

Stresau Laboratory, Inc.

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2006 FEB 2 PM 3 00

Jim Ross
Hazardous Waste Specialist
WDNR
810 W. Maple St.
Spooner, WI 54801

Mark Harder
Environmental Engineer
WDNR
3911 Fish Hatchery Road
Fitchburg, WI 53711

RE: Feasibility and Plan of Operation Report Call-in
EPA ID#: WID 020488011, Hazardous Waste License: Thermal Treatment Unit (#06024)

Dear Sirs;

Stresau Laboratory, Inc. received a letter from Ms. Connie Antonuk, Waste Team Supervisor, Northern Region, WDNR, dated February 02, 2005, informing us that our license would expire on August 07, 2006. A copy of this letter can be found in Attachment A.

According to the letter, we have the option to discontinue operations or to submit an updated FPOR for renewal review. Discontinuance would involve following the closure requirements as stated in the letter. SLI has opted to continue with operations and submit an updated FPOR. Our decision to continue was communicated to Ms. Antonuk in a letter dated March 08, 2005. A copy of this letter can be found in Attachment B.

As to the need for this facility, the reasoning stated in the original FPOR submission remains appropriate to our specialized operations, and is provided in Attachment C. To aid in our decision to continue TTU operations, we contacted a company specializing in the destruction and disposal of reactive waste, EBV EEC, Joplin, MO. A copy of the cost comparison and correspondence is included in Attachment C.

To achieve compliance with EPA and WDNR regulations, much background information was gathered, prepared and presented in the original FPOR. As much of this information has not significantly changed, parts of the original FPOR are to be referenced in this submission for renewal. Any changes reflecting current conditions, operations, procedures and/or the general facility have been noted and included.

By this updated FPOR submission, Stresau Laboratory, Inc. is requesting that the Department renew and extend the current TTU Hazardous Waste License (#06024) for a 10-year period from the date of current expiration. Additionally, SLI is requesting that the Department rescind from the original Conditions of Issuance, Item #13 (see below), as stated in the Department's letter of March 13, 1996.

13) No burning activities that produce loud noises may occur during the morning hours (4:00 am to 12:00 pm) from May 1st through June 30th when the Kirtland's warbler surveys in the jack pine tract in Section 23 of Casey Township are being performed. Stresau Laboratory, Inc. shall

contact the U. S. Fish & Wildlife Service office in Green Bay, WI to determine when surveys will occur during any given year, at phone number 414/433-3803.


As to Item #13, we are of the understanding that the Kirtland's warbler nests in young growth jack pine. As the jack pine in the section referenced has matured, this survey is no longer conducted. Refer to correspondence in Attachment D.

To assist Stresau Laboratory, Inc. in the preparation, review and certification of this updated FPOR, we have retained the environmental engineering of Short Elliott Hendrickson, Chippewa Falls, WI. To provide assistance in compliance to Wisconsin statutes and codes and other legal matters, we have retained the services of Quarles & Brady LLC, Milwaukee, WI.

This FPOR has been prepared with the assistance of the Stresau Laboratory, Inc. Compliance Specialist, and reviewed by the responsible corporate officer. Both names and signatures appear below. Please address any additional questions, concerns and approvals to both at the address and phone shown.

Respectfully submitted,


Richard Hoff
Compliance Specialist


Michael J. Pesko
Chief Operating Officer

Stresau Laboratory, Inc.

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March 17, 2006

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Jill Schoen, CHMM
Waste Management Specialist
WDNR
West Central Region Headquarters
1300 W. Clairemont Ave.; POB 4001
Eau Claire, WI 54702-4001

Jim Ross
Hazardous Waste Specialist
WDNR
810 W. Maple St.
Spooner WI 54801

RE: Feasibility and Plan of Operation Report – Certification Statement
EPA ID#: WID 020488011, Hazardous Waste License: Thermal Treatment Unit (#06024)

Dear Ms. Schoen and Mr. Ross,

During our conference call of Thursday, March 16, 2006, Ms. Schoen brought to our attention that the Certification Statement was missing from our FPOR submission. As such, we are providing this letter, to be included in the original submission directly following the Stresau Laboratory, Inc. FPOR Call-in response, and just ahead of the SEH Certification letter.

The required language was provided by Ms. Schoen, as follows:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted, is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


Michael J. Pesko, Chief Operating Officer

3/17/06
Date

Submitted by:


Richard Hoff, Compliance Specialist

Cc: File



January 14, 2006

RE: Stresau Laboratory, Inc.
Feasibility and Plan of Operation Report
SEH No. ASTRES0501.00 14

Mr. Richard Hoff
Compliance Specialist
Stresau Laboratory, Inc.
N8265 Medley Road
Spooner, WI 54801

Dear Mr. Hoff:

Stresau Laboratory, Inc. (SLI) retained Short Elliott Hendrickson Inc. (SEH®) to assist with the preparation and review of their updated Feasibility and Plan of Operation Report (FPOR) required for the renewal and extension of SLI's current Thermal Treatment Unit (TTU) Hazardous Waste License (#06024). Based on our review of the draft FPOR, updated December 21, 2005, and on information provided by you based on your telephone conversations with Mr. Jim Ross and Mr. Mark Harder, Wisconsin Department of Natural Resources, SEH believes that the updated FPOR has been prepared in general accordance with applicable plan and operational requirements of chs. NR 630, 670, 675, 680 and 685, Wis. Adm. Code.

SEH understands SLI had several discussions with Mr. Ross and Mr. Harder regarding the format and content of the updated FPOR and assumes the format and content will be generally acceptable to the WDNR for the following reasons, at a minimum:

- In general, the operation, maintenance and monitoring (OMM) of the TTU is not complicated and SLI has made numerous improvements to the TTU and associated OMM since the original FPOR and licensing
- Much of the information provided in the original FPOR has not changed; therefore, information provided in the original FPOR may only be included by reference in the updated FPOR
- SLI does not accept waste from off-site sources for treatment in the TTU

In accordance with the requirements of ch. NR 680.05(1), Wis. Adm. Code, the following certification is provided with submittal of the report:

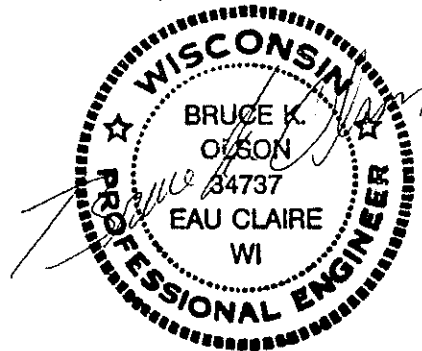
I, Bruce K. Olson, PE, hereby certify that I am a registered Professional Engineer in the State of Wisconsin in accordance with ch. A-E 4, Wis. Adm. Code and that this report has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code.

Sincerely,

Bruce K. Olson, PE (Wis. No. 34737-006)
Principal/Project Manager

BKO/dj

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Feasibility and Plan of Operation (FPOR), Updated May 10, 2006

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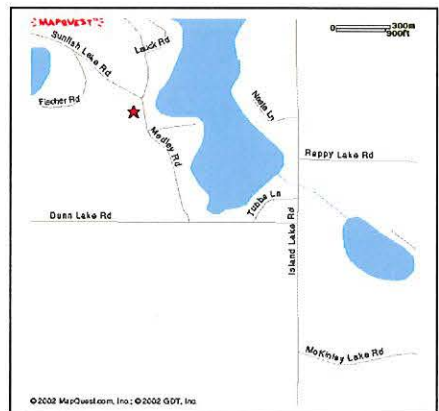
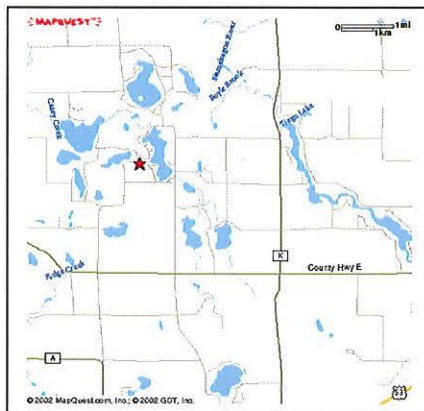
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Section 1: Local Approvals – Reference NR 680.06(1)

The question as to whether or not Stresau Laboratory, Inc. was required to seek local approval for license renewal was posed to the firm of Quarles & Brady LLP. As SLI was in operation prior to any zoning laws, the facility was zoned as industrial. As SLI sought and gained local approval for the initial operation license, it is our opinion that no approval is necessary for a renewal license based upon the findings and opinion of Quarles & Brady. A copy of their memo to SLI is contained in Attachment E.

Section 2: General Facility Description – Reference NR 680.06(3)

Stresau Laboratory, Inc. is located approximately ten (10) miles northwest of Spooner, Wisconsin. The eastern boundary of the site is West Dunn Lake Road. The southern boundary is Dunn Lake Road. Dunn Lake is east of Stresau Laboratory, Inc. and Sunfish Lake is northwest of Stresau Laboratory, Inc. The property is described as Gov. Lots 5, 6 and 8 in the Township of Casey, Section 23, T 40N R13W. Please refer to the Map Section of this report for more detailed maps on the Dunn Lake region, a facility topographical map, facility drawing and other pertinent maps and drawings. For general description purposes, please refer to the maps and photos below:



Stresau Laboratory, Inc. viewed from NE to SW (circa 07/1998)

The rural recreational setting of Stresau Laboratory, Inc. dictates the recreational-residential use of the land, primarily east of the facility on Dunn Lake. The land immediately west of the Stresau Laboratory, Inc. property is zoned Forestry. The University of Wisconsin, Eau Claire is the present owner. Adjacent property to the north and south is also zoned Forestry. The Stresau Laboratory, Inc. property is zoned Industrial, with a strip one hundred (100) feet wide along the outside perimeter zoned Forestry. Attachment V contains a copy of the Washburn County Tax Map (which shows adjacent land owners) for the area around the facility, as well as other required maps.

Section 3: Preliminary Hydrologic, Geologic and Meteorological Information –

As there have been no known changes to the information previously provided, the following is inserted from the 1993 FPOR:

Landform

The area topography, shown in Map 4, Attachment V, is relatively flat in the southern half of the site, with a gentle slope toward Dunn Lake. The northern half of the site is characterized by slightly hummocky topography with maximum local relief of about 35 feet.

Soils and Geology

A detailed soil survey has not been done for the area; however, a general survey done by the Soil Conservation Service indicates that the soil in the site area is made up of the Omega-Pence-Chetek soil association. This association is described as being excessively drained, nearly level to gently sloping, loamy sand to sandy loam underlain by stratified sand or gravelly sand. This material underlying the soil is described as glacial outwash.

While a detailed soil survey has not been completed the Soil Conservation Service (SCS) has surveyed soils north of the SLI property. This survey has found most soils in this region to be of the Menahga series (See Attachment F). The Menahga series consists of very deep excessively drained, sandy soils formed in glacial outwash under coniferous forest on outwash plains and valley trains, the surface soil is black and very dark grayish brown loamy coarse sand and coarse sand 4 inches thick. The subsoil is dark brown, dark yellowish brown and brown coarse sand 20 inches thick. The substratum is pale brown coarse sand. Slopes range from 0 to 45 percent. Areas are used for woodland, cropland and pastureland. In conversation with the SCS soil scientist, Mr. Fred Simeth, located in Spooner expects that soils on the SLI property be also of the Menahga series. These soils have the following characteristics:

TABLE 1 SOIL CHARACTERISTICS			
Depth (in)	Permeability (in/hr)	pH	CEC (meg/100g)
0-4	6.0-20	4.5-6.5	2-10 (topsoil)
0-4	6.0-20	4.5-6.5	1-7 (subsoil)
4-24	6.0-20	4.5-6.5	1-4
24-60	6.0-20	5.6-7.3	1-4

Depth to bedrock in the area is generally in excess of 95 feet below the ground surface. USGS maps indicate that surficial material across the majority of the site, except for the southeast corner, is immediately underlain by the Precambrian Chengwatana Volcanic Group. The Group is described as a light to dark gray breccia and tuff with individual flow units being 15 to 95 feet thick; the total thickness of the Group can vary from zero to 25,000 feet. The surficial material in the southeast corner of the site is in contact with the Cambrian Mount Simon Formation, which is composed of a medium to coarse-grained, quartzose, feldspathic sandstone at least 160 feet thick. The lower units in this formation include, from top to bottom, a very fine to fine-grained quartzose sandstone about 120 feet thick; a silty shale about 55 feet thick; and a very fine to fine-grained quartzose sandstone about 110 feet thick.

The property does not contain any major faults running through it, and the nearest faults are several miles away.

Surface Hydrology

The average evapotranspiration for the general area is about 18 inches per year. Lakes formed during the glacial epochs dominate the surface topography in the region. Dunn Lake, directly to the east, and Sunfish Lake to the west are the nearest permanent surface water bodies. Dunn Lake abuts the six-acre parcel leased by SLI for recreational activities. In general, soil permeability is high, averaging 5 to 10 inches/hour, indicative of a high recharge potential. For this reason, ponding of surface water at the site is rare.

Ground-Water Hydrology

Published data indicate that ground-water flow in the region is to the northwest; however, the on-site wells have not been surveyed and gauged to determine the direction of ground-water flow in the immediate area.

Depth to ground water in the driven point wells (Nos. 2 and 4) are about 10 to 20 feet below grade. When the deep well (No. 1) was drilled in 1979, the well log indicates that water was first encountered at about 60 feet below grade. When the well was sampled in subsequent years, however, records indicate that the water level was about 20 feet below grade.

The deep well at SLI produces about 22 gallons per minute (gpm); most of the other wells within several miles of the site, and screened in the near surface glacial material, yield between 10 and 25 gpm.

The bedrock lava flows thought to underlie some of the site are not considered good municipal sources of water, since the maximum well yield reported is only 20 gpm.

Climate/Meteorology

The climate in the area of the facility is temperate continental. Daytime summer temperatures for Spooner range from an average of 69 to 81 degrees F., and nighttime summer temperatures range from an average of 46 to 56 degrees F. Winter daytime temperatures range from an average of 20 to 38 degrees F., and nighttime temperatures average -2.4 to 15 degrees F. The ground is generally frozen from late November to early April with the maximum frost depth being about 30 inches. Total annual precipitation averages 29 inches with the average annual snowfall totaling 50.6 inches. Snowfall accounts for about 15 percent of the total annual precipitation.

Section 4: Background/Overview –

Stresau Laboratory, Inc. is a facility that is involved with energetic devices. This involvement encompasses Research and Development, Testing and Evaluation, and also Assembly and Manufacturing. Waste energetic materials, residual energetic material and energetic components or devices are examples of reactive wastes generated by this Lab. The energetic materials in the preceding examples are small in volume or quantity and many times are not compatible with each other, i.e., primary energetic material with secondary energetic material. Requirements concerning reactive wastes are many; however, throughout the process of storage and treatment, segregation by energetic material classification is paramount.

Extremely large portions of SLI's contracts are U.S. Government related (in excess of 90%). DOD (Department of Defense) munitions contracts normally have government supplied energetic materials. Consequently this produces energetic waste storage licensing problems for this laboratory. The residuals that result from a government program are U.S. Government property. Nevertheless, these energetic components or powders are many times in the category of reactive wastes. Final disposition of program residuals usually do not occur until the contract obligation has been satisfied and disposition instructions for residuals are directed to SLI by the cognizant DOD PCO (Procuring Contracting Officer).

The customary course of action is that the cognizant PCO grants approval for SLI to dispose of the residuals from the program. Should this include any reactive wastes, destruction would be performed via open burning destruction on site. The PCO will also demand that the DOD Contractors' Safety Manual for Ammunition and Explosives (DOD 4145.26m) be followed.

It is the policy of SLI based on the above discussion to not consider stored program residuals waste until they are notified by the PCO that they will not be used in some other program and that they should be disposed of. Until SLI receives this notice stored program residuals are considered products. SLI prefers to return program residuals to the owner by shipping them as Class A explosives whenever possible. However in small quantities it is not economically feasible to do so and the residuals are deemed waste and thermally treated.

Historically, SLI has destroyed its generated reactive wastes (D003) daily and government owned reactive wastes upon direction. This has been performed in an effective concrete encapsulated pit with two substantial steel, fluid tight, liners. This pit is detailed in Attachment G. The daily waste consists of wet wipe-ups used in the production line areas to remove energetic material dust accumulation caused by the production line operations, (an OSHA requirement). Assembly line operation's reactive waste is placed in containers and is oil-saturated to reduce or eliminate its reactivity. The waste is then open pit burned on a daily schedule, WDNR Forestry staff requests an annual permit (See Attachment H) and weather conditions permitting. Reference NR 630.05(1) and (2).

Open Burning/Open Detonation does not in itself constitute land disposal, however in some cases land disposal restrictions may impact residue (ash) management.

A by-product of the open burning process is ash residue. SLI has established a waste stream for this residue. Please refer to Attachment I, containing copies of ash analysis performed by Waste Research & Reclamation, Eau Claire, WI. Reference NR 630.12(1).

The ash waste stream is managed by collection, packaging, storage, shipment, and then landfill disposal. The ash is manually collected and packaged into fifty-five (55) gallon drums. The drums are sealed and then stored inside Building 14 until shipment time.

A log is kept which details the quantity of daily waste placed into the burn pit and ash removed. A separate log is kept which details daily waste along with rejected energetic materials and/or devices by type. Copies of the 2003 and 2004 Annual Summary, used to complete the annual WDNR Consolidated Report (CRS), can be found in Attachment J. There are two basic kinds of waste disposed of at this facility, daily waste and waste energetic material. Daily Waste contains:

- 67.3% # Fuel Oil (used as fuel and to inert explosiveness)
- 32.2% Paper (wet ones, paper towels, small amounts of packaging)
- 00.5% Energetic materials

Building 14 is specially designed to meet EPA requirements. Informational sheets on Building 14 are located in Attachment K. A review of the plans will show how the floor was designed to contain possible spills. The floor is capable of confining the contents of the largest container stored there and also confining more than ten percent (10%) of the total amount of stored waste. Reference NR 630.05(1) and (2).

All hazardous waste shipped from this site is manifested on the appropriate state or EPA manifest forms. Should the land disposal restriction notification and or certification apply to a waste stream, it is observed and complied with.

Currently the waste solvents and ash are sent to a recycler, Waste Research and Reclamation (Identification # WID990829475), the solvents are recycled or destroyed. The ash is stored at Waste Research and Reclamation's site until shipped to an EPA licensed landfill.

Rollins Environmental Services in Louisiana, (Identification # LAD010395127), has been used to landfill the ash in the past.

Special Note: Over the past few years, SLI has been successful in reducing the amount of hazardous materials being annually shipped for off-site destruction and/or disposal. As such, on January 31, 2005 our Hazardous Waste Generator Status was changed from that of a Small Quantity Generator to that of a Very Small Quantity Generator. Please refer to Attachment L for a copy of the WDNR issued Hazardous Waste Status Change Form (Form 4430-12). Being a VSQG, our collected TTU ash and Lab Packs are now picked-up and processed through the Northwest Regional Planning Commission's "Clean Sweep" program on an as need basis.

Section 5: Waste Classifications –

5-A: Reactive Wastes

Waste energetic materials are categorized as reactive wastes, (D003). The types of energetic materials used at Stresau Laboratory, Inc. are many and this adds to the potential for a vast array of reactive wastes. Please note that the volume of reactives in NEWt (net explosive weight) is low, however, it is the variable of energetic material types at this site that produce so many categories of noncompatible reactive wastes.

SLI is not limited to manufacturing of energetic products. SLI, also, performs research, development and testing. It is difficult to provide WDNR with an "All-Inclusive List" of energetic materials, that are potentially reactive, utilized or manufactured at this site. What SLI will provide at this time is a list of routine products that are commonly used at this site. This list is based on destruct records since 1984. It is from this list that the prodigious amounts of SLI reactive wastes are derived. SLI will provide any additional reactive waste information desired by the WDNR or USEPA upon request. SLI cannot guarantee that the list contains all

wastes that could be treated in the TTU. Future record keeping will allow SLI to expand the list and allow WDNR review of new wastes disposed of. It should be noted that SLI is treating reactive wastes, not specific products and that we feel that the following list is representative at the present time.

NOL-130	Barium Chromate
RD-1333	Boron
RDX	Tungsten Delay
CH-6	Lead Styphnate
PBXN-5	A-1-A
Black Powder	PETN
HNS	Z2Z
HMX	Daily Waste
NOL-60	Fuel Oil
M-9	Rejected Explosive Components
Expulsion Charge	Acetone (cleaning benches)
Benite	Isopropyl Alcohol (wet ones & cleaning Lead
Ignition Charge	Azide)
PBXW-7	Air Filters
	Vacuum Bags

High performance air filters are used in the ventilation system of the production building. The filter captures energetic materials dust in the air.

Workbench spills are captured by a wet vacuum system that saturates spilled energetic materials in a 10wt oil contained in the system vacuum bag. These filters are changed every 24 hours of production and disposed of as daily waste. These bags are also treated as reactive waste.

Regarding analysis of waste ash from the burning process, SLI is aware that TCLP analysis of the ash is required by DNR prior to disposal. In fact, SLI began using the TCLP method prior to the September 1, 1992 effective date. Refer to Attachment I.

5-B: Contaminated Solvents

Various solvents are used at this facility for part washing and cleaning. **Note:** Parts washing involves clean-up activity in our Explosives Preparation department – SLI does not utilize a parts washer in our machining or maintenance departments. Solvents that are not contaminated with reactive wastes are containerized, shipped and recycled. Solvents that are contaminated with reactive wastes are treated in the TTU as daily waste. The quantity of reactive laden solvent is small. Typically, waste solvent is found on wet wipes. Isopropyl Alcohol is the solvent most commonly found on the wet wipes. Acetone is used for cleaning work areas and Ethyl Alcohol is used to wash Lead Azide. The above procedures result in reactive contaminated solvents that are treated in the TTU.

5-C: Ignitable Wastes

The vast majority of waste disposed of at this facility is No. 1 fuel oil. (As previously explained, No. 1 fuel oil is used as a fuel and to deactivate energetic materials waste). SLI conducted a flash point test on a sample of on-site fuel oil, and this test indicated No. 1 fuel oil has a flash point of 130-133 degrees F. A flash point <140 degrees F. is characterized as an ignitable waste (D001).

Section 6: Waste Analysis Plan – Reference NR 630.12, 630.13(1)& 680.06(3)c

It is the policy of SLI based on the discussion in *Section 4, p. 2*, to not consider stored program residuals waste until they are notified by the PCO that they will not be used in some other program and that they should be disposed of. Until SLI receives this notice stored program residuals are considered products. Daily waste is considered reactive waste as it is generated and is normally treated daily.

The SLI waste analysis plan for reactive (D003) waste is not complex. SLI segregates the reactives (as they develop), into compatibility groups for storage. This task is not difficult as the energetic powders are a "known". When destroying overages or rejected D003 materials, reviewing a U. S. Government supplied Hazardous Component Safety Data Sheet (HCSDS) or manufacturers Material Safety Data Sheet (MSDS) predetermine chemical and physical properties. For reactive contaminated solvents a similar procedure is used. Basically, the procedure is to determine what waste is to be treated, review the appropriate MSDS, segregate the wastes according to compatibility, record the waste on the destruct log and thermally treat it.

After thermal destruction, the remaining ash and residue is collected from the burn pit, containerized, transported to Bldg. #14, and placed in a 55-gal. steel drum. This procedure is detailed in GWI-EXP-2, 7.5, contained in Attachment P. As the amount processed waste and collected ash has greatly decreased since the initial FPOR approval it is no longer necessary to sample twice per year or every 5-drums. The Waste Analysis Plan is being revised to performing an analysis on an annual basis or when the waste has a significant change in its constituent make-up. WRR Environmental Services Co., Inc., Eau Claire, WI, or other Wisconsin Certified Laboratory, shall be retained to collect a representative sample of the TTU ash, per the current method referenced in NR 605, Appendix I. The sample is to be analyzed for metals by the TCLP method, or most current requirement. Please refer to Attachment I for current documentation.

Section 7: Description of Security Procedures and Equipment – Reference NR 630.14 & 680.06(3)(d)

Site access to the reactive wastes is controlled by double locked steel doors, in the case of magazines, and to the TTU with a locked entrance gate and rolling roof that is secured to posts on all four corners. Please refer to Attachment G for TTU details. A chain link security fence, with locked gate, to prevent unauthorized access, surrounds the TTU. A locked steel door secures the TTU ash residue stored in Bldg. #14. Locked steel doors, locked gates and security fences provide needed site control.

Through the implementation of a chain link security fence, storage magazines with steel doors using double hooded padlocks and the rolling roof over the TTU, it is the opinion of SLI that we have met the intent of NR 630.14(1). "The owner or operator shall prevent the unknowing entry, and minimize the possibility for unauthorized entry ...". When this facility is not in use it is secured as to prevent any intrusion, knowingly or unknowingly. Adequate warning signs are affixed to the fence.

Additionally, SLI has recently installed a CCTV surveillance system to monitor after hours entrance to the general facility. Activity is monitored on a daily basis, with event activity being recorded in a log.

Section 8: Inspections Schedule – Reference NR 630.15 & 680.06(3)(e)

A company procedure has been written regarding hazardous material inspections (GWI-EXP-5, Attachment M). The procedure contains an inspection log as well as a schedule.

The burn pit is inspected by the operator prior to commencing with a burn (See Attachment M). Ash is periodically removed, placed in buckets and transported to Bldg. #14 for secure storage. At this time, the steel sleeve is inspected for cracks, broken welds, fractures, holes and weak areas.

In the past, the steel liner was removed and subjected to hydraulic testing. Since the installation of the rolling roof covering the entire TTU slab, precipitation is prevented from coming in contact with the TTU slab, so there is nothing to collect in the run-off tank. As the burn pits are constructed in such a manner as to prevent any ground water intrusion and precipitation and run-on is prevented, it is SLI's position that hydraulic testing of the steel liner is no longer necessary and is eliminating this practice unless a visual inspection would indicate a compromise of the structure of the steel liner or pit, or if water is present in the pit area. The revised procedure shall include an annual certified visual inspection, with one copy being sent to the WDNR-Spooner Hazardous Waste Specialist.

The SLI facility is periodically inspected by Northwest District, WDNR Hazardous Waste Specialist, and at least 4 times per year by DoD DCMA. Please refer to Attachment N for the most recent WDNR inspection notes.

Section 9: Personnel Training – Reference NR 630.16

The collection, separation, storage, transportation, TTU operation, ash collection and storage is under the control and direction of the Explosives Preparation Department. Personnel involved have partaken in initial and annual refresher HAZWOPER training. Refresher training is current with State and Federal regulations, and is normally scheduled to participate with area WDNR personnel. Training certification copies can be found in Attachment O. Training records for current and past employees are retained indefinitely in personnel files.

Section 10: Description of Prevention Procedures – Reference NR 630.21 & 630.22

Section 10-A: Prevention of Unloading Hazards – Reference NR 680.06(3)(f)(1)

All phases of the TTU operation are conducted by personnel from the Explosive Preparation department, and are governed by written procedures as described below, with copies contained in Attachment P:

GWI-EXP-1: Collection & Storage of Explosive Waste: This procedure describes the collection, pick-up, transportation, separation and storage of daily and energetic materials waste from the production buildings;

GWI-EXP-2: Burning Reactive Waste: This procedure covers the safety requirements, energetic materials load limits and the conditions under which burning is allowed. Includes form 97K6568, TTU Pre-flight Checklist.

GWI-EXP-3: Burning Reactive Waste in the Burn Trough: This procedure covers the burning of larger quantities of loose powders.

GWI-EXP-4: Burning Scrap Detonators: This procedure covers the procedure used to safely burn larger quantities of detonators utilizing the burn pit.

GWI-SAF-3, P. 8, s. 7.6: Emergency Situation Protocol: This procedure covers steps to be taken to properly handle emergency situations, including fire and chemical related incidents.

GWI-SAF-18: Disaster Recovery Plan: This procedure covers the coordination and management of recovery activities immediately following a disaster.

Section 10-B: Communications –

SLI uses our facility telephone system for the main means of communication. This phone system is equipped with an all-page feature that is referenced in several procedures. As for the TTU, when a burn is planned, no less than two (2) Explosives Preparation personnel are involved – an operator and an assistant serving as an observer. As the TTU is located in a remote part of the facility, waste to be treated and personnel utilize a company truck for transportation. As the use of cell phones, 2-way radios, CB's and other such communication devices are not allowed within this area, should an emergency situation arise, the observer is stationed at a distance with the truck at the ready. Should need arise, the assistant would go to the nearest building with an available phone, announce the emergency and summon help.

Section 10-C: Fire Prevention Equipment -

SLI has in excess of 50 ABC type fire extinguishers throughout the facility, with no less than 2 in the company truck. Additional equipment includes water backpacks and various grass and brush fire fighting tools. SLI has provided training and equipment to a volunteer group to assist in fire control until the Spooner Fire Department arrives. To minimize the occurrence of accidental fire, vegetation within the TTU fenced area is routinely mowed and a 25' cleared strip is maintained outside of the fence. The protocol for this situation is covered in GWI-SAF-10, Grass/Forest Fire Procedure contained in Attachment Q.

Section 10-D: Prevention From or Flooding of Waste Handling Areas, and Prevention of Contamination of Water Supplies – Reference NR 680.06(3)(f)(2) & (3)

Section 10-D(1): Water Infiltration - Water infiltration and spills of any kind are visually inspected for as each authorized employee enters a storage unit. Visual survey of any storage facility entered is standard procedure. Any liquid noted would be collected and properly containerized for process testing prior to disposal. Since all the wastes are under roofs, the probability of water contacting the wastes, (Liquids, Reactives, and Solids), is extremely remote. In the event that water does infiltrate the storage areas, the integrity of the containers most likely will be maintained. Therefore the water may be mopped up and the collected water discharged. Should any of the containers appear to be compromised the WDNR, Spooner, will be consulted before any collected water is discharged.

Section 10-D(2): Run-on Contaminant – Reference NR 630.20(3) As described previously in this report, the waste energetic materials will be stored in dedicated areas inside buildings (storage magazines). Storage areas are equipped with concrete floors. The waste energetic materials will be

containerized and stored in accordance with DoD Contractors' Safety Manual. Since wastes are containerized and stored inside, the possibility of water contacting the wastes is minimal.

The burn pit is constructed of concrete and equipped with a watertight steel liner of sufficient thickness to withstand any probable explosions. All energetic wastes will be destroyed in the liner or in the trough portion of the burn area, thus keeping ash confined to the watertight steel liner that is inspected prior to any burn and emptied periodically by personnel from Explosives Preparation.

The TTU area is located at a higher elevation than land surrounding it. The area has a concrete surface with a 6" curb along the perimeter. The infiltration rate of soil surrounding the area is high. These precautions prevent run-on from occurring at the site.

The policy of Stresau Laboratory is to not burn during precipitation events and to leave the rolling roof and sliding covers over the burn pits closed when not in use. This serves to limit the likelihood of precipitation entering the burn pit steel sleeve or concrete silo. There have been infrequent occasions when precipitation has entered these areas. In the past, this water was not removed, rather wastes were placed in the pit and the materials ignited on top of the water. The heat from the burn process is adequate to remove water by evaporation. SLI has altered all burn procedures such that the operator will inspect the steel sleeve for water prior to loading the unit. If water is present, he will not burn reactive waste that day, rather he will load the sleeve with approximately 2 gallons of fuel oil and ignite it to remove water by evaporation. Destruction of reactive waste will be done the following day.

Section 10-D(3): Contaminated Ground Water – Reference NR 630.05(1) The Burn Pit is a fluid tight steel liner which is five- eighths (5/8) of an inch thick on the walls and three- quarters (3/4) of an inch thick on the base. This liner is inside a watertight concrete silo that is poly-lined between the silo and the earth. The burn trough is a fabricated steel channel with a "V" bar as an inside liner. Please review the plans, Attachment G.

Ground water contamination should not be a problem or a concern for these reasons:

1. The site is higher in elevation than the surrounding area. Therefore no run-on is possible.
2. The site has a poly-liner under it.
3. For contamination to leave the pit it must pass through a steel liner, a sealed reinforced concrete silo liner and then poly-liner. The use of reinforced concrete was an improvement used in the construction of the new burn site to prevent cracking.
4. For contamination to leave the trough area it must pass through a double steel trough, a sealed concrete slab, and a poly-liner.
5. The water in the holding tank has been analyzed and reports indicate that only 910 micrograms (worst case) of lead per liter are in the water, ergo-no hazard.

As a part of the initial FPOR, groundwater and soil sampling was conducted to gather information on existing conditions and to establish a benchmark to gauge future sampling. SLI has conducted annual groundwater sampling from the three (3) wells nearest the TTU, and one (1) well located to the

southwest of the TTU. Copies of the most current sampling (2003 & 2004) can be found in Attachment Q. In both reports, sampling produced no detections of cadmium, lead, mercury or silver, and other metals included in the analysis are indicated to be in stable or decreasing concentrations. Due to the lack of any significant findings in soil samples at SLI's North Site, a reduction in the rate from annually to biennially was requested and granted. With the addition of the rolling roof system covering the entire TTU slab, preventing any precipitation from collecting, and the consistently "non-detection" of tested metals, SLI shall be modifying the groundwater sampling schedule of the four (4) wells associated with the TTU and the soil sampling at the North Site to every two (2) years.

Section 10-D(4): Precipitation Run-off – Reference NR 630.05(2) As stated in the previous Section above, with the installation of the TTU rolling roof system, precipitation run-off is no longer a concern, as it does not come into contact with the TTU slab; however, for whatever reason, should precipitation in any form come in contact with the TTU slab, it shall be collected in the existing 2,000-gallon collection tank. The initial sizing and installation of the 2,000-gallon collection tank was based upon the data gathered and calculated in the original FPOR (page 25 of 78). It was calculated that the 25-year rainfall would produce 1,952 gallons of run-off to be collected.

Section 10-D(5): Groundwater Monitoring – Reference NR 630.05(1) In addition to addressing whether risks presented by an open-burning/open-detonating (OB/OD) unit are acceptable for permitting, the groundwater and subsurface conditions provide guidance as to whether groundwater monitoring is advisable, both during the operating life of the facility and during the post-closure care period, if post-closure care is required. In general, our preliminary assessment indicates groundwater contamination is not a concern, and groundwater monitoring should not be required either for the operating life of the unit or after closure. This situation is typical of OB in fabricated devices where waste residues are not in contact with the ground, OB/OD of wastes that do not of themselves or through their residues pose a hazard of groundwater contamination, or where groundwater is unusable so that contamination is not a concern.

Groundwater monitoring will be appropriate, if at all, where potential contaminants will be present in quantities that give rise to concern of exposures at unacceptable levels and where containment structures do not provide assurance of complete containment and cannot be inspected. Principally, such operations would involve OB on the ground surface. This is not the case at the SLI facility.

The discussion herein will be limited to factors unique to OB/OD operations.

Groundwater monitoring wells that will be used during the life of the facility must be located a sufficient distance from the unit so that they will not be damaged by detonation or burning at the unit. Thus, it may not be possible to place monitoring wells at the usual point of compliance, i.e., the boundary of the waste management area. The potential damage from waste detonation makes monitoring infeasible for OD.

As to post-closure care, where the groundwater assessment indicates the need for post-closure care because of possible groundwater contamination, groundwater monitoring should be part of post-closure care.

Based upon past sampling and analysis of non-detection of cadmium, lead, mercury or silver, it is the recommendation of this report to not conduct groundwater monitoring.

Section 11: Mitigate the Effects of Equipment or Power Failures – Reference NR 680.06(3)(f)(4)

Due to the simple nature of disposing of waste in the burn pit, a power failure is not an issue -- no power is used to treat the waste. By following carefully written procedures, equipment failure should not occur. The major equipment component in the burning operation is the steel liner. The liner is constructed of 5/8" steel sides with a 3/4" base. The DNR 1st notice of incompleteness, included in the 1993 FPOR, requested engineering calculations to support the design of the burn pit. Unfortunately, no such calculations exist. The burn pit design and procedures are the result of many years of operation. The pit design under use was developed through a trial and error procedure over the years. The design has proven itself able to withstand thermal, vibration and shock stresses to which it is exposed. The steel liner is inspected prior to each burn to insure that it is continuing to perform in a safe, efficient and environmentally sound manner, and shall be annually inspected by a Wisconsin Registered Engineer, as specified in GWI-EXP-5 (Attachment M).

Section 12: Prevention of Exposure to Personnel – Reference NR 680.06(3)(f)(5)

Several policies and procedures have been written and audited to ensure the proper, efficient and safe gathering, handling, storage, processing, ash collection and waste removal provides proper prevention of exposure to personnel. Refer to Attachment R.

Section 13: Spill Control and Decontamination Equipment –

In the event of a spill, any contaminated sorbent booms or clay would be containerized and shipped to a hazardous waste landfill or thermally treated, whichever is appropriate. A spill on the ground surface would be cleaned up with a shovel and contaminated soils would be properly disposed of. Most decontamination of equipment could be done with soap and water.

LIST OF EMERGENCY EQUIPMENT:

<u>EQUIPMENT</u>	<u>QUANTITY</u>	<u>LOCATION</u>	<u>DESCRIPTION CAPABILITIES</u>
Shovel	1	Building 14	Non-sparking
Sorbent clay	100 pounds	Building 14	Clay
Sorbent booms	5	Building 14	20 foot lengths, 140 L
Fire extinguishers	30	Various	5 & 10 Lb. ABC TYPE
Gap seal	2 pounds	Building 14	Plugs leaky drums
Salvage drum	1	Building 14	55 gallon
Respirators	2	Building 14	Half mask
Gloves	100	Building 14	Assorted types
Protective suits	20	Building 14	Tyvek & Sarinex

In the event of a spill, SLI annually contracts for the services of a licensed hazardous waste contractor. Waste Research & Reclamation (WRR), through its RESCO division, is contracted for these services. A copy of the current contract can be found in Attachment S.

Section 14: Precautions to Prevent Accidental Ignition or Reaction of Ignitable, Reactive or Incompatible Wastes - Reference NR 630.17 & 680.06(3)(g)

Reactive wastes will be stored in an "appropriate" energetic materials storage magazine. The criteria that will rule on "appropriate" are as follows:

1. Reactive wastes must be storage compatible with whatever is in the storage magazine. DoD Contractors' Safety Manual 4145-26M, Chapter 5 Storage Compatibility System, will dictate "appropriate" as above;
2. Proper labeling will play a major part in proper storage of reactive wastes. Proper labeling will designate reactive wastes from compatible explosive storage;
3. All SLI Storage Magazines are DoD and ATF approved.

Section 15: Solvent, Waste Solvent and Hazardous Waste Storage –

Bldg. 14 is the specified building for storage of solvents, waste solvents, hazardous waste (TTU ash) and daily waste storage. Information on the building location and layout can be found in Attachment K.

Section 16: Traffic Pattern, Estimated Volume and Control – Reference NR 680.06(3)(h)

When the initial FPOR was being prepared, SLI, in March 1992, had one hundred and forty-two (142) employees at the Dunn Lake facility. This number is currently less than 60 employees. There are presently approximately ten to fifteen (10-15) lake homeowners that must travel north of the SLI facility driveway. Traffic is therefore almost entirely SLI employees on the town road that provides ingress and egress to the facility. Traffic near the TTU is entirely SLI employees and authorized visitors. The estimated average daily traffic (workdays only) is less than three hundred (300) vehicles on the town road and five (5) near the burn site. Traffic controls on the town road are standard.

Traffic near the burn site is controlled by the Explosives Preparation Department personnel. Signs have been added along the road to the TTU that read "Danger-Keep Out". The TTU operator will uncover the signs when he approaches the TTU area and traffic will be restricted in this area until the critical part of the burn is over, typically 1-3 hours after ignition.

Section 17: Locational Standards – Reference NR 630.18 & NR 680.06(3)(i)(1)

Neither the TTU site or storage areas are located within a 100-year floodplain, it does not appear as a flood hazard area on the Washburn County FEMA map. See Attachment T for a copy of the Washburn County FEMA map for the Dunn Lake area. The map clearly shows that neither the TTU area or storage areas are within a 100 year floodplain.

Neither the TTU site or the storage areas are located within a wetland. A NR103 review of this site is required for licensing this facility. A copy of the Wetlands Map for this area was included within the initial Environmental Assessment. This map clearly shows the non-existence of wetlands in the vicinity of the TTU site. The TTU site should have no impact on wetlands. Therefore, it is our understanding that this discussion

should be adequate in exempting this facility from further NR103 review. Attachment T contains a concurrence from the DNR Water Management Specialist that the SLI operation does not impact wetlands.

The physical location of the TTU from the property boundaries is more than adequate for this operation. Refer to Attachment G for actual distances as shown on the TTU Building Data Sheet.

Section 18: Non-compliance Issues –

As of this writing, SLI is under no non-compliance action from the WDNR or EPA.

SLI received a Notice of Non-compliance, dated November 17, 2003, from Ms. Rhonda Kenyon, WDNR. At issue was the required update to our contingency plan and a current TTU ash analysis. SLI satisfied the non-compliance issues per Ms. Kenyon's reply, dated February 24, 2004. Please refer to Attachment N.

Section 19: Waste Minimization Program - Refer to NR 630.32

Please refer to Attachment U for a full statement of the SLI Waste Minimization Program.

Section 20: Attachment Listing –

Attachment A -	WDNR Call-in Letter, February 02, 2005
Attachment B -	SLI Reply Letter to Antonuk, March 08, 2005
Attachment C -	Explosive Waste Cost Comparison – Off-site Treatment
Attachment D -	Kirtland's Warbler Survey Correspondence
Attachment E -	Local Approval – Legal Opinion
Attachment F -	Soil Conservation Service (SCS) Soil Survey
Attachment G -	Thermal Treatment Unit (TTU) Detail
Attachment H -	WDNR Annual Burn Permit
Attachment I -	TTU Ash Analysis
Attachment J -	WDNR CRS Copies
Attachment K -	Bldg. 14 Details
Attachment L -	WDNR Hazardous Waste Status Change Form
Attachment M -	GWI-EXP-5 Hazardous Waste Facility Inspections
Attachment N -	Non-compliance Issues – WDNR Correspondence
Attachment O -	HAZWOPER Training Certification Copies
Attachment P -	TTU Burn Procedures – GWI-EXP-1, 2, 3, & 4
Attachment Q -	GWI-SAF-10 Grass/Forest Fire Procedure
Attachment R -	GME Groundwater Annual Monitoring Reports
Attachment S -	Current RESCO Contract
Attachment T -	Wetland Determination: FEMA Map & WDNR Memo
Attachment U -	Waste Minimization Program
Attachment V -	Maps
Attachment W -	Revised RCRA Hazardous Waste Part A Permit Application
Attachment X -	Thermal Treatment (TTU) Closure Plan & Related Costs