5/21/2007

Dale

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
PRAP/ROD ROUTING SLIP

TO: Sal Ervolina, Assistant Division Director

FROM: The attached is submitted for your approval by:

NAME	INITIAL	DATE
Project Manager: Kevin Sarnowicz	KS	5/21/07
Section Chief/RHWRE: James Quinn	JQ	5/24/7
Bureau Director: P. David Smith	PM	5/25/07

DATE: 5/21/2007

RE: **Site Name** Camp Pharsalia **Site Code** 709013
City Pharsalia **County** Chenango

☐ **PRAP**

- ☐ Draft PRAP
- ☐ Clean copy of the PRAP
- ☐ Redline/Strikeout version of the PRAP
- ☐ Copies of edits to PRAP (Sal's/Dale's)
- ☐ Site Briefing Report
- ☐ NYSDOH concurrence letter
- ☐ USEPA concurrence letter

PRAP Release Approvals
Ass't Div Director: _____
Sal Ervolina
Division Director: _____
Dale Desnoyers

S10338
ROD Amendment

☐ **ROD**

- ☐ Draft ROD
- ☐ Signature-ready copy of the ROD
- ☐ Redline/Strikeout version of the ROD
- ☐ Copies of edits to ROD (Sal's/Dale's)
- ☐ Site Briefing Report
- ☐ NYSDOH concurrence letter
- ☐ USEPA concurrence letter

Ass't Div Director:
Sal Ervolina 6/6/07

☐ **BRIEFING**
Date:_____ **Time:**_____ **Room:**_____

c: Dale Desnoyers
Other reviewers who are invited to Briefing

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
Site Briefing Report

Site Code	709013	**Site Name**	Camp Pharsalia		
Classification	03	**Address**	South Plymouth		
Region	7	**City**	Pharsalia	**Zip**	13844
Latitude	42:36:00:0	**Town**	Pharsalia	**Project Manager**	Kevin Sarnowicz
Longitude	75:44:45:0	**County**	Chenango		
Site Type				**Estimated Size**	0.2500

Site Description

Camp Pharsalia is an active incarceration facility in the Town of Pharsalia, operated by the NYS Department of Correctional Services (NYSDCS), and located on property owned by the NYS Department of Environmental Conservation (NYSDEC). Pharsalia is located about 10 miles northwest of Norwich. The area of concern is approximately 0.25 acres located in the southwest part of the property. A wood treatment facility operated there from 1960 to 1977. The site now consists of a building that was used as part of this process and a lawn area that is currently used for prisoner activities such as cutting fire wood. The wood treatment process consisted of soaking wooden poles and lumber in large dip tanks that were filled with a mixture of fuel oil and pentachlorophenol. Fieldwork for the Remedial Investigation was conducted and a Record of Decision was issued in March 2003. A Remedial Design to implement the remedy is under development.

Materials Disposed at Site	**Quantity Disposed**
PENTACHLOROPHENOL (F032 Waste)	UNKNOWN

Analytical Data Available for :

Applicable Standards Exceeded for: Groundwater

Assessment of Environmental Problems

The contaminant of concern is PCP. The sub-surface soil is contaminated with PCP. There is no significant surface soil contamination except in a very limited area, and no immediate receptors of contaminated groundwater.

Assessment of Health Problems

Contamination in the former treatment building is inaccessible as the building has been secured. Surface soil, except for one very limited area, is below action levels for pentachlorophenol. That area has been covered with plastic and crushed stone eliminating the possibility of direct contact with contaminants. The water supply well has not been impacted.

Remedy Description and Cost

Remedy Description for Operable Unit 01

Placement of a six inch vegatative cover layer overlaying a 12-inch compact clay layer to reduce exposure. Implementation of a groundwater monitoring program. Institutional controls restricting future site usage and groundwater usage. Annual certification that the controls are in place and being adhered to.

Total Cost	$259,269
Capital Cost	$70,803
OM&M Cost	$12,000

Issues / Recommendations

Based upon recent information, the NYSDEC is considering changing the remedy called for in the ROD.

A remedial design has been completed for Camp Summit, another correctional facility contaminated with the same waste. During the design for Camp Summit, it was learned that actual costs for excavation and disposal of this waste stream is significantly less than estimated during the feasibility study.

Using the information gathered during the Camp Summit design, the cost estimate for excavation and off-site disposal of the waste at Camp Pharsalia was recalculated. The present worth estimated in the FS was $1,048,000, but the present worth estimate is now $505,000. This new cost estimate compares more favorably with the $259,269 estimated for the ROD-selected remedy of capping the waste on site.

Off-site disposal would not require long term site management. Therefore, a short term groundwater monitoring program would be implemented to monitor the effectiveness of the remedy. The only institutional control associated with site would be to restrict groundwater use until the residual contamination has attenuated. It is recommended that a ROD amendment requiring excavation and off-site disposal of the contamination be approved.

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

June 4, 2007

Mr. Dale Desnoyers, Director
Division of Environmental Remediation
NYS Dept. of Environmental Conservation
625 Broadway – 12th Floor
Albany, NY 12233-7011

RE: Final ROD Amendment
Camp Pharsalia
Site #709013
Pharsalia (T), Chenango County

Dear Mr. Desnoyers:

Staff reviewed the May 2007 Final Record of Decision Amendment for the Camp Pharsalia site. I understand that the selected remedy will be modified from capping of waste materials on-site to excavation and off-site disposal. The site will be restored by bringing in approved backfill, placing additional topsoil as necessary, and seeding. I also understand that a groundwater monitoring program will be implemented to monitor the natural attenuation of residual groundwater contamination. A Site Management Plan will be developed and implemented to restrict future use of groundwater at the site. Furthermore, an institutional control in the form of an environmental easement will be imposed that would require: (a) compliance with the approved site management plan; (b) restricting the use of groundwater as a source of potable or process water; and (c) submission of a periodic certification to the NYSDEC. Based on this information, I believe the Record of Decision Amendment is protective of public health and concur with it.

If you have any questions, please call Mark VanValkenburg at (518) 402-7860.

Sincerely,

Steven M. Bates, Assistant Director
Bureau of Environmental Exposure Investigation

cc: G. A. Carlson, Ph.D./A. Grey, Ph.D.
Mr. G. Litwin/Mr. VanValkenburg/ File
Ms. H. Hamel - CNYRO
Mr. G. Kaiser – CCHD
Mr. D. Smith - DEC
Mr. G. Townsend - DEC Region 7

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RECORD OF DECISION AMENDMENT
CAMP PHARSALIA SITE

Camp Pharsalia / Chenango County / Registry No. 7-09-013 May 2007

Prepared by the New York State Department of Environmental Conservation
Division of Environmental Remediation

1.0 INTRODUCTION

On March 31, 2003, the New York State Department of Environmental Conservation (Department or NYSDEC) signed a Record of Decision (ROD) which selected a remedy for the Camp Pharsalia Site. The ROD signed in March 2003 chose "Containment - Low Permeability Cover System" (Containment - LPCS) as the remedy for the site based on the evaluating criteria presented in the Remedial Feasibility Study. However, since the remedy selection, revised cost estimates have become available through the remedial design for the Camp Summit site, another incarceration facility contaminated with the same type of waste. Camp Summit's remedial design showed that excavation and disposal costs were not as high for the type of waste found at Camp Pharsalia as was originally determined. Therefore, up to date cost estimates have been developed for two remedial alternatives originally evaluated in the Remedial Feasibility Study: Containment - LPCS and Excavation with Off-Site Disposal. Based on the evaluation of alternatives and the acceptance by the public the NYSDEC has amended the remedy for the Camp Pharsalia site to "Excavation and Off-Site Disposal."

A public comment period ran from March 12, 2007 to April 10, 2007 and a public meeting was held on March 28, 2007 at the Pharsalia Town Hall.

2.0 SITE INFORMATION

2.1 Site Description

The Camp Pharsalia site is one of three New York State Department of Correctional Services (NYSDCS) facilities in the State currently under investigation or remediation by the NYSDEC due to former wood treatment operations. Each of the three sites is an active incarceration facility operated by the NYSDCS, and located on property under the jurisdiction of the NYSDEC.

The site is located within the Camp Pharsalia Incarceration Facility located in the Town of Pharsalia, Chenango County (Figure 1). The 25-acre property is owned by the NYSDEC, but operated by NYSDCS. The inactive hazardous waste site occupies approximately 0.25 acres, in the southwest portion of the property. The site consists of a one story wood-framed former wood treatment building and surrounding grassy area. The site is immediately bordered by the correctional facility to the north, an old Civilian Conservation Corps Truck Trail on the east, and state-owned land on the south and west (Figure 2). The surrounding land is rural, and primary uses are residential and agricultural. The nearest private residence is approximately one quarter mile northeast of the site.

2.2 Site History

The Camp Pharsalia site was operated as a sawmill and wood treatment operation. The treatment plant was constructed as a dip tank process. The process operated from approximately 1960 to 1977. Seasoned wood poles were staged on the east end of the treatment building. The logs were moved by an overhead hoist into the treatment building and placed in the dip tank. The top of the dip tank was at floor level. Wood was treated using a pentachlorophenol (PCP) solution consisting of approximately one part PCP to eleven parts fuel oil.

After treatment, the poles would be raised from the dip tank and remain over the tank for approximately four hours. This would allow most of the unabsorbed product to drip back into the dip tank. The poles were then moved to one of the areas designated for the storage of treated posts outside the treatment building. Drums of PCP were reportedly stored on the west side of the treatment building. The fuel oil used in the treatment process was stored inside the treatment building in tanks.

In October of 1997 the NYSDEC Division of Operations requested that the Division of Environmental Remediation (DER) perform an environmental investigation at Camp Pharsalia.

The DER completed a Preliminary Investigation (PI) at Camp Pharsalia in 1999. The investigation found PCP in the soil directly below the treatment building and the area extending to the west of the building. The soil under the building was also tested for dioxin, a common impurity in PCP, which was found above cleanup criteria. Based on these findings, in December of 1999, the NYSDEC listed the Camp Pharsalia site on the State's Registry of Inactive Hazardous Waste Disposal Sites. The site was designated a Class 3 site, which is defined as a site which "Does not present a significant threat to the public health or the environment - action may be deferred."

In 2001, the NYSDEC initiated a Remedial Investigation/Feasibility Study (RI/FS) for the Camp Pharsalia site. The RI was developed to build on the information generated during the PI and to help fully delineate the extent of contamination known to exist.

The Record of Decision for the site, calling for Containment - LPCS of the waste, was issued by New York State Department of Environmental Conservation on March 2003.

2.3 Nature and Extent of Site Contamination

As described in the original ROD and other site documents, many soil and groundwater samples were collected at the site to characterize the nature and extent of contamination. The primary contaminants of concern include the semi-volatile organic contaminants (SVOCs) PCP and poly-aromatic hydrocarbons (PAHs), and dioxins/furans.

Surface Soil

During the RI, surface soil samples were collected from nine locations based on historical treatment plant operations. Samples were collected from approximately 0 to 2 inches below ground surface (bgs). All surface soil samples collected were sent for laboratory analysis of SVOCs, dioxins and metals. Surface soil sample locations are illustrated on the Sample Location Map (Figure 3).

SVOCs were detected in five of the nine samples collected ranging in concentrations from 0.096 parts per million (ppm) to approximately 272 ppm total SVOCs. The only SVOC that exceeded an applicable standard, criteria, or guidance value (SCG) was PCP. The four areas found to exceed the guidance value were located on the west side of the treatment plant. Detected levels of PCP ranged from 1.0 ppm in SS-8 to 272 ppm in SS-5 (Figure 3). The SCG for PCP is 1.0 ppm. PCP was detected in SS-7 in the area west of the treatment plant at levels below the SCG (0.096 ppm vs. 1.0 ppm).

In addition, all nine samples were sent for the analysis of dioxins. Although dioxins and furans were detected in all the samples ranging from 0.05348 - 7.841 parts per billion (ppb), only four samples (SS-5, SS-6, SS-8 and SS-9) possessed 2,3,7,8,-TCDD equivalence above the SCG of 1.0 ppb. These sample locations are consistent with the locations of elevated concentrations of PCP.

Subsurface Soil

A total of fourteen soil borings were installed at the site during the remedial investigation. Boring locations are shown on Figure 3.

Soil borings SB-1 and SB-2 exhibited a petroleum-like sheen at the soil water interface and petroleum-like odors from the soil water interface (approximately 5 feet bgs) to 14 feet bgs. Soil boring SB-11 exhibited the same type of sheen at the soil water interface (approximately 5 feet bgs) and strong petroleum-like odors from 0-8 feet bgs. Elevated PID readings were also recorded at this interval. Petroleum-like odors were detected throughout SB-3 and SB-5. No notable odors, sheens or PID readings were detected in SB-4, SB-6, SB-7, SB-8, SB-9, SB-10, SB-12, SB-13, and PMW-6A.

Soil borings SB-1, SB-2 and SB-3 had detectable levels of several SVOCs; however, no analytes were detected above the SCG for total SVOCs or individual analytes. Soil borings SB-8 through SB-13 and PMW-6A possessed concentrations of bis(2ethylhexyl) phthalate below the guidance value of 50 ppm. Bis(2ethylhexyl) phthalate is not related to the treatment process and is a common laboratory contaminant. PCP was not detected in any of the subsurface soil samples during the RI.

Toxicity Equivalence Factors are tools for estimating the combined risks from exposure to complex mixtures of polychlorinated dioxins (PCDDs) and furans (PCDFs). None of the fourteen soil samples collected possessed a 2,3,7,8-TCDD equivalence greater than the 1.0 ppb SCG. The equivalence concentrations ranged from non-detect (ND) to 0.002183 ppb (SB-2, 10-12 feet). The toxicity equivalence methodology reduces uncertainties and is less likely to underestimate risks than are methods based on a single compound (e.g., 2,3,7,8-TCDD) or a class of compounds.

Groundwater

During the PI, four water samples were analyzed for dioxins/furans and all exceeded the groundwater SCG of 0.0007 parts per trillion (0.00132 ppt to 0.19 ppt). The highest concentration was found in PMW-5, which is located directly downgradient of the treatment plant, within the area of subsurface soil contamination. To verify the reliability of the data, two blank samples consisting of distilled water were also analyzed: the concentrations of dioxin in the distilled water were reported as 0.00132 ppt and 0.00564 ppt. This indicates that the sample results for PMW-1 (0.0023 ppt), PMW-2 (0.00132 ppt), and PMW-4 (0.00245 ppt) likely reflect laboratory contamination and are not indicative of contamination associated with the site.

During the RI two rounds of groundwater sampling were completed. Groundwater was sampled for SVOCs in December 2001 and for SVOCs and dioxins/furans in November 2002. PCP was not detected in groundwater during the RI. Similarly, dioxins/furans were not detected in any of the monitoring wells during the 2002 sampling event.

During monitoring well installation and sampling, faint fuel oil odors were detected at several of the wells. To address this observation, water samples were collected for NYSDOH analytical methods 310.34 and 310.13. These methods are used to detect and quantify fuel oil in drinking water. Diesel range organic compounds were detected in well PMW-1 during the 2001 sampling event and in wells PMW-5 and PMW-6 in the 2002 sampling event. This data suggests that fuel oil constituents are present in groundwater.

2.4 Summary of Human Exposure Pathways

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 3.3 of the RI report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

There are no complete exposure pathways currently at the site. Potential pathways include:

- Direct contact with contaminated surficial soils located immediately to the west of the treatment building, where freshly treated poles were allowed to drip prior to more permanent storage. There is currently an institutional control (e.g. area restriction) in place which limits worker and inmate access to the contaminated area.

  Direct contact with contaminated subsurface soils by construction or utility workers in the future.

- Ingestion of potentially contaminated shallow groundwater in the immediate area of the treatment building is a potential pathway, should a well be installed there in the future.

2.5 Summary of Environmental Assessment

This section summarizes the existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

There are no nearby surface waters or wildlife habitats that could be impacted by the contaminated soils, however, if not addressed (i.e. removed or otherwise controlled) the identified contamination has the potential to further contaminate groundwater.

2.6 Original Remedy

Upon signing the March 2003 ROD, the NYSDEC selected Alternative 6B, Containment - LPCS, as the remedy for this site. The elements of this remedy are as follows:

A remedial design program would have been implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

Demolition and offsite disposal of the former treatment building.

Placement of a LPCS including: (a) Vegetative Layer – approximately 6 inches of topsoil that serves to reduce erosion, (b) Low Permeability Layer – approximately 12 inches of compacted clay to reduce infiltration into the impacted media; and (c) Geosynthetic Demarcation Barrier - a geotextile fabric between the cap and the fill material to serve as a demarcation between the clean and contaminated materials.

4. The site would have been restored by grading to insure proper drainage, placement of additonal topsoil as necessary, and seeding.

   A soils management plan would have been developed to address residual contaminated soils that may be excavated from the site during future redevelopment. The plan would require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations.

6. An institutional control would have been imposed, in such form as the NYSDEC may approve, that would have required compliance with the approved soils management plan.

7. Institutional controls would have been imposed in the form of existing use and development restrictions preventing the use of overburden groundwater as a source of potable or process water without necessary water quality treatment as determined by the Chenango County Department of Health Services.

8. The NYSDEC Division of Operations, or any successor in title, would have completed an annual certification until it is determined that a certification is no longer needed. This submittal would have contained certification that the institutional controls and engineering controls put in place, pursuant to the Record of Decision, are still in place, have not been altered, and are still effective.

9. Since the remedy would have resulted in untreated hazardous waste remaining at the site, a long term groundwater monitoring program would have been instituted.

10. A notification would have been sent to the county clerk for filing, to notify future owners of the residual contaminants remaining in the soil on the site.

3.0 DESCRIPTION OF PROPOSED CHANGES

3.1 New Information

The Camp Pharsalia site is one of three NYSDCS facilities in the State being addressed by the NYSDEC due to former wood treatment operations. The other two facilities are Camp Summit and Camp Georgetown. During the remedial design of the remedy for the Camp Summit site, it was determined that the cost of excavation and off-site disposal of wastes similar to those found at Camp Pharsalia would be significantly less expensive then originally estimated. This new information has led the NYSDEC to perform a new cost analysis for the Camp Pharsalia site. The cost for excavation and off-site disposal is now estimated to be significantly less then what was originally determined and, therefore, excavation and off-site disposal now appears to be a more favorable remedy. The significant decrease in the estimated cost of the excavation and off-site disposal, increased protection of human health and the environment, and cost savings in future operation, monitoring and maintenance (OM&M) have caused the NYSDEC to change the remedy.

3.2 ROD Changes

The Excavation and Off-Site Disposal remedy will address the PCP and dioxin impacted soil by excavating the soil for off-site disposal. The areas of concern are delineated in Figure 4. Specifically, the source areas will be excavated using conventional methods and equipment and the existing treatment building will be demolished and removed. Soil impacts were observed in the area northwest of the treatment plant and beneath the treatment plant at deeper depths. Consequently, soil will be excavated to a depth of 5 feet bgs in the area northwest of the treatment plan and 10 feet bgs beneath the treatment plant to remove the impacted soil exceeding SCGs. The estimated removal volume is 720 cubic yards of soil, measured in place. A 20% bulking factor yields roughly 860 cubic yards of soil that would be managed by excavation. This differs from the original remedy that would have left the waste on-site to be contained and covered.

Because the water table at the site is typically at 3 to 6 feet bgs, excavation operations will require dewatering. Groundwater will be treated on-site by a temporary treatment system. The total amount of groundwater to be treated could be approximately 13,000 gallons.

4.0 EVALUATION OF ROD CHANGES

4.1 Remedial Goals

Goals for the cleanup of the site were established in the original ROD. Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-2.8. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

exposures of persons at or around the site to pentachlorophenol, dioxins/furans and fuel oil in surface and subsurface soils; and

- the release of contaminants from soil into groundwater, further degrading groundwater quality.

Further, the remediation goals for the site include attaining to the extent practicable:

- compliance with all applicable standards criteria and guidance (SCGs).

4.2 Evaluation Criteria

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the original Feasibility Study.

The first two evaluation criteria are called threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Excavation and Off-Site Disposal will be protective of human health and the environment since contaminated soil will be removed from the site. Containment - LPCS alternative would have been protective of human health and the environment by covering the contamination with a protective cover. However, the Containment - LPCS would have left the contaminated media in place and therefore be less protective of human health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

The primary SCGs to be attained are soil SCGs based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels." and 6 NYCRR Subpart 375-6 - Remedial Program Soil Cleanup Objectives). For dioxins/furans the SCG is 1 ppb of 2,3,7,8-TCDD equivalence. For PCP, the SCG is 1 ppm.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Both alternatives will have short-term impacts. The impacts associated with construction will be more significant with the Excavation and Off-Site Disposal alternative which requires significantly more excavation and handling of the contaminated media. The Containment - LPCS alternatives would have left the contaminated media in place and would of had considerably fewer short-term impacts.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Achieving long-term effectiveness will best be accomplished by Excavation and Off-Site Disposal, which removes the contaminated media. Containment - LPCS would have covered the contamination in place and should have been effective in the long term, although contingent on long-term monitoring. Excavation and Off-Site Disposal will eliminate the potential for human and environmental exposure to contaminated soil. Covering the contaminated soil and leaving it on site would have significantly reduced the potential for human and environmental exposure, however, this would require long term maintenance of the cap and groundwater monitoring.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Excavation and Off-Site Disposal will greatly reduce if not eliminate the mobility, toxicity and volume of contaminants at the site. Covering the waste with a low permeability cover system would not have reduce the toxicity and volume of contaminants, but would have greatly reduce the mobility of contaminants.

6. Implementability. The technical feasibility and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Excavation and Off-Site Disposal will be easy to implement by using conventional excavation techniques. The contamination identified at this site may require disposal as hazardous waste and, depending on the contaminant concentration, pre-treatment may be required. This alternative will require a pre-design sampling program to identify which material will be disposed as hazardous waste, which material will require pre-treatment (e.g. incineration), and which material will be disposed as non-hazardous waste.

Containment - LPCS could have been implemented using standard construction techniques and the cap design would have been straightforward.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis (Table 1). Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The cost of the alternatives varies significantly. Although excavation and off-site disposal results in greater reduction in toxicity, mobility and volume of contaminated soils, Containment - LPCS could be implemented at lower cost.

Excavation and Off-Site Disposal is a permanent remedy, but it is also the more costly remedy. The present worth cost to implement the Excavation and Off-Site Disposal remedy is estimated to range from $505,000 to $606,000. It is likely that this remedy will favor the low side of this estimate due to the assumption that most of the contaminated material will be disposed off-site, without pre-treatment, by direct landfilling. The higher side of the cost of this alternative is based on a conservative estimate that will assume half of the contaminated material will be disposed by direct landfilling, one quarter of the material will require pretreatment, and the remaining quarter of the material will require incineration. The present worth cost estimate to implement the Containment - LPCS alternative is $293,000.

Excavation and Off-Site Disposal will not leave a source of contamination on-site, which will greatly reduce operation monitoring and maintenance (OM&M) costs. OM&M for the Containment - LPCS alternative is estimated for a 30 year period and a cost of $208,000. Even though the cost estimate for OM&M for Containment - LPCS is based on a 30 year period, In actuality this remedy would require OM&M indefinitely therefore, would incure a higher cost then estimated. OM&M for Excavation and Off-Site Disposal is estimated for a 5 year period and a cost of $34,000.

The 2003 present worth cost estimate of $1,048,000 for Excavation and Off-Site Disposal was the evaluation criteria that originally disqualified this alternative from being selected. However, the revised (2006) present worth of the alternatives are now $505,000 for Excavation and Off-Site Disposal and $293,000 for Containment - LPCS, a difference of $212,000. The present worth cost for Excavation and Off-Site Disposal is greater then Containment - LPCS, however significantly lower then originally estimated.

Table 1

Record of Decision - March 2003 Cost Estimates

Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
Excavation and Off-Site Disposal (March 2003 original estimate)	$997,000	$51,000	$1,048,000
Containment - LPCS (March 2003 original estimate)	$71,000	$188,000	$259,000

Record of Decision Amendment Revised Cost Estimates - September 2006

Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
Excavation and Off-Site Disposal (September 2006 revised estimate)	$471,000	$7,900	$505,000
Containment - LPCS (September 2006 revised estimate)	$85,000	$14,000	$293,000

8. Community Acceptance. Concerns of the community regarding the proposed changes are evaluated during the public comment period for this proposed amendment. A responsiveness summary has been prepared that describes public comments received and the manner in which the Department will address any concerns raised.

5.0 SUMMARY OF ROD CHANGES

The Department is proposing to amend the Record of Decision (ROD) for the Camp Pharsalia Site.

The elements of the amended remedy are as follow:

A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program;

Demolition and off-site disposal of the former treatment building and its contents;

Excavation and off-site disposal of approximately 860 cubic yards of contaminated soil (Figure 4). Localized groundwater contamination will be extracted and shipped off-site to be treated as part of the dewatering process during soil excavation;

Site restoration by bringing in approved backfill, grading to insure proper drainage, placement of additional topsoil as necessary, and seeding;

Implementation of a groundwater monitoring program to observe the effectiveness of the remedy;

Development of a site management plan to provide the details of the groundwater monitoring plan;

Imposition of an institutional control in the form of an environmental easement that will require compliance with the approved site management plan; restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Chenango County Health Department; and the property owner to complete and submit to the Department a periodic certification of institutional controls; and

8. The property owner will provide a periodic certification of institutional controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

6.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the Camp Pharsalia Site environmental restoration process, a number of Citizen Participation activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

1. A repository for documents pertaining to the site was established.

2. A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

3. A Factsheet was mailed to the nearby property owners announcing the availability of the proposed ROD amendment and the public meeting.

4. A public meeting was held on March 28, 2007 at the Pharsalia Town Hall.

5. A public comment period for the propose ROD amendment was established, beginning on March 12, 2007 and ending on April 10, 2007.

6. A Responsiveness Summary (Appendix A) was prepared and included as part of this document, to address the comments received during the public comment period for the proposed ROD amendment.

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Camp Pharsalia
Proposed Record of Decision Amendment
Town of Pharsalia, Tioga County
Site No. 7-09-013

The Proposed Record of Decision Amendment for the Camp Pharsalia site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and issued to the local document repository on March 8, 2007. This Proposed Record of Decision Amendment outlined the preferred remedial measure proposed for the remediation of the contaminated soil at the Camp Pharsalia site. The preferred remedy is excavation of the PCP and dioxin contaminated soils, building demolition, and institutional controls.

The release of the Proposed Record of Decision Amendment was announced via a notice to the mailing list, informing the public of the Proposed Record of Decision Amendment's availability.

A public meeting was held on March 28, 2007 which included a presentation of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site.

The public comment period for the Proposed Record of Decision Amendment ended on April 10, 2007.

This Responsiveness Summary responds to all questions and comments raised at the March 28, 2007 public meeting and to the written comments received.

The following are the comments received at the public meeting, with the NYSDEC's and NYSDOH's responses:

COMMENT 1: Regarding the institutional control that restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Chenango County Health Department; Is someone proposing to install a groundwater extraction well on the site which would require the Chenango County Health Department to review the proposal? Is this institutional control for the site only or include the surrounding area also.

RESPONSE 1: This institutional control is for the site only. There is not a current proposal to install a groundwater extraction well. This institutional control is for potential future groundwater extraction wells. The Chenango County Health Department would have to review any future potential proposals.

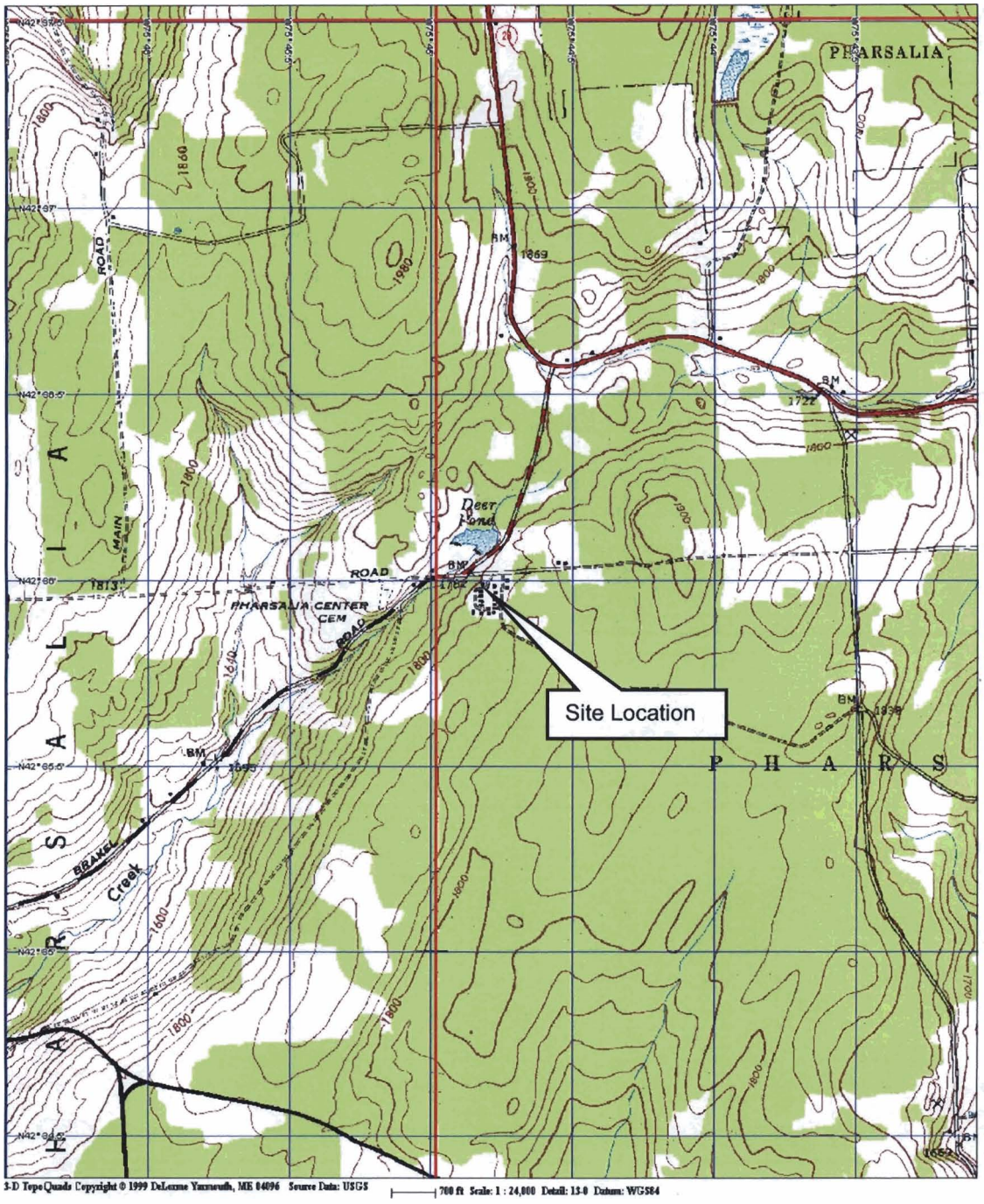
COMMENT 2: Does New York State Department of Environmental Conservation or Health have any groundwater data from residential wells that dioxin was analyzed for?

RESPONSE 2: The New York State Department of Environmental Conservation does not have residential drinking water data. The data for the last groundwater sampling event (November 2002) for the site related

groundwater monitoring showed dioxins present in groundwater below the New York State Drinking Water Standards.

COMMENT 3: Have the wells serving the correctional facility been sampled?

RESPONSE 2: The wells serving the correctional facility were sampled for dioxin during the remedial investigation and none was detected.



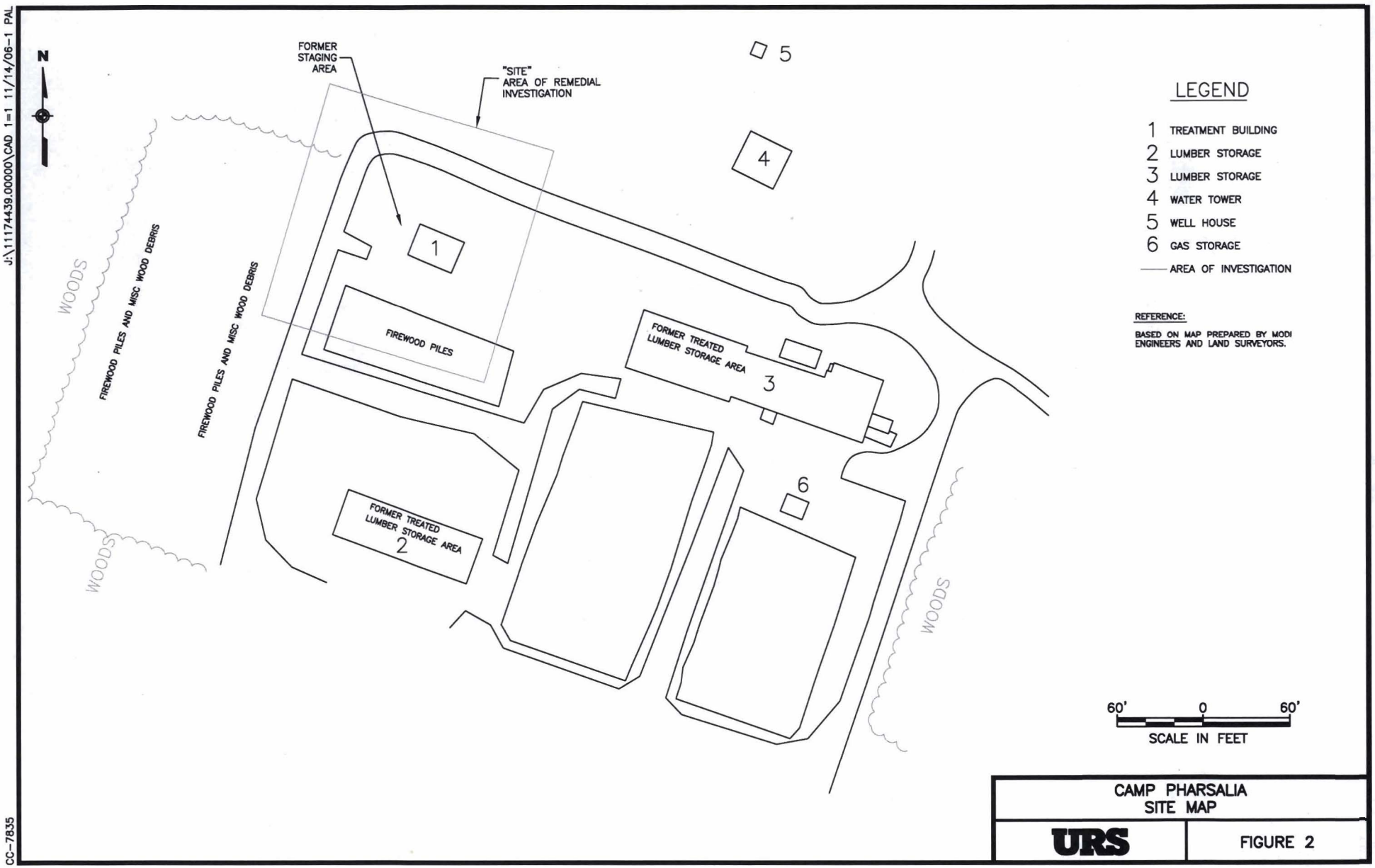
Scale: 1:24,000

Reference:
DeLorme 3-D Topo Quads, 1999
Yarmouth, Me.
Datum WGS84

URS

Figure 1
Site Location Map
Camp Pharsalia

J:\11174439.00000\CAD 1=1 11/14/06-1 PAL

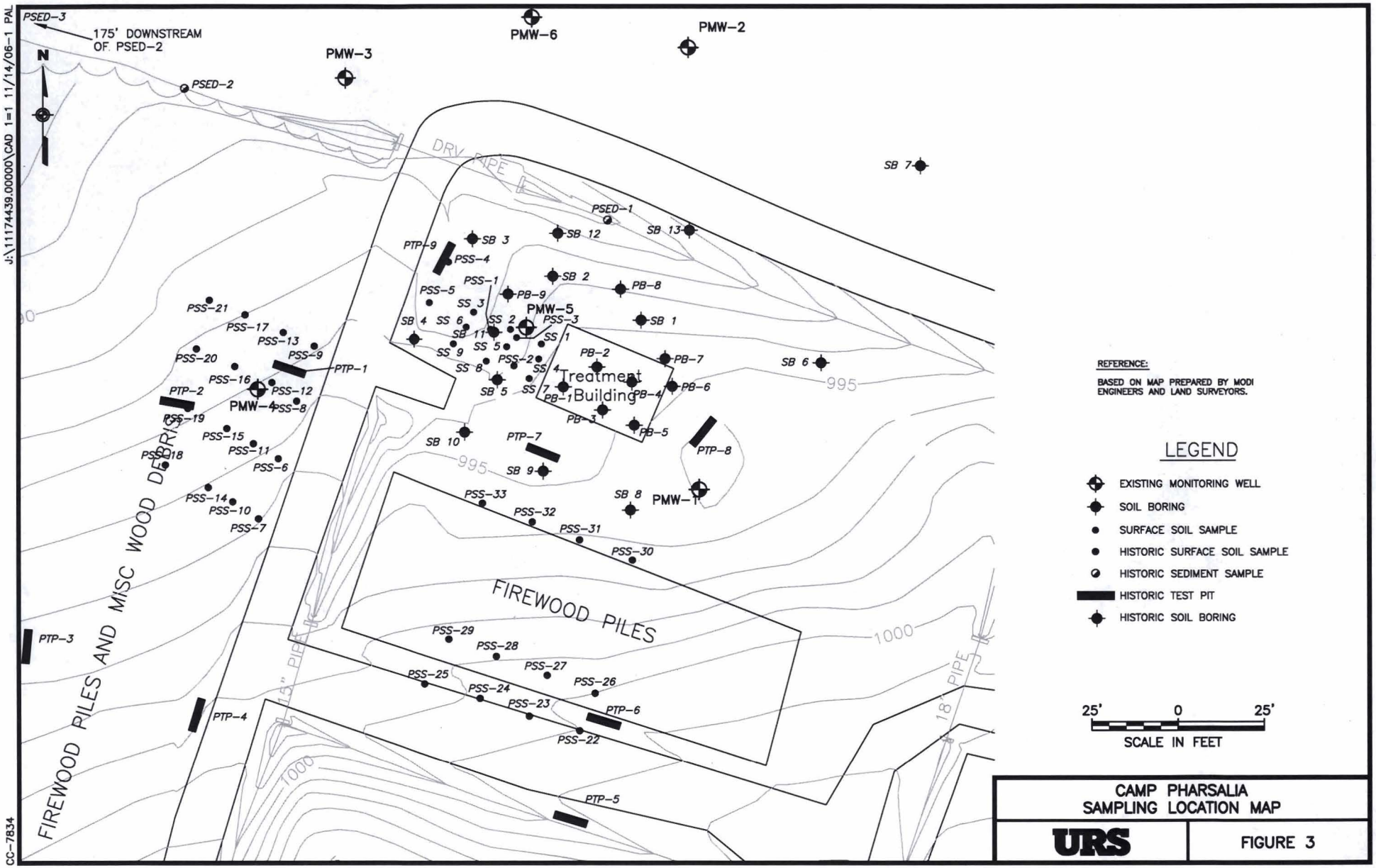


CAMP PHARSALIA
SITE MAP

URS

FIGURE 2

CC-7835



CAMP PHARSALIA
SAMPLING LOCATION MAP

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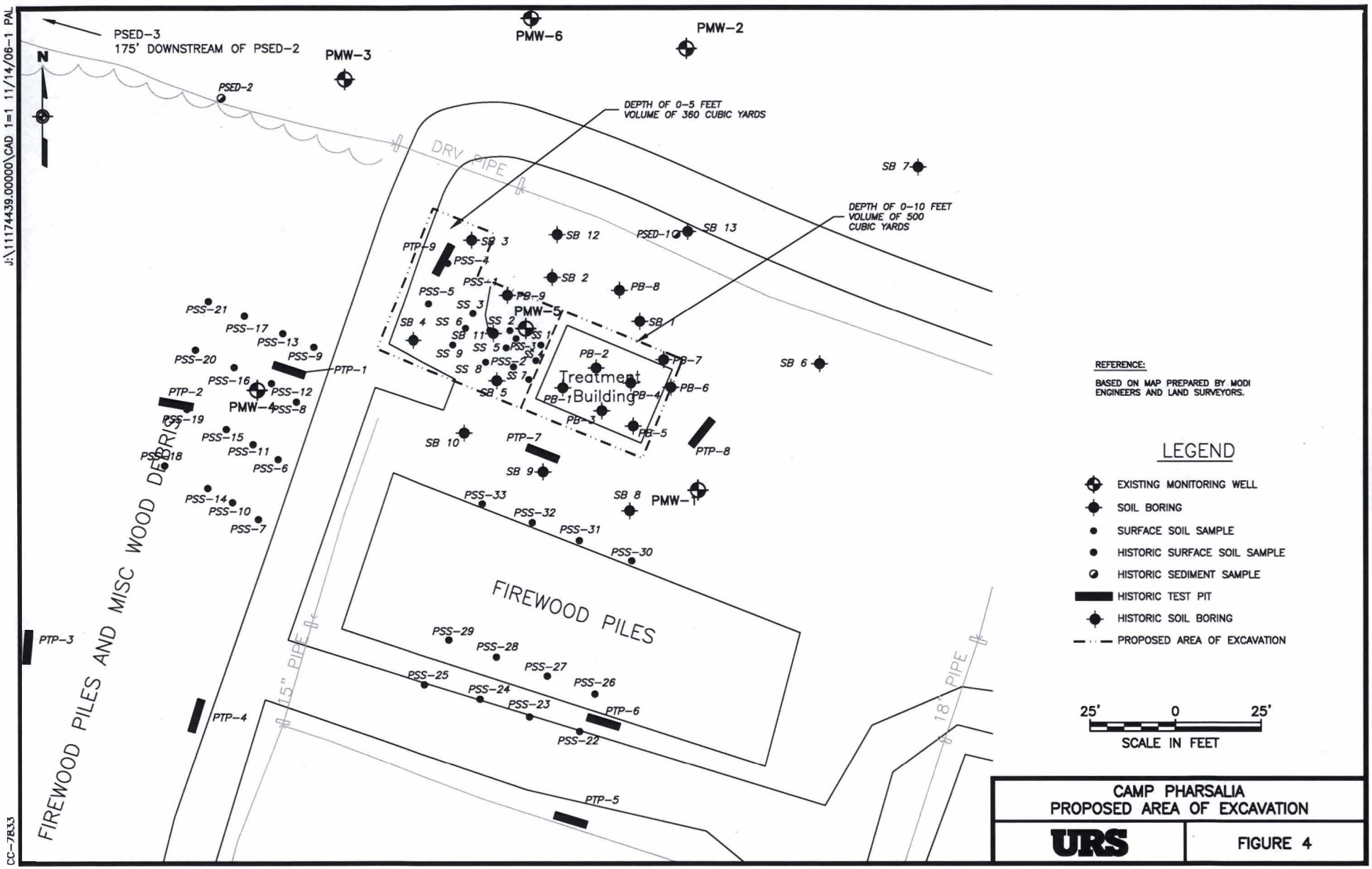
FIGURE 3


J:\11174439.00000\CAD 1=1 11/14/06-1 PAL
CC-7833
PSED-3
175' DOWNSTREAM OF PSED-2
N
PSED-2
PMW-3
PMW-6
PMW-2
DRV PIPE
DEPTH OF 0-5 FEET
VOLUME OF 360 CUBIC YARDS
DEPTH OF 0-10 FEET
VOLUME OF 500
CUBIC YARDS
SB 7
SB 13
PSED-1
SB 12
SB 3
PTP-9
PSS-4
PSS-1
SB 2
PB-8
PSS-5
PB-9
SS 3
PMW-5
SB 4
SS 6
SS 2
SB 1
SB 11
SS 1
SS 5
SS 9
PSS-2
PB-2
PB-7
SB 6
SS 8
SS 7
Treatment
Building
PB-1
PB-4
PB-6
SB 5
PB-3
PB-5
PTP-1
PSS-21
PSS-17
PSS-13
PSS-9
PSS-20
PSS-16
PSS-12
PMW-4
PSS-8
PTP-2
PSS-19
PSS-15
PSS-11
PSS-18
PSS-6
SB 10
PTP-7
PTP-8
SB 9
PSS-14
PSS-10
PSS-7
PSS-33
SB 8
PMW-1
PSS-32
PSS-31
PSS-30
FIREWOOD PILES AND MISC WOOD DEBRIS
FIREWOOD PILES
PTP-3
PSS-29
PSS-28
PSS-27
PSS-26
PSS-25
PSS-24
PSS-23
PTP-6
PTP-4
PSS-22
15" PIPE
18" PIPE
PTP-5
REFERENCE:
BASED ON MAP PREPARED BY MODI
ENGINEERS AND LAND SURVEYORS.
LEGEND
EXISTING MONITORING WELL
SOIL BORING
SURFACE SOIL SAMPLE
HISTORIC SURFACE SOIL SAMPLE
HISTORIC SEDIMENT SAMPLE
HISTORIC TEST PIT
HISTORIC SOIL BORING
PROPOSED AREA OF EXCAVATION
25' 0 25'
SCALE IN FEET
CAMP PHARSALIA
PROPOSED AREA OF EXCAVATION
URS
FIGURE 4