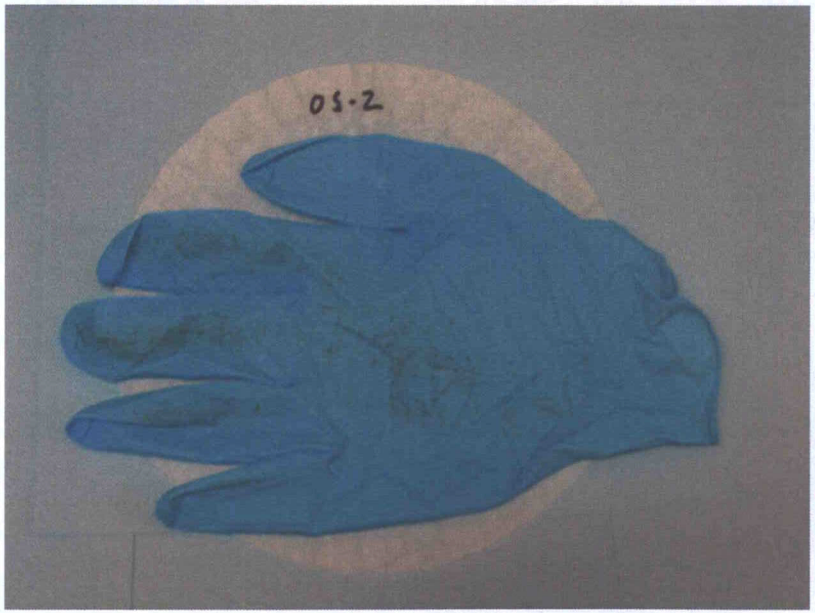
Large oil stains that dribbled after water level fell. Near SL-160.

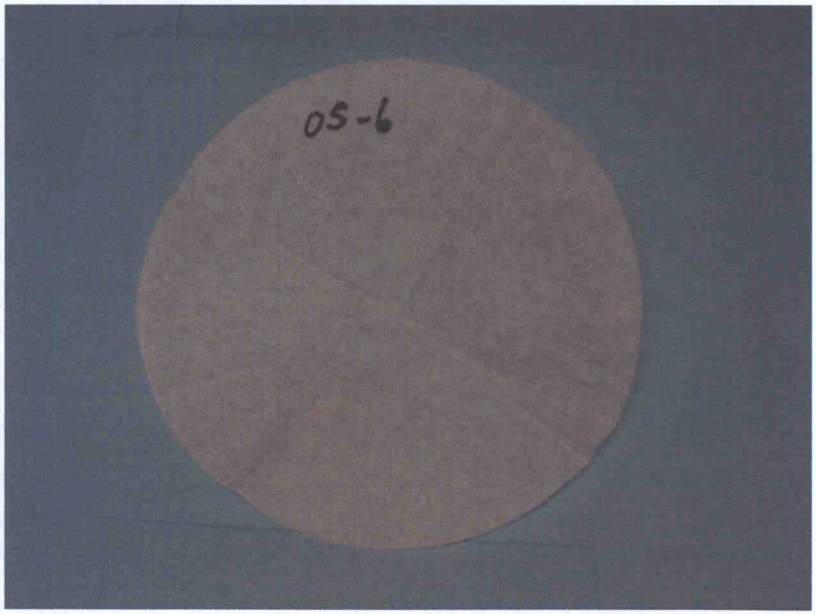
Investigation and Sampling Report
Winthrop Commerce Center LUST Site
Haefele Damage Claim

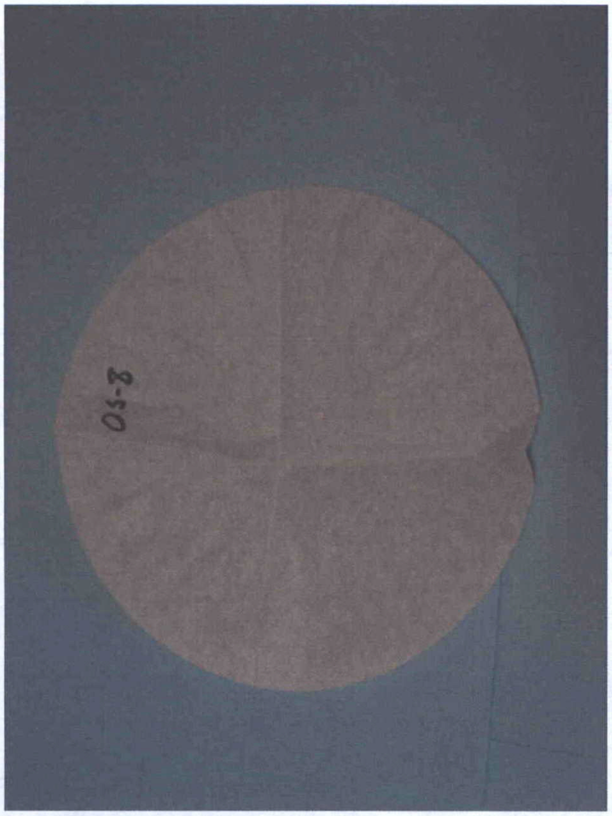
Appendix C
Photographs of transfer tests and oil-stained debris

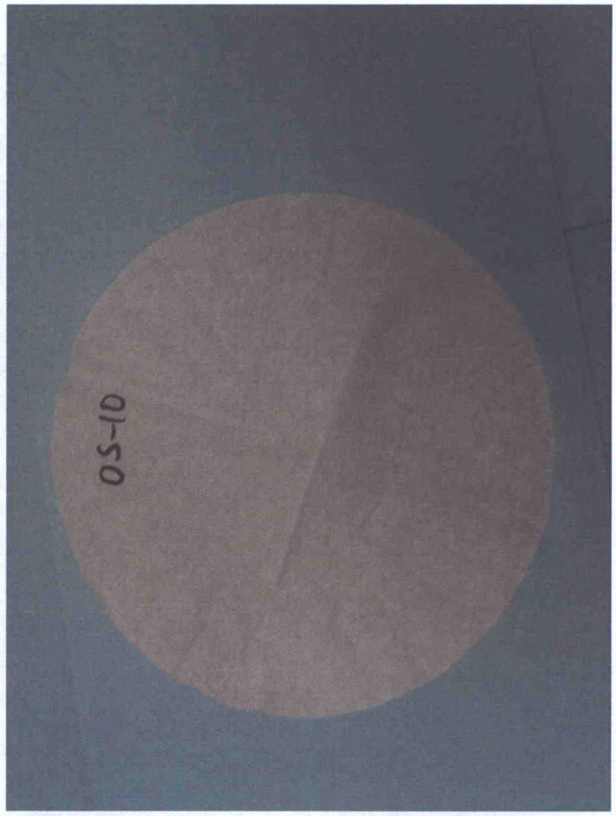

OS-1

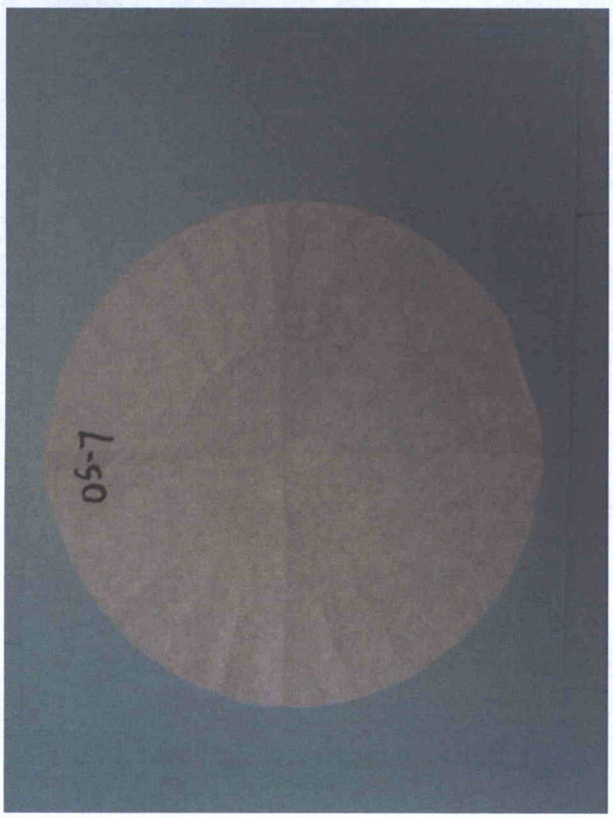

OS-2

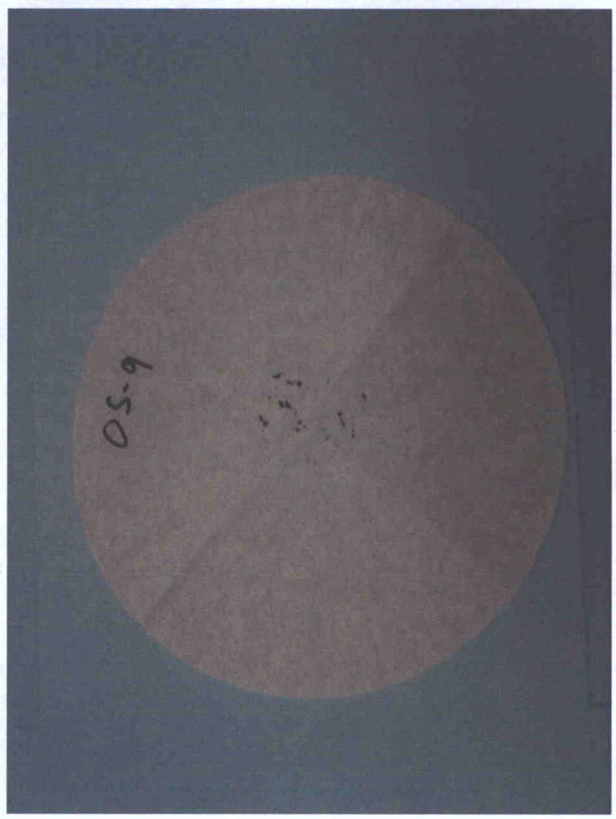

OS-2

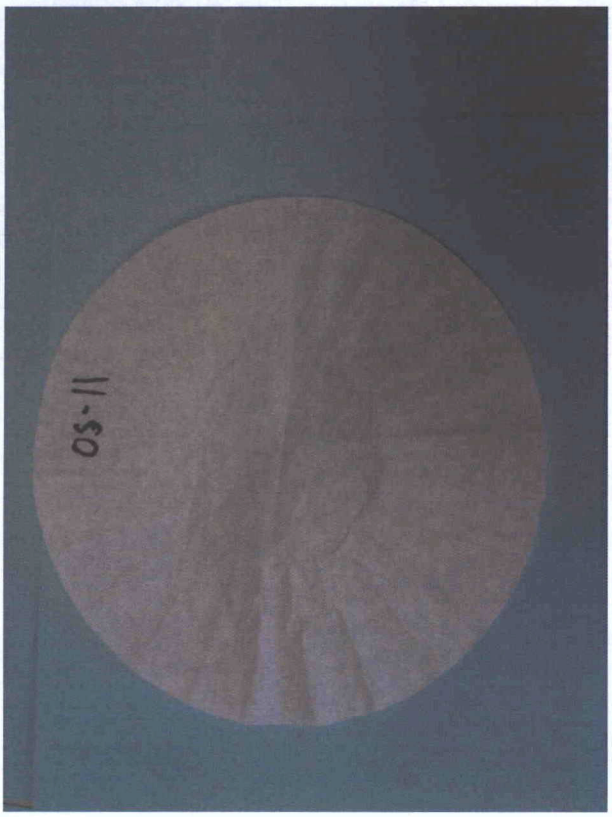

OS-6

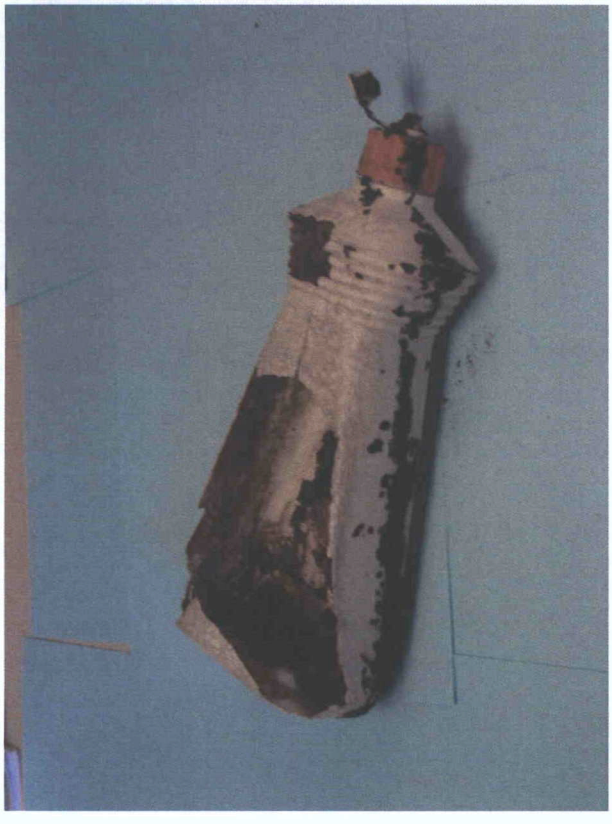

OS-8


OS-10


OS-7


OS-9


05-11



Investigation and Sampling Report
Winthrop Commerce Center LUST Site
Haefele Damage Claim

Appendix D
Sampling and Analysis Plan

Sampling And Analysis Plan
Haefele Property
Winthrop Commerce Center LUST Site (A-157-05)

October 3, 2006

John E. Beane, Ph.D., C.G., Senior Geologist

Introduction and Background

In April 2005, #6 fuel oil that had been trapped in the ground at the former Carlton Woolen Mill on Main Street in Winthrop seeped into Mill Stream in substantial quantities during the spring freshet. The oil was washed quickly down stream to Annabessacook Lake. The lake was partially covered with ice, so the oil only had access to the northern end of the lake that was ice-free. The shoreline of that northern portion of the lake was exposed to the floating heavy oil before cleanup workers were able to further restrict the oil through the effective use of booms. The water level of the lake was about three feet higher than normal lake level at the time of the oil discharge.

The Haefele property includes approximately 300 feet of shoreline along the northeastern shore of the lake. In April 2005, after the water level had dropped, the Haefele's dogs returned from the lake shore with some of the oil on them, and they transferred the contamination to the Haefele home. In July 2006, the Haefeles filed a third party damage claim for damages to their home and shoreline.

On August 25, 2006, Department staff inspected the shoreline and met with John Haefele at the site to discuss his understanding of the remaining damage to his shoreline property from the oil discharge. In addition to his perceived loss of use of the shoreline portion of the property during 2005 and 2006, Mr. Haefele expressed concern about remaining impairment of the property due to oil residues on the shoreline and in the bottom sediments of the lake. One specific concern was that someone swimming from his shoreline might disturb sunken oil that would then rise to the surface and expose the swimmer to the contamination. Another concern was that oil along the shoreline might still be fluid enough to adhere to his dogs, so he has refrained from exercising the dogs along the lake.

During the site visit I observed black oil stains that ringed tree trunks about three feet above the summertime lake level. Where the lakeshore bank was steep, these trees were right along the shoreline. Where the slope was flatter, the stains were fifteen feet or more from the shoreline. In the field it appeared that there was just one elevation on each tree that got oiled. That is consistent with the source being controlled by booming before the water level fell. If that is true, then the zone of potential soil contamination would be a contour line at that single elevation.

The oil stains on the trees were dry to the touch. They were not tacky, and no oil was transferred to my hand by simply touching the stain. Rubbing the stain would transfer the stain to my hand. Petroleum odor was not noticeable.

Objectives

This sampling is intended to provide data on the persisting contamination that might affect the real value of the property in support of an appraisal of the property and determination of compensable damages.

Specific objectives are twofold.

1) Determine whether transferable petroleum residue persists on land or in the bottom sediments that might contaminated people or dogs using the area for recreation. That is, will those using the area come away with visible oil on them?

2) Document the locations and concentrations of regulated contaminant compounds (polynuclear aromatic hydrocarbons) in soil and sediment, and whether those soils or sediments require remediation.

Analytical Methods

Samples of soil, lake-bottom sediment and lake water will be collected.

The diesel range organics (DRO) analysis will not be used for soils or sediments because of the method's poor discrimination between naturally occurring organic matter and the high-molecular weight hydrocarbons typical of weathered #6 fuel oil. Instead, soil and sediment samples will be analyzed for polynuclear aromatic hydrocarbon compounds (PAH) (EPA Method 8270C) that are characteristic of fuel oil, although they are not exclusive to fuel oil.

Water samples will be analyzed for DRO and PAH.

Up to four soil samples will be analyzed. Up to four sediment samples will be analyzed. Up to two water samples will be analyzed.

In addition to laboratory analyses, field observations of odor, appearance and textural character (stickiness, fluidness, dryness) and transferability will be used to evaluate and describe the characteristics of oil residues encountered during the investigation. Transferability will be evaluated by pressing a piece of filter paper against the oiled surface and describing the abundance and nature of the material transferred to the filter paper. Digital photographs of each oiled surface and the corresponding filter paper will record their appearances.

Field Methods

Soil Sampling

The first task will be to locate the zone of probable contamination on the land. We will use a builder's level to determine the relative elevation of the stained rings on the trees.

If all the visible rings are the same elevation (± 0.2 ft.), then that elevation will be located on the ground, and the contour will be marked with closely spaced pin flags. Similar to a bathtub ring, that contour would mark the water level at the time that the floating oil "event" happened. Inspection of the land surface for oily residue or staining, and sampling for contaminant compounds will then be focused along that contour.

It the oil-stained rings on the trees are not all the same elevation, that would imply that floating "clots" of oil blew into shore as the water level varied over a more prolonged floating oil "episode". If this is the case, then inspection of the land surface for oily residue or staining, and sampling for contaminant compounds will then be focused throughout the area below the elevation of the highest stains.

Soil samples will be collected from the upper ten centimeters , including the leaf litter and forest duff, because floating product would have adhered to these surface materials and it would not have been fluid enough to penetrate the soil. Only one autumn leaf fall has occurred since the oil discharge, so the oil will not be deeply buried beneath subsequent accumulations of leaves.

Sediment and Water Samples

Targeting the most likely locations for sediment contamination is not as straightforward as was the case with soil. Heavy oil floating on a surface water body tends to sink because the oil picks up relatively denser soil particles by contact with the shoreline. Sand is the most likely material to cause this. The shoreline on the Haefele property is not particularly sandy. Rather, it is stony or covered with leafy organic detritus. Sunken oil may not be particularly abundant along the Haefele shoreline.

To screen locations for sunken oil contamination, a sampling grid will be established along the shoreline. Pin flags will be placed on the shoreline at twenty foot intervals. From a boat, the bottom sediment will be disturbed at depths of two feet, four feet and six feet (to the extent that it is reasonable and practical) adjacent to each pin flag, in an effort to mobilize sunken oil and create a sheen at the lake surface. The implement used to disturb the bottom sediments (a hoe?) will be observed for oil contamination between each screening point. The depth, distance to shore and GPS location (± 1 meter) will be recorded for each point. If a sheen is noted, then a water sample will be collected from the surface in an attempt to capture some of the floating oil. Up to two such samples will be collected. At up to four locations where a sheen is observed after disturbing the bottom sediments, or where oily residue is noted on the implement, sediment samples will be collected from the upper ten centimeters using a mini-ponar sampler. Sampling

will be done in accordance with the Department's "Surface Water and Sediment Sampling Protocol" (Brian Beneski, 1999).

The locations of all samples will be documented using GPS to within ± 1 meter.

Reporting

A report will be generated upon receipt of laboratory analytical reports that will document the field observations and laboratory chemical analyses and interpret the results to shed light on the degree of remaining contamination of the property. The report will include photographic documentation of the staining and field transferability tests, any photographs of sheens mobilized by field activities, and a map or maps documenting sample locations.

Sampling And Analysis Plan
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CAMPBELL
ENVIRONMENTAL GROUP

September 30, 2005

Mr. Peter Blanchard
Bureau of Remediation & Waste Management
Department of Environmental Protection
State House Station #17
Augusta, ME 04333-00017

Subject: Winthrop Commerce Center
Investigation Work Plan

Dear Mr. Blanchard:

On September 16, 2005, Campbell Environmental Group, Inc. (CEG) met with the Maine Department of Environmental Protection (Department) at the Winthrop Commerce Center (WCC) located in Winthrop, Maine. The purpose of the meeting was to discuss the planning of investigation and remedial work associated with the No. 6 fuel oil released to Mill Stream.

At this meeting CEG was tasked to conduct a historical survey to determine the construction details of the boiler room, the underground storage tank (UST) and associated piping, and the identification of any other potential sources of petroleum. To complete this task CEG and Department Personnel reviewed available blue prints and conducted a visual inspection of Mill Stream along the base of the boiler house wall and upstream under the main mill building. CEG personnel also reviewed Sanborn fire insurance maps, reviewed historical information at the Winthrop Historical Society, reviewed Carleton Woolen Mill's files, and conducted interviews with former facility employees and town officials. Additionally, CEG was tasked to prepare recommendations for a focused subsurface investigation to determine the distribution of impacted soil and to determine the potential sources of the oil. This letter presents the findings of the historical survey and the recommended subsurface investigation program.

Mill Stream Survey

On September 16, 22, and 29, 2005, oil impacted soil was observed on the banks or within the sediments of Mill Stream in the following areas;

- the base of the boiler house retaining wall;
- upstream of the boiler house under the main mill building;
- downstream of the boiler house;
- adjacent to a culvert pipe discharging to the stream; and
- down gradient of the culvert pipe discharging to the stream.

173 Gray Road, Falmouth, Maine 04105 . (207) 253-1990 . FAX (207) 253-1988 . EMAIL: ceg@cegenvironmental.com

During the September 16, 2005 stream survey, two areas of oil were observed seeping from the base of the exterior boiler building wall along Mill Stream. One seep was located directly beneath the boiler room (photograph No.1) and the second was associated with at crack in the retaining wall approximately four feet downstream of the boiler room between the boiler room and the fire pump house (photograph Nos.2 & 3). On this day, no visual evidence of oil or oil staining was observed in Mill Stream or along the building foundation upstream of the boiler room beneath the main mill building.

A second survey was performed on September 22, 2005. The purpose of this survey was to determine the lateral distribution of impacted soil near the boiler house retaining wall. Several shallow hand excavations were conducted along the base of the retaining wall. Visually impacted soil was observed along the base of the wall from the furthest upgradient location accessible to just below the concrete bridge across Mill Stream (photograph No. 4). With the exception of the two originally observed seeps, impacted soil was observed approximately two to three inches below non-impacted soil. While conducting this survey strong petroleum odors emanating from the concrete storm water discharge pipe were encountered. No visible staining or evidence of petroleum was observed in this pipe (photograph No. 4). On September 29, 2005, oil was also observed at the terminus of the discharge pipe. The locations of the oil-impacted areas are presented on Figure 1.

It has been reported that prior to the observance of the 2005 spring release, a small dam located in Mill Stream and just below the boiler house was breached. Based on visual observations and communications with Lou Carrier and Walter Bubier (former Carleton Woolen Mill employee) the water level in the stream below the boiler house was approximately one to two feet above the base of the retaining wall and therefore above the observed seep locations.

Historical Review and Interviews

On September 22, 2005 Department and CEG personnel conducted a review of available blue prints of the facility. Two prints were found with some relevant information; however, no prints of the boiler house construction were located. The two prints of interest included a detail of the fire pump house and a 1985 figure identifying Energy Management, Inc as the designer of the boiler system. This pump house design figure indicates that the base of the retaining wall may be up to three feet thick (photograph No. 5). Department personnel contacted Energy Management, Inc. for additional information, but were informed that they did not keep records dating that far back.

On September 26 and 27, 2005, CEG personnel spoke with Mr. Walter Bubier, a former Carleton Woolen Mill employee who was responsible for the boiler operations. Mr. Bubier was identified as a knowledgeable former employee during a September 21, 2005 conversation with Mr. Lawrence Stanley a former Carleton Woolen Mill electrician. Mr. Bubier operated the boilers from approximately 1966 to 1983. Mr. Bubier indicated the USTs were originally installed around 1966. At this time, the mill was transitioning from heating with coal to oil. Mr. Bubier does not recall if the UST was installed using concrete cradles. He believes the UST was placed on a gravel pad. He also indicated that the UST was installed in coal ash and that there was a wooden floor from an old wood vault that used to store wastes beneath the current boiler house. He indicated that the wastes were from previous tannery operations at the site. CEG personnel subsequently contacted Mr. David Cook, the Winthrop Town Historian, who

indicated that in the late 1700s to the early 1800s there was a tannery located in the approximate location of the former Carleton Woolen Mill. Mr. Cook also indicated that the tannery used tree bark to derive tannins to process hides instead of the chemicals typically used in modern tanneries.

Mr. Bubier also indicated that they had an access hole into the ground adjacent to the tank that allowed them access to the soil to determine if the tank was leaking. After identifying that the tank was leaking, they tried to patch it but were unsuccessful. Eventually the tank was abandoned by cleaning it and filling it with sand. Mr. Bubier believes that the tank contents were heated and that they did not operate a day tank. The pumps were located inside the tank and the feed pipes exited the tank approximately from the center of the tank. Once the leak was identified, Mr. Bubier said that they excavated soil down to the bedrock between the pump house and the boiler house. He indicated that they kept the hole open and let oil accumulate before pumping it out.

To obtain historical Sanborn fire insurance maps, CEG contacted Environmental Data Resources, Inc. (EDR). EDR provided CEG with historical maps from 1885, 1892, 1897, 1903, 1911, 1926, and 1945. These maps are attached. An additional map prepared by Industrial Risk Insurers and dated November 14, 1986, was found within the Carleton Woolen Mills file. A review of the maps indicated that the facility was known as the Winthrop Mills, Co., Blankets and Cotton Wraps until some time after 1926 when the name appears on the 1945 map as Winthrop Woolen Mills. From 1885 through 1897 the structure located at the location of the current boiler room was labeled as "waste house". There is no indication as to what type of waste was stored in this "waste house". In 1945 the "waste house" structure is referred to as the "boiler house". There is no indication of underground or above ground fuel storage tanks in the available Sanborn maps (1885 through 1945). These maps indicate that coal was the fuel source for heat and steam through 1926.

Based on our historical review, the 1986 map, and a map of Carleton Woolen Mill, dated 1998, No. 6 fuel oil was stored at two locations at the site that included the UST beneath the boiler house and the AST located behind the main mill building. One additional UST identified to have stored No. 2 fuel is referred to as a 500 gallon tank in the 1986 map. It is not clear if this is the tank indicated on Department tank records as being a 1,000 gallon No. 2 fuel oil UST. This UST was located at the northeast corner of the office building along Main Street (Figure 1). Department tank records indicate that this tank was removed; however, the removal date is not documented.

Subsurface Investigation

CEG proposes to determine the distribution of fuel oil-saturated soil and its potential source or sources in the vicinity of where fuel oil has been observed in the sediments of Mill Stream, by installation of soil borings. Based on the reported difficult drilling conditions and access constraints of the boiler building, CEG recommends using a sonic drilling technique to advance the borings to bedrock. The principle of sonic drilling comes from a high-speed vibration within the drill head. Since the head is attached directly to the drill rod, the vibration is passed down through the drill bit, which causes the rock it encounters to displace and fracture. This drilling technique provides a continuous soil core sample without generating drilling spoils. This method should be able to be advanced through solid rock.

CEG proposes to install as many as ten soil borings (Figure 1). The approximate locations are presented on Figure 1. The distribution of borings are designed to provide an estimate of the extent of saturated soil in the vicinity of the boiler house and to generate data to support the selection of the most cost effective remedial option. The following is the rational for each boring location;

- Soil borings SB-1 through SB-3 are located to determine the potential lateral extent of petroleum-saturated soil along the retaining wall to the south of the boiler house. SB-2 will be located near the southern backfill of the storm water line where strong petroleum odors were noticed during the September 22, 2005 stream survey. Saturated soil has been observed in the stream in the vicinity of all of these locations;
- Soil boring SB-4 is to be located as close as possible to the northern backfill of the storm drain to determine if fuel oil is migrating from an off-site source to the stream;
- Soil boring SB-5 is located to determine the potential lateral extent of petroleum-saturated soil on the eastern side of the boiler house and to determine if the UST is a potential source of the fuel oil found in the stream;
- Soil borings SB-6 and SB-7 are located to determine the potential lateral extent of petroleum-saturated soil to the north of the boiler house and to determine if the 1993 AST oil spill is the source of the fuel in the stream; and
- Soil borings SB-8 through SB-10 are located inside the boiler building to investigate the potential depth and distribution of petroleum-saturated soil beneath the building foundation.

Soil borings SB-8 through SB-10, are designed to be installed at the end of the boring program. The completion of these borings may not be necessary depending on the data generated from the other locations. If petroleum-saturated soils are observed in the borings located outside of the boiler house it may be assumed that soil beneath the boiler house is also saturated. This decision will be made in the field with the Department. The borings will be extended to the top of bedrock. A CEG geologist will collect, log, and analyze soil samples collected from the boring locations. Samples will be collected continuously from each boring. The samples will be analyzed on-site for volatile organic compounds (VOCs) using a 10.6 eV-lamp photoionization detector (PID). The sampling will be conducted in accordance with the MEDEP's Jar/PolyBag Headspace Technique, which is outlined in *MRSA 06-096 Chapter 691 Appendix Q*. Although head space sampling will be conducted, visual observations will be used to determine if petroleum-saturated soil is present. A maximum of one soil sample from each boring will be collected for diesel range organics (DRO) using MEDEP Method 4.1.25 and submitted to an off-site analytical laboratory for analysis. The samples will be selected only if visible evidence of petroleum-saturated soil is encountered in a boring. The results of this analysis will be used to confirm the presence of No.6 fuel oil and resulting chromatographs will be compared with those collected from the petroleum released to the Mill Stream earlier this spring. The comparison will determine if the petroleum products are similar in composition.

Upon completion, and if further actions are not anticipated, the borings will be backfilled with native material, bentonite cement grout, or a combination of both. Holes in the concrete floor of the boiler house will be filled with concrete and holes in paved areas will be patched with cold patch.

Two open storm drains are located along the mill building wall on either side of the chimney stack (photograph Nos. 6 & 7). CEG proposes to dye test these drains to determine if they drain were impacted by the 1993 AST oil spill or other operational activities. Residual oil in these drains could contribute to oil discharged in the stream. Approximately 250 gallons of dyed water will be released into the each open drain. CEG will station personnel along the bank of Mill Stream and beneath the mill building to watch for the appearance of the dyed water.

Asbestos Survey and Abatement

CEG proposes to contract with Morrissey Environmental of Lewiston, Maine to conduct an asbestos demolition impact survey of the boiler house and adjacent fire pump house.

Reporting

Upon completion of this field work the site investigation data will be compiled into a letter report documenting the methods used and the results of the investigation tasks. The report will include test pit and boring logs, a site map depicting test pit and soil boring locations, analytical data, site photographs, and results of the asbestos survey. The report will describe adjustments to the work plan, and will also include recommendations, if any, based on the interpretation of the investigation results.

Schedule

CEG is prepared to initiate work upon your approval of this work plan. The proposed driller, Boart Longyear (formerly D.L. Maher Drilling) is available the last week of October 2005. Morrissey Environmental is available to conduct the asbestos survey the week of October 10, 2005. CEG estimates a project duration of approximately five weeks from mobilization to the site to submittal of the draft letter report. This schedule includes the standard laboratory analytical turnaround time of two weeks. CEG anticipates that the data generated immediately following the drilling program will allow the Department to evaluate potential remedial actions.

We look forward to discussing this draft work plan with you in the very near future. If you have any questions, please contact me at 207-253-1990.

Sincerely,
Campbell Environmental Group

Richard Campbell, C.G.
President

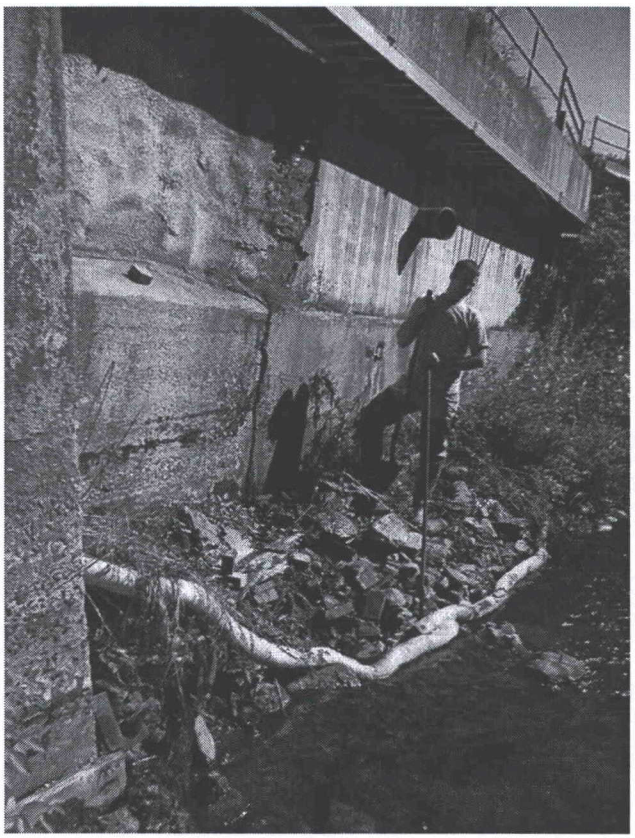
Glenn Daukas
Senior Geologist

Cc: Stephen Davis
Fred Lavallee
John Beane
Scott Whittier
Glen Wall

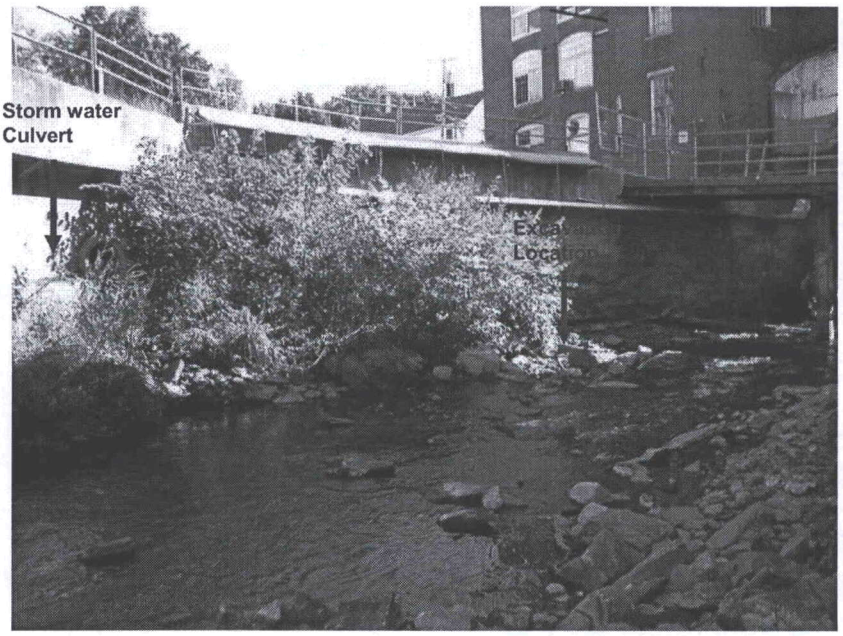
CAMPBELL
ENVIRONMENTAL GROUP

Photograph No. 1, Oil Seep Below Boiler Room

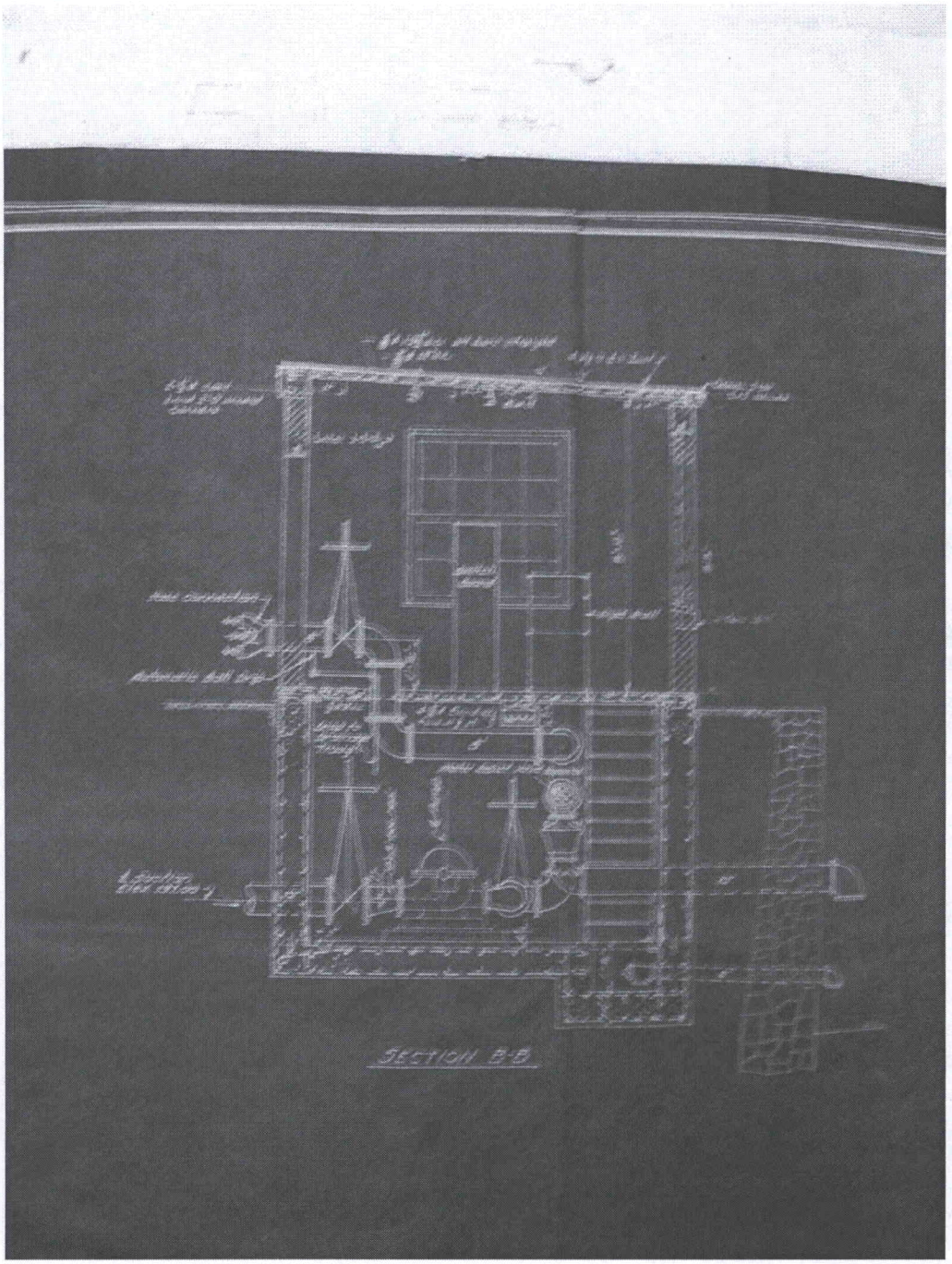
Photograph No. 2, Oil Seep at Retaining Wall Crack



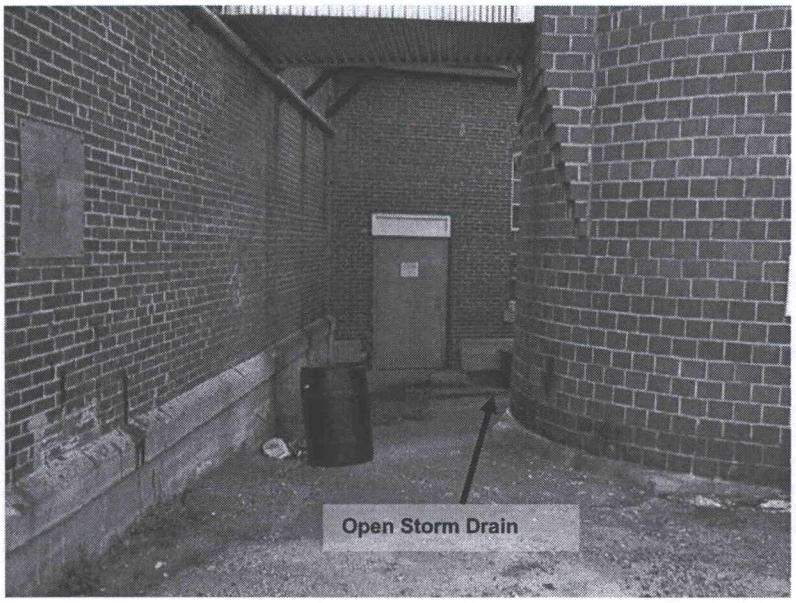
Photograph No. 3, Oil Seep at Retaining Wall Crack



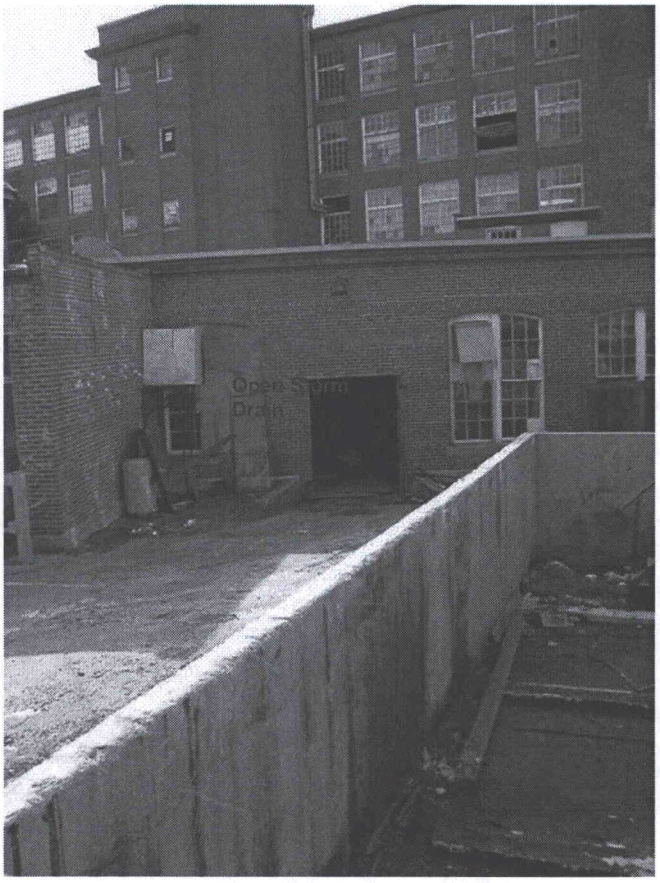
Photograph No. 4, Retaining Wall Downstream of Boiler Room



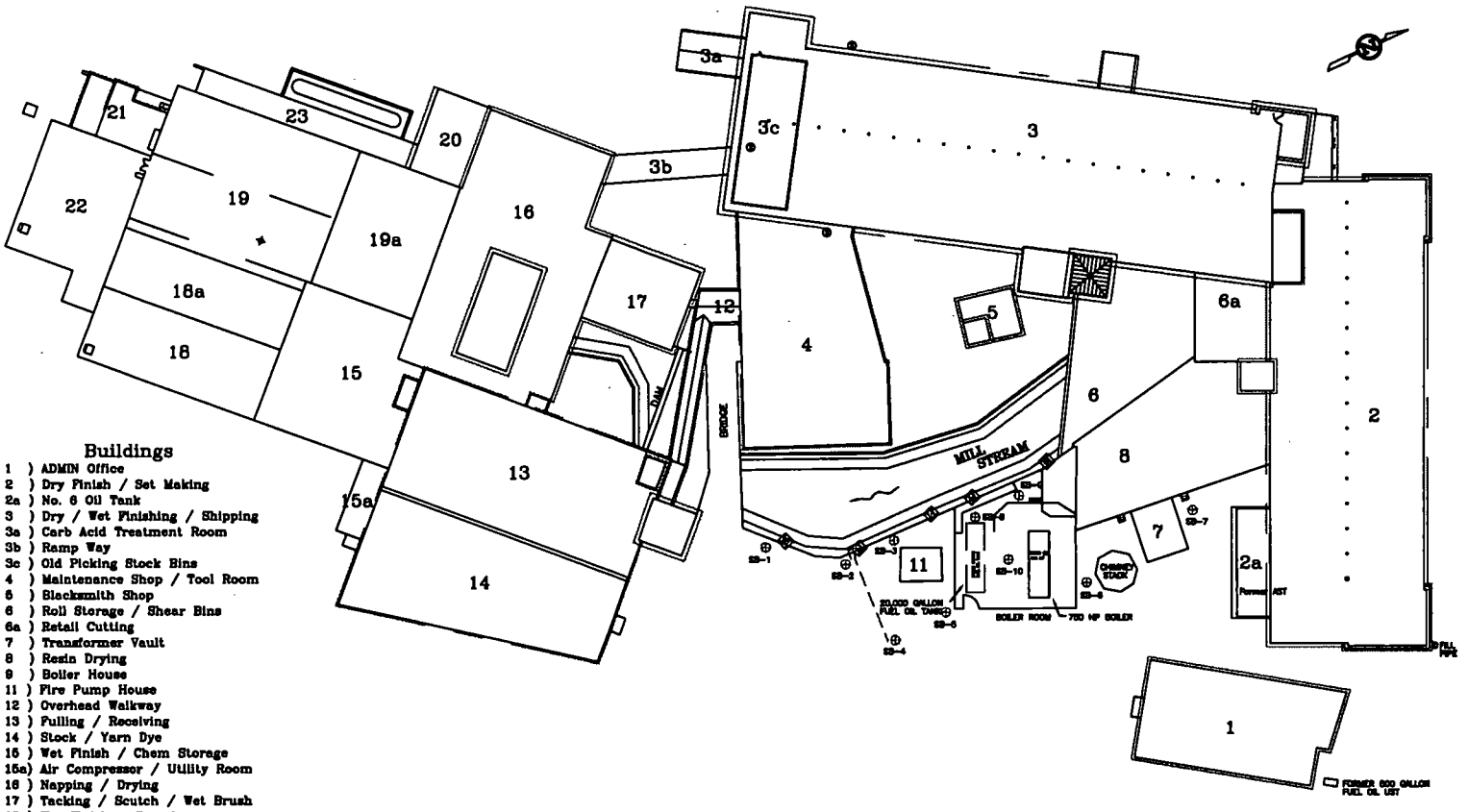
Photograph No. 5, Fire Pump House Blue Print



Photograph No. 6, Storm Drain Location



Photograph No. 7 Storm Drain Location



Buildings

1) ADMIN Office
2) Dry Finish / Set Making
2a) No. 6 Oil Tank
3) Dry / Wet Finishing / Shipping
3a) Carb Acid Treatment Room
3b) Ramp Way
3c) Old Picking Stock Bins
4) Maintenance Shop / Tool Room
5) Blacksmith Shop
6) Roll Storage / Shear Bins
6a) Retail Cutting
7) Transformer Vault
8) Resin Drying
9) Boiler House
11) Fire Pump House
12) Overhead Walkway
13) Pulling / Receiving
14) Stock / Yarn Dye
15) Wet Finish / Chem Storage
15a) Air Compressor / Utility Room
16) Napping / Drying
17) Tacking / Scutch / Wet Brush
18) Wet Finish - Scutch
18a) Dye House - Batching
19) Piece DyeHouse
19a) Drug Room Mezzanine
20) Locker Room
21) Screenhouse / Dyehouse Office
22) Drugroom
23) Beam Dye Pumphouse

LEGEND:

- BUILDING OUTLINE
- ROOF OVERHANG
- COPPER FLASHING
- FUEL OIL TANK
- PROPOSED BORING
- VISIBLY IMPACTED SOIL
- STORM DRAIN
- UNDERGROUND CULVERT
- EXHAUST STACK
- FILL PIPE
- UST — UNDERGROUND STORAGE TANK

LOCATION OF FUEL OIL TANK IS APPROXIMATE

MAP SOURCE:
Carlton Woolen Mills, Inc.
Dyeing and Finishing Mill
Record Drawing Schedule May 3, 1998

SCALE IN FEET
0 45 90

CLIENT:
CARLETON WOOLEN MILLS INC.

LOCATION:
WINTHROP, MAINE

PM:	DETAILED:	PROJECT NO.:
RC	JW	0805-113-00
REV. NO.:	DRAWING DATE:	ACAD FILE:
	09/16/05	0805-113-PLAN

Figure 1

WINTHROP COMMERCE CENTER

CAMPBELL ENVIRONMENTAL GROUP
173 GRAY ROAD
FALMOUTH, MAINE 04105
(207) 253-1990

EDR® Environmental
Data Resources Inc

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Glenn Daukas
Campbell Environmental
173 Gray Rd
Falmouth, ME 04105

Order Date: 9/21/2005 **Completion Date:** 9/22/2005
Inquiry #: 1516068.1S
P.O. #: NA
Site Name: Carleton Mills
Address: Mechanic Street
City/State: Winthrop, ME 04364
Cross Streets:

Customer Project: NA
6010099PVC 207-253-1990

Based on client-supplied information, fire insurance maps for the following years were identified

1885 - 1 Map
1892 - 1 Map
1897 - 1 Map
1903 - 1 Map
1911 - 1 Map
1926 - 1 Map
1945 - 1 Map

Limited Permission to Photocopy Total Maps: 7

USER'S GUIDE

This User's Guide provides guidelines for accessing Sanborn Map® images and for transferring them to your Word Processor.

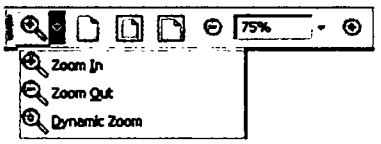
Reading Sanborn Maps

- Sanborn Maps document historical property use by displaying property information through words, abbreviations, and map symbols. The Sanborn Map Key provides information to help interpret the symbols and abbreviations used on Sanborn Maps. The Key is available from EDR's Web Site at: http://www.edrnet.com/reports/samples/key.pdf

Organization of Electronic Sanborn Image File

- Sanborn Map Report, listing years of coverage
- User's Guide
- Oldest Sanborn Map Image
- Most recent Sanborn Map Image

Navigating the Electronic Sanborn Image File



1. Open file on screen.
2. Identify TP (Target Property) on the most recent map.
3. Find TP on older printed images.
4. Using Acrobat® Reader®, zoom to 250% in order to view more clearly. (200-250% is the approximate equivalent scale of hardcopy Sanborn Maps.)
   A. On the menu bar, click "View" and then "Zoom to..."
   B. Or, use the magnifying tool and drag a box around the TP

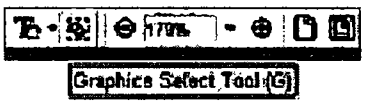
Printing a Sanborn Map From the Electonic File

- EDR recommends printing images at 300 dpi (300 dpi prints faster than 600 dpi)
- To print only the TP area, cut and paste from Acrobat to your word processor application.

Acrobat Versions 6 and 7

1. Go to the menu bar
2. Click the "Select Tool"
3. Draw a box around the area selected
4. "Right click" on your mouse
5. Select "Copy Image to Clipboard"
6. Go to Word Processor such as Microsoft Word, paste and print.

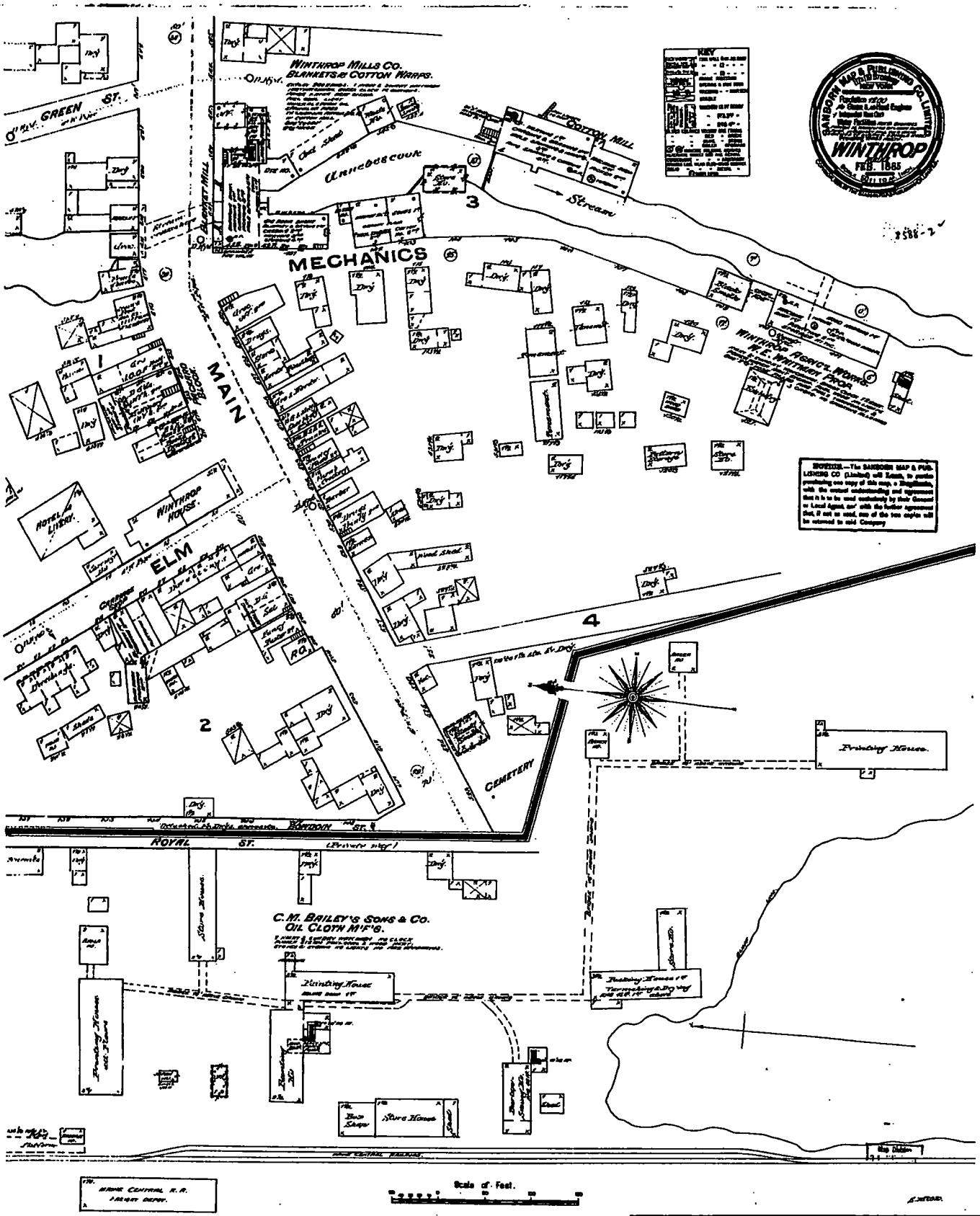
Acrobat Version 5

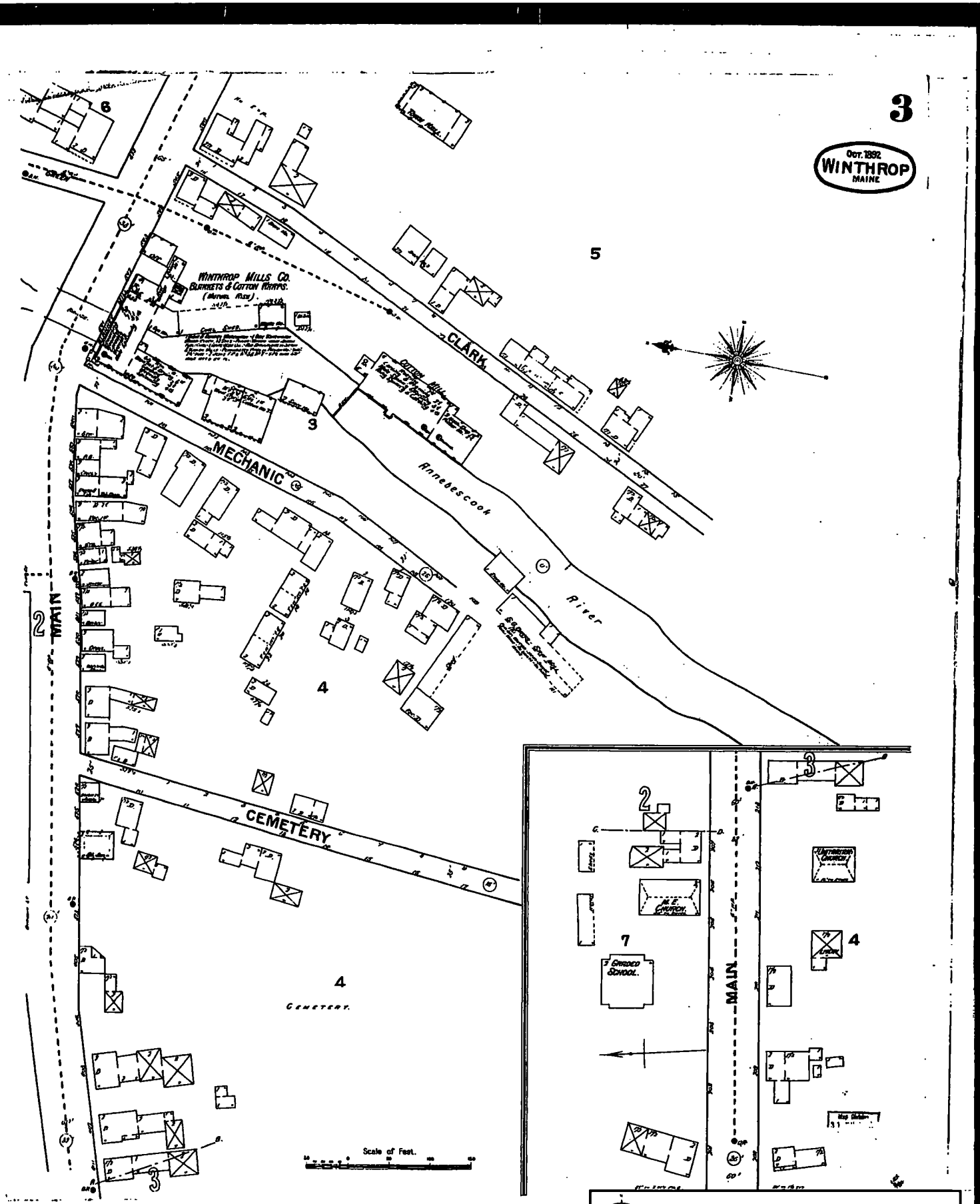


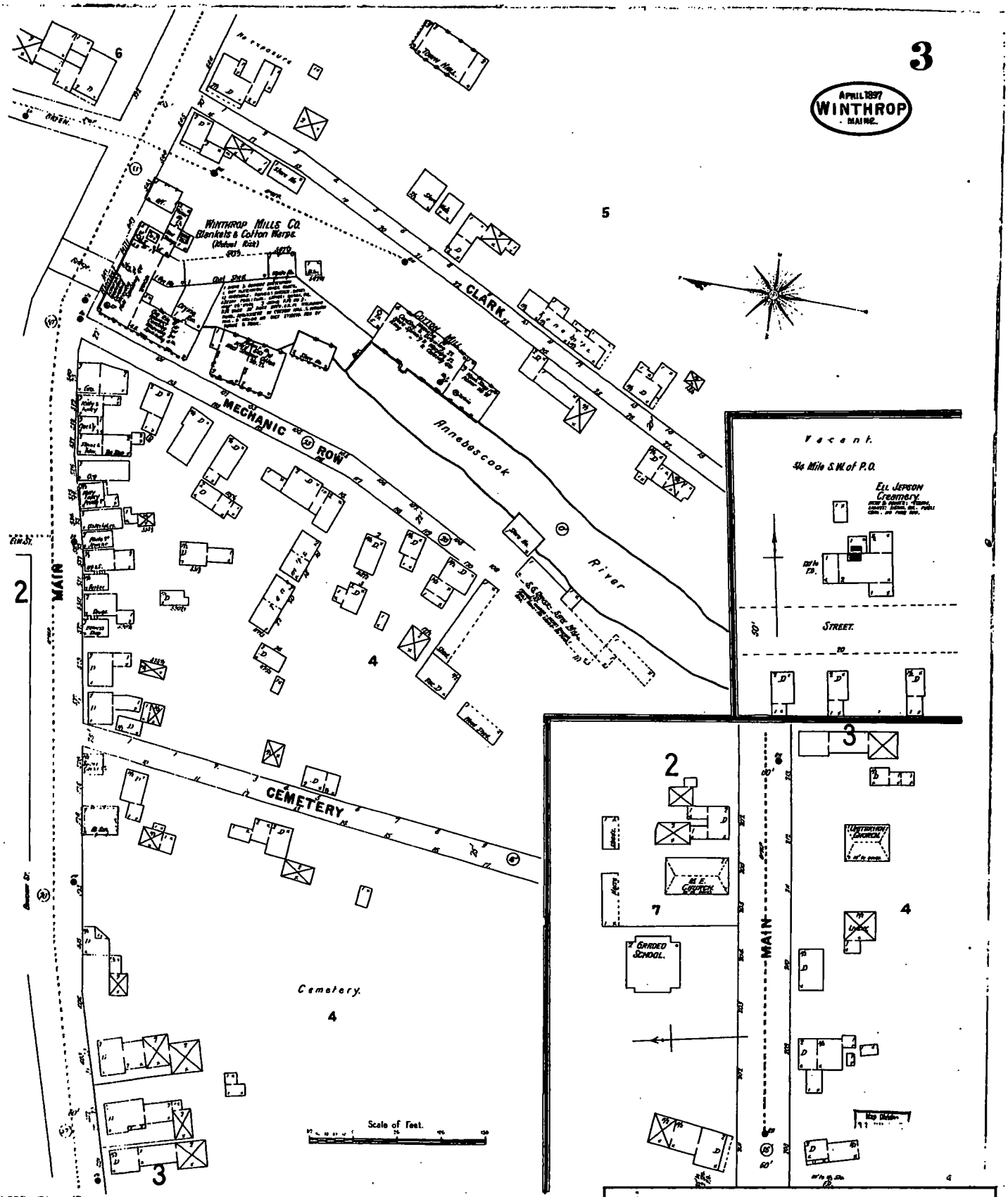
1. Go to the menu bar
2. Click the "Graphics Select Tool"
3. Draw a box around the area selected
4. Go to "Menu"
5. Highlight "Edit"
6. Highlight "Copy"
7. Go to Word Processor such as Microsoft Word, paste and print.

Important Information about Email Delivery of Electronic Sanborn Map Images

- Images are grouped intro one file, up to 2MB.
- In cases where in excess of 6-7 map years are available, the file size typically exceeds 2MB. In these cases, you will receive multiple files, labeled as "1 of 3", "2 of 3", etc. including all available map years.
- Due to file size limitations, certain ISPs, including AOL, may occasionally delay or decline to deliver files. Please contact your ISP to identify their specific file size limitations.






3
APRIL 1897
WINTHROP
MAINE.
WINTHROP MILLS CO.
Blankets & Cotton Warps.
(Mutual Risk)
CLARK ST.
MECHANIC ROW
MAIN
CEMETERY
Cemetery.
Annebescook
River
Vacant.
¼ Mile S.W. of P.O.
ELI JEPSON
Creamery.
STREET.
GRADED SCHOOL.
Scale of Feet.
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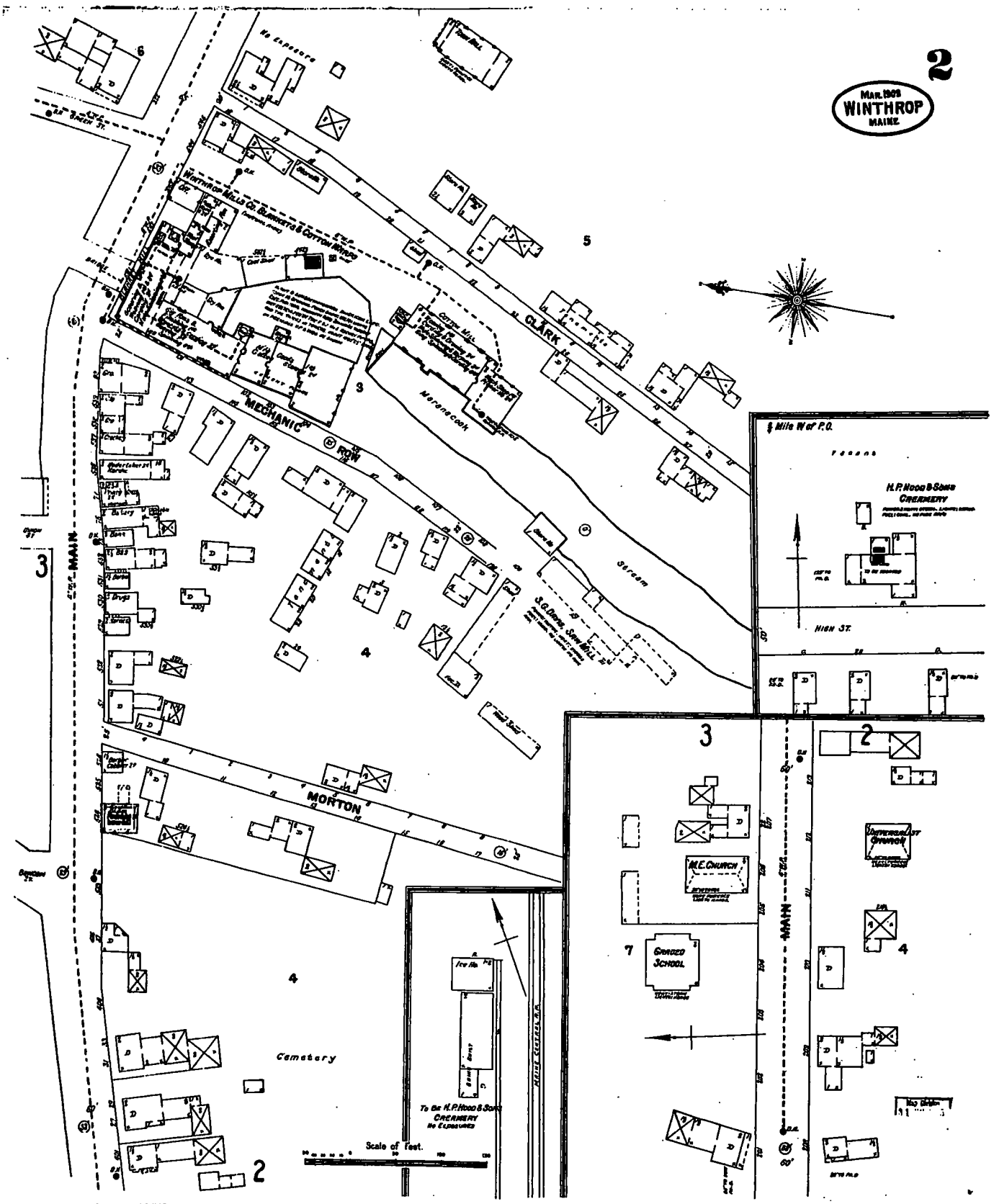
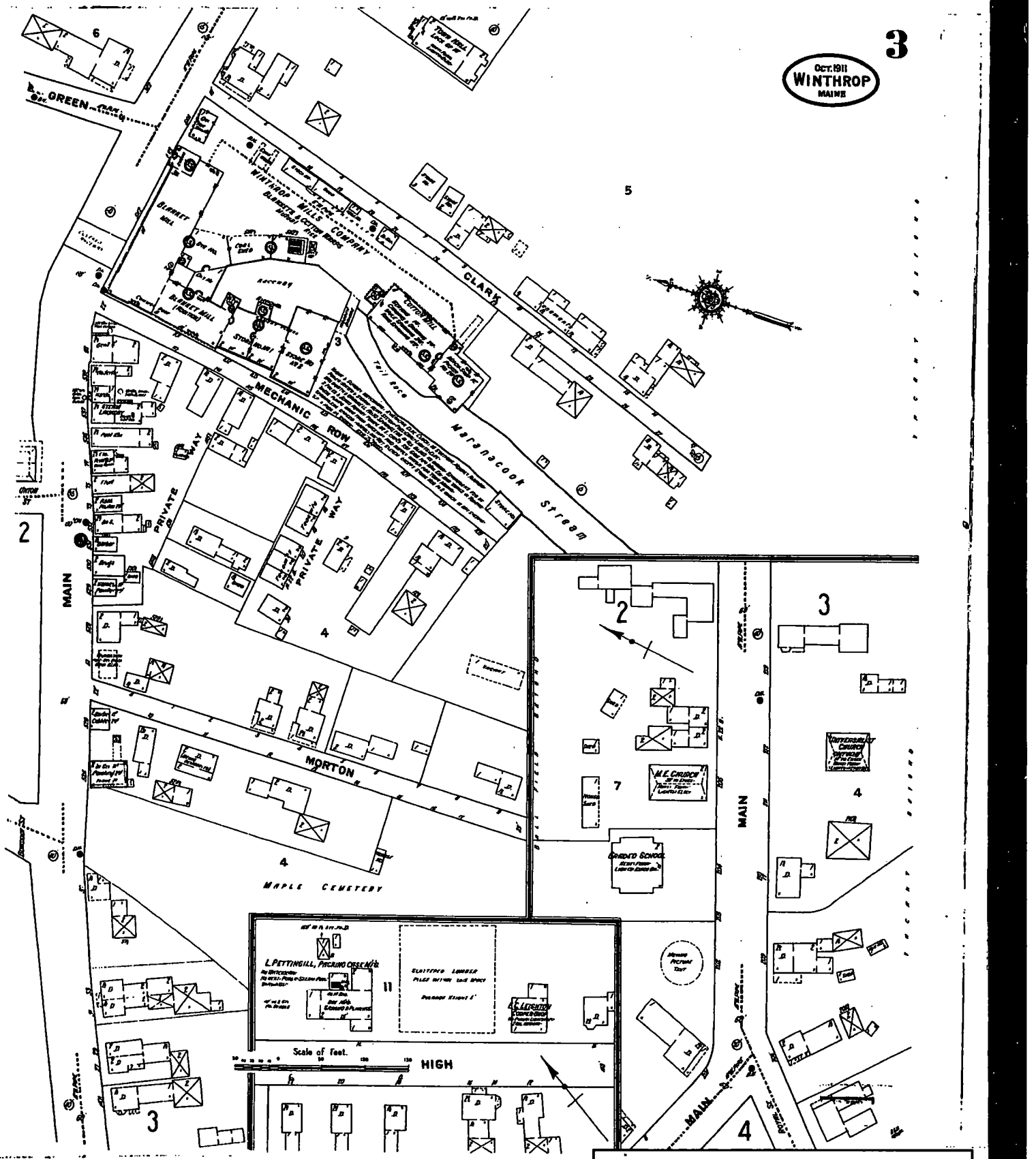
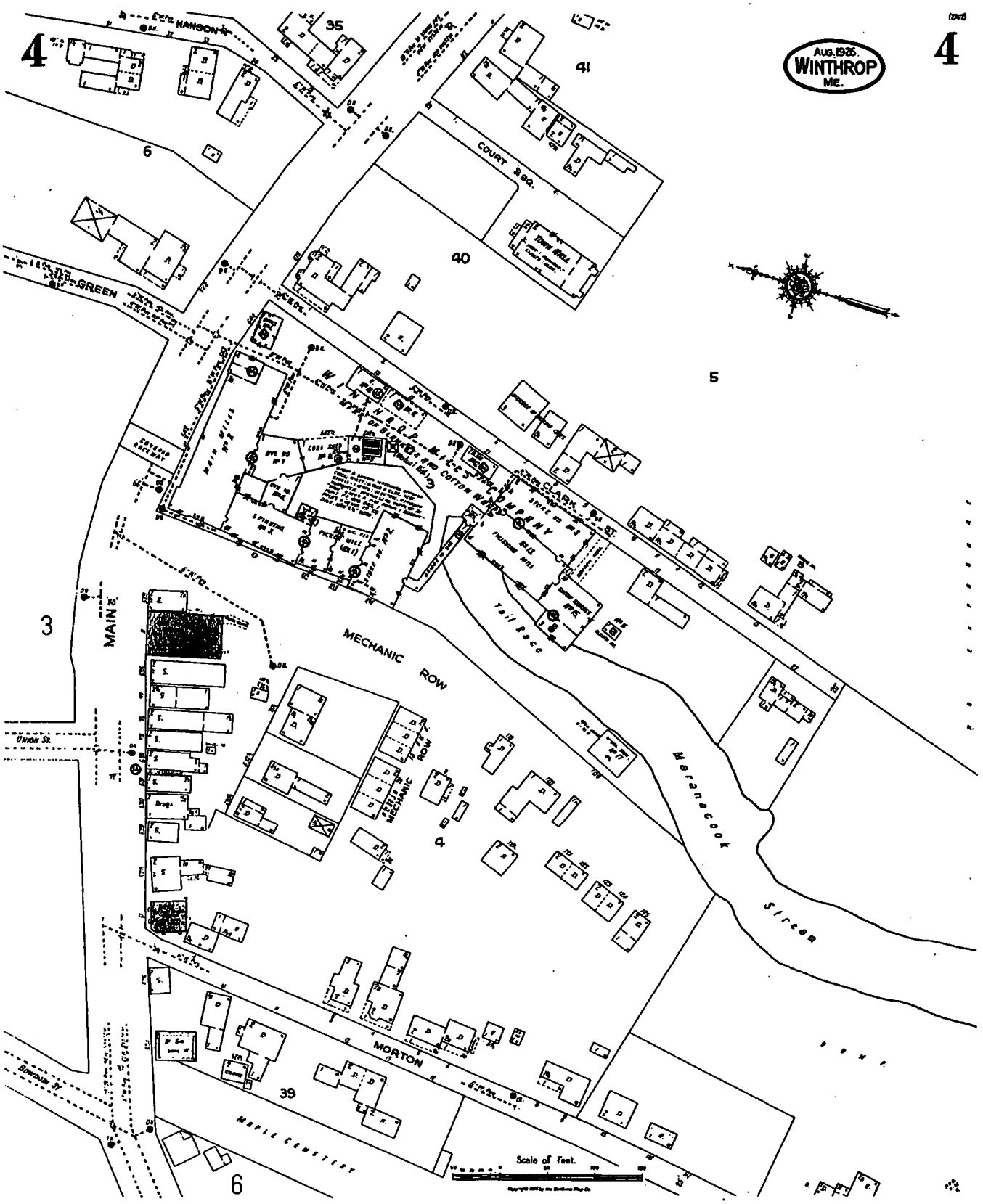
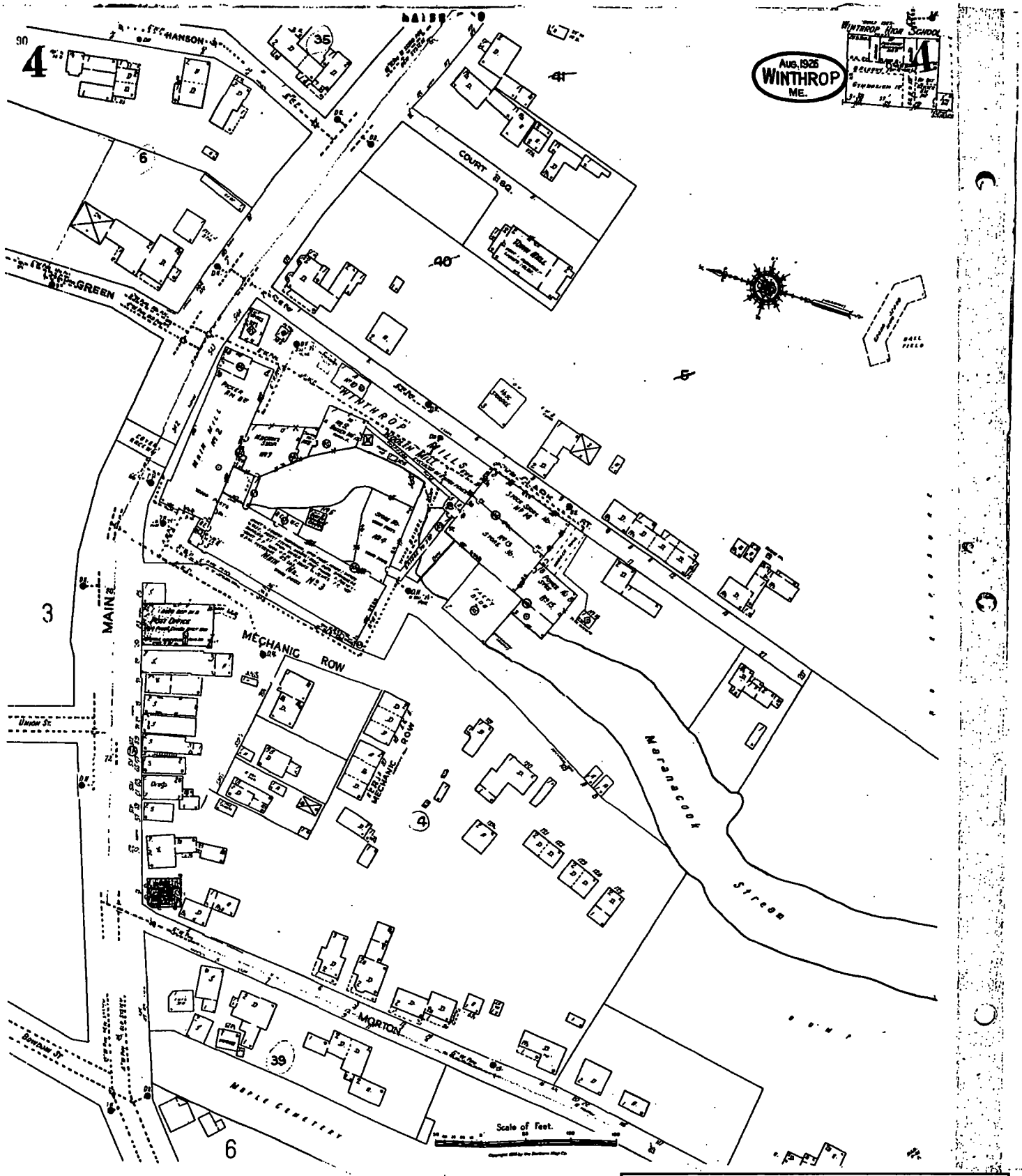








Boring Identification: SB-1

Project:	MEDEP Winthrop Commerce Cntr	*Driller:*	John / Chris
Location:	Winthrop, ME	*Drilling Company:*	Boart Longyear
Project No.:	0905-1117-00	*Drilling Meth:*	Sonic
Date:	11.14.05	*Screen Length:*	
Logged By:	KH	*Notes:*	NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
			75%		65°	BDL		1/5" Brown F-C SAND Trace Gravel and debris, moist, large brick @ ~3'	
5								20" Brown, silty Fc SAND and GRAVEL, Some brick debris and rock fragments, WET	
			33%		65.3°	BDL			
10								7" Gray-Brown rock FRAGMENTS some F. SAND and silt	
			12%		67.2°	BDL			
15								competent rock @ ~17' bg — 16" Light and dark banded rock - GNEISS	
			← 27%	—	—				
20								EXPLORATION TERMINATED AT 20 FEET	
25									

Boring Identification: SB-2

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John/Chris
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11.14.05	***Screen Length:***	
Logged By:	KAH	***Notes:***	13:20 - stopped for repairs to RIG

NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
					64.2°	0.7		40" Brown F-C SAND, some gravel, trace Rock fragments, moist	
			67%		65.7°	BDL			
5									
					63.2°	0.2		23" Dk. Brown silty F-M SAND, some c. SAND and F. gravel, trace Rock Fragments at bottom, moist	
			38%		62.8°	BDL			
10					63.6°	BDL		9" As Above	
								9" Concrete Fragments	
	SB-2 10-15'		53%		67.9°	2.6	11:15	15" Orange-Brown silty F-C SAND, some Gravel, wood And Rock Fragments	
15								WEATHERED ROCK AT ~15', competent rock @ ~16' Black and white banded rock - GNEISS	
			—						
								EXPLORATION TERMINATED AT APPROX. 17' bg	
20									

Boring Identification: SB-3

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John / Chris
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11.14.05	***Screen Length:***	
Logged By:	KAH	***Notes:***	NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
			68%		65.6°	BDL		20" Light brown F-m sand, trace F- gravel, dry	
								21" Dk Brown F-C sand, some	
					64.7°	BDL		F- gravel, Dry	
5									5
								8" As above	
					64.8°	BDL			
			55%					25" Light-Brown, silty F sand,	
					66.4°	1.1		some clay, trace organics and brick debris, moist	
10									10
								20" Brown silt and clay and	
			33%		65.7°	0.6		F- SAND, SOME WOOD FRAGMENTS AND ORGANICS IN LOWER 8", WET	
15									15
					64.5°	BDL		6" Blue-Gray silty clay	
			10%					Competent rock at ~17' bg	
								EXPLORATION TERMINATED @ ~16 Feet bg	

Boring Identification: SB-4

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John / David
Location:	Winthrop. ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11.15.05	***Screen Length:***	
Logged By:	KAH	***Notes:***	NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
					72.6°	0.9		12" Brown silty clay, some sand and gravel, trace organics, moist	
			57%						
					79.8	BDL		22" Dk-Brown to Black Asphalt Fragments, some sand and F. gravel	
5									5
					79.9°	13.1		5" Dk-Grayish Green SILT and F. SAND, some DARK streaks moist	
	SB-4 5-10'		40%				13:00	9" Gray F. sand and Rock Fragments, DRY	
					78.2°	0.9			
10								COMPETANT ROCK AT APPROX. 10' BG.	10
							—	EXPLORATION TERMINATED AT APPROX. 11' BG	
15									15
20									20

Boring Identification: SB-5

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John / David
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11-15-05	***Screen Length:***	
Logged By:	KAH	***Notes:***	

NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
					62.4	BDL		30" Brown silty F. SAND, some m-c sand and F. gravel, trace organics, moist	
			58%						
					63.5	0.4		5" Blue-Green silt, moist	
5								6" Blue-Green and Brown mottled silty clay	5
			43%		62.1	BDL		20" Gray-Brown mottled silty clay, trace C-F. sand, large root fragments in lower 4"	
10								12" Gray & Sandy SILT and Rock Fragments, some clay	10
			20%		63.0	BDL		- BEDROCK AT 11 Feet -	
								BORING TERMINATED AT APP. 11 Feet	
15									15
20									20

Boring Identification: SB-6

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John / David
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11.16.05	***Screen Length:***	
Logged By:	KAH	***Notes:***	NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
					71.2°	BDL		20" Dk Brown SAND, DRY	
			50 %		70.7°	BDL		10" Light Brown SAND, DRY	
								— DRILLER ON TOP OF SOMETHING HARD, OFFSET A FEW FEET AND CONTINUE —	
5									5
								— ON IT AGAIN, SWIPED OUTSIDE DRILLING, PREPARE TO MOVE INTO THE BOILER HOUSE	
10									10
15									15

Boring Identification: SB-7

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John/David
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11-16-05	***Screen Length:***	
Logged By:	KAH	***Notes:***	7:10 - Problem with PID
			NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
			—		—	—		Concrete and Brick Fragments to approx 4'	
								Dk-Gray Rock Fragment at approx 4 to 5'	
5									5
								Layers of rock and unconsolidated material from 5-10'. Rock is Light to Dk. Gray & uncon. material varies from SAND TO CLAY	
			—	70.1 →		0.6			
10									10
								15' Gray, sandy Rock Fragments Sheen on Rock	
	SB-7		47%	69.0 →		5.1	11:00	18" Gray-silty F. SAND, oil globules, wet w/ sheen	
	10-15'								
15									15
								NO RECOVERY - LIQUID PHASE PET. ON WATER,	
							—	COMPETANT ROCK AT APPROX 15 Feet	—

Boring Identification: SB-8

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John / David
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11-16-05	***Screen Length:***	
Logged By:	KAH	***Notes:***	11:30 -- Rig down - broken wheel

NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
					64°	BDL		24" Brown F-M SAND, some rock fragments, dry concrete	
			40%						
5								12" As above, dry	5
			43%		64.5°	0.2		19" Brown silty SAND, some GRAVEL, trace cobble, moist	
10								15" BLACK SILT AND SAND AND GRAVEL, some Rock Fragments, WET, NAPL phase petroleum is visible	10
	SB-8 10-15'		25%		64.2	21	13:50		
15								Competent Rock at ~ 16' BG	15

Boring Identification: SB-9

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11·16·05	***Screen Length:***	
Logged By:	KeH	***Notes:***	NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
			25%		69	B.G.L		7" Brown F. SAND, dry UPPER 8" = concrete top of tank @ ~ 3 feet	
5			0%					NO RECOVERY - PUSHING SOMETHING — bottom of tank @ ~ 10'	5
10	SB-9 10-15'		23%		70.2	0.2	15:00	14" Grey F. Sand, little lig. phase petroleum, moist	10
15	SB-9 15-20'		20%		74.2	0.4	15:20	12" Dk Gray ~~[illegible]~~ SILT AND F. SAND, SOME ORGANICS, NO VISUAL IMPACTS BEDROCK @ ~ 17' bg BORING TERMINATED —	15
20									

Boring Identification: SB-10

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John / David
Location:	Winthrop. ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11·16·05	***Screen Length:***	
Logged By:	KAH	***Notes:***	

NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight In Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
			—		—	—		NO RECOVERY — TOP OF TANK AT ~3 FEET	
5									5
			—		—	—		NO RECOVERY BOTTOM OF TANK @ APPROX. 10 FEET	
10					67.1°	4.3		24" GRAY SILT and FINE SAND, MOIST, NO VISIBLE LIQ-PHASE PET, SOME ROCK FRAGMENTS IN THE LOWER 5"	10
	SB-10 10-15'		40%				1613O		
15								BEDROCK AT APPROX. 15' EXPLORATION TERMINATED @ 15'	15
20									20

[redacted]

Boring Identification: SB-11

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John / David
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11-17-05	***Screen Length:***	
Logged By:	KAH	***Notes:***	NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
			—					NO RECOVERY - pushed Asphalt	
5					67.6°	0.2		16" Dk. Brown SILT AND F. SAND, WET	5
			53%					16" Light Brown F. SAND, some ROCK FRAGMENTS, moist & brick debris	
					69.2	0.5		BEDROCK @ Approx. 8.5 Feet	
10							—	BORING TERMINATED AT 8.5 FEET —	10
15									15
20									20

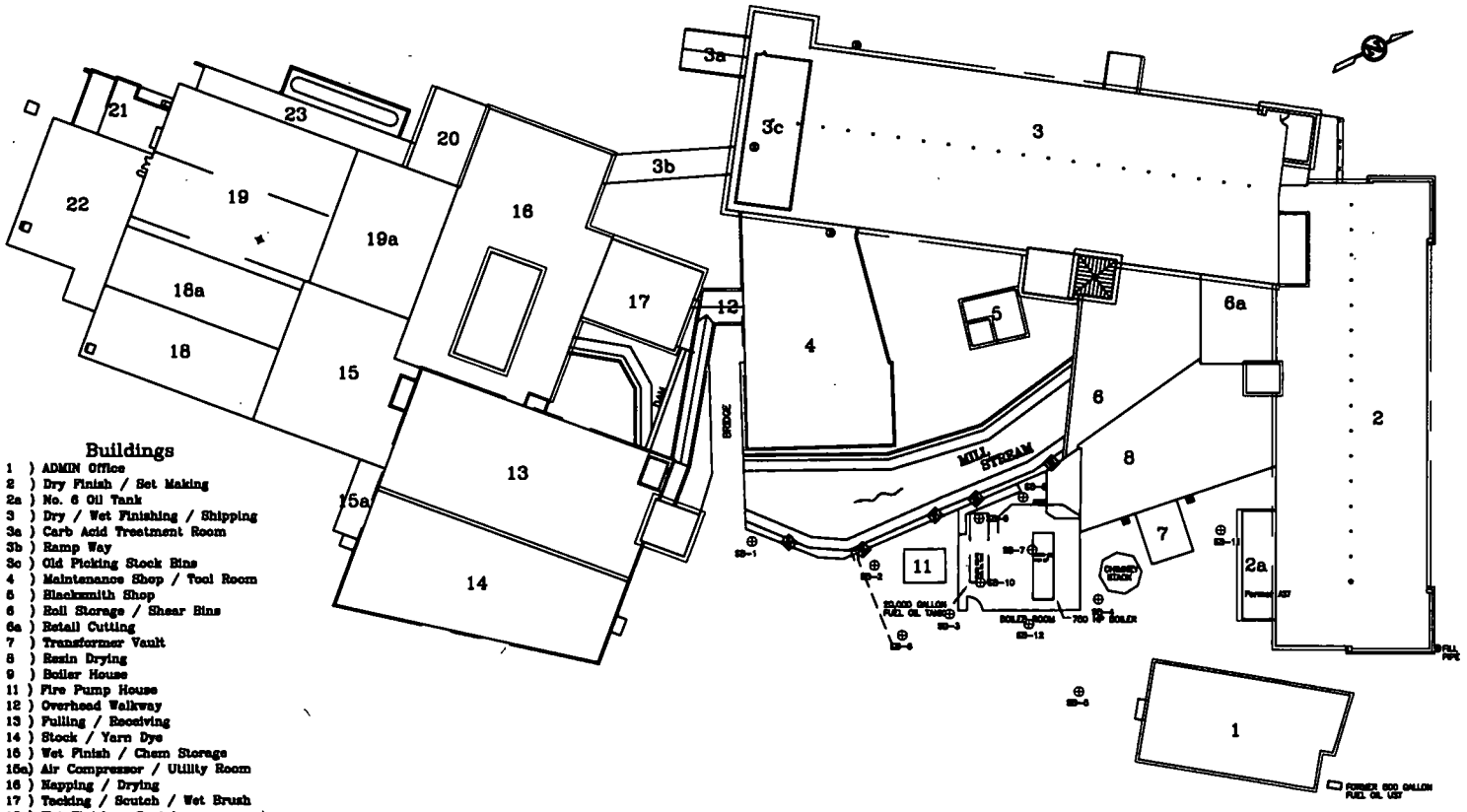
Boring Identification: SB-12

Project:	MEDEP Winthrop Commerce Cntr	***Driller:***	John / David
Location:	Winthrop, ME	***Drilling Company:***	Boart Longyear
Project No.:	0905-1117-00	***Drilling Meth:***	Sonic
Date:	11-17-05	***Screen Length:***	
Logged By:	KAH	***Notes:***	

NA=Not Available/Not Applicable

Key: Bentonite | Sand | Silt | Gravel | Screen | Casing

Depth (feet)	Sample No.	Blow Count	% Rec.	Weight in Grams	Soil Temp	10.7 PID (ppm)	Time	Soils/Lithology	Depth (feet)
					70.1	0.2		34" Black ASH, some F. SAND AND BRICK debris in lower 10", dry	
			57%						
5					70.0	0.5		12" Black silty F. SAND, AND ASH, WET	5
	SB-12 5-10'		48%		72.4	0.7	13:30	17" Reddish Brown grading Greenish Gray SILT, some F. SAND, MOIST	
								4" Light Gray Clay, dry	
10								6" Light Gray clay, dry	10
			50%		61.6	0.3		20" Brown-dk brown mottled SILT AND F. SAND, MOIST	
								BEDROCK AT APPROX 12.5'	
15									15



Buildings

1) ADMIN Office
2) Dry Finish / Set Making
2a) No. 6 Oil Tank
3) Dry / Wet Finishing / Shipping
3a) Carb Acid Treatment Room
3b) Ramp Way
3c) Old Picking Stock Bins
4) Maintenance Shop / Tool Room
5) Blacksmith Shop
6) Roll Storage / Shear Bins
6a) Retail Cutting
7) Transformer Vault
8) Resin Drying
9) Boiler House
11) Fire Pump House
12) Overhead Walkway
13) Pulling / Receiving
14) Stock / Yarn Dye
15) Wet Finish / Chem Storage
15a) Air Compressor / Utility Room
16) Napping / Drying
17) Tacking / Scutch / Wet Brush
18) Wet Finish - Scutch
18a) Dye House - Batching
19) Piece DyeHouse
19a) Drug Room Mezzanine
20) Locker Room
21) Screenhouse / Dyehouse Office
22) Drugroom
23) Beam Dye Pumphouse

LEGEND:

- BUILDING OUTLINE
- ROOF OVERHANG
- COPPER FLASHING
- FUEL OIL TANK
- BORING LOCATIONS
- VISIBLY IMPACTED SOIL
- STORM DRAIN
- UNDERGROUND CULVERT
- EXHAUST STACK
- FILL PIPE
- UST — UNDERGROUND STORAGE TANK

LOCATION OF FUEL OIL TANK IS APPROXIMATE

MAP SOURCE:
Carlton Woolen Mills, Inc.
Dyeing and Finishing Mill
Record Drawing Schedule May 3, 1998

SCALE IN FEET
0 45 90

CLIENT:
CARLETON WOOLEN MILLS INC.

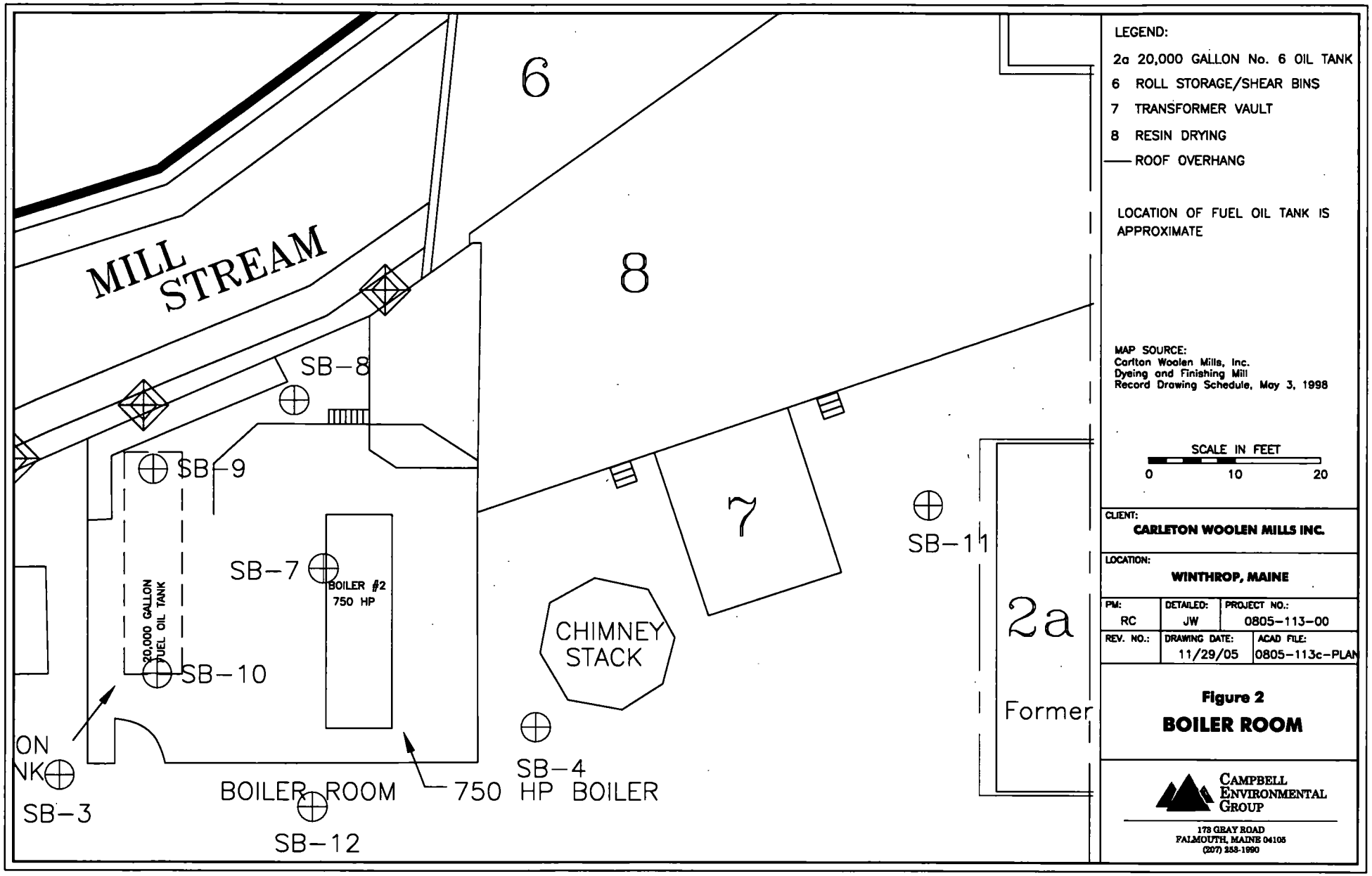
LOCATION:
WINTHROP, MAINE

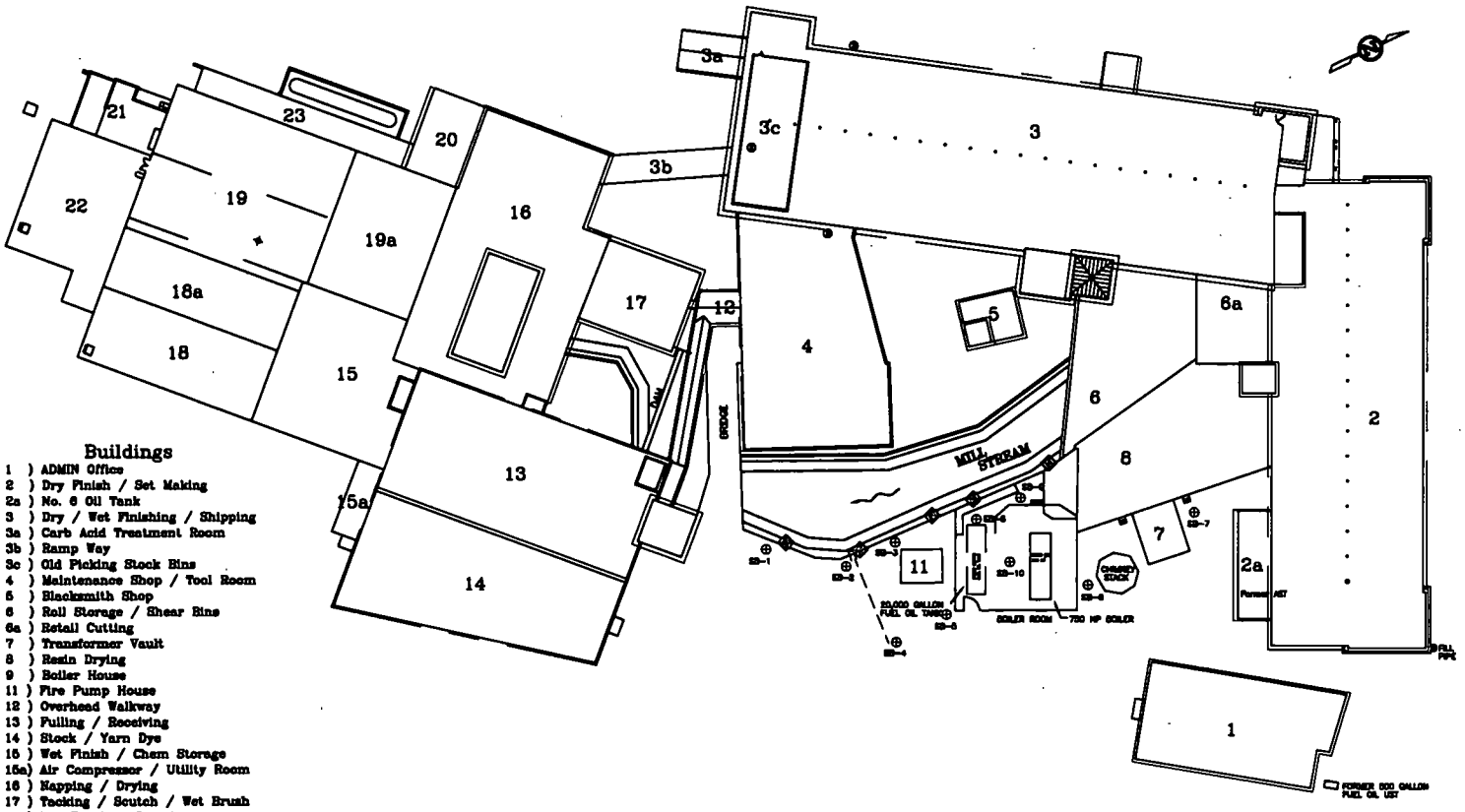
PM:	DETAILED:	PROJECT NO.:
RC	JW	0805-113-00
REV. NO.:	DRAWING DATE:	ACAD FILE:
	11/29/05	0805-113c-PLAN

Figure 1

WINTHROP COMMERCE CENTER

CAMPBELL ENVIRONMENTAL GROUP
173 GRAY ROAD
FALMOUTH, MAINE 04105
(207) 253-1990


MILL STREAM
6
8
7
2a
Former
SB-8
SB-9
SB-7
SB-10
SB-11
SB-4
SB-3
SB-12
BOILER #2
750 HP
20,000 GALLON
FUEL OIL TANK
CHIMNEY
STACK
BOILER ROOM
750 HP BOILER
ON
NK
LEGEND:
2a 20,000 GALLON No. 6 OIL TANK
6 ROLL STORAGE/SHEAR BINS
7 TRANSFORMER VAULT
8 RESIN DRYING
ROOF OVERHANG
LOCATION OF FUEL OIL TANK IS APPROXIMATE
MAP SOURCE:
Carlton Woolen Mills, Inc.
Dyeing and Finishing Mill
Record Drawing Schedule, May 3, 1998
SCALE IN FEET
0
10
20
CLIENT:
CARLETON WOOLEN MILLS INC.
LOCATION:
WINTHROP, MAINE
PM: RC
DETAILED: JW
PROJECT NO.: 0805-113-00
REV. NO.:
DRAWING DATE: 11/29/05
ACAD FILE: 0805-113c-PLAN
Figure 2
BOILER ROOM
CAMPBELL ENVIRONMENTAL GROUP
173 GRAY ROAD
FALMOUTH, MAINE 04105
(207) 253-1990



Buildings

1) ADMIN Office
2) Dry Finish / Set Making
2a) No. 6 Oil Tank
3) Dry / Wet Finishing / Shipping
3a) Carb Acid Treatment Room
3b) Ramp Way
3c) Old Picking Stock Bins
4) Maintenance Shop / Tool Room
5) Blacksmith Shop
6) Roll Storage / Shear Bins
6a) Retail Cutting
7) Transformer Vault
8) Resin Drying
9) Boiler House
11) Fire Pump House
12) Overhead Walkway
13) Pulling / Receiving
14) Stock / Yarn Dye
15) Wet Finish / Chem Storage
15a) Air Compressor / Utility Room
16) Napping / Drying
17) Tacking / Scutch / Wet Brush
18) Wet Finish - Scutch
18a) Dye House - Batching
19) Piece DyeHouse
19a) Drug Room Mezzanine
20) Locker Room
21) Screenhouse / Dyehouse Office
22) Drugroom
23) Beam Dye Pumphouse

LEGEND:

- BUILDING OUTLINE
- ROOF OVERHANG
- COPPER FLASHING
- FUEL OIL TANK
- PROPOSED BORING
- VISIBLY IMPACTED SOIL
- STORM DRAIN
- UNDERGROUND CULVERT
- EXHAUST STACK
- FILL PIPE
- UST — UNDERGROUND STORAGE TANK

LOCATION OF FUEL OIL TANK IS APPROXIMATE

MAP SOURCE:
Carlton Woolen Mills, Inc.
Dyeing and Finishing Mill
Record Drawing Schedule May 3, 1998

SCALE IN FEET
0 45 90

CLIENT:
CARLETON WOOLEN MILLS INC.

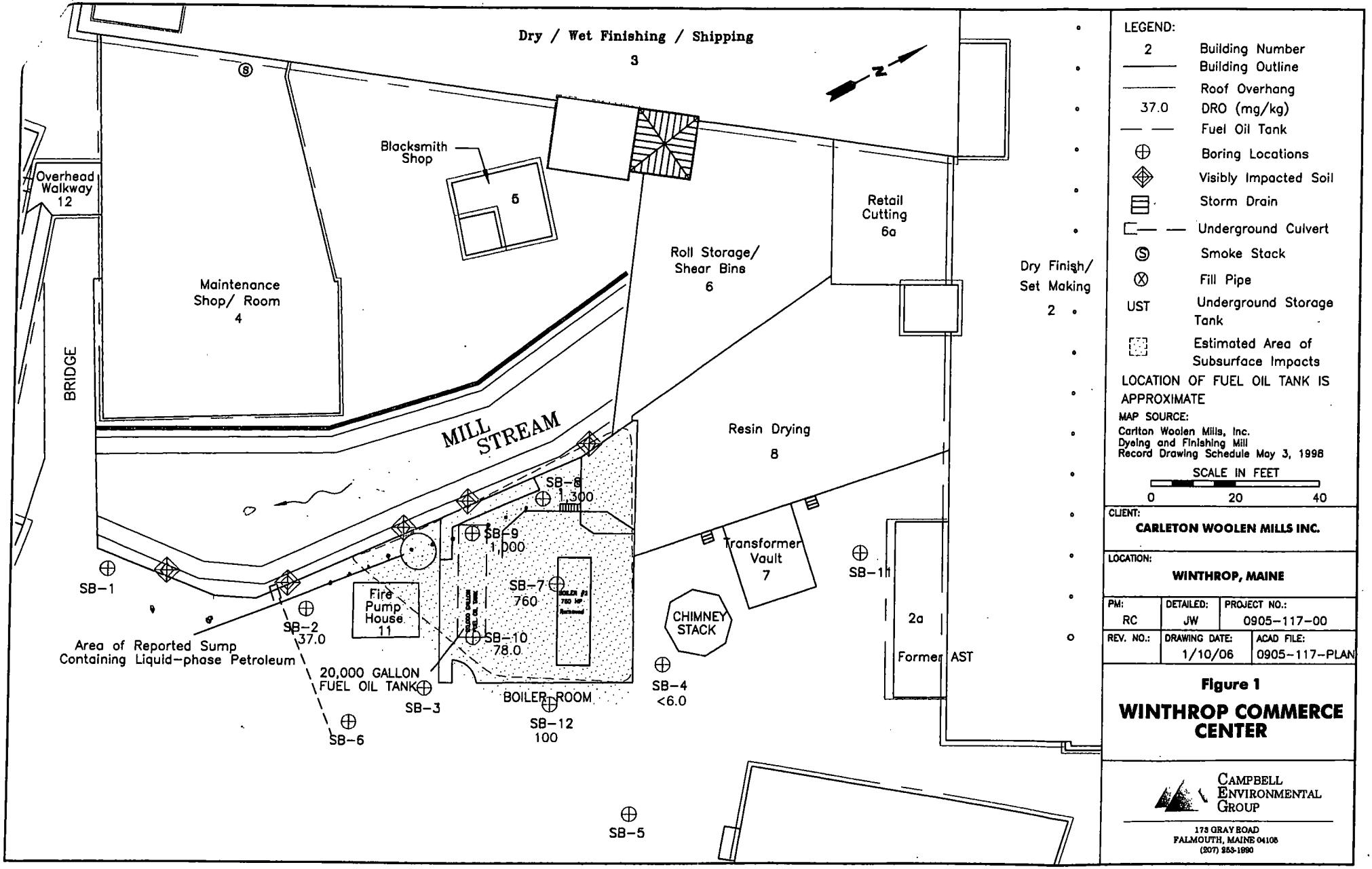
LOCATION:
WINTHROP, MAINE

PM:	DETAILED:	PROJECT NO.:
RC	JW	0805-113-00
REV. NO.:	DRAWING DATE:	ACAD FILE:
	09/16/05	0805-113-PLAN

Figure 1

WINTHROP COMMERCE CENTER

CAMPBELL ENVIRONMENTAL GROUP
178 GRAY ROAD
FALMOUTH, MAINE 04105
(207) 253-1990



LEGEND:

2	Building Number
———	Building Outline
———	Roof Overhang
37.0	DRO (mg/kg)
— —	Fuel Oil Tank
⊕	Boring Locations
◈	Visibly Impacted Soil
▭	Storm Drain
⊏— —	Underground Culvert
Ⓢ	Smoke Stack
Ⓧ	Fill Pipe
UST	Underground Storage Tank
⬚	Estimated Area of Subsurface Impacts

LOCATION OF FUEL OIL TANK IS APPROXIMATE

MAP SOURCE:
Carlton Woolen Mills, Inc.
Dyeing and Finishing Mill
Record Drawing Schedule May 3, 1998

SCALE IN FEET
0 20 40

CLIENT:
CARLETON WOOLEN MILLS INC.

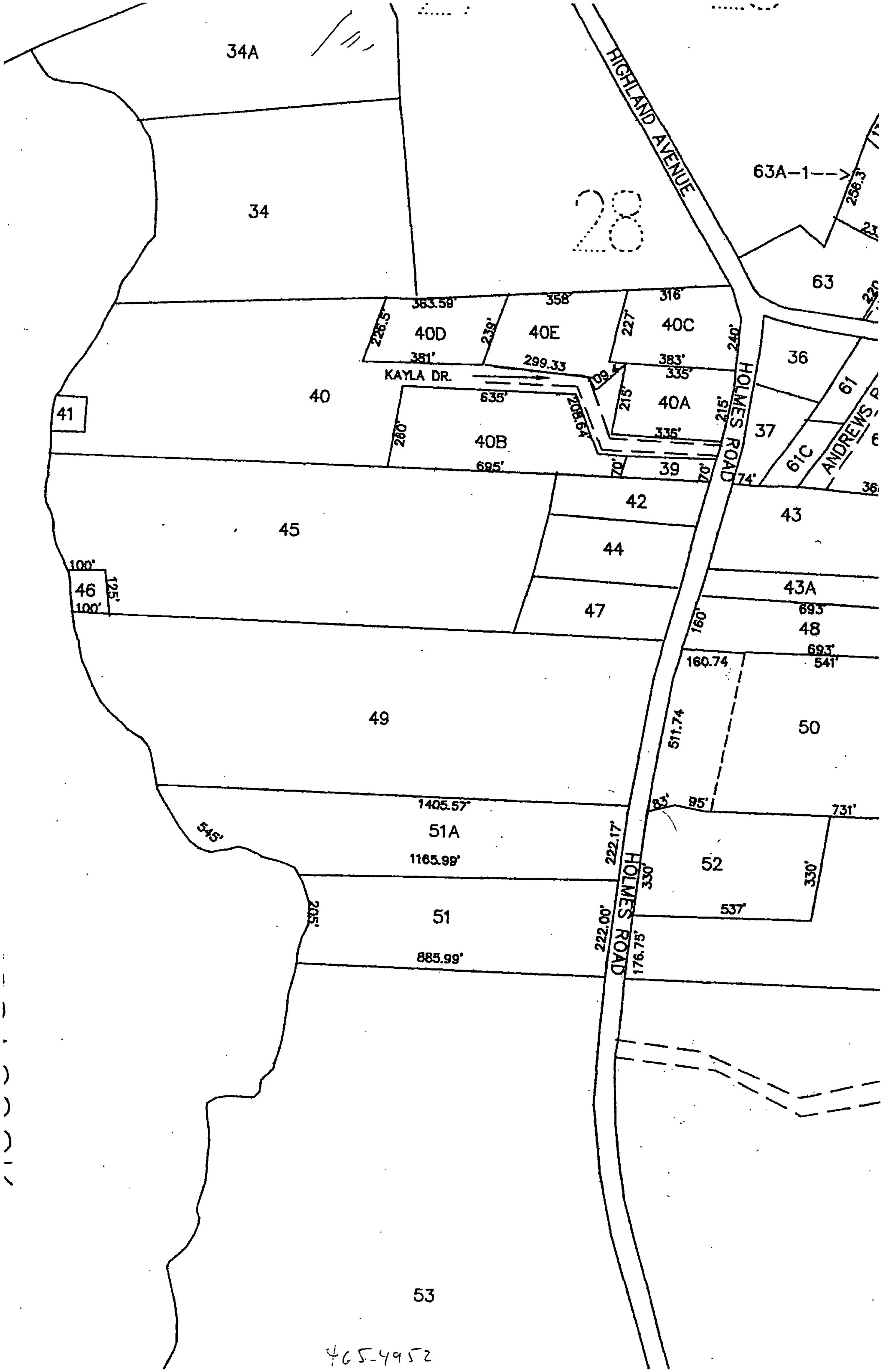
LOCATION:
WINTHROP, MAINE

PM:	DETAILED:	PROJECT NO.:
RC	JW	0905-117-00
REV. NO.:	DRAWING DATE:	ACAD FILE:
	1/10/06	0905-117-PLAN

Figure 1

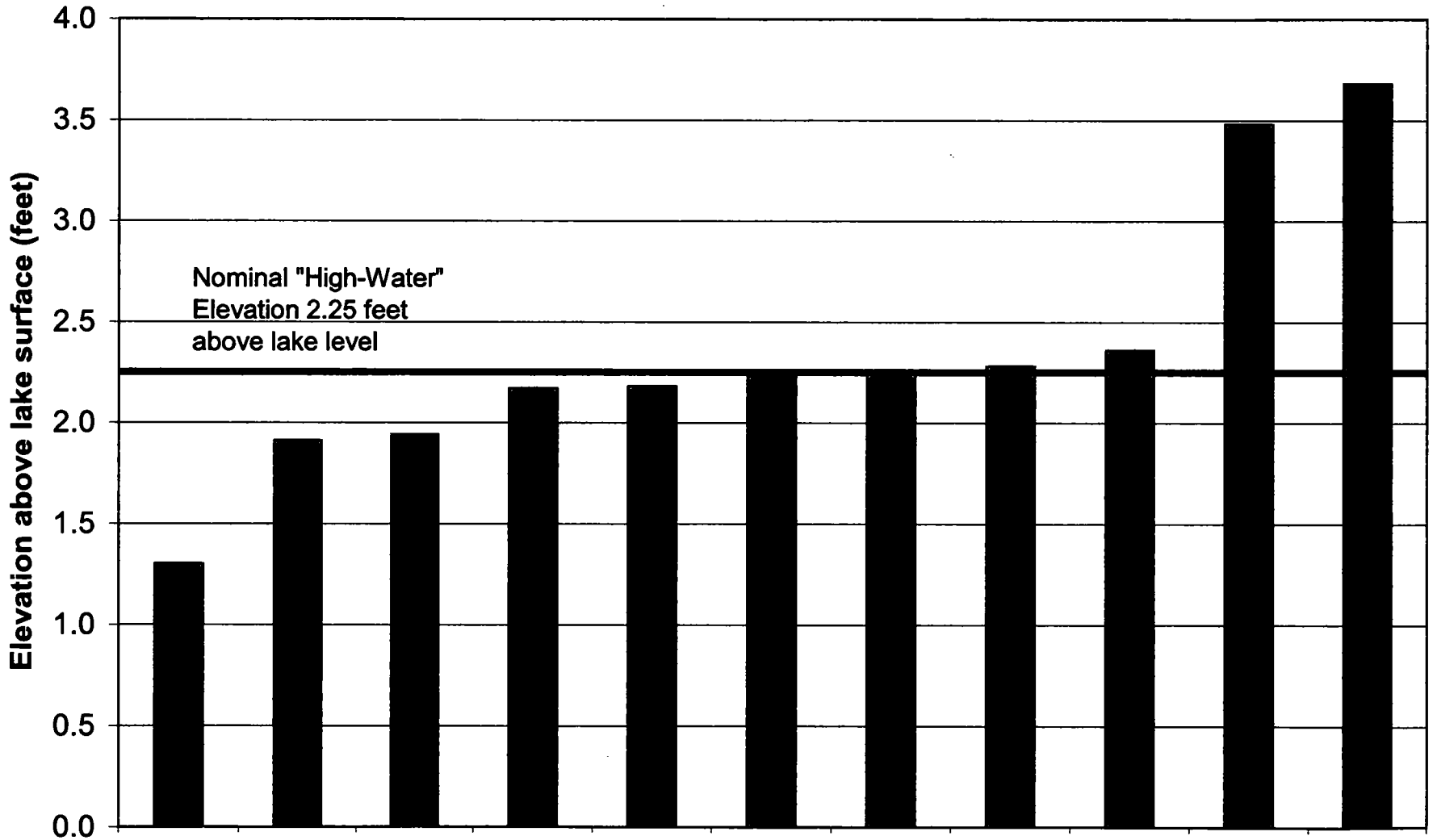
WINTHROP COMMERCE CENTER

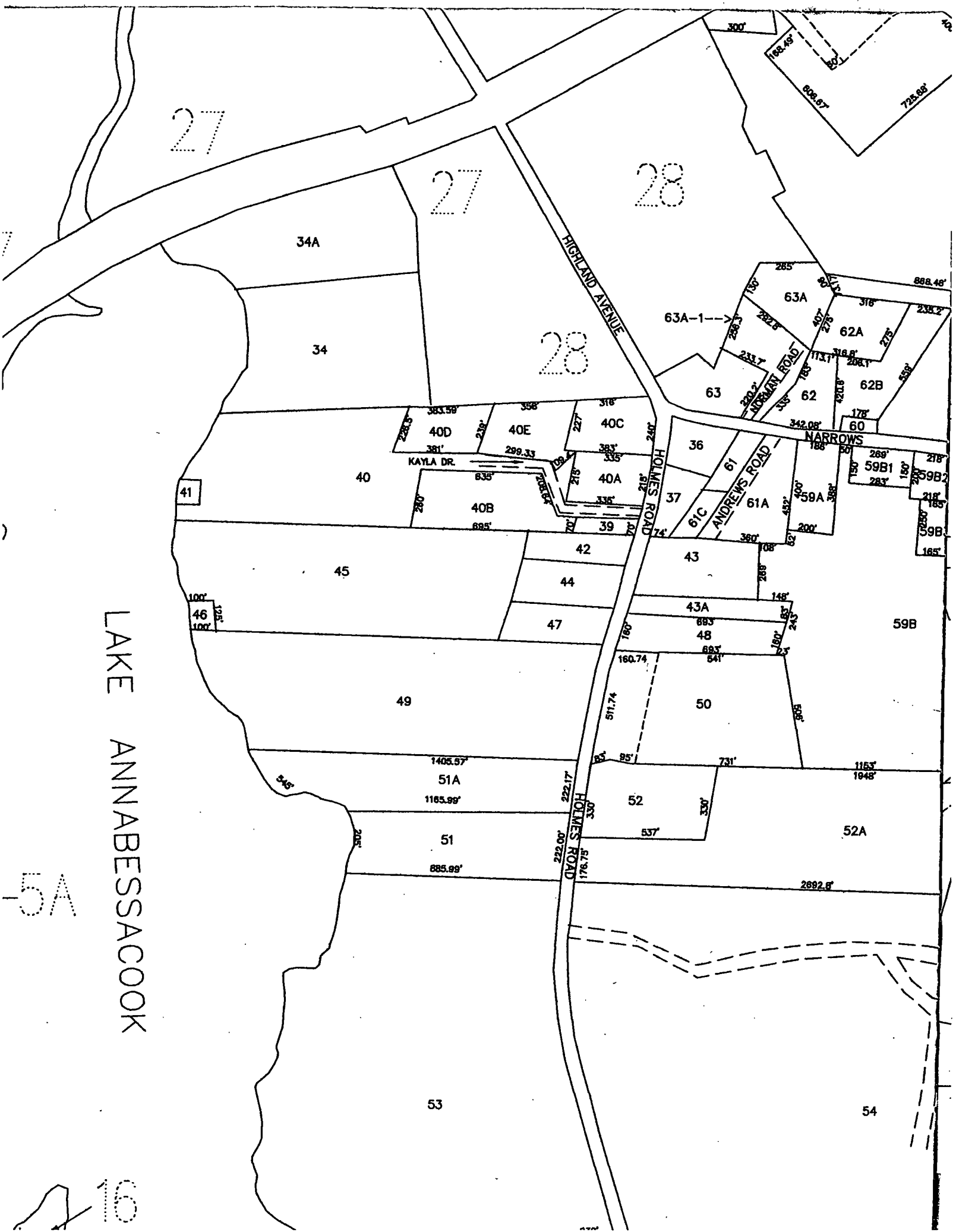
CAMPBELL ENVIRONMENTAL GROUP
173 GRAY ROAD
FALMOUTH, MAINE 04105
(207) 553-1990

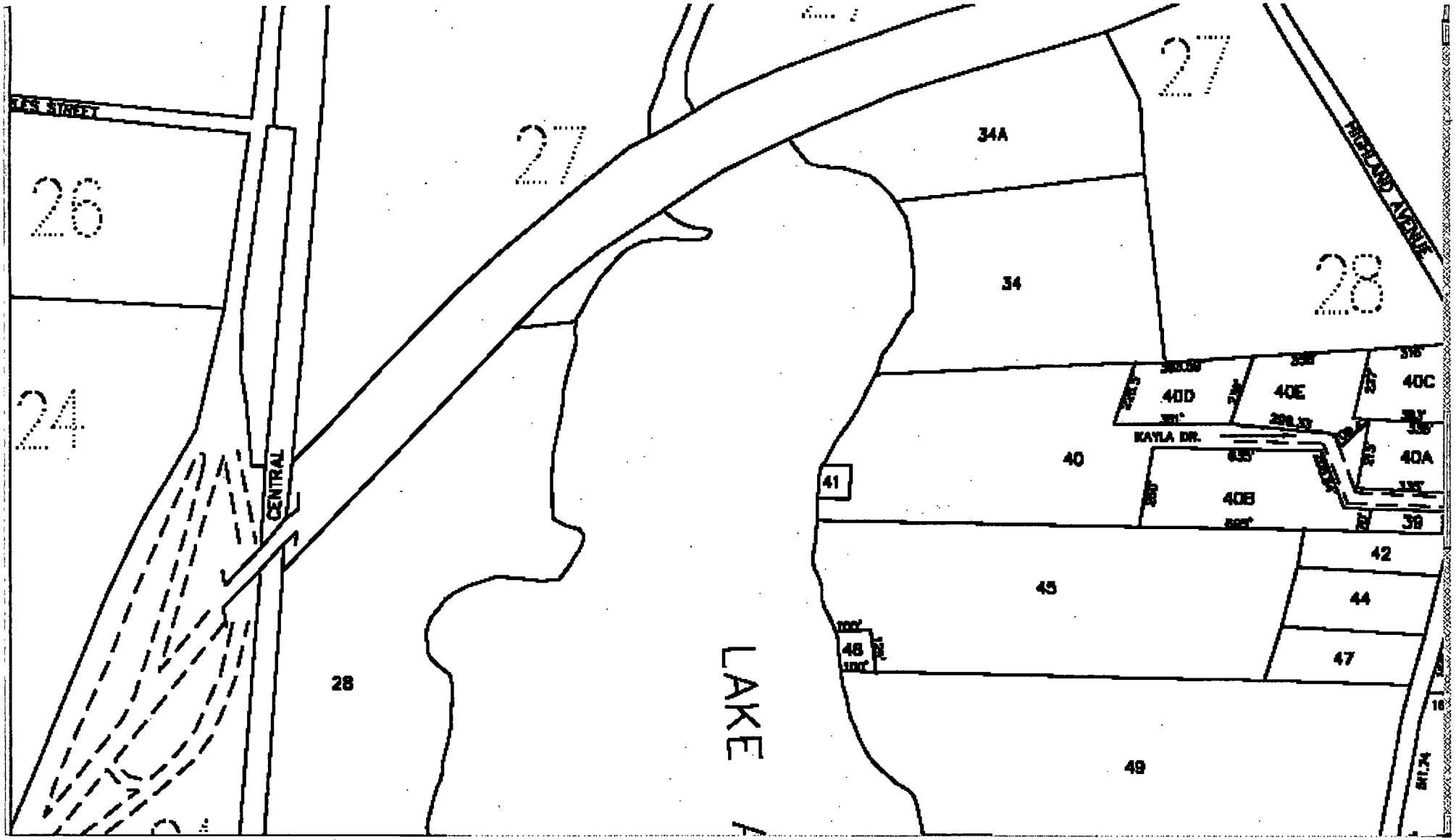

34A
HIGHLAND AVENUE
63A-1
256.3'
34
28
63
383.59'
358'
316'
226.5'
40D
239'
40E
227'
40C
240'
36
381'
299.33
383'
335'
KAYLA DR.
635'
40
41
215'
40A
215'
61
280'
208.64
37
40B
335'
61C
ANDREWS
695'
70'
39
70'
HOLMES ROAD
74'
42
43
45
44
100'
46
125'
100'
43A
693'
47
160'
48
693'
541'
160.74
49
511.74
50
1405.57'
83'
95'
731'
545'
51A
222.17'
1165.99'
330'
52
330'
205'
51
222.00'
176.75'
537'
885.99'
53

465-4952

Oil Stain Elevations - Haefele Property

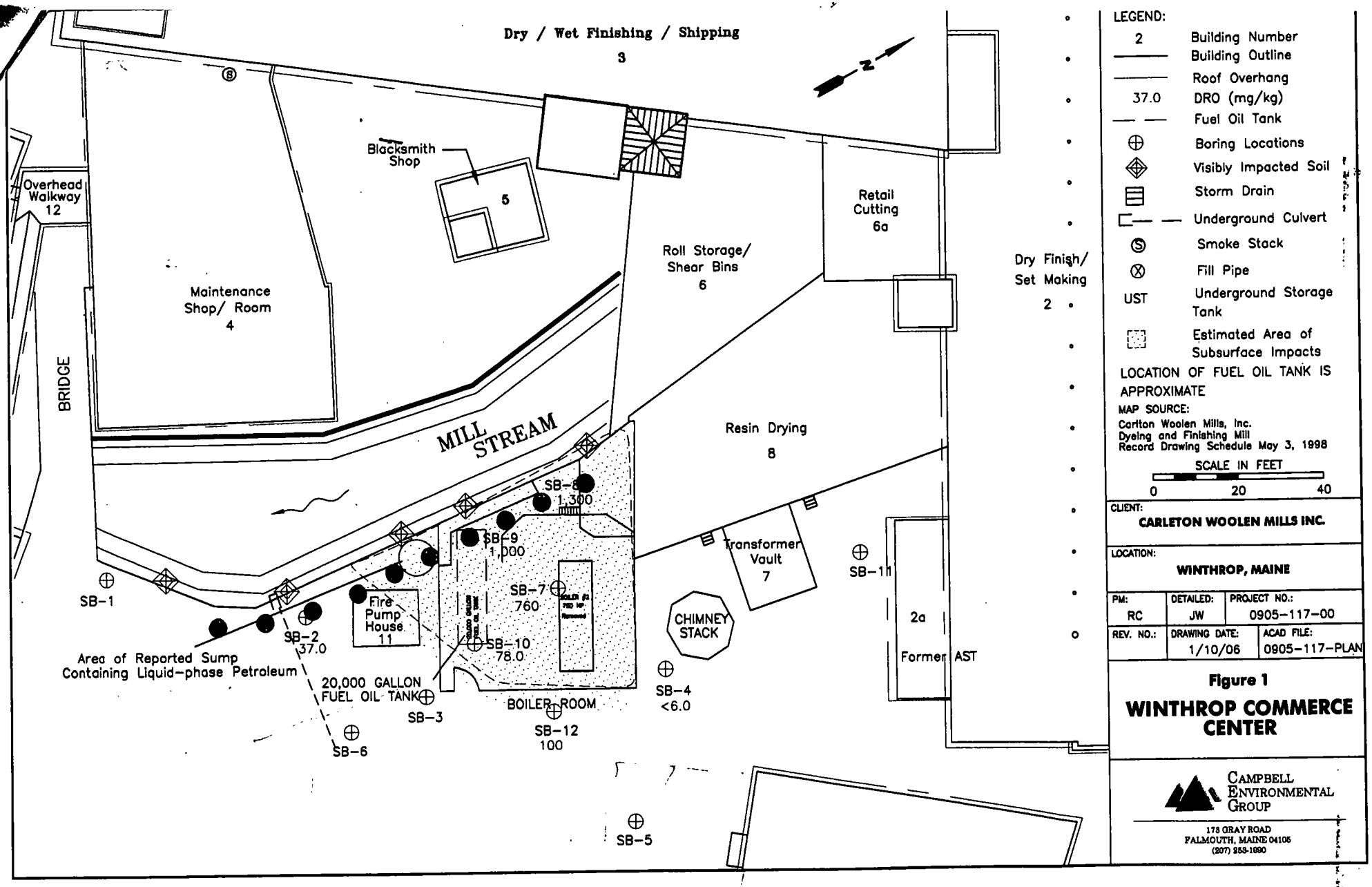



27
27
28
28
34A
34
63A
63A-1
62A
63
62
62B
60
NARROWS
HIGHLAND AVENUE
NORMAN ROAD
HOLMES ROAD
ANDREWS ROAD
KAYLA DR.
40D
40E
40C
40
40A
40B
41
36
37
61
61A
61C
59A
59B1
59B2
59B
39
42
43
44
45
43A
46
47
48
49
50
51A
51
52
52A
53
54
LAKE ANNABESSACOOK
-5A
16



Haefele property, lot 40

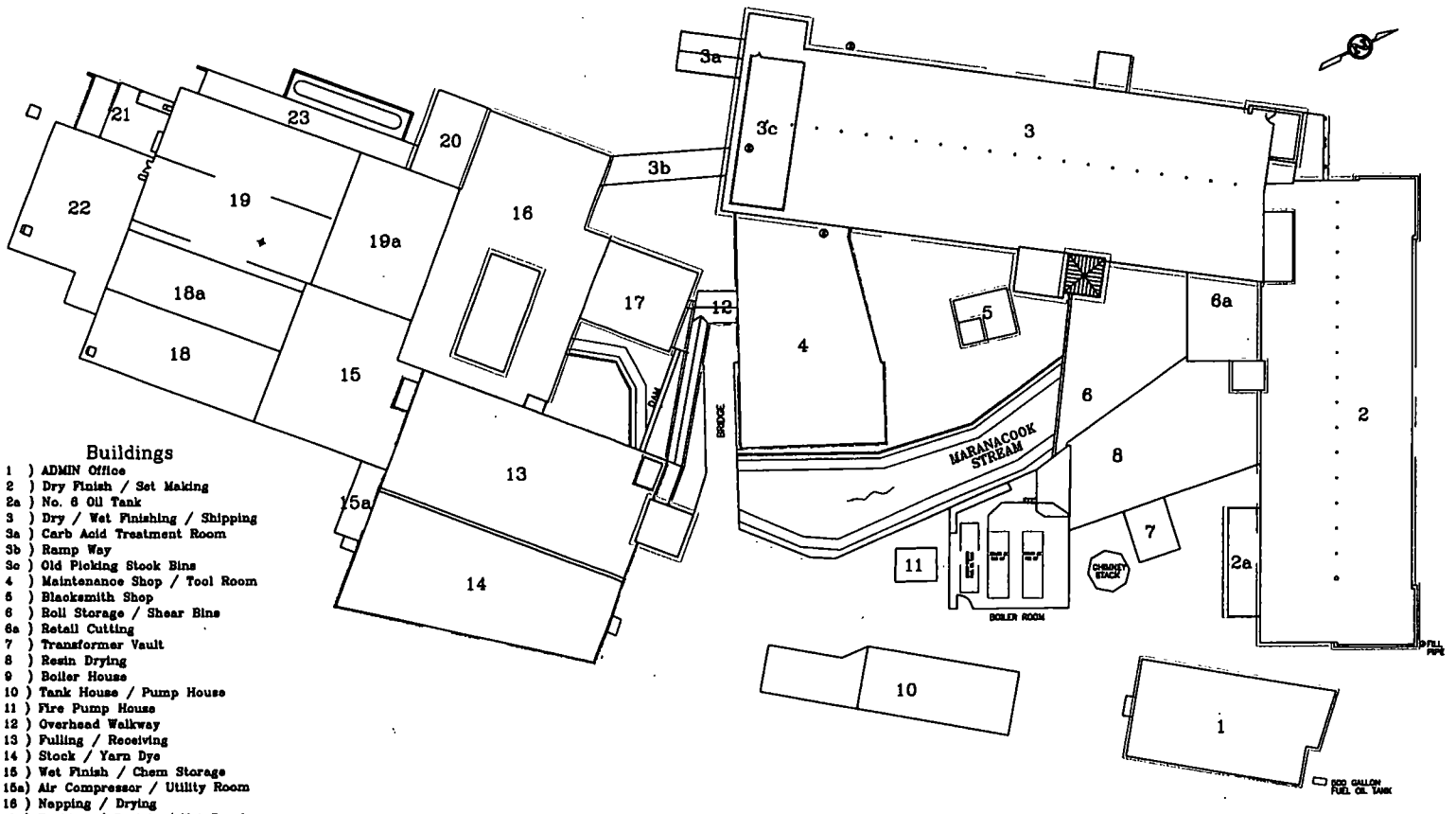
2307



● Proposed Boring Locations

Clark Street

Dig safe 2007 220 7638



Buildings

1) ADMIN Office
2) Dry Finish / Set Making
2a) No. 6 Oil Tank
3) Dry / Wet Finishing / Shipping
3a) Carb Acid Treatment Room
3b) Ramp Way
3c) Old Picking Stock Bins
4) Maintenance Shop / Tool Room
5) Blacksmith Shop
6) Roll Storage / Shear Bins
6a) Retail Cutting
7) Transformer Vault
8) Resin Drying
9) Boiler House
10) Tank House / Pump House
11) Fire Pump House
12) Overhead Walkway
13) Fulling / Receiving
14) Stock / Yarn Dye
15) Wet Finish / Chem Storage
15a) Air Compressor / Utility Room
16) Napping / Drying
17) Tacking / Scutch / Wet Brush
18) Wet Finish - Scutch
18a) Dye House - Batching
19) Piece DyeHouse
19a) Drug Room Mezzanine
20) Locker Room
21) Screenhouse / Dyehouse Office
22) Drugroom
23) Beam Dye Pumphouse

LEGEND:

- BUILDING OUTLINE
- ROOF OVERHANG
- COPPER FLASHING
- FUEL OIL TANK
- (S) EXHAUST STACK
- (X) FILL PIPE

LOCATION OF FUEL OIL TANK IS APPROXIMATE

MAP SOURCE:
Carlton Woolen Mills, Inc.
Dyeing and Finishing Mill
Record Drawing Schedule May 3, 1998

SCALE IN FEET
0 45 90

CLIENT:
CARLETON WOOLEN MILLS INC.

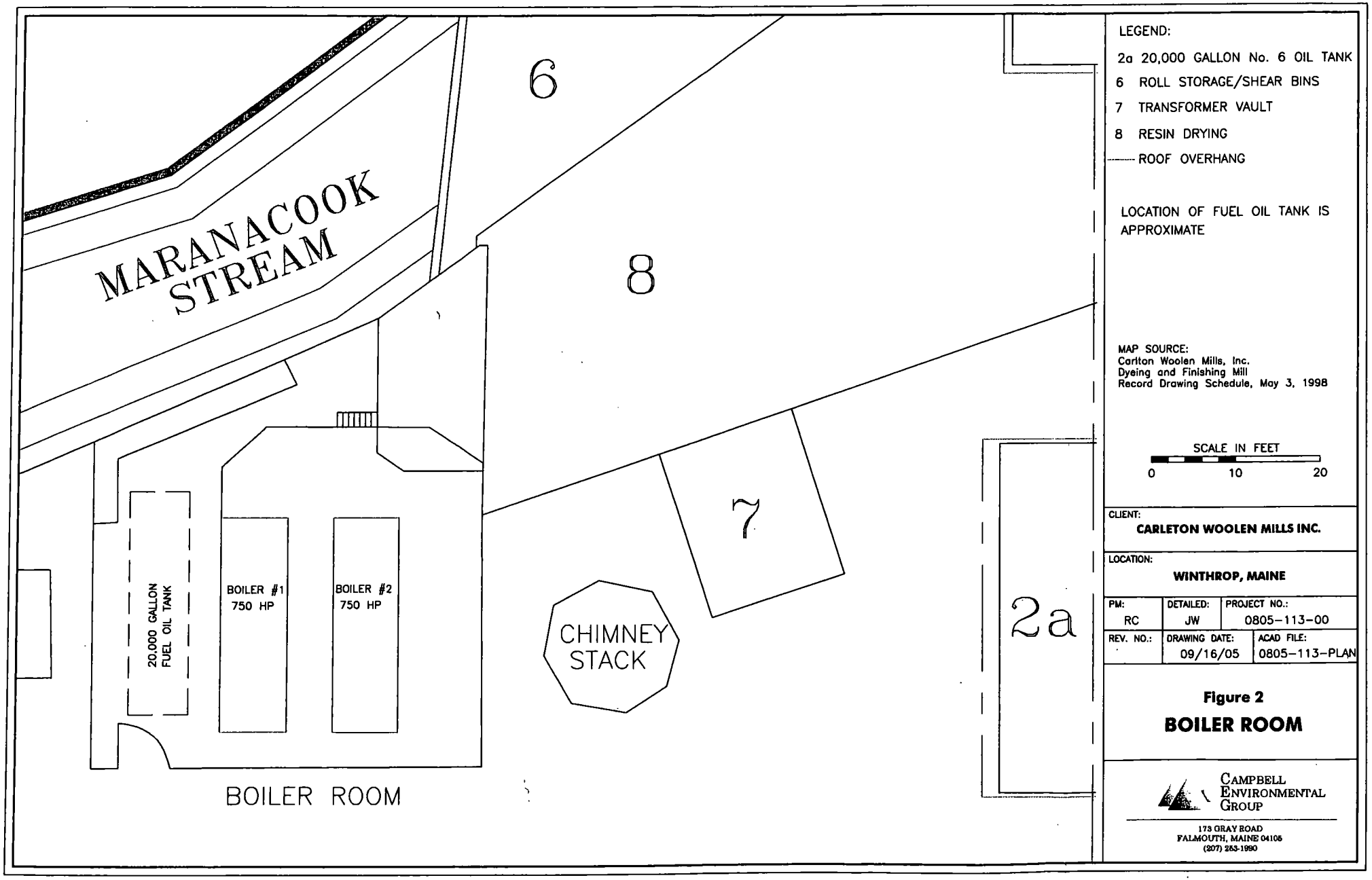
LOCATION:
WINTHROP, MAINE

PM:	DETAILED:	PROJECT NO.:
RC	JW	0805-113-00
REV. NO.:	DRAWING DATE:	ACAD FILE:
	09/16/05	0805-113-PLAN

Figure 3

WINTHROP COMMERCE CENTER

CAMPBELL ENVIRONMENTAL GROUP
173 GRAY ROAD
FALMOUTH, MAINE 04105
(207) 253-1990



LEGEND:

2a 20,000 GALLON No. 6 OIL TANK

6 ROLL STORAGE/SHEAR BINS

7 TRANSFORMER VAULT

8 RESIN DRYING

------ ROOF OVERHANG

LOCATION OF FUEL OIL TANK IS APPROXIMATE

MAP SOURCE:
Carlton Woolen Mills, Inc.
Dyeing and Finishing Mill
Record Drawing Schedule, May 3, 1998

SCALE IN FEET
0 10 20

CLIENT:
CARLETON WOOLEN MILLS INC.

LOCATION:
WINTHROP, MAINE

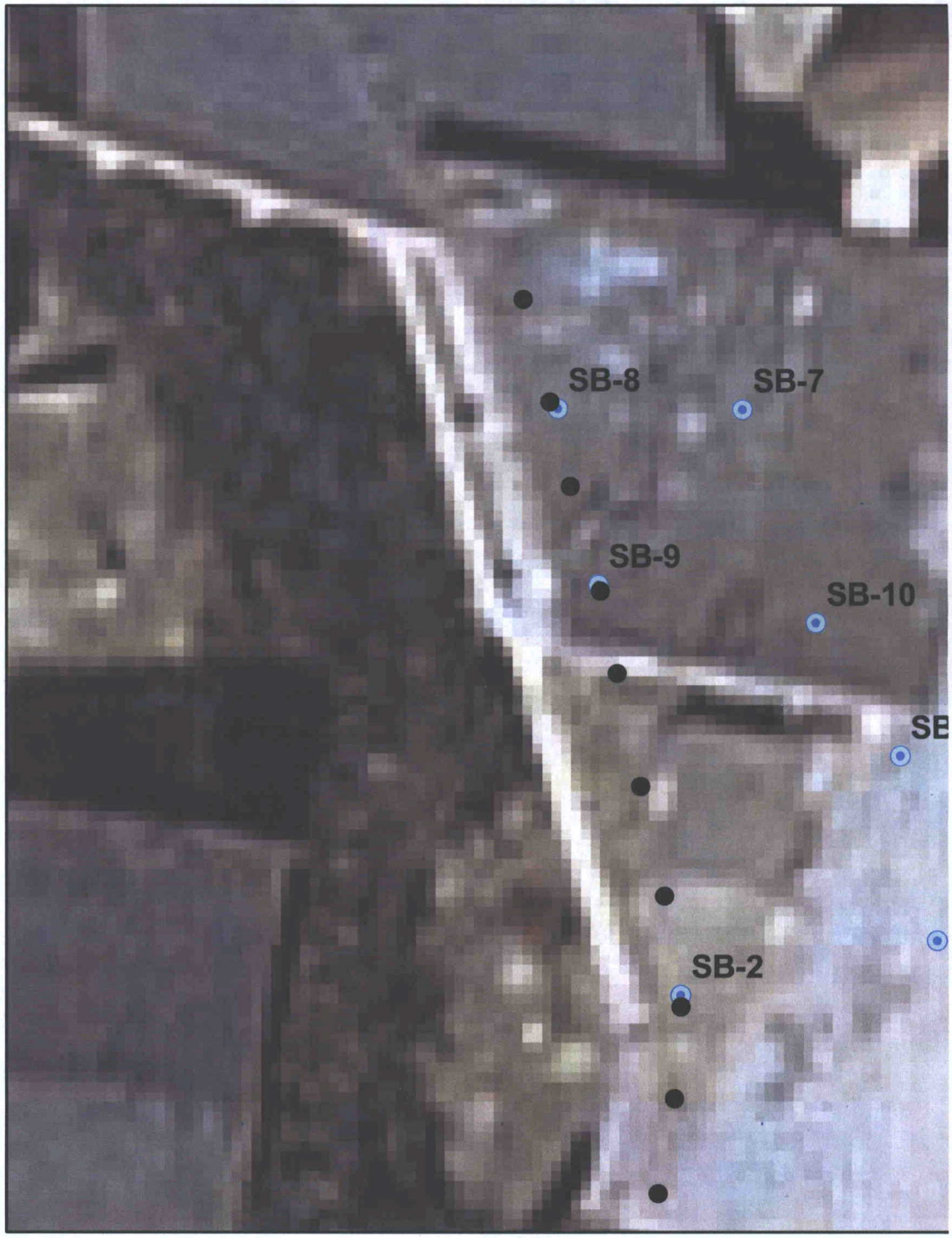
PM:	DETAILED:	PROJECT NO.:
RC	JW	0805-113-00
REV. NO.:	DRAWING DATE:	ACAD FILE:
	09/16/05	0805-113-PLAN

Figure 2

BOILER ROOM

CAMPBELL ENVIRONMENTAL GROUP
173 GRAY ROAD
FALMOUTH, MAINE 04105
(207) 253-1990

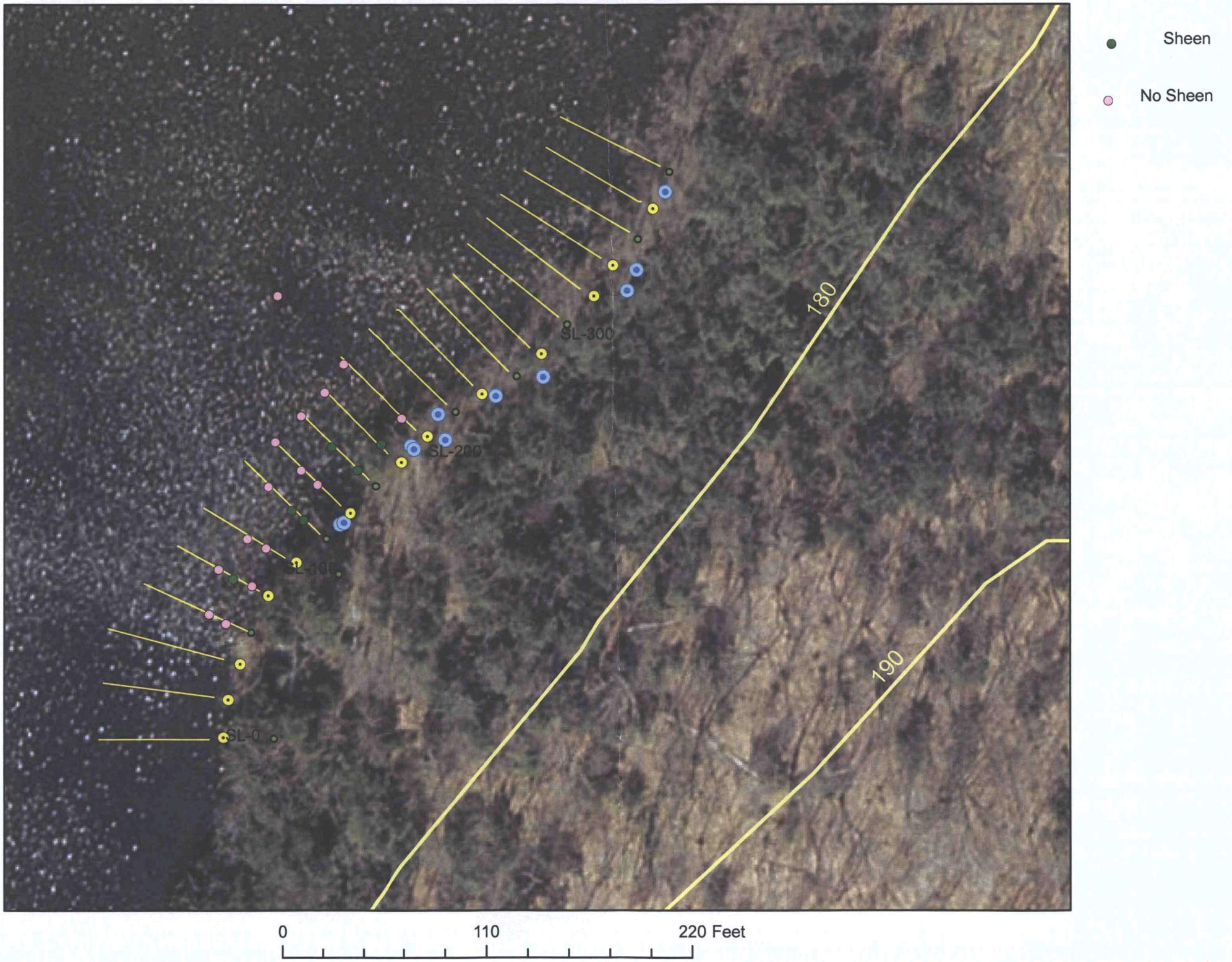
Figure 1



● Proposed Boring

N

0 5 10 20 30 40 Feet


Sheen
No Sheen
180
190
SL-300
SL-200
SL-100
SL-0
0
110
220 Feet

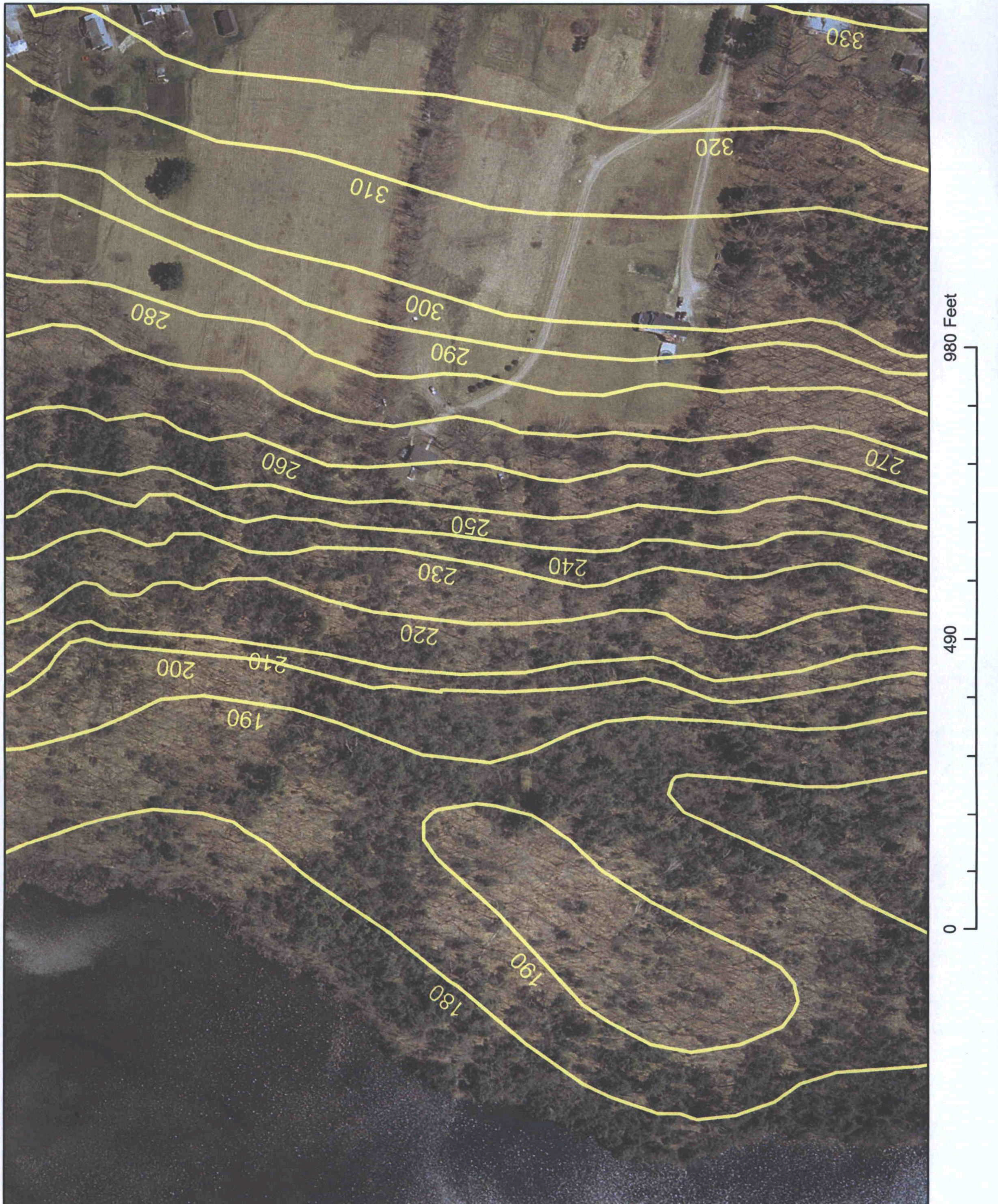
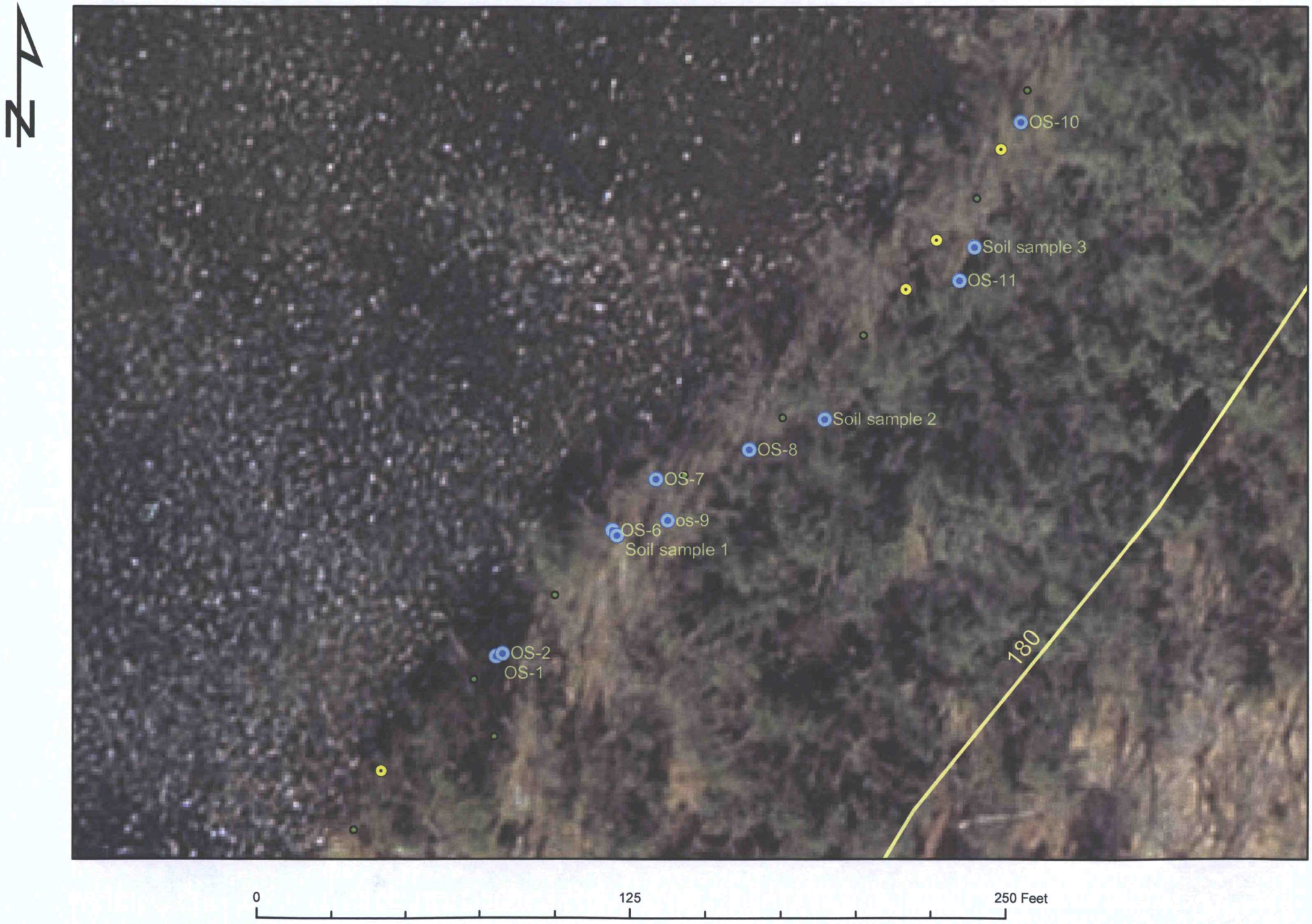

330
320
310
300
290
280
270
260
250
240
230
220
210
200
190
190
180
0
490
980 Feet

Figure 3. Locations of oil stains (OS) and soil samples




180
190
0
100
200 Feet


0
840
1,680 Feet

0 425 850 Feet