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Responses to 09/28/04 Notice of Deficiencies and Supplemental Information for the RCRA Hazardous Waste Permit Renewal Application

Prepared for:

Clean Harbors Colfax, LLC
3763 Highway 471
Colfax, Louisiana 71417

Agency Interest #32096
LAD 981055791

DEQ - OES
2004 DEC 20 AM 10: 38

DECEMBER 2004

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CLEAN HARBORS COLFAX, LLC

RESPONSES TO 09/28/04 NOTICE OF DEFICIENCIES RELATED TO THE HAZARDOUS WASTE PERMIT APPLICATION

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CleanHarbors®
ENVIRONMENTAL SERVICES, INC.

December 17, 2004

Via Federal Express

Mr. Michael Vince, Administrator
Louisiana Department of Environmental Quality
Office of Environmental Services/Permits Division
602 N. Fifth Street
Baton Rouge, Louisiana 70802

DEQ - OES
2004 DEC 20 AM 10: 38

Subject: **Responses to 09/28/04 Notice of Deficiencies**
Hazardous Waste Permit Renewal Application
Clean Harbors Colfax, LLC
LAD 981 055 791
LDEQ Agency Interest Number 32096

Attention: **Ms. Karla Vidrine**

Dear Mr. Vince:

In response to the Department's September 28, 2004 Notice of Deficiency (NOD) related to the revised Hazardous Waste Permit Application that was submitted to the Department on August 13, 2003, please find attached five (5) complete bound copies of the facility's responses. This letter, along with the attached appendices, should be considered as supplemental and/or revised information to complement the previous application. Please note that the only drawings included in Appendix B are those that were modified for this submittal. All others that were in the previous application submittal remain a part of the pending application. The facility has included below an itemized listing of each deficiency identified by the Department (listed below in *italics*), followed by the facility's response in **bold**.

LAC 33:V.515.A.15-27 *This information must be included and made part of the Part A/I portion of the permit application.*

15. **The Topographic Maps were included in the appendices. An additional copy of the topographic map is included with this response behind the tab marked "Part A/I Application."**

16. Drawing # 103 addresses this item and is included with the revised Part A/I Application
17. Additional photographs have been included in the Part A/I Application that more clearly depict the operating units at the facility.
18. This information is included on the Part A form.
19. This information is included on the Part A form.
20. This information is included on the Part A form.
21. The facility is an actively operating facility. The types of regulated activities occurring at the site are included in the Part A/I on the RCRA Subtitle C Site Identification form.
22. Clean Harbors Colfax, LLC does not own or operate any other facilities in Louisiana. Its parent company owns other subsidiary companies conducting hazardous waste business in Louisiana, and a list of those companies is included in the Part A/I.
23. This information was included in Appendix A, and a copy has been attached to the revised Part A/I Application.
24. N/A
25. N/A
26. This information was included in Appendices A and Q, and a copy has been reproduced for inclusion in the Part A/I Application.
27. Comments are included on the Part A form.

LAC 33:V.517.A — *The hours of operation/day must be provided. The response "The facility may choose to conduct facility operations anytime during a 24-hour day" is not sufficient.*

The response states that the facility will only thermally treat waste from 30 minutes after sunrise to 30 minutes before sunset. Other administrative activities may occur 24 hours per day. The application should have stated that typical operating hours are from 8:00 a.m. to 5:00 p.m. Monday through Friday but that operations may occur outside these times as business needs necessitate.

LAC 33:V.517.B.1 — *Appendix B, Drawing 100, 101, and 105 are not to scale. The applicant's response states that the drawings are at a scale of 1"=200' but drawings 100, 101 are to a scale of 1"=2000' and drawing 105 is to a scale of 1"=300'. The regulation states that the scale must be 1"$\leq$200'.*

Drawing 103 has been revised to meet the requirements of this regulation. This drawing

shows a 1,000-foot radius around the permitted site and is drawn to a scale of 1 inch equal to 200 feet.

The facility has requested under separate cover to be allowed to utilize a scale of 1" = up to 2,000 feet for Drawing 101. The facility obtained approval for this alternate map scale for this drawing in a letter dated December 9, 2004 (Scardina to Andrews).

Drawing 100 is included for additional reference and is not intended to satisfy the regulatory requirement.

Drawing 105 is included to show a security and emergency equipment overview. Since it is not a topographic map and not intended to satisfy this regulation, the 1 inch = 200 feet requirement does not apply to this drawing.

LAC 33:V.517.B.4 — *The map indicating surface water and potentiometric maps must be identified (i.e., which Appendix and which drawing/map). The drawing/map must show the surface flow and a potentiometric surface for aquifers within 100 feet of lowest elevation of other facilities containing hazardous waste from 1,000 feet upstream to 1,000 feet downstream, where practicable.*

The drawing that satisfies this requirement can be found in Appendix U. The upper and lower aquifers are depicted in Appendix 2-H of the Environmental Assessment Report (Appendix U). Generally, the upper aquifer is within the upper 50 feet below the site, and the lower aquifer is within approximately 100-140 feet below the site. This is the only practicably available information for aquifers within 100 feet below the surface.

LAC 33:V.517.B.5 — *The aerial photograph/maps (i.e., Drawings 100 and 101) are not to scale, they do not contain a legend and do not identify the surrounding land uses within two miles of the site.*

As noted previously, Drawing 100 should be considered as additional information. Drawing 101 has been modified to depict a two-mile radius around the facility. Given this aerial range, it is not practical to provide this drawing in a 1 inch to 200 feet scale; therefore, the facility has separately requested to be allowed to utilize an alternate scale. The facility obtained approval for this alternate map scale for this drawing in a letter dated December 9, 2004 (Scardina to Andrews).

LAC 33:V.517.B.6 *The applicant must identify the map/drawing that shows the legal boundaries of the TSD facility site (i.e., the Appendix and drawing/map number).*

Drawing 117 (Appendix B) has been added to the permit application to meet this requirement.

LAC 33:V.517.B.7 *The applicant must identify the map/drawing that shows the legal boundaries of the TSD facility site (i.e., Appendix and drawing/map number). The drawing/map must show the gates and fences.*

Drawing 117 (Appendix B) has been added to the permit application to meet this requirement.

LAC 33:V.517.B.8 *The map of withdraw wells (i.e., Drawing 104) is not to scale. A revised map must be provided.*

The map is to scale; however, it is not drawn at a scale of 1 inch = 200 feet. The facility has revised the map but has separately requested that it be allowed to utilize an alternate map scale for this drawing. The facility obtained approval for this alternate map scale for this drawing in a letter dated December 9, 2004 (Scardina to Andrews).

LAC 33:V.517.B.13 *A drawing/map of the location of operational units within the TSD facility site, where hazardous waste is (or will be) treated, stored, or disposed of must be provided. The drawing/map must include the location of the storage units (i.e., magazine racks) and treatment units (i.e., burn pans). An explanation of each unit should be provided.*

All operational units are depicted on the revised Drawing 103. The waste management activities conducted at each location are fully described in Chapter 5 of the application. Specifically, detailed information related to the storage units begins on page 5-42 of the application, and detailed information regarding the miscellaneous units begins on page 5-64 of the application.

LAC 33:V.517.D *The applicant must provide an explanation of the chemical and physical analyses of the hazardous wastes and the hazardous debris*

to be handled at the facility (i.e., information contained in the WAP).

The response states that no analyses will be conducted due to the nature of the wastes (i.e., explosive, reactive). The response also refers to further information in the WAP that is included in Appendix G. Considering the inherent risks associated with handling this type of waste, the facility believes that there is no beneficial reason for conducting any further analysis (beyond visual inspection) of incoming waste streams. The existing WAP in the existing permit indicates that no sampling and analysis will be completed, and the facility is not requesting a change to this portion of its WAP. The WAP has been revised slightly to include further details about the types of waste management techniques that may be accomplished at the facility.

LAC 33:V.517.F — *The identification of any sensors or cameras should be identified and described as security measures taken at the facility.*

There are no sensors or cameras present at the site.

LAC 33:V.517.J.1 — *An explanation of the ramps, types of safety equipment, measures used to prevent hazards (falls, spills, forklift accidents, etc.) should be provided.*

All employees are trained in proper unloading procedures as a part of the initial training provided when employees are first hired. All incoming waste shipments are unloaded either utilizing fork lifts or by hand, when appropriate. Most incoming wastes are shipped in relatively small packages that are easily handled and moved from one location to another by hand. The facility's forklifts can be used to place waste containers into the storage magazines wherein a dolly can be used if necessary to position the waste within the storage unit. Each employee is provided with ongoing training with issues regarding spill prevention and accident prevention. Primarily, the focus for accident prevention involves remaining alert at all times and evaluating each task to ensure that the proper equipment is used when needed to prevent personal injury. The facility has had an outstanding record in this regard since its inception. To avoid spills, facility personnel carefully evaluate each container of waste to ensure that it is in good condition and closed so that it is not susceptible to spillage. Each container is carefully managed to minimize the possibility of dropping it and causing it to rupture.

LAC 33:V.517.J.4 *An explanation of the drainage rain under roof or cover collection/drainage and the drainage from the burn area and/or storage areas should be provided.*

There is no drainage from any operating areas except for the discharge of rainwater from the concrete area surrounding the burn pans. Any accumulated precipitation inside the buildings is collected and placed on the burn pans and burned or cooked off along with the waste, although these collected materials are not considered hazardous wastes, based on generator knowledge of the processes at the facility.

LAC 33:V.517.T. *The applicant has not satisfactorily addressed this regulation. In addition to providing published studies, the applicant must provide either:*

- *aerial reconnaissance of the area within a five-mile radius from the facility (this may be accomplished by analysis of aerial or satellite imagery);and*
- *an analysis of aerial photographs covering a 3,000-foot radius of the facility or if needed, to clarify the above data, a reconnaissance based on walking portions of the area within 3,000 feet of the facility.*

This information provided must be of a quality as to be acceptable to geologists experienced in identifying and evaluating seismic activity. The applicant must include a certification statement from a qualified geologist. The information provided as Appendix B does not constitute a site-specific geological certification.

If the above information does not demonstrate compliance with the seismic standard, the applicant must satisfy the requirements of LAC 33:V.517.T.1.a.ii.

Information has been added to Appendix D (attached) to comply with this requirement, and it has been certified by a qualified geologist.

LAC 33:V.517.T.1.a.i-ii *A response to this regulatory requirement must be provided. The seismic requirements in 40 CFR 264.18(a) must be addressed. The comment in 40 CFR 264.18(a) states that if these requirements are met then the procedures for demonstrating compliance with 40 CFR*

270.14(b)(11) have been established. The Louisiana Administrative Code (LAC) requires a response to this regulation. The state regulations do not contain the comments in 40 CFR 264.18 and 270.14. The Applicant must provide a response that contains the information required in the regulation.

As requested, the additional seismic evaluation has been added to Appendix D (along with other geological information and data) as a report entitled "Compliance with the Seismic Standard (LAC33: V: 517.T)." No Holocene seismic activity was identified according to the regulation. A qualified geologist has certified the report.

LAC 33:V.517.T.5.a *The applicant has not provided documentation of the absence of recreational areas within 1,000 feet of the site.*

The facility has requested documentation from the Louisiana Office of State Parks and has not yet received a written response; however, it should be noted that the vast majority of the 1,000 foot area surrounding the active portion of the property is within the secondary property boundary that is owned and controlled by Clean Harbors Colfax, LLC, and there are no recreational areas known to the facility within 1,000 feet of the active site. This information has been confirmed by a survey completed by site personnel.

LAC 33:V.517.T.6.b *Documentation of the population, land use, and traffic count should be provided to support the information provided in response to the requirements.*

Population:

Current population data, as derived from demographic profiles in the U.S. Department of Commerce 2000 Census, show the surrounding population of the nearest community Colfax, Louisiana is 5,189. This information has been added to Appendix R. According to the same data, this entire population is considered rural with 3.0% of that rural population engaged in farming. Population density for the Colfax area is 34.5 persons per square mile. According to the 2000 census data, the employed civilian labor force in the Colfax Community is employed in a variety of occupations. The civilian labor force is 48.8% of the total population over 16. 51.2 % of the population over 16 is not in the labor force (i.e. unemployed households; no wage earner, 7.3%; unemployed spouses or retired workers).

The estimated population within two-miles of the facility is 150 people (4 square miles x 34.5). The majority of those residents within that two-mile limit are retired. The continuation of the storage and treatment operations at the facility does not impact the livelihood of these people.

Land Use:

Current land use, as indicated by the enclosed aerial map, shows the land adjacent to the facility to be undeveloped and well-vegetated with trees and brush. As indicated on the map, the primary land use is the growth and harvesting of timber for commercial use located 1.8 miles north northwest of the facility. The nearest farmland is located along the Red River approximately 2 miles west-southwest of the facility.

Roadway and Traffic Count:

As shown on the aerial map, access to the facility is from LA Highway 471 which is adjacent to the north portion of the west boundary of the site. Vehicles delivering waste shipments to the site are only allowed to enter from the LA Highway 471 access gate. According to a phone conversation with Mr. Pete Bruce (318.561.5105), LA DOTD District 08 (Grant Parish), LA Highway 471 had an average daily traffic count of 800 vehicles a day during 1995, the most current year available. Written documentation is not available.

LAC 33:V.517.T.7.a — *An explanation of the length of time the material is held "awaiting unloading or awaiting ignition" should be provided.*

Unloading occurs within 24 hours of receipt or by noon the next operating day in accordance with Condition B.1.d of the existing permit (page 30). Any material that is "awaiting ignition" is not held on the burn pads beyond the operating day during which it is placed there.

LAC 33:V.517.T.7.b — *An explanation of the residue remaining after treatment must be provided. An explanation of the temporary storage must be provided (i.e., location). A description of the burn pans should be provided. An explanation of the denotation process should be provided. An explanation of the decontamination procedures for the equipment used during operations should be provided.*

The Ash Management SOP attached to the WAP explains how the ash will be managed. Since it is considered a site generated waste and since it is typically nonhazardous, it may be

stored anywhere on-site but is usually only stored within the truck staging area. The burn pans are described in detail on page 5-65 of the application. The facility does not utilize any equipment that is subject to becoming contaminated during routine operations.

The treatment process ignition is as follows. The material is remotely ignited from the nearby reinforced building. No personnel are allowed close to the burn pads while the material is being ignited or during the subsequent thermal treatment process.

LAC 33:V.517.T.7.b.ii — *An explanation for the disposal of the residue in a solid or hazardous waste permitted facility should be provided. A description of how the residue is collected and the procedures for removal etc. after a burn should be provided.*

The Ash Management SOP in the WAP (Appendix G, attached) explains this process in detail. Following a cool-down period, the burn pans are lifted using a forklift and transported to the truck staging building where the contents are dumped into an open roll off container. The material remains in this container until the container is full. While filling the container, samples are collected and then, after the container is full, the samples are composited and analyzed in accordance with the Ash Management SOP. Then the material is shipped off-site for disposal.

LAC 33:V.517.T.7.b.iii — *A description and explanation of the storage and disposal procedures must be provided (i.e., disposal of residue, off-site, etc.).*

The material generated on-site during the thermal treatment process is stored in containers (typically, roll off boxes). This material is accumulated and following analysis for characteristically hazardous constituents, the material is disposed off-site. The ash that results from the thermal treatment of the listed wastes may be stored in a drum or other small container since this material usually consists of much smaller quantities. All ash is shipped off-site to an appropriately permitted facility for disposal. Technically, the facility does not dispose of any waste on-site.

LAC 33.V.517.T.b.iii.(a) — *An explanation of the truck staging/parking area with the secondary containment must be provided (size, utilization, incompatible waste handling procedures, etc).*

The covered truck staging/parking area measures 107 feet long by 64 feet wide. Four truck parking spaces are provided with individual containment for the separation of incompatible wastes in the event of a leak. The containment wall is constructed of concrete with a total height of 16 inches. Each of the four parking areas contains a sump for rainwater collection. The 16-inch concrete walls are designed to contain 10% of a maximum truckload of drums and moderate amounts of wind blown rainwater, with approximately 3-inches of freeboard. Containment calculations for this area are included in Appendix S of the permit application.

LAC 33:V.517.T.7.b.iii.(b) *An explanation of how the accepted wastes are tracked should be provided.*

Each incoming shipment is accompanied by a hazardous waste manifest that describes the waste(s) being shipped to and accepted by the facility. Copies of these manifests are maintained in the facility Operating Record. Data from each manifest is electronically maintained in a computerized system for easy reference. Each manifest is also scanned and maintained in an electronic file. The on-site operators record additional information as to the unloading locations of each waste shipment and each movement of the waste as it occurs. This information is maintained in logs that are kept on-site and are available for review by the LDEQ upon request. Each operating day, a burn log is kept that describes exactly which materials are thermally treated each day. This information includes cross-references to the incoming manifests.

LAC 33:V.521.A.1 *A description of all 10 storage units should be provided (10 units are permitted as S01). A description and explanation of the covered storage area and the preparation building must be provided. A detailed explanation of the use of the tank storage must be provided.*

The basic design details of the storage magazines are shown in Appendix B. The storage magazines are approximately 10 feet by 20 feet in area and 8 feet high. The floors, walls, roof, and doors are constructed of high tensile steel and covered with hardwood. The high tensile steel is coated with a non-reactive paint to protect the steel from corrosion or deterioration. The magazines are ventilated to prevent the build-up of extreme heat and pressure or the accumulation of moisture. The vent openings are screened. The magazines are grounded against lightning strikes. Magazines Nos. 8, 9 and 10 have 12-inch high thresholds and vertical extensions for floor vents to contain possible spills. The height of the thresholds and floor vent extensions are based on a design spill of 10% of the maximum stored waste volume.

The doors are double locked with 5 tumbler locks. The four corners of the magazines and the

fences are posted with warning signs. Smoking, open flames, firearms, and other spark producing devices are prohibited within 50 feet of the magazines.

All ten storage units are of the same design and construction with the exception of the three identified as Magazines 8, 9, and 10. The covered area into which these three storage magazines open is not a permitted unit. The preparation building is further described later in this section. The tank is not used and is being removed from the permit application.

> *The tank must meet all applicable requirements if used for storage of hazardous waste at anytime. If the tank is used for less than 90 day storage for waste generated on-site then all applicable requirements must be met. The applicant must explain if the tank is used for less than 90 day storage. An explanation of the liquids (as hazardous or non-hazardous) stored in the tank after incoming materials are drained must be explained.*

This portable tank has never been used up to this point for hazardous waste service. As a result, all previous references to it as a permitted unit should be removed. If, in the future, the facility desires to utilize this tank for hazardous waste management activities, the necessary permitting requests will be submitted to the LDEQ for its consideration.

> *A description and explanation of the ash container storage area must be provided.*

The roll-off staging area is for site-generated waste only. Typically, this waste is nonhazardous. If analysis indicates that a particular load is hazardous, then it will be labeled appropriately and stored for up to 90 days. The Part A/I application has been amended to include 2,500 gallons of storage (S01) for the area at the rear of the Preparation Building. This area, upon issuance of the permit, may potentially include storage of listed site generated ash residue for up to one year from the time of placement of the waste in the unit. This unit may also store certain wastes that are not required to be stored in the magazines per ATF regulations (such as fireworks) prior to their treatment.

> *The capacity of the container storage and the tank storage must be included in the Part A of the application if used for hazardous waste storage. These areas will need to be permitted for hazardous waste use (i.e., storage).*

The container storage capacity is included. The Part A has been revised to more accurately reflect all the areas proposed for waste storage and processing. The tank capacity is not included because the tank will not be used for off-site hazardous waste activities.

A detailed explanation of the operations and processing of material at the preparation building must be provided.

The Preparation Building includes three (3) specially equipped booths that are designed for the disassembly of various devices prior to their thermal treatment. These booths measure approximately 8 feet by 8 feet and are surrounded by thick wood that is designed to prevent damage to the building or injury to employees in the event of an inadvertent detonation. The cutting equipment inside each compartment is also remotely controlled to further enhance the safety of the employees. The process of disassembling the material (particularly the munitions type waste) makes the material safer to handle and more amenable to the treatment process. The Preparation Building has been added to the Part A/I application as X02 (miscellaneous unit) for decontainerizing and/or disassembling the devices in preparation for final treatment thermally. The capacity is 350 pounds per hour (Net Explosive Weight).

An explanation of the operations of the covered truck staging/parking area (i.e., length of time material is staged) must be provided. The capacity of the staging area must be calculated in the overall permitted capacity (if used for storage and must be permitted).

The waste that is temporarily staged in this building will be unloaded within 24 hours of arrival if it arrives during operating hours. If it arrives during non-operating hours, it will be unloaded by noon the next normal business day.

General Comment

If you store free liquids, all applicable requirements must be met. A spill prevention plan/procedures must be established.

The Contingency Plan provides the details concerning spill prevention and response. The facility will follow all applicable requirements for the storage of wastes that include free liquids.

LAC 33:V.521.A.2

An explanation of the use of the tank to hold small quantities of precipitation collected and temporarily stored before disposition of the liquid must be provided. If the tank is used to handle liquids

drained from incoming material as previously stated, then an explanation of the tank cleaning procedures, to remove any hazardous residue, must be provided before the tank can be used for other service or storage.

The deminimis amounts of liquid generated from rainfall accumulation are burned along with the wastes in the burn pans. These amounts should be extremely small since the thermal treatment process is not initiated during inclement weather and while the burn units are not in use, they are kept covered with portable covers to minimize rainfall accumulation in the burners. As mentioned previously, the tank has not been used ever before, and the facility wishes to withdraw it from permitting consideration.

LAC 33:V.521.A.4-5

A detailed explanation of the storage areas, areas to be permitted, storage capacity, process areas, treatment areas must be provided (i.e., magazines, ash storage area, preparation building, staging/parking area and trailer storage). An explanation of where, how and how long liquids are stored, analyzed and removed and how leaks are addressed should be provided.

A detailed description and explanation of the hazardous ash "kept" in a designated area at the preparation building must be provided.

Detailed information regarding the areas to be permitted is provided beginning on page 5-42 of the permit application. Since the storage magazines are elevated, there is no potential for runon of precipitation, and the magazines are designed to prevent the possibility of rainfall entering the units. As a result, removal of liquids generated from precipitation from these units is not a consideration. The concrete containment area surrounding the thermal treatment unit is sloped toward the stormwater holding pond at the rear of the unit, and any rainfall that occurs is immediately directed into this pond. Since the burn pans are not operated during rainy conditions and are covered at other times, no significant accumulations of rainwater should ever occur in these units.

As explained on page 5-46 of the permit application, the ash that may be temporarily stored in the Preparation Building is stored in closed containers and is not susceptible to infiltration by precipitation.

LAC 33:V.1103.B

A detailed explanation and response to this requirement must be provided.

Clean Harbors, as a generator of hazardous waste, will make the necessary and appropriate waste determinations as required by the regulation. Either generator knowledge will be used (in the case of listed hazardous wastes) or actual testing will be completed (in the case of characteristic waste). For further information, please refer to the WAP/Ash Management SOP (Appendix G).

LAC 33:V.1503.A.3 — *See comments on response to LAC 33:V517.T.1 above.*

There is no evidence of the presence of faults with displacement in Holocene time within 200 feet of the facility as explained in the response to 517.T.1.Seismic Conditions- see above.

LAC 33:V.1503.C.1 — *The maximum capacity of the staging area must be provided. An explanation of the area's capability to handle 24 trucks per day should be provided.*

The staging area that was referred to in this section is the winding road that leads into the facility. It was mentioned that the site can accommodate up to 24 trucks at a time in order to demonstrate that the vehicles would not be backed up onto the highway and cause traffic disruptions. Very rarely does the facility actually see more than one or two trucks in an operating day, but the response to the regulation was related to how the facility would avoid congestion and other hazards conducive to accidents on the roads that provide access to the facility.

LAC 33:V.1503.C.2 — *The documentation of local law enforcement, fire departments, hospitals, etc. (i.e., agreement or refusal) to provide assistance to the facility must be provided.*

Arrangements with local authorities are discussed in detail in the Contingency Plan. A copy of the latest coordination agreements is included with this submittal along with a revised copy of the Contingency Plan in its entirety (Please refer to Appendix I).

LAC 33:V.1505.A.1 — *In response to LAC 33:V.521.A.1 and .534.A.1, the tank would be use to store wastewater/washwater generated. Please explain the statement that "No process waste water is generated as part of the treatment process."*

The burning process does not produce any waste water. Periodically, rainfall over the burn pad will generate water that is discharged under a stormwater permit that is discussed in the application. Water is not used as part of the thermal treatment process.

LAC 33:V.1507.B — *The application states that the perimeter is checked no less than twice per shift. Please explain how many shifts per day.*

For purposes of this permit, the statement should have read "per eight-hour shift and there are 3 eight-hour shifts in a 24-hour day."

LAC 33:V.1507.C — *An explanation of all hours for which the perimeter barrier shall be manned should be provided.*

The main gate, which is the only entrance that is unlocked, is manned during all hours while the facility is not operating by a security guard. During hours in which the facility is operating, Clean Harbors personnel maintain constant surveillance of this gate. It should also be noted that other internal security efforts are employed to prevent unauthorized disturbance of the facility's permitted activities. During the thermal treatment process, the burn pads are observed/attended at all times. In addition, while waste is stored in the magazines, they remain locked at all times and would be extremely difficult to penetrate if a trespasser were able to obtain unauthorized access to the property.

LAC 33:V.1507.H — *An explanation of the fire controls for the magazines and decontamination facilities should be provided. A brief explanation of the type of firefighting equipment addressed in Appendix I should be provided. Information on the type of alarm system utilized (if applicable) should be provided.*

On page 15-17 of the application, it is explained that (1) fire extinguishers are not allowed within 50 feet of the magazines and (2) if a fire should occur within a magazine, it will be allowed to burn itself out. Fighting it would not be a feasible option. In lieu of an alarm system, notifications between facility personnel are accomplished via two-way radio or by telephones within the facility.

Information and documentation of the number of fire hydrants must be provided. The location of any fire hydrants must be identified on a map or diagram. The location of the hydrants must be no more than 200 feet from each fire-hazard facility (unit).

There are no fire hydrants on-site.

LAC 33:V.1507.K — *A response that the warning signs are spaced at no greater than 200 foot intervals and that the signs are legible from a distance of at least 25 feet must be provided.*

The response indicated that the signs are placed in accordance with the above recited regulation. To clarify, the warning signs are spaced at no greater than 200-foot intervals, and the signs are legible from a distance of at least 25 feet.

LAC 33:V.1511.C.3 — *An explanation of the decontamination equipment should be provided. An explanation of the location of the PPE is must be provided (i.e., summarize and refer to other sections or further details).*

The information is included in Appendix C of the Contingency Plan (Appendix I). PPE is located in all the operating areas at sufficient quantities to ensure that the four on-site operators have access to it at all times.

LAC 33:V.1511.G.1.a-d — *A description to familiarize local law enforcement, fire departments, and emergency response teams with the layout of the facility, the waste handled at the facility, hazards associated with the waste, roads, evacuation routes, etc. must be provided.*

This information is covered in the Contingency Plan and is included herein as Appendix I.

LAC 33:V.1511.G.1.b — *An explanation of the primary and secondary emergency responders should be provided (i.e., fire, hospitals, sheriffs, etc.).*

As described in the Contingency Plan, the Grant Parish Sheriff's Department will coordinate any assistance that may be needed from any nearby agencies that may be called upon to assist, should that need arise.

LAC 33:V.1513.B.5 — *The location of all emergency equipment, a physical description and a brief outline of the capabilities of each item must be provided. A diagram or map should be provided indicating the location of all emergency equipment. This information must also be included in the contingency plan.*

This information is included in the revised Contingency Plan, and the plan is included as Appendix I

LAC 33:V.1513.B.6 — *The applicant must explain the procedures for an evacuation as ordered by the emergency coordinator.*

This regulation describes what the Contingency Plan must include, and the response refers to the Contingency Plan in Appendix I. The plan includes this information on page 21, (i.e., notification is accomplished via 2-way radio).

General Comment — *The contingency plan must list all the waste codes in the Part A permit application, specify whether the guard is on duty at all times, discuss the differences in the two evacuation routes (primary and secondary), and include a map that clearly denotes the two routes. The plan must also provide a description of any spill kits and their contents. The applicant must comply with the reporting requirements for spills, releases, and emergencies that can be viewed at: http://deq.state.la.us/surveillance/spoc procedures.htm*

The plan includes all this information. As noted in other sections, the security guard is only present when CH personnel are not on-site (i.e., after hours). The facility acknowledges the reporting requirements for spills, releases, and emergencies and will implement those requirements as necessary, should the need arise.

LAC 33:V.1513.F.5 — *A detail explanation of the emergency procedures that would occur during an emergency must be provided.*

This information is included in the revised Contingency Plan (Appendix I).

LAC 33:V.1513.F.6 — *An explanation of other potential sources of a release should be provided.*

The facility does not anticipate any sources of a release; however, there is the remote possibility that unexpected events could occur that might result in a release. An example would be the possibility of a spill of waste that occurs during loading into one of the magazines (i.e., a drum that drops and is ruptured) or any other unforeseen situation that might cause a release. The key point is that the facility is prepared to mitigate such an event in a manner that is protective of both human health and the environment.

LAC 33:V.1513.F.10

The owner or operator "must note" in the operating record the time, date and details of any incident that requires implementation of the contingency plan and not "to the extent that it is applicable."

Clean Harbors Colfax, LLC will note in the operating record the time, date and details of any incident that requires implementation of the Contingency Plan.

LAC 33:V.1515.A.3 &
LAC 33:V.1517.B.1

An explanation of the emergency procedures, preparedness and prevention, training, PPE and any applicable special requirements for a threat to human health in the handling of waste and emergency situations, in which waste produces toxic gases when decomposing or when being treated must be provided.

The revised Training Plan (Appendix K) includes a discussion regarding the training requirements for employees who may handle wastes that may be subject to decomposition leading to violent reactions. More details can also be found on pages 15-40 and 15-41 of the application.

LAC 33:V.1517.D

An explanation of all storage units must be provided. An explanation of how all storage units meet the applicable state and federal (ATF) requirement (i.e., design) should be provided.

Detailed information on the storage units is included elsewhere in the application. This regulation requires sufficient separation of treatment and storage facilities containing ignitable, reactive and incompatible wastes prevent hazards in the event of a spill, etc. The units meet the RCRA requirements for hazardous waste storage units, and they also meet the spacing requirements of the ATF (i.e., they cannot be placed within a certain number of feet of each other, etc.). The ATF requirements also provide for certain types of locking devices to ensure that the units are kept secure. A copy of the ATF regulation pertaining to storage of explosives was included in Appendix R of the application.

LAC 33:V.1519.A.3

An explanation of how the analysis must be repeated as necessary to ensure that it is accurate and up to date (at a minimum, the analysis must be repeated).

As mentioned in the response, the only updated analysis will be the annual profile re-certification requirement. As stated previously, there is no "analysis" (i.e., chemical analysis) involved due to the nature of the waste.

LAC 33:V.1519.B.3 — *An explanation of the sampling procedures/protocol for the ash determined as characteristic waste and the ash determined as listed waste should be provided.*

This information is explained in detail in the Ash Management SOP attached to the WAP. There is no sampling for listed wastes. If a waste is listed due to the mixture rule, it is hazardous for the applicable waste codes, regardless of the results of any analytical, and will be managed accordingly. Therefore, the facility believes that analyzing known hazardous wastes would be unnecessarily costly and would provide no additional beneficial information.

LAC 33:V.1519.B.4 — *An explanation of the frequency for analysis for the outgoing ash that is determined as characteristic and listed waste should be provided.*

As stated in the Ash Management SOP, every load that is accumulated is sampled in the case of characteristic, or potentially characteristic, wastes. Listed materials are not sampled and/or analyzed. They are assumed to be hazardous based on the mixture rule.

LAC 33:V.1527.A.2 — *An explanation of the ATF explosive laws and regulations and the compliance with the state regulations should be provided.*

The ATF explosives laws require certain spacing with regard to the storage units at the facility. The ATF laws also specify certain types of locks that must be placed on storage units used to store explosives, and the facility maintains these locking devices to ensure the security of the waste while it is in storage. The facility pointed out in its response to this comment that it would adhere to these requirements, as well as all other applicable EPA and LDEQ requirements, to the extent that they apply. In cases where the requirements overlap, the facility will adhere to most stringent of those requirements.

LAC 33:V.1753.C — *If the on-site tank is used for the storage of any hazardous waste, this requirement is applicable.*

The on-site tank has not been used nor is it anticipated that it will be used in the future for the storage of hazardous waste; therefore, this requirement does not apply.

LAC 33:V.1755.A — *If the tank onsite is used for the storage of any hazardous waste this requirement is applicable.*

The tank is not used for permit-related activities and is being removed from the permit application.

LAC 33.V.2101.A — *An explanation of the commingling of residue from burning containers that held characteristic waste must be provided.*

The material is accumulated/commingled until the container becomes full. Then the analysis is completed to determine if it is hazardous. The Ash Management SOP indicates that a sample(s) will be analyzed for all the characteristic metals that might be present.

LAC 33:V.2111.A — *The container storage areas must meet all the applicable regulatory requirements and must have a containment system that is designed and operated in accordance with LAC 33:V.2111.B except as otherwise provided by LAC 33:V.2111.C as well as the requirements established by the Bureau of Alcohol, Tobacco, and Firearms. An explanation of the container storage areas complying with these requirements must be provided.*

These requirements are fully explained in 2111.B and 2111.C, as required. The explanation of the containment system is as follows:

The design of the storage magazines is shown in Appendix B (Drawing # 110) of the application. The floor of each magazine consists of plywood overlying steel. The floor rests on steel channels which in turn rest upon a solid concrete slab that is free of gaps or cracks and that is adequately impervious. The floor of the preparation building and ash storage area and the covered truck staging/parking consists of a solid concrete base that is free of gaps or cracks and that is adequately impervious. The storage magazines are provided with interior wall vents that prevent the accumulation of moisture. Storage magazines 8, 9, and 10 are used to store liquid waste and are constructed of steel with continuously welded joints to provide containment should leakage occur. The floor slabs of the concrete burner pads; the truck staging/parking areas; and the preparation building and ash storage area are gently sloped to drain liquids to a central location for removal. The containers that are used to temporarily store residual ash for shipment are elevated above the floor surface. Any liquids that could accumulate in this area would not come into contact with the ash stored in the roll-off containers. The storage magazines are approximately 10 feet by 20 feet in area and 8 feet high. The floors, walls, roof, and doors are constructed of high tensile steel covered with two layers of hardwood plywood. The magazines

contain vents on the interior to prevent the build-up of extreme heat and pressure or accumulation of moisture. The vent openings are screened. The magazines are grounded against lightning strikes. Magazine Nos. 8, 9 and 10 have 12-inch high thresholds and vertical extensions for floor vents to contain possible spills. The height of the thresholds and floor vent extensions are based on a design spill of 10% of the maximum stored waste volume as required. The covered staging area at the entrance of Magazine Nos. 8, 9, and 10 measures 107 feet long by 27 feet wide. The maximum truckload unloading in this area has been determined to be 80 - 55 gallon drums of liquid wastes. The 16-inch high concrete walls are designed to contain 10% of the volume of a maximum truckload of drums and moderate amounts of wind blown rainwater with 3-inches of freeboard remaining. Containment calculations for this area are included in Appendix S of the permit application. The facility utilizes portable containment skids for use when liquids are stored in these magazines. Each skid provides adequate secondary containment for the drums placed on it.

The covered truck staging/parking area measures 107 feet long by 64 feet wide. Four truck parking spaces are provided with individual containment for the separation of incompatible wastes in the event of a leak. The containment curbing is constructed of concrete with a total height of 6 inches (See Section B-B, Drawing # 108, Appendix B). Each of the four parking areas contains a sump for rainwater collection. The 6-inch concrete curbs are designed to contain 10% of a maximum truckload of drums and moderate amounts of wind blown rainwater with approximately 3-inches of freeboard. Containment calculations for this area are included in Appendix S of the permit application.

Run-on is prevented by grading the ground surface so that surface runoff is directed away from the magazines; the preparation building and ash storage area; the concrete burner pads; and staging/parking areas.

Collection of spills, discussed in Sections 517.J.2 and 1505.C, is part of the housekeeping requirements for storage magazines. Inspection for, and collection of, any possible leaked or spilled material will be part of the inspection as detailed in Section 1509. Containment areas will be inspected no less than weekly for leaks, spills, and rainwater collection as detailed in Section 1509.

LAC 33:V.2111.B.1 — *The preparation building and the ash storage area, truck staging/parking must be permitted units and meet all applicable storage and secondary containment requirements if used in the treatment and storage of hazardous waste.*

The Part A/I application has been amended to include the Preparation Building. The staging/parking unit is not a permitted unit. It is simply used for temporary unloading/staging activities. The unit is not used for hazardous waste storage (beyond unloading) or treatment activities.

LAC 33:V.2111.B.2 — *An explanation of the base slope or the containment system design, operation and drainage and the removal of liquids must be provided (i.e., collection, and removal of).*

The container storage areas that are used for liquid wastes (Magazines 8, 9, and 10) are operated such that all containers are elevated in containment trays that would hold any liquids that might potentially leak from the containers and also prevent contact with any liquids that might spill onto the floor of the storage unit.

LAC 33:V.2111.B.2 — *An explanation of the storage of ash in roll-off containers must be provided. If applicable, this type of storage must be addressed as a permitted storage unit.*

The accumulation of the ash in the roll off containers is considered a generator activity, not a permitted activity. Further, it is typically nonhazardous, so these requirements do not apply to this activity.

An explanation of the temporary storage of residual ash must be provided.

This temporary storage is not a permit-related activity. If it is determined that the ash is hazardous, then the 90-day generator storage limitation will apply.

LAC 33:V.2115.C — *An explanation of the magazines storing incompatible wastes that are separated by at least 210 feet and how incompatible wastes are treated separately must be provided (i.e., identify units, location, dike, berm or other devices, etc.). An explanation of Magazines 8, 9, and 10 which contain wastes packed in non-hazardous liquids or "liquid wastes" must be provided.*

No incompatibles are stored within the same magazine, and all the magazines that might potentially store wastes that would be incompatible if combined are separated by a minimum

of 210 feet. Only similar materials are treated within a burner at any given time. No incompatible wastes are mixed together at the facility.

With regard to Magazines 8, 9, and 10, no incompatibles are stored inside these units either. As discussed in other sections of the application, these storage magazines are used for storage of wastes that arrive containing liquids. Certain explosives may be packed in liquid materials to facilitate safer transport and storage.

General Comment — *Closure cost estimates are to be based on third party worst case scenario. Therefore, cost must be provided for outside contract personnel to close the site, remove material, treat material, decontaminate equipment, etc. and not costs based on Clean Harbor, Colfax personnel completing the closure.*

The cost estimates have been revised to meet these requirements.

Chapter 22 & 23 — *No response to these chapters are provided. The applicant must respond to these regulatory requirements.*

Chapter 22 is related to Land Disposal Restrictions (LDR). The facility does not conduct any land disposal; therefore, most of these regulations are not applicable. Chapter 23 is concerned with waste piles which is another activity not associated with the facility. Therefore, Chapter 23 is not applicable to the facility. Chapter 22 is addressed in the section marked as "Chapter 22."

LAC 33:V.2403.A.1 — *An explanation of the potential for release of "waste by-products" must be provided.*

The response stated that the facility is operated in a manner to minimize the potential for release of waste by-products, not that there was a potential for a release. The facility does not anticipate any unacceptable releases of waste by-products.

Releases from Magazines 8-10 are discussed but the other magazines units are not discussed. An explanation of the potential releases from these units must also be provided.

Magazines 8-10 are the only ones that may contain liquid wastes. Since all the units remain locked except when necessary to remove waste, there is no potential that material could escape the units until facility personnel physically remove it. No uncontainerized wastes are present

in the units at any time; therefore, the material remains securely stored and not susceptible to release.

LAC 33.V.2403.B.2 (General Comment)

If three of the magazine storage areas are located in the Truck Staging Building then this building will need to be permitted.

They are not actually located in the Liquids Unloading Building. Their front doors open into the building, and the concrete floor in that building may provide tertiary containment for these three units. Technically, the container is the primary containment; the containment trays in which they are placed are the secondary containment; each storage building provides tertiary containment; and the concrete floor provides a fourth level of containment. Therefore, the facility believes that it is taking precautions over and above those required by the regulations to prevent the occurrence of uncontained spills.

The truck staging area itself is only for generator activities and temporary staging/receiving.

LAC 33:V.3203

An explanation of the treatment process and operational procedures (i.e., equipment used to remove residue, PPE, safety procedures, inspection, etc.) should be provided.

The section beginning on page 32-1 provides detailed information on the treatment process and the operational procedures. Information related to PPE, safety procedures, and inspection is provided in other areas of the permit application (i.e., Contingency Plan and Inspection Plan).

LAC 33:V.3203.A & B

If Appendix 8 is meant to supply the required information regarding site hydrology and geology, the entire document must be provided for review.

This comment was apparently repeated from the previous NOD. There was no Appendix 8 in this application. It was explained in the revised application that Appendix 8 had been renamed as Appendix U, and the entire document was provided for review.

LAC 33:V.3203.A.1

An explanation of the volume, physical and chemical characteristics of the waste in the units should be provided in addition to referencing other sections of the application for more information.

This information is provided in detail commencing on page 32-3 of the permit application.

A description of the "trial burns" must be provided in addition to referencing the section in the application for more information.

Various types of waste that the facility anticipated that it would thermally treat during its operations were burned on a trial basis in order to collect dispersion data in order to produce conclusions related to the anticipated effects of operations at the facility. Once the data were collected, the conclusion was reached that the potential health hazards associated with the thermal treatment system were minimal. The specific details associated with this project are located in Appendix Y of the application.

An explanation (i.e., details, summary) of the referenced Appendix U must be provided.

Potential exposure pathways (air, water, soil) were evaluated to the determine potential impacts to human health and the environment related to the operation of the facility. Appendix U summarizes the results of this evaluation and demonstrates that the impacts will be minimal. It should be noted that there is no land disposal on-site.

LAC 33:V.3203.A.1-5

As a condition of operation, the applicant shall continue to conduct an annual soil monitoring program in order to ensure compliance with LAC 33:V.3203 and 3322. Specific deficiencies regarding the soils monitoring plan are addressed below.

"Soil Monitoring Plan" - Soil samples taken for VOCs must be collected in accordance with USEPA SW-846 Method 5035; VOC soil samples must be analyzed in accordance with Method 8260B. The applicant must ensure that the method utilized for all analyses will provide sample quantitation limits at or lower than any risk-based corrective action level (i.e., RECAP Screening Standard, background level, or other derived RECAP standard). All analyses must be performed by a laboratory that LDEQ accreditation for the parameters being measured. An explanation of the quantity and direction of groundwater flow must be provided.

The cover letter addressing this comment previously stated that the appropriate SW-846 methods would be used and that only LDEQ certified laboratories would be utilized. The text refers to Appendix U for information about the groundwater flow. The Soil Monitoring Plan has been revised to include this information (Appendix Z).

The location of Table 3 within the application must be provided.

That comment was apparently a misprint. The reference to Table 3 should be deleted.

LAC 33:V.3203.A.7 *An explanation of the results of the soil monitoring conducted must be provided.*

The most recent soil monitoring report was included in its entirety as Appendix V. This soil monitoring report confirmed the previous soil monitoring results which indicated that there have been no detrimental impacts to the soil from the operation of the facility. The report compared the results of the on-site sampling/analysis to the results of the background sampling/analysis and confirmed that there is no statistically significant difference between soil conditions on-site and those off-site (background).

It should be noted that the approved Soil Monitoring Plan allows the facility the option of reducing the frequency of its soil sampling and reporting to once every two (2) years after it is established that there have been no statistically significant increases in the concentrations of the contaminants tested resulting from the ongoing waste management activities. Previously, the facility has continued to conduct soil sampling and reporting through 2004. The facility plans to adopt the previously approved reduced sampling/reporting frequency going forward. Therefore, sampling/analysis and reporting will be completed in even-numbered years henceforth. In the event that future results show a statistically significant increase in any of the constituents, the sampling frequency will then revert back to annually.

LAC 33:V.3203.B.1-7 *An explanation of prevention of releases, migration of waste constituents in surface water or wetlands or on the soil surface must be provided. An explanation of the volume and physical and chemical characteristics of the waste in the unit must be provided. An explanation of the hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit must be provided. An explanation of the quantity, quality, and direction of groundwater flow must be provided in addition to referencing a section of the permit for additional information. An explanation of the proximity of the unit to surface waters must be provided. An explanation of the surface drainage from the site which enters stream segment 101301 Rigolette Bayou and the utilization of surface waters must be provided in addition to referencing sections of the application.*

The additional information provided below in concert with the information already provided should adequately respond to this regulatory section.

A description of the hydrology is in Appendix U in the Environmental Assessment Report Section III, Wetlands and Surface Water. The surface water hydrology is depicted on Drawing 103.

The operations area is adjacent to the highest topographic point of the area, approximately 200 feet above mean sea level, with three primary drainage features discharging stormwater from the storage and treatment units. Discharge from the thermal treatment area flows into the retention pond and the retention pond drains north toward an intermittent stream that flows northwest. Additional tributaries converge into Summerfield Branch approximately 0.6 miles west of Highway 471.

The second drainage feature directs storm water flow from the western corner of the facility. This channel drains into Summerfield Branch west of Highway 471. The preparation building and four storage magazines are located within this area.

Storm water from the southeastern portion of the facility flows to an intermittent stream that flows into a wetland area near the property boundary. Some facility roads and the areas adjacent to five storage magazines drain into this natural channel.

The nearest named surface water body is Summerfield Branch, which is approximately 0.5 miles to the northwest from the site boundary. Summerfield Branch flows approximately 2 miles northwest into Bayou Grappe. Bayou Grappe meanders from northwest to southeast and eventually merges with the Red River.

As summarized in Appendix O, the average annual precipitation for Alexandria from 1971 to 2000 was 61.44 inches. Over this period, normal monthly precipitation ranged from 4.00 inches in September to 6.39 inches in December. Mean temperature ranged from 56.6 to 77.1 degrees Fahrenheit with an average temperature of 66.9 degrees Fahrenheit. The Wind Rose Plot from Alexandria International Airpark from 1980 to 1994 indicates that the average wind speed was 3.64 knots, and the prevalent wind direction is from the south. The meteorological data for 2002 from the Baton Rouge station indicates that the prevailing wind direction is 90 degrees and the mean speed is 6 miles per hour. The maximum 2-minute wind was 60 miles per hour.

Regional Groundwater:

A water well search was conducted within a 3-mile radius of the center of the site to investigate regional groundwater use. Thirty-seven wells were identified. Of these fourteen (14) are currently used for potable water as public supply, stock or domestic use. The following table summarizes the aquifer and well depth below ground surface (bgs) sorted by aquifer:

DOTD Well No.	Aquifer	Depth (ft, bgs)
G-62	Red River Valley Alluvial (112RRVA)	25
Na-158	Red River Valley Alluvial (112RRVA)	108
G-87	Red River Valley Alluvial (112RRVA)	36
G-63	Catahoula (122CTHL)	35
G-75	Catahoula (122CTHL)	136
G-77	Catahoula (122CTHL)	148
G-98	Catahoula (122CTHL)	225
G-233	Catahoula (122CTHL)	90
G-234	Catahoula (122CTHL)	260
G-247	Catahoula (122CTHL)	100
G-260	Catahoula (122CTHL)	70
G-393	Catahoula (122CTHL)	75
G-321	Montgomery (112MGMR)	47
G-392	Montgomery (112MGMR)	45

As shown, the Catahoula Aquifer (9 wells) is predominantly used in this area followed by the Red River Alluvial Aquifer (3 wells) and Montgomery Aquifer (2 wells).

Catahoula Aquifer:

Well depths in the Catahoula Aquifer within the study area range from 35 to 260 feet bgs. Information on this aquifer was obtained from *Catahoula Aquifer Summary, Baseline Monitoring Project, FY2001, Appendix 5 of the Triennial Summary Report for the Environmental Evaluation Division of the Louisiana Department of Environmental Quality,* which is included in Appendix D.

The Catahoula Formation consists primarily of sands with some silty to sandy clays and overlies the regional confining clays of the Vicksburg and Jackson groups. Within the Catahoula, fine to coarse sands are discontinuous and interbedded with silt and clay.

Recharge takes place primarily as a result of the direct infiltration of rainfall in interstream, upland outcrop areas, movement of water through overlying terrace deposits, and leakage from other aquifers. Saltwater ridges under the Red River and Little River valleys in central Louisiana divide the Catahoula aquifer. The hydraulic conductivity of the Catahoula varies between 20-260 feet/day.

The maximum depths of occurrence of freshwater in the Catahoula range from 250 feet above sea level to 2,200 feet below sea level. The range of thickness of the fresh water interval in the Catahoula is 50 to 450 feet.

The following table highlights some of the more common water characteristics that are considered when studying ground water quality with the minimum, maximum, and average values that were found during the current sampling of the Catahoula aquifer for pH, TDS, hardness, chloride, iron, and nitrite-nitrate:

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
pH (SU)	7.08	8.66	7.75
TDS (ppm)	217	570	317
Hardness (ppm)	<5	96.5	18.2
Chloride (ppm)	3.7	37.5	16.5
Iron (ppb)	36.7	762	318.67
Nitrite-Nitrate	<0.05	<0.05	<0.05

The closest sampled well as part of the study is G-5196Z, which is approximately 15 miles southeast and 125 feet bgs. The results are listed in Tables 5-3 and 5-4 of the Baseline Monitoring Report. In summary, the data show that the ground water produced from this aquifer is soft and is of good quality when considering short or long-term health risk guidelines.

Red River Alluvial Aquifer:

Well depths in the Red River Alluvial Aquifer within the study area range from 25 to 108 feet bgs. Information about this aquifer was obtained from *Red River Alluvial Aquifer Summary, Baseline Monitoring Project, FY2001, Appendix 3 of the Triennial Summary Report for the Environmental Evaluation Division of the Louisiana Department of Environmental Quality,* which is included in Appendix D.

Red River alluvium consists of fining upward sequences of gravel, sand, silt, and clay. The aquifer is poorly to moderately well sorted, with fine-grained to medium-grained sand near the top, grading to coarse sand and gravel in the lower portions. It is confined by layers of silt and clay of varying thickness and extent.

The Red River Alluvial aquifer is hydraulically connected with the Red River and its major streams. Recharge is accomplished by direct infiltration of rainfall in the river valley, lateral and upward movement of water from adjacent and underlying aquifers, and overbank stream flooding. The amount of recharge from rainfall depends on the thickness and permeability of the silt and clay layers overlying it. Water levels fluctuate seasonally in response to precipitation trends and river stages. Water levels are generally within 30 to 40 feet of the land surface and movement is downgradient and toward rivers and streams. Natural discharge occurs by seepage of water into the Red River and its streams, but some water moves into the aquifer when stream stages are above aquifer water levels. The hydraulic conductivity varies between 10-530 feet/day.

The maximum depths of occurrence of freshwater in the Red River Alluvial range from 20 feet above sea level, to 160 feet below sea level. The range of thickness of the fresh water interval in the Red River Alluvial is 50 to 200 feet.

The following table highlights some of the more common water characteristics that are considered when studying ground water quality with the minimum, maximum, and average values that were found during the current sampling of the Red River Alluvial aquifer for pH, TDS, hardness, chloride, iron, and nitrite-nitrate:

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
pH (SU)	7.08	8.35	7.64
TDS (ppm)	396.0	1506.0	817.6
Hardness (ppm)	<5	653.0	353.7
Chloride (ppm)	6.1	664.0	163.4
Iron (ppb)	<20	10661.00	3396.20
Nitrite-Nitrate, as N (ppm)	<0.05	<0.05	<0.05

The closest sampled well as part of the study is Na-47, which is approximately 15 miles west and 80 feet bgs. The results are listed in Tables 3-3 and 3-4 of the Baseline Monitoring Report. In summary, the data show that the ground water produced from this aquifer is very hard,

but is of good quality when considering short-term or long-term health risk guidelines. The data also show that this aquifer is of poor quality when considering taste, odor, or appearance guidelines.

Montgomery Aquifer:

No regional information could be found about this aquifer.

Since the water wells are typically in production, no water level information is available for these aquifers to determine the direction of groundwater flow. Production wells will influence local flow direction within the capture zone of each well.

According to the Louisiana Aquifer Recharge Potential Map, recharge potential is low to none at the site (Appendix D). In addition, the downward slope from the site drains surface water and reduces recharge potential.

Site Groundwater:

Site-specific hydrogeology is described in the Environmental Assessment Report Section II, Groundwater and Subsurface Environment in Appendix U. Twelve (12) soil borings up to 160 feet bgs, two (2) monitor wells and five (5) piezometers were installed to delineate the subsurface soils and groundwater conditions.

Two distinct water bearing zones separated by fractured clay layers are present beneath the site. Appendix 2-I of the Environmental Assessment Report Section II, Groundwater and Subsurface Environment (Appendix U) includes a fence diagram that depicts the subsurface geology and water bearing zones. The water bearing zones are described as the upper aquifer and lower aquifer. The upper zone sand formation is not continuous across the site and appears to be a sand channel that trends northwest to southeast. The lower zone sand appears to be continuous across the site. A potentiometric surface map for the upper zone indicates flow to the south-southeast with a gradient of 0.0046 (Figure 2-1 in the Environmental Assessment Report). A potentiometric surface map for the lower zone indicates flow to the southeast with a gradient of 0.0065 (Figure 2-2 in the Environmental Assessment Report).

Monitor wells/piezometers P1-W1, P2-W1, P3-W1, MW1-W1 and MW2-W1 were collected on July 19-23, 1993. The samples were analyzed for volatile organics, semi-volatile organics and priority pollutant metals. No volatile organics were detected. Of the semi-volatile organics, Diethylphthalate was detected at 6 μg/l in P1-W1 and P2-W1 and Phenol was detected in all of the wells from 22 to 140μg/l. The groundwater screening standard (GWss) from the LDEQ

RECAP document (October 2003) for Diethylphthalate is 2.92 mg/l (2,920 μg/l) so the detected concentrations are below the GWss. The GWss Phenol is 0.1825 mg/l (182.5 μg/l) so the detected concentrations are below the GWss. Naturally occurring metals were detected as follows:

Metals (mg/l)	Range	GWss
Aluminum	0.2 to 32.4	NA
Barium	0.012 to 0.32	2
Chromium	0.02 to 0.06	0.1
Copper	0.01 to 0.03	1.3
Zinc	0.07 to 0.29	1.095

A GWss for aluminum was not provided in RECAP. As shown, these metals are below the GWss for all constituents and represent background or indigenous concentrations.

LAC 33:V.3203.B.11 — *An explanation of the potential damage to physical structures caused by exposure to waste constituents (i.e., fire, explosion, etc.)*

Periodically, the heat associated with the repeated thermal treatment of the waste will damage the burn pans. These burn pans occasionally need to be replaced with new burn pans. The facility considers this activity a routine maintenance activity.

LAC 33:V.3203.C.1-5 — *An explanation of the prevention of any releases and explain the volume and physical and chemical characteristics of the waste in the unit including its potential for the emission and dispersal of gases, aerosols, and particulates must be provided. An explanation of the atmospheric, meteorologic and topographic characteristics of the unit and the surrounding area must be provided in addition to referencing other sections in the application for additional information. An explanation of the prevention of any releases that may have adverse effects of the existing quality of the air, including other source of contamination and their cumulative impact on the air in addition to referencing a section of the application for additional information must also be provided.*

Topographic:

A description of the hydrology is in Appendix U in the Environmental Assessment Report Section III, Wetlands and Surface Water. The surface water hydrology is depicted on Drawing 103.

The operations area is adjacent to the highest topographic point of the area, approximately 200 feet above mean sea level, with three primary drainage features discharging stormwater from the storage and treatment units. Discharge from the thermal treatment area flows into the retention pond, and the retention pond drains north toward an intermittent stream that flows northwest. Additional tributaries converge into Summerfield Branch approximately 0.6 miles west of Highway 471.

The second drainage feature directs storm water flow from the western corner of the facility. This channel drains into Summerfield Branch west of Highway 471. The areas near the preparation building and four storage magazines drain into this area.

Storm water from the southeastern portion of the facility flows to an intermittent stream that flows into a wetland area near the property boundary. Some facility roads and the area near five of the storage magazines drain into this natural channel.

The nearest named surface water body is Summerfield Branch, which is approximately 0.5 miles to the northwest from the site boundary. Summerfield Branch flows approximately 2 miles northwest into Bayou Grappe. Bayou Grappe meanders from northwest to southeast and eventually merges with the Red River.

Meteorological:

As summarized in Appendix O, the average annual precipitation for Alexandria from 1971 to 2000 was 61.44 inches. Over this period, normal monthly precipitation ranged from 4.00 inches in September to 6.39 inches in December. Mean temperature ranged from 56.6 to 77.1 degrees Fahrenheit with an average temperature of 66.9 degrees Fahrenheit. The Wind Rose Plot from Alexandria International Airpark from 1980 to 1994 indicates that the average wind speed was 3.64 knots and the prevalent wind direction is from the south. The meteorological data for 2002 from the Baton Rouge station indicates that the prevailing wind direction is 90 degrees and the mean speed is 6 miles per hour. The maximum 2-minute wind was 60 miles per hour.

LAC 33:V.3207 *See comments on LAC 33:V.Chapter 35, below.*

See responses to LAC 33:V.Chapter 35.

LAC 33:V.3322

This regulation pertaining to HSWA Corrective Action requirements for Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) applies to the Clean Harbors-Colfax facility, including currently identified SWMUs/AOCs, any newly-identified SWMUs/AOCs, and any newly-identified releases from existing SWMUs/AOCs. Currently, the only identified SWMU/ACO requiring corrective action is the "Old Burn Unit." Because several revisions of RECAP have been implemented since the existing workplan for conducting an RFI for this unit was submitted several years ago, a updated, revised workplan, prepared in accordance with the October 2003 version of RECAP, must be submitted as part of this application.

LAC 33:V.3322 states that the owner or operator of a facility seeking a permit for the treatment, storage, or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit. There are no known releases from the SWMUs within the operational unit boundary, and corrective action is not necessary at this time.

LAC 33:V.Chapter 35

In addition to the soil samples proposed for areas of visual contamination near the treatment unit, additional soil sampling locations should be proposed for any areas at which waste enters or leaves the unit, any areas where runoff leaves the unit, and beneath any unsealed joints or cracks in the containment system. On closure, groundwater sampling may be required, depending on the results of soil sampling.

The facility stated in the Closure Plan that it anticipates that it will have to assess the soil in the area of the treatment unit under the existing Soil Monitoring Plan (as it has done routinely over the life of the facility). If it is determined that there has been a soil impact, an assessment plan will then be developed in coordination with the LDEQ. The facility acknowledges that the results of the soil sampling could necessitate the need for groundwater sampling at the time of closure.

LAC 33:V.Chapter 3509 & General Comment

The closure cost estimates are to be based on worst case scenario and based on third party cost estimates (i.e., facility is at maximum

capacity, material and waste must be treated, disposed of by contract workers).

The closure cost estimate assumes that the maximum permitted amount of waste will be on-site at the time of closure. LAC 33.V.3705.A.2 allows for the use of costs for on-site disposal if the facility can demonstrate that on-site capacity will exist at all times over the life of the facility. Since the facility's lifetime capacity is not limited by this permit, the facility believes that the on-site capacity will still exist at the time of closure for the thermal treatment of any remaining wastes that may be in storage. The third party disposal of the resulting ash from this process is included in the closure cost estimate. This approach is the same as that allowed by LDEQ when it issued the original permit. The cost estimate has been revised to incorporate the costs accommodate for processing the waste by a third party utilizing the facility's existing equipment and technology.

General Comment

A workplan for conducting an RFI for this unit was submitted several years ago. Because several revisions of RECAP have been implemented since submittal of this workplan, we should probably request an updated workplan, prepared in accordance with the October 2003 version of RECAP, in conjunction with the next round of responses to NODs.

The revised workplan is included as Appendix M.

LAC 33:V.3511

An explanation of the staging/parking area's capacity must be provided (i.e., maximum number of trucks, etc.).

This information is described on pages 35-7 and 35-8. The text indicates that it is a 4-bay parking area.

Appendix B
Drawing 100

The map showing a distance of 1,000 feet around the facility must e to a scale of 1" equal to not more than 200'; contours must be shown on the map. The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility must be provided (LAC 33:V.517.B).

Drawing 100 should be considered as additional reference information. Drawing 103 has been revised to fully address these requirements.

Drawing 101

The aerial maps are not to scale and do not contain a legend. The maps do not include the surrounding land use (i.e., residents, commercial, agricultural, and recreational areas, schools, day cares, hospitals, etc.). The maps must indicate a 2 mile radius (circle) around the facility and identify all of the land uses within the 2 mile radius of the facility. The applicant must submit a revised aerial map(s) with all the above information (LAC 33:V.517.B.5).

Drawing 101 has been revised. Surrounding land use is contained on Drawing 101.

Drawing 102

The surrounding land use map and legend must identify any residential, commercial, agricultural, recreational and public areas such as schools, day care centers, hospitals, nursing homes, prisons, libraries, etc. (LAC 33:V.517.B.5).

This drawing has been deleted, and the relevant information is included on the revised Drawing 101. There are no recreational or public areas such as schools, day care centers, hospitals, nursing homes, prisons, libraries, etc. in the vicinity of the facility. The drawing does indicate residential and agricultural/forest areas surrounding the site. There is a church within two miles of the facility as depicted on the drawing.

Appendix B
Drawings 103 & 104

A topographical map or maps showing a distance of 1,000 feet around the facility at a scale of 1" equal to not more than 200 feet that shows the contours must be provided. The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility. Surface water including intermittent streams and surface flow through the site (LAC 33:V.515.A.15 and 517.B).

The map indicating all known wells, operating and abandoned, on the site and within 2 miles of the site perimeter as required by LAC 33:V.515.A.15, including the depth of the wells, amount of pumpage, water level, depth and water analysis from the water well nearest the disposal site is also required.

Drawing 103 has been revised. Drawing 104 has been revised to include a table on the map that includes the well data requested above.

LAC 33:V.517.B.4
Appendix B
Drawing 103

surface waters including intermittent streams and surface flow through the site and map of potentiometric surface for aquifers within 1000 feet of lowest elevation of disposal cells, or other facilities containing hazardous waste, from 1,000 feet upstream to 1,000 feet downstream, where practicable must be provided.

A general map and cross sections indicating the extent of freshwater sands, and the degree of isolation from waste sources by confirming layers of clay must be provided.

Same as above.

Appendix B
Drawing 104 and
General Comment

A topographical map extending two miles beyond the property boundaries of the facility indicating each hazardous waste treatment, storage, and disposal facility, and those wells, springs, other surface water bodies, and drinking water wells listed in the public records or otherwise known to the applicant must be provided.

Drawing 104 has been revised and includes all the pertinent information required above.

Appendix B
Drawing 105

A map of the security and emergency equipment must be to a scale of 1" equal to not more than 200 feet. The security (perimeter fence) drawing/map must contain a legend identifying all the information shown on the map. The lighting and monitoring equipment(i.e., cameras, gate cards, guard shack, etc.) and warning signs must be denoted on the drawing and a legend identifying their locations must be provided.

The drawing of emergency equipment layout must indicate the number and locations of fire extinguishers and/or PPE within the each designated areas.

There are no cameras at the facility, and gate cards are not utilized. Drawing 105 has been revised to more clearly identify the emergency equipment.

Appendix B
Drawing 114

A revised map with a scale of 1" equal to not more than 200 feet, a north arrow and a legend must be provided.

This drawing was intended to show only the deep cross section. There is no other information depicted, thus no additional legend. The map covers an area greater than four miles, and it would be impossible to include this much property on a drawing with a scale of 1 inch to 200 feet. As a result, a separate request for an alternate map scale has been submitted to the Department. The facility obtained approval for this alternate map scale for this drawing in a letter dated December 9, 2004 (Scardina to Andrews). The map does contain a north arrow.

Appendix B
Drawing 116

A more recent aerial photograph should be provided if possible. The magazine areas should be included in the aerial photograph if possible.

Even a more recent aerial photo is not likely to clearly depict all the magazines since the numerous evergreen trees on the facility obstruct the view from the air. Please refer to the revised Drawing 101 for a more complete aerial view. Additional ground-level photographs of the waste management units are included in the Part A/I application to provide more descriptive information (including typical views of the storage magazines).

Appendix E

No figure was included in this appendix.

This appendix was reserved for potential use but was not needed. As a result, there were no figures included in it.

Appendix G
WAP

The WAP must include the following information:

- *Maintaining and decontamination of equipment*
- *Sample preservation and storage; QA/QC procedures*
- *Flow chart/diagram of shipment screening*
- *Selecting sampling procedures that include sampling strategies such as objectives of collecting samples, types of samples needed, selecting of sampling locations, number of samples, sampling frequencies, sample collection and handling techniques used*
- *Sampling equipment (physical parameters, chemical parameters, waste specification)*
- *Waste parameters and rationale for selecting*

- *Criteria for parameter selection that includes waste identification, the identification of incompatible/inappropriate wastes, process and design considerations (types, location and construction of units), types of wastes to be managed, volumes of wastes to be managed, method of treatment*
- *Identification and classification and quantity of hazardous waste that include each hazardous waste at the facility, each process, rationale for identification of each waste as a hazardous waste, EPA waste classification code*
- *A description of hazardous waste management units that includes the storage areas and the OB/OD units and describe each waste type in each unit, method for how hazardous waste will be mixed or blended, how will these activities be conducted, etc. must be included..*

Most of these items are not applicable since, due to the physical and chemical properties of the incoming wastes, sampling is not suitable (other than visual observation). The revised Waste Analysis Plan further describes the activities undertaken at the facility to ensure that each incoming waste stream has been properly identified by the generator and is acceptable for management at the facility.

Appendix G
WAP

The WAP must describe the following information:

- *How the identification of the wastes from off site will be verified*
- *How will corroborative testing be conducted (i.e., using full scale analysis, fingerprinting, or other process such as acceptable knowledge)*
- *Will managing wastes (mix bulk chemicals) change the chemical properties*
- *How will the initial waste characterization change*
- *What additional sampling and analysis is required at the storage facility*
- *Will new waste identification be required and how will it be verified*
- *How will the treated waste be sampled*
- *What testing/analytical methods will be used to analyze the waste*
- *How will the wastes be screened for contaminants that are incompatible with the treatment process*

- *What are the treatment or process design limitations for optimal safe use of equipment*

This information is explained in the revised Waste Analysis Plan (Appendix G). The key aspect is that no analytical of the incoming waste takes place (aside from visual examination). Acceptance is based on information provided by the generators and historical experience. This information/knowledge, along with a visual inspection provides the basis for decision-making with regard to waste identification and acceptance.

Appendix G
WAP

The WAP must include a description of the facility, selecting of waste analysis parameters, selecting of sampling procedures, selecting of laboratory and testing and analytical methods and selecting of waste re-evaluation frequencies.

The wastes are not sampled, per the WAP, due to the inherent risks associated with the wastes. Each waste stream that continues to be accepted at the facility is re-evaluated on an annual basis, or more often if the facility has reason to suspect that characteristics of the waste have changed since the submittal of the previous profile/re-characterization. As stated previously, there are no chemical analytical procedures involved with the waste evaluation on-site.

A description of what the applicable treatment standards with respect to LDR regulations, did the treatment achieve LDR standards or is additional sampling and analysis necessary to make this determination and what new wastes/waste codes and treatability groups were generated and are there any additional applicable treatment standards with respect to LDR regulations.

The material is being thermally treated, and there are no numerical treatment standards for reactive wastes. Deactivation is the applicable treatment standard for the incoming wastes. The remaining residue is a new waste that is generated as a treatment by-product and is considered site generated. This material is analyzed to determine whether it is characteristically hazardous or not. In the case of listed waste residues, these materials are considered hazardous and are shipped to an appropriate waste outlet for incineration/disposal. To the extent that the newly generated wastes are hazardous, the LDR requirements would apply and would be dealt with accordingly from that point.

Appendix G
WAP

A detailed explanation of the storage and disposal of the ash/residue left after a burn must be provided.

The Ash Management SOP that accompanies the Waste Analysis Plan provides detailed information concerning the management of the ash/residue left after a burn.

Appendix I
Contingency Plan

An explanation of the two (primary and secondary) evacuation routes must be provided. A map or diagram that clearly denotes the two routes must be provided. The plan must also provide a description of any spill kits and their contents.

The evacuation plan must contain a map, diagram or site layout marking the gates and the primary and secondary evacuation routes. A description of evacuation procedures must be provided.

The procedures for the notification of local authorities and the notification and evacuation of the local community must be provided.

The evacuation maps have been re-drawn to better differentiate between the primary and secondary evacuation routes.

The contents of the spill kits are provided in the revised plan.

In the highly unlikely event that an evacuation of the local community is necessary, the local sheriff's department will coordinate the notification and evacuation. This information has been included in the revised Contingency Plan (Appendix I).

Appendix I
Contingency Plan

The contingency plan must include decontamination procedures.

The plan has been revised to include decontamination procedures.

Appendix I
Contingency Plan

A description of communication procedures for off-site emergency assistance (i.e., who, how, etc.) and the primary and secondary contacts (i.e., list of names and telephone numbers) must be provided.

Pages 18 and 19 include the off-site emergency contacts and phone numbers.

Appendix I
Contingency Plan

An example of the inspection report form should be provided. Procedures for preventive maintenance should be provided.

The inspection report form for inspections of emergency equipment is included in the Inspection Plan (Appendix H, Figure 2).

Appendix I
Contingency Plan

A list of all emergency equipment must include the location, a physical description and a brief outline of each item's capabilities must be provided.

This information is addressed in the appendices to the Contingency Plan.

Appendix I
Contingency Plan

Emergency procedures for bomb threats should be established and addressed in the contingency and emergency plan.

In the event of a bomb threat, the facility would report it to the local law enforcement authorities for further investigation and recommendations as to the proper course of action. Since the facility is monitored at all times, it is highly unlikely that a bomb could be unknowingly brought into the facility. Due to the remote location of the facility and due to the lack of significant targets, the facility considers it extremely unlikely that it would be targeted for a bomb attack by terrorists or others. The facility has no documented occurrences of bomb threats to date.

Appendix I
Contingency Plan
Figure 1

Figure 1, site plan, is not to scale, does not include a legend or a north arrow. A revised map must be provided.

This drawing was not intended to be a "site plan." The intent was to show the general location of the facility. It should be referred to as "Site Location Map."

Appendix I
Contingency Plan
Figure 2

Figure 2, emergency equipment map is not to scale. The legend does not include all items identified on the map. The map does not include all emergency equipment and the number of fire extinguishers, eye washes, etc. in each location. The map does not indicate the exact location of the emergency equipment within the buildings. A list of all equipment that includes a description of each must be provided. A color coded diagram is useful in identifying locations and should be provided if possible.

The map has been revised and improved.

Appendix I
Contingency Plan
Figure 3

Figure 3, evacuation route map is not to scale. The map must include a legend that identifies all items indicated on the map. The map does not identify the primary and secondary evacuation routes. The map is difficult to read and identify the areas marked. A color coded diagram is useful in identifying locations, areas and routes. A revised map must be provided.

The map has been revised and improved.

Appendix I
Contingency Plan
Appendix A
List of Fire Fighting Equipment

The list of emergency equipment must include all equipment used on-site in the incident of a fire. The equipment should include the PPE, the fire hoses, fire hydrants utilized, pumps, the fire water pond, water trucks and all other equipment used. A physical description of each item on the list and a brief outline of its capabilities must be provided.

The facility does not have any fire hydrants, water trucks, or other equipment. The pond is available to supply water to off-site fire fighting equipment if needed for refilling. The facility maintains fire breaks throughout the surrounding wooded areas to minimize the potential that a fire could spread to off-site areas. The facility also conducts periodic controlled burns (in coordination with the appropriate authorities) to further minimize the potential of fires in the areas surrounding the active site.

Appendix I
Contingency Plan
Appendix B
List of Spill Control Equipment

The list of spill control equipment must include the decontamination equipment, the PPE, etc. A physical description of each item on the list and a brief outline of its capabilities must be included.

The decontamination equipment and PPE are included in Appendix C of the Contingency Plan.

Appendix I
Contingency Plan
Appendix C
Decontamination Equipment

The list of decontamination equipment must include a of all the PPE, the exact location of protective equipment and the quantity of each. A physical description of each item on the list and a brief outline of its capabilities must be included.

The quantity of each type of PPE will vary from time to time but will be sufficient to ensure that all personnel have access to it at all times while on-site.

Appendix J
Engineering Certifications

The Engineering Certifications must be provided.

As per the Table of Contents, this Appendix was reserved. The only Engineering Certification that needed to be included was the certification for the WAP, and it was included as an attachment to the WAP (Appendix G).

Appendix K
Training Plan

The Training Plan should include HAZWOPER training for all employees in the RCRA regulated areas/units and annual refreshers. The training program must include CPR, First Aid, PPE and decontamination training for all applicable employees.

All these items are discussed in the plan.

Appendix K
Training Plan

A delineation of the training programs must be provided (i.e., conducted on-site or off-site, by a contractor or in house). A list of employees, by job title, required to attend these training programs (i.e., Site Coordinator, Plant Engineer, etc.) must be provided.

All the site job titles are included along with details on the required training for each. The training will generally be conducted on-site but may be conducted off-site, if necessary. Training will be conducted either by competent employees of the company or by outside contractors.

Appendix K
Training Plan

The facility shall conduct training sessions to inform and train representatives of local fire departments, law enforcement, and emergency response teams of the plant layout, locations of possible hazards, location of emergency equipment, operations, evacuation

plan and route, power cutoffs, communication equipment and the phone numbers of all required contacts, etc. as required by the regulations.

This topic is discussed in Section 3.7 of the Training Plan. The section has been expanded to include more details. All outside emergency response personnel are provided with the latest copy of the Contingency Plan to ensure that they are familiar with the facility and that they have all the latest facility contact information. Signed coordination agreements are provided in Appendix I, along with the Contingency Plan.

Appendix K
Training Plan

The training program should include CPR, First Aid, and the use of PPE training for all applicable employees.

These items are included. PPE training is included in the orientation training as described on page 5 of the Training Plan. CPR and First Aid are specifically included in the discussion on page 6 of the plan.

Appendix L
Closure Plan

Closure cost estimates for the collection, containerizing and for the disposal of waste as solid or hazardous must be provided. Costs for testing the ash residue must be included.

Costs for disposal of all residual wastes are included, and additional cost estimates for analytical testing of the ash residue have been included in the revised cost estimate.

Appendix L
Closure Plan

Closure cost estimates for steam cleaning or high pressure washing and the amount of wash water generated, according to EPA OSWER Directive 9476.00-6 is 4 gallons per square foot. The estimates provided for the amount of washwater generated and the cost for disposal were low. The applicant must revise the cost estimates or provide documentation for the amounts and figures provided.

The cost estimate has been revised to include the generation and disposal of additional wash water. Appendix L has been revised to incorporate these changes and is included as an attachment to this document.

Appendix L
Closure Plan

The closure cost estimates for the decontamination of the tank must be provided. The estimate for closure must include all associated cost for the closure of a tank.

The tank has never been used and is being removed from the permit.

Appendix L
Closure Plan

Closure cost estimates for the decontamination of the loader and excavator should be provided.

These pieces of equipment do not come into contact with hazardous wastes. Since they do not come into direct contact with hazardous waste, the facility does not believe they will need to be decontaminated.

Appendix T
Response to IT Questions

Responses to "IT" Questions must be detailed. All responses must provide an explanation of why of a question is applicability or not applicability. Reponses must not reference a section within the permit as a response. The responses to "IT" questions should be a "stand alone document." The response must contain the information for which the applicant referenced. A detailed explanation must be provided for each "IT" question response. All figures, flow charts or diagrams included as part of a response must be explained in detail and clearly label.

Please refer to revised Appendix T.

Clean Harbors Colfax, LLC looks forward to working with the Department as this application proceeds toward renewal of the operating permit for the facility. If, in the meantime, however, the Department has any questions concerning the enclosed information, please do not hesitate to contact me at (225) 778-3570.

Sincerely,

Paul L. Andrews

Paul L. Andrews
Sr. Compliance Manager
Clean Harbors Environmental Services, Inc., Louisiana Facilities

Enclosures (NOD Responses-5 bound copies)

cc:

Ms. Cathy Carter (w/enc, 1 complete copy) — USEPA-Region 6
Mr. James Gallion (w/enc, 2 complete copies) — Clean Harbors Colfax, LLC
Mr. Mike Crisenbery (wo/enc) — Clean Harbors Environmental Services, Inc.

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OMB #: 2050-0034 Expires 10/31/02

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT INFORMATION FORM

1. Facility Permit Contact (See instructions on page 35)	First Name: James	MI: E	Last Name: Gallion
	Phone Number: 318-627-3443		Phone Number Extension:
2. Facility Permit Contact Mailing Address (See instructions on page 35)	Street or P.O. Box: 3763 Highway 471		
	City, Town, or Village: Colfax		
	State: LA		
	Country: USA		Zip Code: 71417
3. Legal Owner Mailing Address and Telephone Number (See instructions on page 36)	Street or P.O. Box: 3763 Highway 471		
	City, Town, or Village: Colfax		
	State: LA		
	Country: USA	Zip Code: 71417	Phone Number 318-627-3443
4. Operator Mailing Address and Telephone Number (See instructions on page 36)	Street or P.O. Box: 3763 Highway 471		
	City, Town, or Village: Colfax		
	State: LA		
	Country: USA	Zip Code: 71417	Phone Number 318-627-3443
5. Facility Existence Date (See instructions on page 36)	Facility Existence Date (mm/dd/yyyy): 06/20/1985		

6. Other Environmental Permits (See instructions on page 36)

A. Permit Type (Enter code)	B. Permit Number	C. Description
P	1120-00010-01	State Air Permit
N	LAR00B143	Federal NPDES General Permit

7. Nature of Business (Provide a brief description; see instructions on page 37)

Thermal treatment of reactive wastes.

8. Process Codes and Design Capacities (See instructions on page 37)

A. PROCESS CODE - *Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item 9.*

B. PROCESS DESIGN CAPACITY- *For each code entered in column A, enter the capacity of the process.*

1. AMOUNT - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.*
2. UNIT OF MEASURE - *For each amount entered in column B(1), enter the code in column B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.*

C. PROCESS TOTAL NUMBER OF UNITS - *Enter the total number of units for each corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection Well Disposal	allons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectare-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Acres; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T02	Surface Impoundment Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Day; Liters Per Hour; or Million Btu Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; Btu Per Hour; or Million Btu Per Hour
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Liters Per Hour; Kilograms Per Hour; or Million Btu Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Hour; Liters Per Hour; or Million Btu Per Hour
T88	Titanium Dioxide Chloride Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces Other Industrial Furnaces Listed In 40 CFR §260.10	
T93		
T94	Containment Building - Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; or Million Btu Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V

UNIT OF MEASURE	UNIT OF MEASURE CODE
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Million Btu Per Hour	X

UNIT OF MEASURE	UNIT OF MEASURE CODE
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu Per Hour	I

8. Process Codes and Design Capacities (*Continued*)

EXAMPLE FOR COMPLETING Item 8 (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	(2) Unit of Measure (Enter code)	C. Process Total Number of Units	For Official Use Only
X	1	S	0	2	5 3 3 .7 8 8	G	0 0 1	
	1	X	0	1	350.000	J	0 0 1	
	2	X	0	2	350.000	J	0 0 1	
	3	S	0	1	119,680.000	G	0 1 0	
	4	S	0	1	60.000	Y	0 0 1	
	5							
	6							
	7							
	8							
	9							
1	0							
1	1							
1	2							
1	3							

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in Item 9.

9. Other Processes (*See instructions on page 37 and follow instructions from Item 8 for D99, S99, T04 and X99 process codes*)

Line Number (Enter #s in sequence with Item 8)		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	(2) Unit of Measure (Enter code)	C. Process Total Number of Units	D. Description of Process
X	1	T	0	4				In-situ Vitrification
	1							
	2							
	3							
	4							

10. Description of Hazardous Wastes (See instructions on page 37)

A. EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. ESTIMATED ANNUAL QUANTITY - *For each listed waste entered in column A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. UNIT OF MEASURE - *For each quantity entered in column B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate the waste will be stored, treated, and/or disposed at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of Item 10.D(1).*
3. *Use additional sheet, enter line number from previous sheet, and enter additional code(s) in Item 10.E.*

2. PROCESS DESCRIPTION: *If a code is not listed for a process that will be used, describe the process in Item 10.D(2) or in Item 10.E(2).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.*
3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING Item 10 (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X	1	K	0	5	4	900	P	T	0	3	D	8	0				
X	2	D	0	0	2	400	P	T	0	3	D	8	0				
X	3	D	0	0	1	100	P	T	0	3	D	8	0				
X	4	D	0	0	2												Included With Above

10. Description of Hazardous Wastes *(Continued: use additional sheets as necessary)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B Estimated Annual Quantity of Waste	C. Unit of Measure (Enter Code)	D. PROCESSES (1) PROCESS CODES (Enter code)												D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D001	480,000	P	S01	X01											
2	D002	480,000	P	S01	X01											
3	D003	480,000	P	S01	X01											
4	D004	480,000	P	S01	X01											
5	D005	480,000	P	S01	X01											
6	D006	480,000	P	S01	X01											
7	D007	480,000	P	S01	X01											
8	D008	480,000	P	S01	X01											
9	D010	480,000	P	S01	X01											
10	D011	480,000	P	S01	X01											
11	D030	480,000	P	S01	X01											
12	K044	480,000	P	S01	X01											
13	K045	480,000	P	S01	X01											
14	K046	480,000	P	S01	X01											
15	P009	480,000	P	S01	X01											
16	P048	480,000	P	S01	X01											
17	P065	480,000	P	S01	X01											
18	P081	480,000	P	S01	X01											
19	P105	480,000	P	S01	X01											
20	P112	480,000	P	S01	X01											
21	U069	480,000	P	S01	X01											
22	U088	480,000	P	S01	X01											
23	U096	480,000	P	S01	X01											
24	U105	480,000	P	S01	X01											
25	U108	480,000	P	S01	X01											
26	U115	480,000	P	S01	X01											
27	U117	480,000	P	S01	X01											
28	U133	480,000	P	S01	X01											
29	U160	480,000	P	S01	X01											
30	U234	480,000	P	S01	X01											
31																
32																
33																

11. Map (See instructions on page 38) See Attached

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

12. Facility Drawing (See instructions on page 39) See Attached

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

13. Photographs (See instructions on page 39) See Attached

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

14. Comments (See instructions on page 39)

Item 8, Line 1 - Yearly capacity is 480,000 pounds (net explosive weight); this is equal to 0.658 short tons per day or 350 pounds per hour.

Item 8, Line 2 - Line 2 is to permit mechanical processing of the waste in the preparation building.

Item 8, Line 3 - Each magazine can store up to 5,000 pounds (net explosive weight).

Item 8, Line 4 - Line 4 is to permit limited storage of waste at the rear of the preparation building.

Item 8, Lines 1 and 2 - Expressed as net explosive weight.

Item 10 - All pounds represent net explosive weight.

MAIL THE COMPLETED FORM TO: The Appropriate State or EPA Regional Office.	United States Environmental Protection Agency **RCRA SUBTITLE C SITE IDENTIFICATION FORM**	
1. Reason for Submittal (See instructions on page 23) MARK CORRECT BOX(ES)	**Reason for Submittal:** ☐ To provide Initial Notification of Regulated Waste Activity (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities). ☐ To provide Subsequent Notification of Regulated Waste Activity (to update site identification information). ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application. ☒ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment # 3). ☐ As a component of the Hazardous Waste Report.	
2. Site EPA ID Number (See instructions on page 24)	**EPA ID Number:** LAD 981 055 791	
3. Site Name (See instructions on page 24)	**Name:** Clean Harbors Colfax, LLC	
4. Site Location Information (See instructions on page 24)	**Street Address:** 3763 Highway 471	
	City, Town, or Village: Colfax	**State:** LA
	County Name: Grant	**Zip Code:** 71417
5. Site Land Type (See instructions on page 24)	**Site Land Type:** ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other	
6. North American Industry Classification System (NAICS) Code(s) for the Site (See instructions on page 24)	**A.** 562211	**B.**
	C.	**D.**
7. Site Mailing Address (See instructions on page 25)	**Street or P. O. Box:** 3763 Highway 471	
	City, Town, or Village: Colfax	
	State: LA	
	Country: USA	**Zip Code:** 71417
8. Site Contact Person (See instructions on page 25)	**First Name:** James **MI:** E	**Last Name:** Gallion
	Phone Number: 318-627-3443	**Phone Number Extension:** ---
9. Legal Owner and Operator of the Site (See instructions on pages 25 to 26)	**A. Name of Site's Legal Owner:** Clean Harbors Colfax, LLC	**Date Became Owner (mm/dd/yyyy):** 09/07/2002
	Owner Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other	
	B. Name of Site's Operator: Clean Harbors Colfax, LLC	**Date Became Operator (mm/dd/yyyy):** 09/07/2002
	Operator Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other	

EPA ID No. L A D 9 8 1 0 5 5 7 9 1

10. Type of Regulated Waste Activity (Mark the appropriate boxes for activities that apply to your site. See instructions on pages 26 to 30)

A. Hazardous Waste Activities

1. Generator of Hazardous Waste (Choose only one of the following three categories.)

☒ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or

☐ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or

☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo.) of non-acute hazardous waste

In addition, indicate other generator activities. (Mark all that apply)

☒ d. United States Importer of Hazardous Waste

☐ e. Mixed Waste (hazardous and radioactive) Generator

For Items 2 through 6, mark all that apply.

☐ **2. Transporter of Hazardous Waste**

☒ **3. Treater, Storer, or Disposer of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.

☐ **4. Recycler of Hazardous Waste (at your site)** Note: A hazardous waste permit may be required for this activity.

5. Exempt Boiler and/or Industrial Furnace

☐ a. Small Quantity On-site Burner Exemption

☐ b. *Smelting, Melting, and Refining Furnace Exemption*

☐ **6. Underground Injection Control**

B. Universal Waste Activities

1. Large Quantity Handler of Universal Waste (accumulate *5,000* kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste generated and/or accumulated at your site. (Mark all boxes that apply):

	Generate	Accumulate
a. Batteries	☐	☐
b. Pesticides	☐	☐
c. Thermostats	☐	☐
d. Lamps	☐	☐
e. Other (specify) _____	☐	☐
f. Other (specify) _____	☐	☐
g. Other (specify) _____	☐	☐

☐ **2. Destination *Facility for Universal Waste***
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities (Mark all boxes that apply.)

1. *Used Oil Transporter* - Indicate Type(s) of Activity(ies)

☐ a. Transporter

☐ b. Transfer Facility

2. Used Oil Processor and/or Re-refiner - Indicate Type(s) of Activity(ies)

☐ a. Processor

☐ b. Re-refiner

☐ **3. Off-Specification Used Oil Burner**

4. Used Oil Fuel Marketer - Indicate Type(s) of Activity(ies)

☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner

☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

11. Description of Hazardous Wastes (See instructions on page 31)

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

D001	D002	D003	D004	D005	D006	D007
D008	D010	D011	D030	K044	K045	K046
P009	P048	P065	P081	P105	P112	U069
U088	U096	U105	U108	U115	U117	U133
U160	U234					

EPA ID No. L A D 9 8 1 0 5 5 7 9 1

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed for waste codes.

12. Comments (See instructions on page 31)

13. Certification. 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. **(See instructions on page 31)**

Signature of owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
	Scott Kuhn, Vice President of Environmental Compliance	07/28/2003

Other Louisiana Facilities Owned/Operated by Clean Harbors*

Clean Harbors Baton Rouge, LLC (Baton Rouge)
Baton Rouge Disposal, LLC (Baton Rouge)
Clean Harbors Plaquemine, LLC (Plaquemine)
Clean Harbors White Castle, LLC (White Castle)
Crowley Disposal, LLC (Jennings)
Disposal Properties, LLC (Mermentau)

*** Each of these facilities is owned by the same parent company as Clean Harbors Colfax, LLC, but each facility is independent from the other. Clean Harbors Colfax, LLC is neither the owner nor a subsidiary of any of the above listed facility.**

Media Type (check one)

Hazardous Waste [X] Air [ ]
Solid Waste [ ] Water [ ]
Radiation Licensing [ ]

Agency Interest Number: 32096

Is this a copy of a previously submitted form? Yes [ ] No [X]
If yes, indicate the original submittal date: _____
If yes, indicate the original permit number: _____

Department of Environmental Quality
Permits Division
P.O. Box 82135
Baton Rouge, LA 70884-2135
(225) 765-0219

Addendum to Permit Applications per LAC 33:I.1701

Please Type Or Print

Company Name: Clean Harbors Colfax, LLC [X] Owner [X] Operator

Parent Company (if Company Name given above is a division): Clean Harbors Colfax, LLC is a wholly owned subsidiary of Clean Harbors Disposal Services, LLC

Plant name (if any): Clean Harbors Colfax, LLC

Nearest town: Colfax

Parish where located: Grant

For Permits Division Use Only

Use attachments to provide the required information. "NA" is not an acceptable answer. If a particular section does not apply to you, explain why. * which is a wholly owned subsidiary of Clean Harbors, Inc.

1. Please provide a list of the states where you, as applicant*, have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying. See attached list.

   *This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.

2. Do you owe any outstanding fees or final penalties to the Department? No [X] Yes [ ] If yes, please explain.

3. Is your company a corporation or limited liability company? No [ ] Yes [X] If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State.

Certification:

I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Addendum to the Permit Application, including all attachments thereto are true, accurate, and complete.

Responsible Official

Name	Scott Kuhn
Title	Vice President, Environmental Compliance
Company	Clean Harbors Colfax, LLC
Suite, mail drop, or division	
Street or P.O. Box	3763 Highway 471
City	Colfax
State	LA
Zip	70417
Business phone	318-627-3443
Signature of responsible official(s)	
Date	7/28/2003

The Department may require the submission of additional information if it deems such information necessary.

June 19, 2001

Addendum to Permit Applications
Per
LAC 33:1.1701

1. List of states where applicant has similar permits:

Arizona
California
Colorado
Connecticut
Florida
Georgia
Iowa
Illinois
Indiana
Kansas
Louisiana
Massachusetts
Maryland
Maine
Michigan
Minnesota
Missouri
North Carolina
North Dakota
Nebraska
New Hampshire
New Jersey
New Mexico
Nevada
New York
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
Tennessee
Texas
Utah
Virginia
Vermont
Washington
Wisconsin
West Virginia

UNITED STATES OF AMERICA

State of Louisiana

Fox McKeithen

SECRETARY OF STATE

As Secretary of State, of the State of Louisiana, I do hereby Certify that

CLEAN HARBORS COLFAX, LLC

A DELAWARE limited liability company domiciled at DOVER,

Filed charter and qualified to do business in this State on July 11, 2002,

I further certify that the records of this Office indicate the company has paid all fees due the Secretary of State, and so far as the Office of the Secretary of State is concerned, is in good standing and is authorized to do business in this State.

I further certify that this certificate is not intended to reflect the financial condition of this company since this information is not available from the records of this Office.

In testimony whereof, I have hereunto set my hand and caused the Seal of my Office to be affixed at the City of Baton Rouge on,

June 13, 2003

ABA 35303384Q

Secretary of State

STATE OF LOUISIANA
UNION JUSTICE CONFIDENCE
SECRETARY OF STATE

CERTIFICATE SS 102 S (R 3-88)

Assistant Secretary's Certificate

I, William Geary, Assistant Secretary of Clean Harbors, Inc. and all of its subsidiaries listed on Exhibit A, certify that each operations person with the title of Director, General Manager or Compliance Manager has the authority to sign and certify environmental documents, including but not limited to environmental reports, related to the operation of the facility. I further certify, that each operations person with the title of Director, General Manager or Compliance Manager at a facility with more than 250 people or having gross annual sales or expenditures in excess of $25 million dollars, has the authority to sign and certify environmental documents, including but not limited to permit applications, related to the operation of the facility.

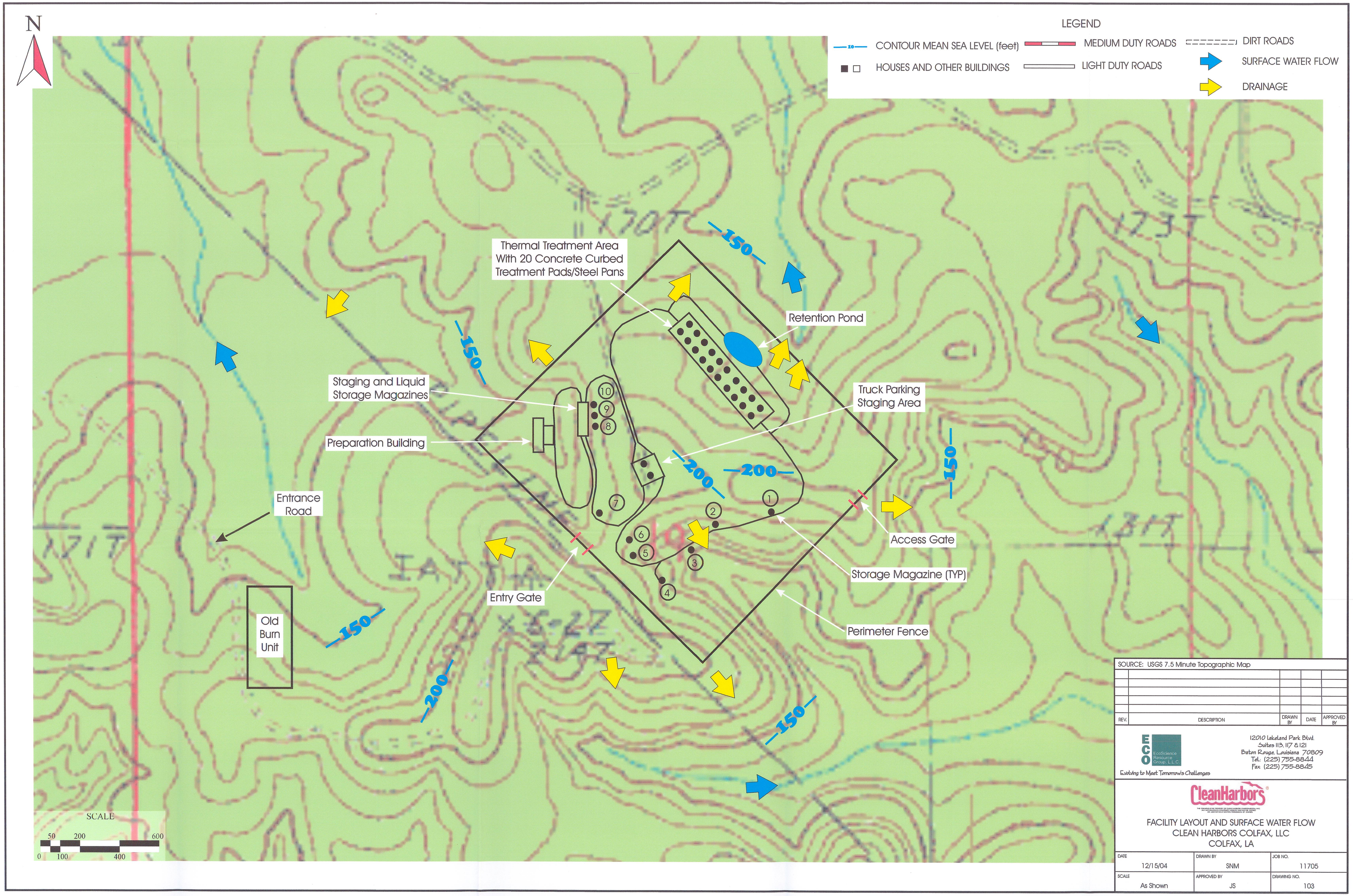
Witness the execution hereof under seal.

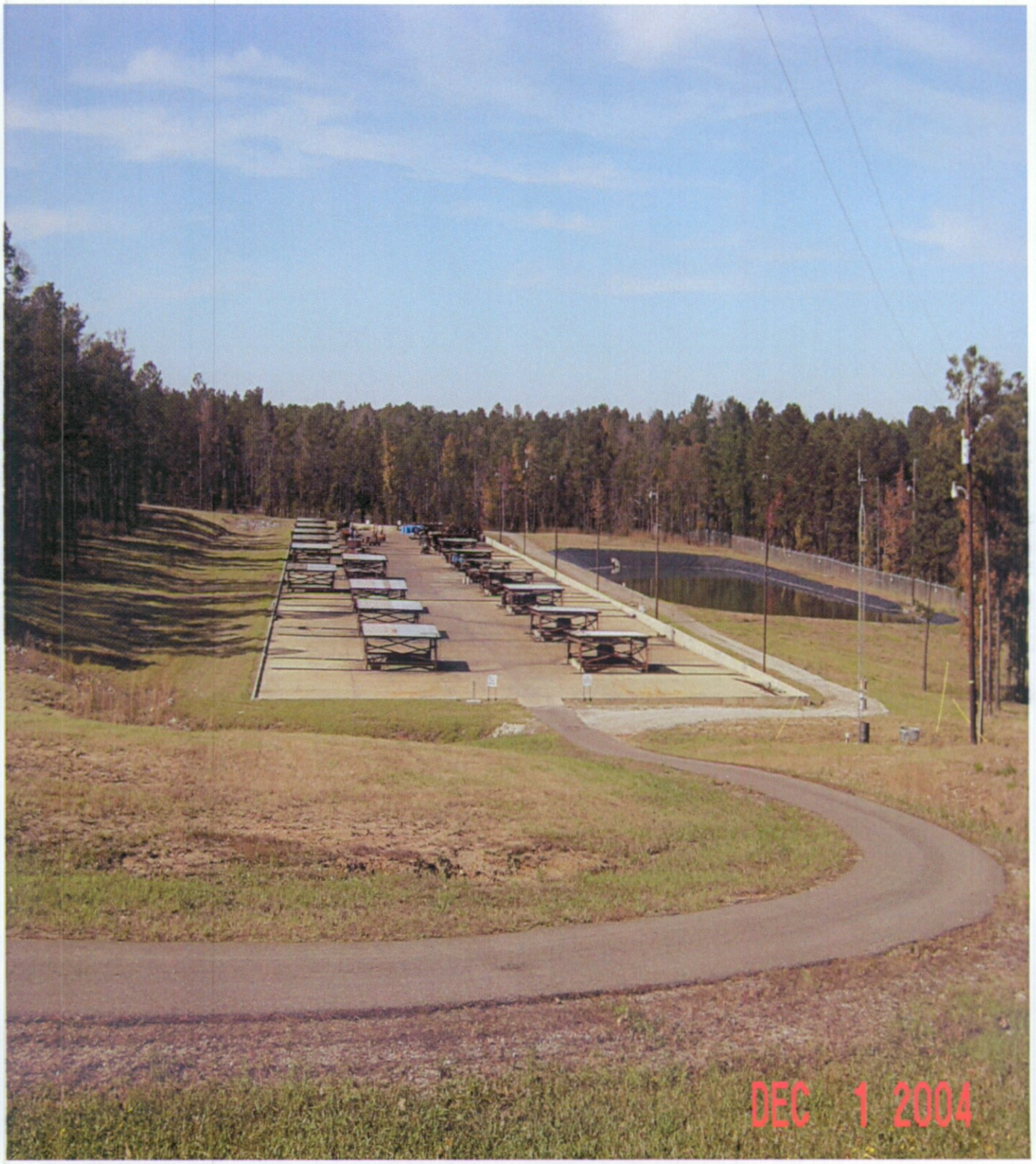
September 20, 2002

William Geary, Assistant Secretary

Exhibt A

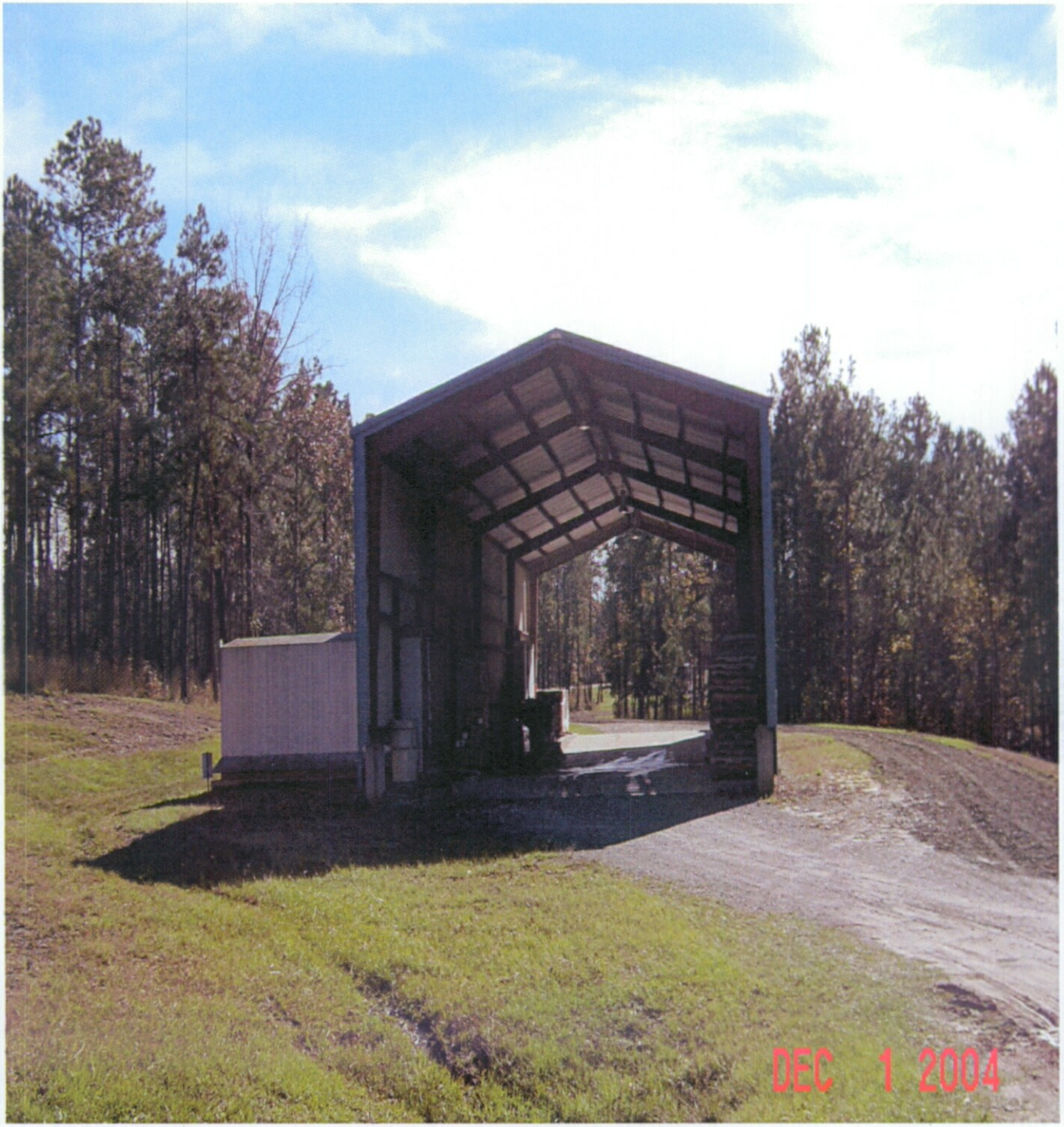
Company
Altair Disposal Services, LLC
Baton Rouge Disposal, LLC
Bridgeport Disposal, LLC
Clean Harbors Andover, LLC
Clean Harbors Antioch, LLC
Clean Harbors Aragonite, LLC
Clean Harbors Arizona, LLC
Clean Harbors Baton Rouge, LLC
Clean Harbors BDT, LLC
Clean Harbors Buttonwillow, LLC
Clean Harbors Canada, Inc.
Clean Harbors Chattanooga, LLC
Clean Harbors Coffeyville, LLC
Clean Harbors Colfax, LLC
Clean Harbors Deer Park, LP
Clean Harbors Deer Trail, LLC
Clean Harbors Environmental Servies, Inc.
Clean Harbors Florida, LLC
Clean Harbors Grassy Mountain, LLC
Clean Harbors Kansas, LLC
Clean Harbors LaPorte, LP
Clean Harbors Laurel, LLC
Clean Harbors Lone Mountain, LLC
Clean Harbors Los Angeles, LLC
Clean Harbors Mercier, Inc.
Clean Harbors of Baltimore, Inc.
Clean Harbors of Braintree, Inc.
Clean Harbors of Connecticut, Inc.
Clean Harbors Pecatonica, LLC
Clean Harbors Plaquemine, LLC
Clean Harbors PPM, LLC
Clean Harbors Quebec, Inc
Clean Harbors Reidsville, LLC
Clean Harbors San Jose, LLC
Clean Harbors Tennessee, LLC
Clean Harbors Westmorland, LLC
Clean Harbors White Castle, LLC
Crowley Disposal, LLC
Disposal Properties, LLC
GSX Disposal, LLC
Harbor Industrial Services Texas, LP
Hillard Disposal, LLC
Roebuck Disposal, LLC
Sawyer Disposal Services, LLC
Tulsa Disposal, LLC


N
LEGEND
CONTOUR MEAN SEA LEVEL (feet)
HOUSES AND OTHER BUILDINGS
MEDIUM DUTY ROADS
LIGHT DUTY ROADS
DIRT ROADS
SURFACE WATER FLOW
DRAINAGE
Thermal Treatment Area With 20 Concrete Curbed Treatment Pads/Steel Pans
Retention Pond
Staging and Liquid Storage Magazines
Truck Parking Staging Area
Preparation Building
Entrance Road
Access Gate
Storage Magazine (TYP)
Entry Gate
Perimeter Fence
Old Burn Unit
150
200
SCALE
0 50 100 200 400 600
SOURCE: USGS 7.5 Minute Topographic Map
REV. DESCRIPTION DRAWN BY DATE APPROVED BY
EcoScience Resource Group, L.L.C.
Evolving to Meet Tomorrow's Challenges
12010 Lakeland Park Blvd.
Suites 113, 117 & 121
Baton Rouge, Louisiana 70809
Tel: (225) 755-8844
Fax: (225) 755-8845
CleanHarbors
FACILITY LAYOUT AND SURFACE WATER FLOW
CLEAN HARBORS COLFAX, LLC
COLFAX, LA
DATE 12/15/04
DRAWN BY SNM
JOB NO. 11705
SCALE As Shown
APPROVED BY JS
DRAWING NO. 103



Burn Pads

Liquid Storage Magazines

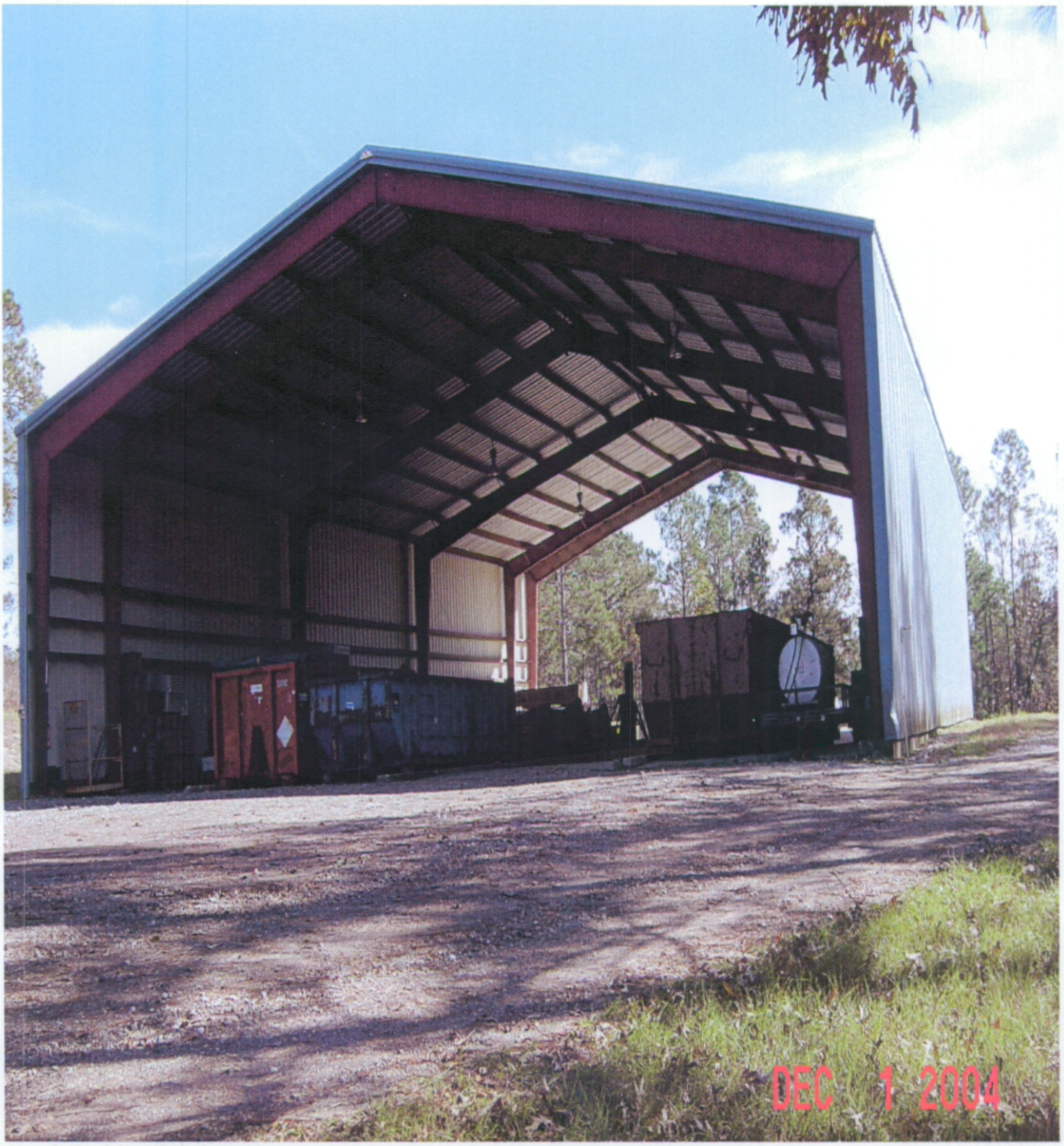


Liquid Staging Area

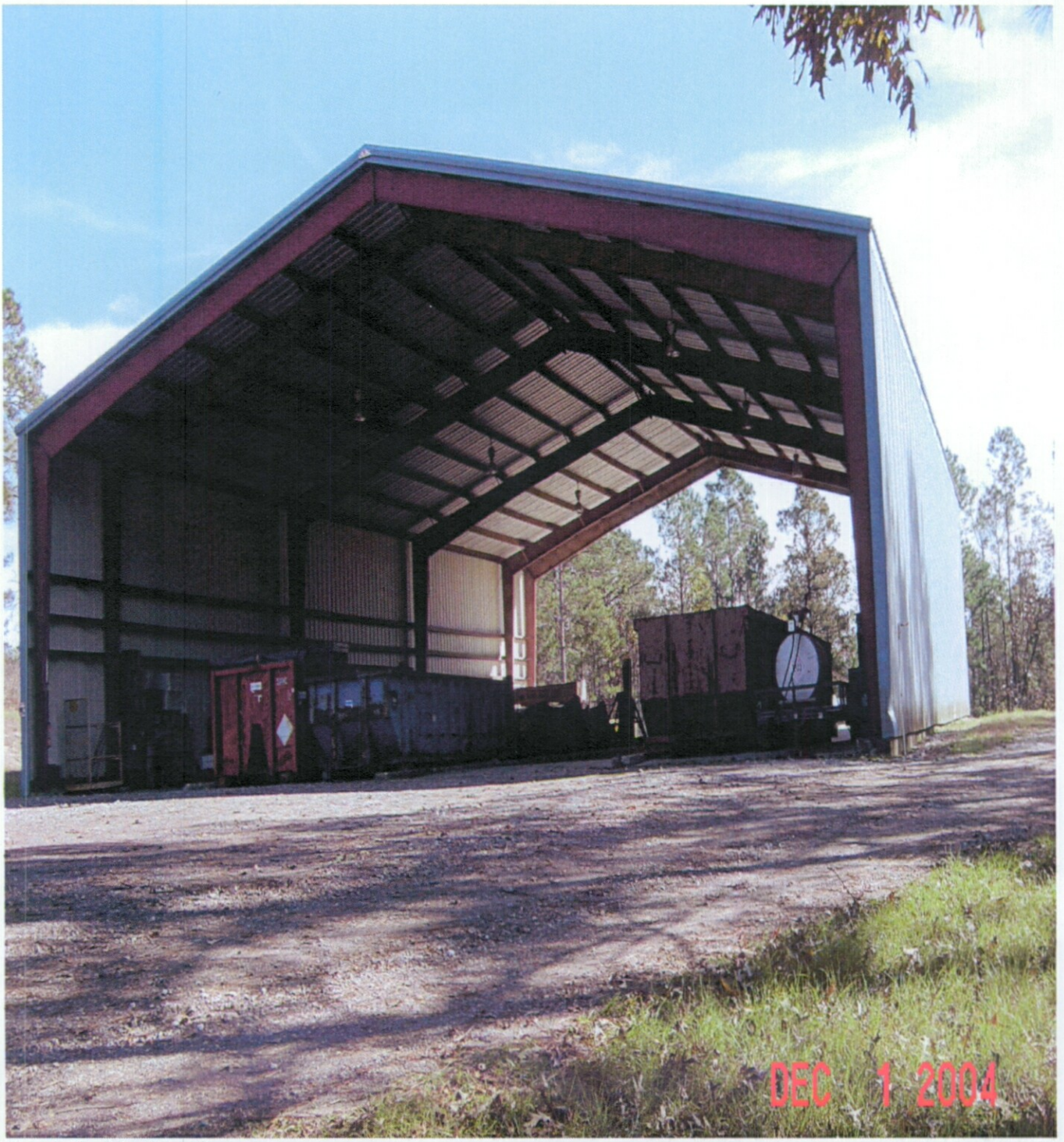
Storage Magazine – Solids (Typical)

Storage Magazine – Solids (Typical)

Preparation Building



Truck Parking/Staging Area



Truck Parking/Staging Area

Chapter 22. Prohibitions on Land Disposal

Subchapter A. Land Disposal Restrictions

2201. Purpose, Scope, and Applicability

A. *This Chapter is adopted pursuant to the authority of Act 1984, Number 803, as amended by Act 1986, Number 422, and Act 1987, Number 852, cited as Louisiana Revised Statutes Title 30, Section 2193.*

B. *The purpose of these regulations is to provide for prohibitions and incentives designed to encourage alternative methods of hazardous waste disposal, destruction, and reduction; to lessen the possibility of hazardous waste releases from existing land disposal sites; and to provide for the eventual prohibition of land disposal of hazardous waste.*

C. *This Chapter identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.*

D. *The requirements of this Chapter apply to all persons who generate or transport hazardous waste and to owners and operators of hazardous waste treatment, storage, and disposal facilities.*

E. *These regulations shall be construed and implemented to support the use of the following waste management practices in the following order of priority:*

1. *reduction of hazardous waste generated;*
2. *recycling of hazardous waste;*
3. *treatment of hazardous waste; and*
4. *land disposal of residuals from hazardous waste recycling and treatment.*

F. *The policies and determinations that the administrative authority makes pursuant to these regulations shall assert and reflect the primacy of waste reduction.*

G. *Prohibited wastes may continue to be land disposed as follows:*

1. *where persons have been granted an extension to the effective date of a prohibition under LAC 33:V.Chapter 22.Subchapter A or in accordance with LAC 33:V.2239 with respect to those wastes covered by the extension;*
2. *where persons have been granted an approval from a prohibition in accordance with a petition under LAC 33:V.2241 or 2271, or a determination made in accordance with LAC 33:V.2273, with respect to those wastes and units covered by the petition;*
3. *where an extension of the effective date or an exemption from a prohibition has been granted by EPA, and the administrative authority grants an emergency variance to allow continued land disposal. In such a case the land disposal may continue until the administrative authority makes a decision regarding the extension or exemption. Following a decision by the*

administrative authority, the waste may be land disposed only in accordance with the provisions of the extension or exemption;

4. *wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this Chapter, are not prohibited if the wastes:*

   a. *are disposed into a nonhazardous or hazardous injection well as defined in LAC 43:XVII.203.C; and*

   b. *do not exhibit any prohibited characteristic of hazardous waste identified in LAC 33:V.4903 at the point of injection at the well head;*

5. *wastes that are hazardous only because they exhibit a hazardous characteristic and which are otherwise prohibited under this Chapter are not prohibited if the wastes meet any of the following criteria, unless the wastes are subject to a specified method of treatment other than DEACT in LAC 33:V.2299.Appendix, Table 2, or are D003 reactive cyanide:*

   a. *the wastes are managed in a treatment system which subsequently discharges to waters of the United States pursuant to a permit issued under Section 402 of the Clean Water Act; or*

   b. *the wastes are treated for purposes of the pretreatment requirements of Section 307 of the Clean Water Act; or*

   c. *the wastes are managed in a zero discharge system engaged in Clean Water Act-equivalent treatment as defined in LAC 33:V.2221.D.1; and*

   d. *the wastes no longer exhibit a prohibited characteristic at the point of land disposal (i.e., placement in a surface impoundment).*

H. *The requirements of this Section shall not affect the availability of a waiver under Section 121(d)(4) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).*

I. *The following hazardous wastes are not subject to any provision of this Chapter:*

1. *waste pesticides that a farmer disposes of in accordance with LAC 33:V.1101.D;*

2. *waste identified or listed as hazardous after November 8, 1984, for which EPA has not promulgated land disposal prohibitions or treatment standards;*

3. *de minimis losses of characteristic wastes to wastewaters are not considered to be prohibited wastes and are defined as losses from normal material handling operations (e.g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks, or containers; leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; rinsate from empty containers or from containers that are rendered empty by that rinsing; and laboratory wastes not exceeding 1 percent of the total flow of wastewater into the facility's headworks on an annual basis or with a combined annualized average concentration not exceeding one part per million in the headworks of the facility's wastewater treatment or pretreatment facility;*

4. *waste generated by small quantity generators of less than 100 kg of nonacute hazardous waste or less than 1 kg of acute hazardous waste per month, as defined in LAC 33:V.108;*

5. *universal waste handlers and universal waste transporters (as defined in LAC 33:V.3813) are exempt from LAC 33:V.2205, 2245.A-I, 2246.E, and 2247 for the wastes listed below. These handlers are subject to regulation under LAC 33:V.Chapter 38, when handling the below listed universal wastes:*

   a. *batteries as described in LAC 33:V.3803;*

   b. *pesticides as described in LAC 33:V.3805;*

   c. *thermostats as described in LAC 33:V.3807;*

   d. *lamps as described in LAC 33:V.3809; and*

   e. *antifreeze as described in LAC 33:V.3811.*

Clean Harbors Colfax, LLC acknowledges the purpose, scope, and applicability of this chapter. Although the facility does not land dispose any wastes on-site, certain provisions of this chapter related to treatment and storage of hazardous wastes apply to the facility.

2203. Definitions Applicable to This Chapter

A. *When used in this Chapter the following terms have the meanings given below.*

Cone of Influence—that area around the well within which increased injection zone pressures caused by injection into the waste injection well could drive fluids into an underground source of drinking water (USDW).

Confining Zone—a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone.

Debris—solid material exceeding a 60-mm particle size that is intended for disposal and that is a manufactured object, or plant or animal matter, or natural geologic material. However, the following materials are not debris: any material for which a specific treatment standard is provided in LAC 33:V.Chapter 22.Subchapter A, namely lead acid batteries, cadmium batteries, and radioactive lead solids; process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and intact containers of hazardous waste that are not ruptured and that retain at least 75 percent of their original volume. A mixture of debris that has not been treated to the standards provided by LAC 33:V.2230 with other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.

Duly Authorized Representative—an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager or superintendent, or a position of equivalent responsibility (a duly authorized representative may be

thus be either a named individual or any individual occupying a named position), designated or named in writing by one of the following:

a. *for a corporation, by a responsible corporate officer; for the purposes of this Chapter, responsible corporate officer means:*

   i. *a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or*

   ii. *the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;*

b. *for a partnership or sole proprietorship, by a general partner or the proprietor, respectively;*

c. *for a municipality, state, federal, or other public agency, by either a principal executive officer or ranking elected official.*

Formation—a body of consolidated or unconsolidated rock characterized by a degree of lithologic homogeneity which is prevailingly, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

Halogenated Organic Compounds or HOCs—those compounds having a carbon-halogen bond which are listed in LAC 33:V.2299.Appendix, Table 5.

Hazardous Constituent(s)—those constituents listed in LAC 33:V.3105, Table 1.

Hazardous Debris—debris that contains a hazardous waste listed in LAC 33:V.4903 or that exhibits a characteristic of hazardous waste identified in LAC 33:V.4901. Any deliberate mixing of prohibited hazardous waste with debris that changes its treatment classification (i.e., from waste to hazardous debris) is not allowed under the dilution prohibition in LAC 33:V.2207.

Injection Interval—the part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

Injection Zone—a geological formation, group of formations, or part of a formation receiving fluids through an injection well.

Inorganic Metal-Bearing Waste—a waste for which the department has established treatment standards for metal hazardous constituents and which does not otherwise contain significant organic or cyanide content as described in LAC 33:V.2207.C.1, and is specifically listed in LAC 33:V.2299.Appendix, Table 12.

Land Disposal—placement in or on the land, except in a corrective action management unit or staging pile, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt-dome formation, salt-bed formation, underground mine or cave, or placement in a concrete vault or bunker intended for disposal purposes.

Mechanical Integrity—an injection well has mechanical integrity if:

a. *there is no significant leak in the casing, tubing, or packer; and*

b. *there is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore.*

Nonwastewaters—wastes that do not meet the criteria for wastewaters defined in this Section.

Petitioner—a person, or his or her duly authorized representative, who has legal authority and responsibility for a facility that generates, transports, treats, stores, or disposes of any hazardous waste, and who submits a written request to the administrative authority for an exemption, extension, or variance to allow the land disposal of an otherwise prohibited waste.

Polychlorinated Biphenyls or PCBs—any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees, or any combination of substances which contains such substance.

Soil—unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles as classified by the U.S. Soil Conservation Service, or a mixture of such materials with liquids, sludges, or solids, that is inseparable by simple mechanical removal processes and is made up primarily of soil by volume based on visual inspection. Any deliberate mixing of prohibited hazardous waste with soil that changes its treatment classification (i.e., from waste to contaminated soil) is not allowed under the dilution prohibition in LAC 33:V.2207.

Transmissive Fault or Fracture—a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

Treatment—any method, technique, or process, including incineration, occurring at permitted facilities or facilities operating under interim status that changes the physical, chemical, or biological character or composition of any hazardous waste such that the waste becomes nonhazardous, significantly less hazardous, or more suitable for land disposal because of removal or substantial reduction of undesirable properties, such as toxicity, mobility, persistence, reactivity, bioaccumulation, flammability, or corrosivity. Treatment does not include any of the following if one or more of the following is the only method used:

a. *solidification of hazardous waste by the addition of absorbent material which produces a change only in the physical character of the waste without a corresponding change in the chemical character of the waste;*

b. *treatment occurring directly in or on the land, such as land treatment, except that treatment may include in situ treatment necessary for site remediation;*

c. *dilution of hazardous waste by the addition of nonhazardous material; and/or*

d. *evaporation in a surface impoundment.*

Underground Source of Drinking Water or USDW—an aquifer or its portion:

a. *which supplies any public water system; or*

b. *which contains a sufficient quantity of groundwater to supply a public water system and:*

i. currently supplies drinking water for human consumption; or

ii. contains fewer that 10,000 mg/L total dissolved solids; and

c. which is not an aquifer exempted by the Department of Natural Resources, Office of Conservation.

Underlying Hazardous Constituent—any constituent listed in LAC 33:V.2299.Appendix, Table 7, Universal Treatment Standards, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standard.

Wastewaters—wastes that contain less than 1 percent by weight total organic carbon (TOC) and less than 1 percent by weight total suspended solids (TSS).

B. All other terms are used as defined in Chapter 1 of these regulations.

The facility acknowledges the definitions of the terms utilized in this chapter.

2205. Storage of Prohibited Wastes

A. The storage of hazardous wastes prohibited from land disposal is prohibited except under the following conditions.

1. A generator may store such wastes in tanks, containers, or containment buildings on-site solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal and the generator complies with the requirements of LAC 33:V.1109.E, Chapters 9, 15, 17, 18, 19, 21, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 35, 37, 43, and 51.

The facility, as a generator, may, from time to time, store hazardous wastes that are prohibited from land disposal in containers. Tanks or containment buildings are not used for such storage at the present time and are not anticipated in the future.

2. An owner/operator of a hazardous waste treatment, storage, or disposal facility may store such wastes in tanks, containers, or containment buildings solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal provided that each container or tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating record at that facility. Regardless of whether the tank itself is marked, an owner/operator must comply with the operating record requirements specified in LAC 33:V.1529 or 4357.

The facility, as owner/operator of a hazardous waste treatment, storage, or disposal facility (TSDF), anticipates that it will store such wastes in containers. The facility will comply with the marking requirements in this regulation during such time that hazardous wastes are stored on-site.

3. *A transporter may store manifested shipments of such wastes at a transfer facility for 10 days or less with the approval of the administrative authority in accordance with LAC 33:V.1305.*

The facility does not currently operate as a 10-day transfer facility. If, in the future, the facility determines the need for such transfer activities, the facility will submit the proper notifications to the LDEQ at that time.

B. *An owner/operator of a treatment, storage, or disposal facility may store such wastes for up to one year provided that such storage is solely for the purpose of accumulating such quantities of hazardous wastes as are necessary to facilitate proper recovery, treatment, or disposal. In response to a request from the administrative authority, the owner/operator must prove that storage for less than one year is solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.*

The facility will comply with the one year storage limitation in this regulation.

C. *An owner/operator of a treatment, storage, or disposal facility may store such wastes beyond one year with the approval of the administrative authority; however, the owner/operator bears the burden of proving that such storage is solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.*

The facility will not store wastes beyond one year without the prior approval of the administrative authority.

D. *The prohibition in Subsection A of this Section does not apply to hazardous wastes that are the subject of an approval under LAC 33:V.2241 or 2271, or a determination under LAC 33:V.2273, a case-by-case extension of time under LAC 33:V.2239, or a national capacity variance.*

E. *The prohibition in Subsection A of this Section does not apply to hazardous wastes that:*

1. *meet the treatment standards specified under LAC 33:V.2225, 2227, or 2229; or*
2. *have been granted a variance under LAC 33:V.2231; or*

4. *if treatment standards have not been specified, are in compliance with the applicable prohibitions specified in LAC 33:V.2213.*

The facility acknowledges these exceptions to the storage prohibitions in Subsection A.

E. *Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm must be stored at a facility that meets the requirements of 40 CFR 761.65(b) and must be removed from storage and treated or disposed as required by this Chapter within one year of the date when such wastes are first placed into storage. The provisions of Subsection C of this Section do not apply to PCB wastes prohibited under LAC 33:V.2213.*

The facility does not accept PCBs at concentrations greater than or equal to 50 ppm.

F. *Notwithstanding the above, any storage facility must be in full compliance with all applicable hazardous waste rules pertaining to storage.*

The facility acknowledges the requirement that it remain in full compliance with all applicable hazardous waste rules pertaining to storage and intends to do so.

G. *The prohibition and requirements in this Section do not apply to hazardous remediation wastes stored in a staging pile approved in accordance with to LAC 33:V.2605.*

The facility acknowledges this exception but does not anticipate that it will have any applicability to the facility's future operations.

2207. Dilution Prohibited as a Substitute for Treatment

A. *Except as provided in Subsection B of this Section, no generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a prohibited waste or the residual from treatment of a prohibited waste as a substitute for adequate treatment to achieve compliance with this Chapter, to circumvent the effective date of or otherwise avoid a prohibition listed in Subchapter A of this Chapter, or to circumvent a land disposal prohibition imposed by RCRA Section 3004.*

B. *Dilution of wastes that are hazardous only because they exhibit a characteristic in treatment systems that include land-based units which treat wastes subsequently discharged to a water of the United States pursuant to a permit issued under Section 402 of the Clean Water Act (CWA) or which treat wastes in a CWA-equivalent treatment system or which treat wastes for purposes of pretreatment requirements under Section 307 of the CWA is not impermissible dilution for purposes of this Section unless a method other than DEACT has been specified in LAC 33:V.2223 as the treatment standard, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.*

C. *Combustion of the hazardous waste codes listed in LAC 33:V.2299.Appendix, Table 12 is prohibited, unless the waste, at the point of generation, or after any bona fide treatment, such as cyanide destruction prior to combustion, can be demonstrated to comply with one or more of the following criteria (unless otherwise specifically prohibited from combustion):*

1. *the waste contains hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard found in LAC 33:V.2299.Appendix, Table 7;*
2. *the waste consists of organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste;*
3. *the waste, at point of generation, has reasonable heating value, such as greater than or equal to 5,000 BTU per pound;*
4. *the waste is cogenerated with wastes for which combustion is a required method of treatment;*
5. *the waste is subject to federal and/or state requirements necessitating reduction of organics (including biological agents); or*
6. *the waste contains greater than 1 percent Total Organic Carbon (TOC).*

H. *It is a form of impermissible dilution, and therefore prohibited, to add iron filings or other metallic forms of iron to lead-containing hazardous wastes in order to achieve any land disposal restriction treatment standard for lead. Lead-containing wastes include D008 wastes (wastes exhibiting a characteristic due to the presence of lead), all characteristic wastes containing lead as an underlying hazardous constituent, listed wastes containing lead as a regulated constituent, and hazardous media containing any of the aforementioned lead-containing wastes.*

The facility acknowledges the prohibitions related to dilution and will comply with these requirements.

2209. Waste-Specific Prohibitions—Wood Preserving Wastes

A. *Effective September 20, 1998, the following wastes are prohibited from land disposal: the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers F032, F034, and F035.*

B. *Effective May 12, 1999, the following wastes are prohibited from land disposal: soil and debris contaminated with F032, F034, F035, and radioactive wastes mixed with EPA Hazardous Waste Numbers F032, F034, and F035.*

C. *Between September 20, 1998 and May 12, 1999, soil and debris contaminated with F032, F034, F035, and radioactive waste mixed with F032, F034, and F035 may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in LAC 33:V.2239.I.2.*

D. *The requirements of Subsections A and B of this Section do not apply if:*

1. *an exemption or an approval has been granted in accordance with a petition under LAC 33:V.2241 or 2271, or a determination made under LAC 33:V.2273, with respect to those wastes and units covered by the petition;*
2. *the wastes meet the applicable alternate treatment standards established in accordance with a petition granted under LAC 33:V.2231;*
3. *the wastes meet the applicable treatment standards specified in this Subchapter; or*
4. *persons have been granted an extension to the effective date of a prohibition in accordance with LAC 33:V.2239, with respect to those wastes covered by the extension.*

The facility acknowledges the above prohibitions, but since the facility does not operate a land disposal unit, these requirements do not apply to the facility.

E. *To determine whether a hazardous waste identified in this Section exceeds the applicable treatment standards specified in LAC 33:V.2223, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Universal Treatment Standard levels of LAC 33:V.2299.Appendix, Table 7, the waste is prohibited from land disposal and all requirements of this Chapter are applicable, except as otherwise specified.*

The facility acknowledges the applicability of this requirement to determine whether any hazardous wastes it generates exceeds the applicable treatment standards. In addition, the facility requires each candidate waste profile to include information regarding the respective generator's determination regarding whether or not the prospective waste exceeds the applicable treatment standards.

2211. Waste-Specific Prohibitions—Dioxin-Containing Wastes

A. *The following wastes containing dioxin are deemed to pose the greatest risk to the public when disposed of on land. Therefore, the dioxin-containing wastes specified in LAC 33:V.Chapter 49 as Hazardous Waste Numbers F020, F021, F022, F023, F026, F027, and F028 are prohibited from land disposal.*

B. *The requirements of Subsection A of this Section do not apply if:*

1. *the wastes are treated to meet the standard of LAC 33:V.Chapter 22.Subchapter A; or*
2. *the wastes are disposed of at a facility that has been granted an approval from a prohibition in accordance with a petition under LAC 33:V.2241 or 2271, or a determination made under LAC 33:V.2273, with respect to those wastes covered by the exemption or approval or determination; or*

3. *an extension to the effective date of a prohibition in accordance with LAC 33:V.2239, with respect to those wastes covered by the extension.*

C. *Between the effective date of these regulations and November 8, 1990, wastes which are contaminated soil or debris resulting from a response action taken under Section 104 or 106 of CERCLA or a corrective action taken under Subtitle C of RCRA may be land disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in LAC 33:V.2239.A.1 and 2 and all other applicable requirements of LAC 33:V.Chapter 15 or Chapter 43.*

The facility does not receive wastes that include these waste codes; therefore, this section does not apply. The facility also does not dispose of any waste in an on-site land disposal unit.

2213. Waste-Specific Prohibitions—Chlorinated Aliphatic Wastes

A. *Effective May 8, 2001, the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers K174 and K175, soil and debris contaminated with these wastes, radioactive wastes mixed with these wastes, and soil and debris contaminated with radioactive wastes mixed with these wastes are prohibited from land disposal.*

B. *The requirements of Subsection A of this Section do not apply if:*

1. *the wastes meet the applicable treatment standards specified in this Chapter;*
2. *persons have been granted an exemption from a prohibition in accordance with a petition under LAC 33:V.2241 or 2271, with respect to those wastes and units covered by the petition;*
3. *the wastes meet the applicable treatment standards established in accordance with a petition granted under LAC 33:V.2231;*
4. *hazardous debris has met the treatment standards in LAC 33:V.2223 or the alternative treatment standards in LAC 33:V.2230; or*
5. *persons have been granted an extension to the effective date of the prohibition granted in accordance with LAC 33:V.2239, with respect to the wastes covered by the extension.*

C. *To determine whether a hazardous waste identified in this Section exceeds the applicable treatment standards specified in LAC 33:V.2223, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable levels of LAC 33:V.2223, the waste is prohibited from land disposal and all requirements of this Chapter are applicable, except as otherwise specified.*

D. *Disposal of K175 wastes that have complied with all applicable LAC 33:V.2223 treatment standards must also be macroencapsulated in accordance with LAC 33:V.2299.Appendix, Table 8, unless the waste is placed in:*

1. *a RCRA Subtitle C monofill containing only K175 wastes that meet all applicable LAC 33:V.2223 treatment standards; or*
2. *a dedicated RCRA Subtitle C landfill cell in which all other wastes being disposed are at a pH less than or equal to 6.0.*

The facility does not receive wastes that include these waste codes; therefore, this section does not apply. The facility also does not dispose of any waste in an on-site land disposal unit.

2215. Waste Specific Prohibitions—Soils Exhibiting the Toxicity Characteristic for Metals and Containing PCBs

A. *Effective December 26, 2000, the following wastes are prohibited from land disposal: any volume of soils exhibiting the toxicity characteristic solely because of metals (D004-D011) and containing PCBs.*

B. *Requirements of Subsection A of this Section do not apply if:*

1. *the wastes contain halogenated organic compounds (see LAC 33:V.2299.Appendix, Table 9) in total concentrations of less than 1,000 mg/kg and meet the treatment standards specified in LAC 33:V.2223 for EPA Hazardous Waste Numbers D004-D011, as applicable;*
2. *the wastes contain halogenated organic compounds in total concentrations of less than 1,000 mg/kg and meet the alternative treatment standards specified in LAC 33:V.2236 for contaminated soil;*
3. *persons have been granted an exemption from a prohibition in accordance with a petition under LAC 33:V.2241, with respect to those wastes and units covered by the petition; or*
4. *the wastes meet applicable alternative treatment standards established in accordance with a petition granted under LAC 33:V.2231.*

The facility does not receive wastes that contain PCBs; therefore, this section is not applicable. The facility also does not dispose of any waste in an on-site land disposal unit.

2216. Waste-Specific Prohibitions—Toxicity Characteristic Metal Wastes

A. *Effective April 20, 1999, the following wastes are prohibited from land disposal: the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers D004-D011 that are newly identified (i.e., wastes, soil, or debris identified as hazardous by the toxicity characteristic leaching procedure, but not the extraction procedure) and waste, soil, or debris from mineral processing operations that is identified as hazardous by the specifications in LAC 33:V.Chapter 49.*

B. *Effective April 20, 1999, the following waste is prohibited from land disposal: slag from secondary lead smelting which exhibits the toxicity characteristic due to the presence of one or more metals.*

C. *Effective May 26, 2000, the following wastes are prohibited from land disposal: newly identified characteristic wastes from elemental phosphorus processing; radioactive wastes mixed with EPA Hazardous Waste Numbers D004-D011 that are newly identified (i.e., wastes, soil, or debris identified as hazardous by the toxicity characteristic leaching procedure, but not the extraction procedure); or mixed with newly identified characteristic mineral processing wastes, soil, or debris.*

D. *Between April 20, 1999 and May 26, 2000, newly identified characteristic wastes from elemental phosphorus processing, radioactive waste mixed with EPA Hazardous Waste Numbers D004-D011, wastes that are newly identified (i.e., wastes, soil, or debris identified as hazardous by the toxicity characteristic leaching procedure, but not the extraction procedure) or mixed with newly identified characteristic mineral processing wastes, soil, or debris may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in LAC 33:V.2239.H.2.*

E. *The requirements of Subsections A and B of this Section do not apply if:*

1. *the wastes meet the applicable treatment standards specified in LAC 33:V.2223-2236;*
2. *persons have been granted an exemption from a prohibition in accordance with a petition under LAC 33:V.2241 or 2271, with respect to those wastes and units covered by the petition;*
3. *the wastes meet the applicable alternate treatment standards established in accordance with a petition granted under LAC 33:V.2231; or*
4. *persons have been granted an extension to the effective date of a prohibition in accordance with LAC 33:V.2239, with respect to these wastes covered by the extension.*

F. *To determine whether a hazardous waste identified in this Section exceeds the applicable treatment standards specified in LAC 33:V.2223, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents (including underlying hazardous constituents in characteristic wastes) in excess of the applicable universal treatment standard levels of LAC 33:V.2233, the waste is prohibited from land disposal, and all requirements of this Chapter are applicable, except as otherwise specified.*

Since the facility does not operate any land disposal units on-site, these requirements do not apply.

2218. Waste Specific Prohibitions—Petroleum Refining Wastes

A. *Effective April 20, 1999, the wastes specified in LAC 33:V.4901.C, Table 2 as EPA Hazardous Wastes Numbers K169, K170, K171, and K172, soils and debris contaminated with these hazardous wastes, radioactive wastes mixed with these hazardous wastes, and soils and debris contaminated with these radioactive mixed wastes, are prohibited from land disposal.*

B. *The requirements of Subsection A of this Section do not apply if:*

1. *the wastes meet the applicable treatment standards specified in LAC 33:V.2223-2236;*
2. *persons who have been granted an exemption from a prohibition in accordance with a petition under LAC 33:V.2241 or 2271, with respect to those wastes and units covered by the petition;*
3. *the wastes meet the applicable treatment standards established in accordance with a petition granted under LAC 33:V.2231;*
4. *hazardous debris that have meet the treatment standards in LAC 33:V.2223 or in the alternative treatment standards in LAC 33:V.2230; or*
5. *persons have been granted an extension to the effective date of a prohibition in accordance with LAC 33:V.2239.*

C. *To determine whether a hazardous waste identified in this Subsection exceeds the applicable treatment standards specified in LAC 33:V.2223, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable universal treatment standard levels of LAC 33:V.2233, the waste is prohibited from land disposal and all requirements of this Chapter are applicable, except as otherwise stated.*

Since the facility does not operate any land disposal units on-site, these requirements do not apply.

2219. Waste Specific Prohibitions—Inorganic Chemical Wastes

A. *Effective May 20, 2002, the wastes specified in 40 CFR Part 261 as EPA Hazardous Waste Numbers K176, K177, and K178, soil and debris contaminated with these wastes, radioactive wastes mixed with these wastes, and soil and debris contaminated with radioactive wastes mixed with these wastes are prohibited from land disposal.*

B. *The requirements of Subsection A of this Section do not apply if:*

1. *the wastes meet the applicable treatment standards specified in LAC 33:V.2223 and LAC 33:V.2299.Appendix, Table 2;*
2. *persons have been granted an exemption from a prohibition in accordance with a petition under LAC 33:V.2241, with respect to those wastes and units covered by the petition;*
3. *the wastes meet the applicable treatment standards established in accordance with a petition granted under LAC 33:V.2231;*
4. *hazardous debris has met the treatment standards in LAC 33:V.2223 or the alternative treatment standards in LAC 33:V.2230; or*
5. *persons have been granted an extension to the effective date of a prohibition in accordance with LAC 33:V.2239, with respect to those wastes covered by the extension.*

C. *To determine whether a hazardous waste identified in this Section exceeds the applicable treatment standards specified in LAC 33:V.2223, the initial generator must test a sample of the*

waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable levels in LAC 33:V.2223 and LAC 33:V.2299.Appendix, Table 2 of this Chapter, the waste is prohibited from land disposal, and all requirements of this Chapter are applicable, except as otherwise specified.

Since the facility does not operate any land disposal units on-site, these requirements do not apply.

2221. Schedule of Wastes Identified or Listed after November 8, 1984

A. *The administrative authority shall review these regulations and shall study and identify additional wastes to be incorporated into the regulations and prohibited from land disposal. He or she shall also study and report on changes in technology which make alternative methods of treatment of hazardous waste available that may provide alternatives to land disposal. Such review shall be done on or before December 31 each year beginning with 1989.*

B. *The administrative authority shall develop a schedule within six months after the date of identification or listing of a new hazardous waste to make a land disposal determination.*

C. *Reserved.*

D. *Waste-Specific Prohibitions: Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated*

1. *Effective March 20, 1995, the wastes specified in LAC 33:V.4903.B as D001 (and is not in the High TOC Ignitable Liquids Subcategory) and specified in LAC 33:V.4903.C as D002 that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA) or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA) or that are zero-dischargers that engage in CWA-equivalent treatment before ultimate land disposal are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination, or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or better than these technologies.*

2. *Effective March 20, 1995, the wastes specified in LAC 33:V.4903.B as D001 (and is not in the High TOC Ignitable Liquids Subcategory) and specified in LAC 33:V.4903.C as D002 that are managed in systems defined in LAC 43:XVII.103.C as Class V injection wells that do not engage in CWA-equivalent treatment before injection are prohibited from land disposal.*

E. *Waste-Specific Prohibitions: Newly Identified Organic Toxicity Characteristic Wastes and Newly Listed Coke By-product and Chlorotoluene Production Wastes*

1. *Effective September 20, 1995, the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers K141, K142, K143, K144, K145, K147, K148, K149, K150, and K151 are prohibited from land disposal. In addition, debris contaminated with EPA Hazardous Waste Numbers F037, F038, K107-K112, K117, K118, K123-K126, K131, K132, K136, U328, U353,*

and U359 and soil and debris contaminated with D012-D043, K141-K145, and K147-K151 are prohibited from land disposal. The following wastes that are specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043 that are not radioactive or that are managed in systems other than those whose discharge is regulated under the CWA or that are zero dischargers that do not engage in CWA-equivalent treatment before ultimate land disposal or that are injected in Class I deep wells regulated under the SDWA are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or better than these technologies.

2. *On September 19, 1996, radioactive wastes that are mixed with D018-D043 that are managed in systems other than those whose discharge is regulated under the CWA or that inject in Class I deep wells regulated under the SDWA or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal are prohibited from land disposal. CWA-equivalent treatment means biological treatment of organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or better than these technologies. Radioactive wastes mixed with K141-K145 and K147-K151 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.*

3. *Between March 20, 1995 and September 19, 1996, the wastes included in LAC 33:V.2221.E.2 may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in LAC 33:V.2239.I.2.*

4. *The requirements of LAC 33:V.2221.E.1-3 do not apply if the following conditions are met:*

   a. *the wastes meet the applicable treatment standards specified in LAC 33:V.Chapter 22.Subchapter A;*

   b. *persons have been granted an exemption from a prohibition in accordance with a petition under LAC 33:V.2241, with respect to those wastes and units covered by the petition;*

   c. *the wastes meet the applicable alternate treatment standards established in accordance with a petition granted under LAC 33:V.2231; and*

   d. *persons have been granted an extension to the effective date of a prohibition in accordance with LAC 33:V.2239, with respect to those wastes covered by the extension.*

5. *To determine whether a hazardous waste identified in LAC 33:V.2221 exceeds the applicable treatment standards specified in LAC 33:V.2299.Appendix, Table 2, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable*

LAC 33:V.2299.Appendix, Table 2 levels, the waste is prohibited from land disposal, and all requirements of this Chapter are applicable, except as otherwise specified.

F. Waste-Specific Prohibitions: Spent Aluminum Potliners and Reactive and Carbamate Wastes

1. *Effective April 20, 1998, the wastes specified in LAC 33:V.4901.C as EPA Hazardous Waste Numbers K156-K159,.K161, and in LAC 33:V.4901.E as EPA Hazardous Waste Numbers P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U278-U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409-U411 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.*

2. *Effective April 20, 1998, the wastes identified in LAC 33:V.4903.D as D003 that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA) or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA) or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. This prohibition does not apply to unexploded ordnance and other explosive devices, which have been the subject of an emergency response. Such D003 wastes are prohibited unless they meet the treatment standard of DEACT before land disposal (see LAC 33:V.2223).*

3. *On September 21, 1998, the wastes specified in LAC 33:V.4901.C as EPA Hazardous Waste Number K088 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.*

4. *On April 20, 1998, radioactive wastes mixed with K088, K156-K159, K161, P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U278-U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409-U411 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.*

5. *Between July 8, 1996, and April 20, 1998, the wastes included in 40 CFR 268.39(a), (c), and (d) may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in LAC 33:V.2239.I.2.*

6. *The requirements of Paragraphs F.1-4 of this Section do not apply if:*

   a. *the wastes meet the applicable treatment standards specified in this Chapter;*

   b. *persons have been granted an exemption from a prohibition pursuant to a petition under LAC 33:V.2241, with respect to those wastes and units covered by the petition;*

   c. *the wastes meet the applicable alternate treatment standards established pursuant to a petition granted under LAC 33:V.2231; or*

   d. *persons have been granted an extension to the effective date of a prohibition pursuant to LAC 33:V.2239, with respect to these wastes covered by the extension.*

7. *To determine whether a hazardous waste identified in this Section exceeds the applicable treatment standards specified in LAC 33:V.2223, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are*

expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable treatment levels, the waste is prohibited from land disposal and all requirements of this Chapter are applicable, except as otherwise specified.

Since the facility does not operate any land disposal units on-site, these requirement do not apply.

2223. Applicability of Treatment Standards

A. *A prohibited waste identified in the LAC 33:V.2299.Appendix, Table 2 may be land disposed only if it meets the requirements found in Table 2. For each waste, the table identifies one of the three types of treatment standard requirements:*

1. *all hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste (total waste standards);*
2. *the hazardous constituents in the extract of the waste or in the extract of the treatment residue must be at or below the values found in the table (waste extract standards); or*
3. *the waste must be treated using the technology specified in the table (technology standard), which are described in detail in LAC 33:V.2299.Appendix, Table 3, Technology Codes and Description of Technology-Based Standards.*

B. *For wastewaters, compliance with concentration level standards is based on maximums for any one day, except for D004-D011 wastes for which the previously promulgated treatment standards based on grab samples remain in effect. For all nonwastewaters, compliance with concentration level standards is based on grab sampling. For wastes covered by the waste extract standards, the Test Method 1311, the Toxicity Characteristic Leaching Procedure as described in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, as incorporated by reference at LAC 33:V.110, must be used to measure compliance. An exception is made for D004 and D008, for which either of two test methods may be used: Method 1311 or Method 1310, the Extraction Procedure Toxicity Test. For wastes covered by a technology standard, the wastes may be land disposed after being treated using that specified technology or an equivalent treatment technology approved by the administrative authority under the procedures set forth in LAC 33:V.2227.*

C. *When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern.*

D. *Notwithstanding the prohibitions specified in Subsection A of this Section, treatment and disposal facilities may demonstrate (and certify in accordance with LAC 33:V.2247.C) compliance with the treatment standards for organic constituents specified by footnote in LAC 33:V.2299Appendix, Table 2, Treatment Standards for Hazardous Wastes, provided the following conditions are satisfied:*

1. *the treatment standards for the organic constituents were established based on incineration in units operated in accordance with the technical requirements of LAC 33:V.Chapter 31 or based on combustion in fuel substitution units operating in accordance with applicable technical requirements;*

2. *the treatment or disposal facility has used the methods referenced in Paragraph D.1 of this Section to treat the organic constituents; and*

3. *the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this Section by an order of magnitude.*

E. *For characteristic wastes (D001-D043) that are subject to treatment standards in LAC 33:V.2299.Appendix, Table 2, Treatment Standards for Hazardous Wastes, and are not managed in a wastewater treatment system that is regulated under the Clean Water Act (CWA), that is CWA-equivalent, or that is injected into a Class I nonhazardous deep injection well, all underlying hazardous constituents (as defined in LAC 33:V.2203) must meet Universal Treatment Standards, found in LAC 33:V.2299.Appendix, Table 7, prior to land disposal as defined in LAC 33:V.2203.*

F. *The treatment standards for F001-F005 nonwastewater constituents carbon disulfide, cyclohexanone, and/or methanol apply to wastes that contain only one, two, or three of these constituents. Compliance is measured for these constituents in the waste extract from Test Method 1311, the Toxicity Characteristic Leaching Procedure found in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, as incorporated by reference in LAC 33:V.110. If the waste contains any of these three constituents along with any of the other 25 constituents found in F001-F005, then compliance with treatment standards for carbon disulfide, cyclohexanone, and/or methanol are not required.*

G. *Between August 26, 1997, and April 20, 1999, the treatment standards for the wastes specified in LAC 33:V.4901.C as EPA Hazardous Waste Numbers K156-161 and in LAC 33:V.4901.E-F as EPA Hazardous Waste Numbers P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U278-U280, U364-U367, U372, U373, U375-U379, U381-U387, U389-U396, U404, and U409-U411 and soil contaminated with these wastes were satisfied by either meeting the constituent concentrations presented in LAC 33:V.2299.Appendix, Table 2, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST at LAC 33:V.2299.Appendix, Table 3, for nonwastewaters; and biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at LAC 33:V.2299.Appendix, Table 3, for wastewaters.*

H. *Prohibited D004-D011 mixed radioactive wastes and mixed radioactive listed wastes containing metal constituents that were previously treated by stabilization to the treatment standards in effect at that time and then put into storage, do not have to be retreated to meet treatment standards in this Section prior to land disposal.*

I. *Effective September 4, 1998, the treatment standards for the wastes specified in LAC 33:V.4901.D as EPA Hazardous Waste Numbers P185, P191, P192, P197, U364, U394, and*

U395 may be satisfied by either meeting the constituent concentrations presented in LAC 33:V.2299.Appendix, Table 2, Treatment Standards for Hazardous Wastes, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST in LAC 33:V.2299.Appendix, Table 3, for nonwastewaters; and biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST in LAC 33:V.2299.Appendix, Table 3, for wastewaters.

Since all the wastes that are managed at the facility include the D003 waste code, the applicable treatment standard is deactivation (DEACT). The facility's thermal treatment process achieves this technology-based standard. The subsequently generated waste (the ash) is then evaluated as a new solid waste. The facility, as generator, then makes the appropriate determinations concerning whether the waste is hazardous or nonhazardous and, if hazardous, whether the waste exceeds the applicable treatment standards. Then the facility makes the appropriate determination as to the ultimate disposition of the waste.

2227. Treatment Standards Expressed as Specified Technologies

A. *The wastes specified in LAC 33:V.2299.Appendix, Table 2, for which standards are expressed as a treatment method rather than a concentration level, must be treated using the technology or technologies specified in LAC 33:V.2299.Appendix, Table 3, entitled "Technology Codes and Description of Technology-Based Standards."*

B. *Any person may submit an application to the Office of Environmental Services, Permits Division demonstrating that an alternative treatment method can achieve a measure of performance equivalent to that achieved by methods specified in LAC 33:V.2227.A, C, and D or specified in LAC 33:V.2299.Appendix, Table 8. The applicant must submit information demonstrating that his or her treatment method is in compliance with federal, state, and local requirements and is protective of human health and the environment. On the basis of such information and any other available information, the administrative authority may approve the use of the alternative treatment method if he or she finds that the alternative treatment method provides a measure of performance equivalent to those achieved by methods specified in LAC 33:V.2227.A, C, and D or specified in LAC 33:V.2299.Appendix, Table 8. Any approval must be stated in writing and may contain such provisions and conditions as the administrative authority deems appropriate. The person to whom such approval is issued must comply with all limitations contained in such a determination.*

C. *As an alternative to the otherwise applicable LAC 33:V.Chapter 22.Subchapter A treatment standards, lab packs are eligible for land disposal provided all of the following requirements are met:*

1. *the lab packs comply with the applicable provisions of LAC 33:V.2519 and 4511;*
2. *the lab packs do not contain any of the wastes listed in LAC 33:V.2299.Appendix, Table 6;*
3. *the lab packs are incinerated in accordance with the requirements of LAC 33:V.Chapter 31 and Chapter 43.Subchapter N; and*

4. *any incinerator residues from lab packs containing D004, D005, D006, D007, D008, D010, or D011 are treated in compliance with the applicable treatment standards specified for such wastes in LAC 33:V.Chapter 22.Subchapter A.*

D. *Radioactive hazardous mixed wastes are subject to the treatment standards in LAC 33:V.2223. Where treatment standards are specified for radioactive mixed wastes in LAC 33:V.2299.Appendix, Table 2, those treatment standards will govern. Where there is no specific treatment standard for radioactive mixed waste, the treatment standard for the hazardous waste (as designated by EPA waste code) applies. Hazardous debris containing radioactive waste is subject to the treatment standards specified in LAC 33:V.2230.*

All incoming wastes are treated utilizing the technology-based standard of deactivation since all incoming wastes contain EPA waste D003 and there are no numerical standards for this waste code.

2230. Treatment Standards for Hazardous Debris

A. *Treatment Standards. Hazardous debris must be treated prior to land disposal unless the administrative authority determines under LAC 33:V.109.Hazardous Waste.6.b that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard in LAC 33:V.2299.Appendix, Table 8 for the waste contaminating the debris.*

1. *Hazardous debris must be treated for each contaminant subject to treatment defined by LAC 33:V.2230.B using the technology or technologies identified in LAC 33:V.2299.Appendix, Table 8.*

2. *Hazardous debris that exhibits the characteristic of ignitablity, corrosivity, or reactivity identified under LAC 33:V.4903.B, C, and D, respectively, must be deactivated by treatment identified in LAC 33:V.2299.Appendix, Table 8.*

3. *The treatment standard of LAC 33:V.2299.Appendix, Table 8 must be achieved for each type of debris contained in a mixture of debris types. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.*

4. *Debris that is contaminated with two or more contaminants subject to treatment identified under LAC 33:V.2230.B must be treated for each contaminant using one or more of the treatment technologies identified in LAC 33:V.2299.Appendix, Table 8. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.*

5. *Hazardous debris that is also a waste PCB under 40 CFR Part 761 is subject to the requirements of 40 CFR Part 761 or the requirements of this Section, whichever is more stringent.*

B. *Hazardous debris must be treated for each "contaminant subject to treatment." The contaminants subject to treatment must be determined as follows:*

1. *the contaminants subject to treatment for debris that exhibit the Toxicity Characteristic (TC) by LAC 33:V.4903 are those EP constituents for which debris exhibits the TC toxicity characteristic;*

2. *the contaminants subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents or wastes for which treatment standards are established under LAC 33:V.2299.Appendix, Table 2; and*

3. *hazardous debris that is reactive because of cyanide must be treated for cyanide.*

C. *Hazardous debris that has been treated using one of the specified extraction or destruction technologies in LAC 33:V.2299.Appendix, Table 8 and does not exhibit a characteristic of hazardous waste identified under LAC 33:V.4903 after treatment is not a hazardous waste and need not be managed in a Subtitle C facility. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in LAC 33:V.2299.Appendix, Table 8 is a hazardous waste and must be managed in a Subtitle C facility.*

D. *Treatment Residues*

1. *General Requirements*

   a. *Residue from the treatment of hazardous debris must be separated from the treated debris using simple physical or mechanical means; and*

   b. *residue from the treatment of hazardous debris is subject to the waste-specific treatment standards provided by LAC 33:V.Chapter 22.Subchapter B for the waste contaminating the debris.*

2. *Residue from the deactivation of ignitable, corrosive, or reactive characteristic hazardous debris (other than cyanide-reactive) that is not contaminated with a contaminant subject to treatment defined by LAC 33:V.2230.B must be deactivated prior to land disposal and is not subject to the waste-specific treatment standard of LAC 33:V.2299.Appendix, Table 2.*

3. *Residue from the treatment of debris that is reactive because of cyanide must meet the treatment standards for D003 in LAC 33:V.2299.Appendix, Table 2.*

4. *Ignitable nonwastewater residue containing equal to or greater than 10 percent total organic carbon is subject to the technology-based standards for D001, ignitable liquids.*

5. *Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards of LAC 33:V.2230.*

The facility does not treat waste utilizing the alternate standards for debris.

2231. Variance from a Treatment Standard

A. *Based on a petition filed by a generator or treater of hazardous waste, the EPA administrator and the administrative authority may approve a variance from an applicable treatment standard if:*

1. *it is not physically possible to treat the waste to the level specified in the treatment standard or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differ significantly from waste analyzed in developing the treatment standard, the waste cannot be treated to the specified level or by the specified method; or*

2. *it is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. To show that this is the case, the petitioner must either demonstrate that:*

   a. *treatment to the specified level or by the specified method is technically inappropriate (e.g., resulting in combustion of large amounts of mildly contaminated environmental media); or*

   b. *for remediation waste only, treatment to the specified level or by the specified method is environmentally inappropriate because it would likely discourage aggressive remediation.*

B. *Each petition must be submitted to the Office of Environmental Services, Permits Division for consideration in accordance with the procedures in LAC 33:V.105.H.*

C. *After receiving a petition for a variance from a treatment standard, the administrative authority may request any additional information or samples that he or she may require to evaluate the petition. Additional copies of the complete petition may be requested as needed to send to affected states and regional offices.*

1. *Each petition must include the following statement signed by the petitioner or a duly authorized representative.*

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

2. *Certification. Each petition for a variance must be certified by a Louisiana licensed professional engineer (PE).*

D. *The EPA administrator and/or the Office of Environmental Services, Permits Division will give public notice of the intent to approve or deny a petition and will provide the person requesting the variance and the public, through a newspaper notice in the official state journal and the local newspaper in the affected area, the cost of which will be charged to the person requesting the variance, the opportunity to submit written comments on the request and the conditions of the variance, allowing a 30-day comment period. The notices referred to in this Section will be provided in the local newspaper in three separate issues; however, the 30-day comment or notice period shall begin with the notice in the official state journal. The administrative authority will also, in response to a request or at his or her own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning the variance request. The administrative authority will give public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the*

opportunity for the public to submit written comments.) The final decision on a variance from a treatment standard will also be published.

E. A generator, treatment facility, or disposal facility that is managing a waste covered by a variance from the treatment standards must comply with the waste analysis requirements for prohibited wastes under LAC 33:V.2245 and 2247.

F. During the petition review process, the applicant is required to comply with all prohibitions on land disposal under this Chapter, unless a petition for a variance has been approved by the EPA, and the administrative authority grants an emergency variance. If EPA has approved the variance, the land disposal of the waste may continue for up to one year under an emergency variance issued by the administrative authority until the administrative authority makes a decision on the petition for variance. In no case shall an emergency variance extend beyond one year after the date of issuance. After the administrative authority issues a decision on the variance, the waste may be land disposed only in accordance with the provisions of the variance.

G. Based on a petition filed by a generator or treater of hazardous waste, the administrative authority may approve a site-specific variance from an applicable treatment standard if:

1. it is not physically possible to treat the waste to the level specified in the treatment standard or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differ significantly from waste analyzed in developing the treatment standard, the waste cannot be treated to the specified level or by the specified method; or

2. it is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. To show that this is the case, the petitioner must either demonstrate that:

a. treatment to the specified level or by the specified method is technically inappropriate (e.g., resulting in combustion of large amounts of mildly contaminated environmental media where the treatment standard is not based on combustion of such media); or

b. for remediation waste only, treatment to the specified level or by the specified method is environmentally inappropriate because it would likely discourage aggressive remediation;

3. for contaminated soil only, treatment to the level or by the method specified in the soil treatment standard would result in concentrations of hazardous constituents that are below (i.e., lower than) the concentrations necessary to minimize short and long term threats to human health and the environment. Treatment variances approved under this Subsection must:

a. at a minimum, impose alternative land disposal restriction treatment standards that, using a reasonable maximum exposure scenario:

i. for carcinogens, achieve constituent concentrations that result in the total excess risk to an individual exposed over a lifetime generally falling within a range from 10^{-4} to 10^{-6}; and

ii. for constituents with noncarcinogenic effects, achieve constituent concentrations that an individual could be exposed to on a daily basis without appreciable risk of deleterious effect during a lifetime;

b. not consider post-land-disposal controls;

4. for contaminated soil only, treatment to the level or by the method specified in the soil treatment standards would result in concentrations of hazardous constituents that are below (i.e., lower than) natural background concentrations at the site where the contaminated soil will be land disposed;

5. public notice and a reasonable opportunity for public comment must be provided before granting or denying a petition.

H. Each application for a site-specific variance from a treatment standard must include the information in LAC 33:V.105.H.2.

I. After receiving an application for a site-specific variance from a treatment standard, the administrative authority or his delegated representative may request any additional information or samples which may be required to evaluate the application.

J. A generator, treatment facility, or disposal facility that is managing a waste covered by a site-specific variance from a treatment standard must comply with the waste analysis requirements for restricted wastes found under LAC 33:V.2245 and 2247.

K. During the application review process the applicant for a site-specific variance must comply with all restrictions on land disposal under LAC 33:V.2231 once the effective date for the waste has been reached.

L. The facilities listed in LAC 33:V.2299.Appendix, Table 10 are excluded from the treatment standard under LAC 33:V.2299.Appendix, Table 2 and are subject to the constituent concentrations.

M. For all variances the petitioner must also demonstrate that compliance with any given treatment variance is sufficient to minimize threats to human health and the environment posed by land disposal of the waste. In evaluating this demonstration, the department may take into account whether a treatment variance should be approved if the subject waste is to be used in a manner constituting disposal in accordance with LAC 33:V.Chapter 41.Subchapter C.

The facility acknowledges the requirements for variance petitions and will follow these requirements in the event that a variance should ever be needed for this purpose.

2233. Universal Treatment Standards

A. LAC 33:V.2299.Appendix, Table 7 identifies the hazardous constituents, along with the nonwastewater and wastewater treatment standard levels that are used to regulate most prohibited hazardous wastes with numerical limits. For determining compliance with treatment standards for underlying hazardous constituents as defined in LAC 33:V.2203.A, these treatment standards may not be exceeded. Compliance with these treatment standards is

measured by an analysis of grab samples, unless otherwise noted in LAC 33:V.2299.Appendix, Table 7.

The facility acknowledges the applicability of the universal treatment standards for waste that are land disposed, although no wastes are land disposed in any on-site unit.

2236. Alternative Land Disposal Restriction (LDR) Treatment Standards for Contaminated Soil

A. *Applicability. You must comply with LDRs prior to placing soil that exhibits a characteristic of hazardous waste, or exhibited a characteristic of hazardous waste at the time it was generated, into a land disposal unit. The following chart describes whether you must comply with LDRs prior to placing soil contaminated by listed hazardous waste into a land disposal unit.*

If LDRs	*And If LDRs*	*And If*	*Then You*
*applied to the listed waste when it contaminated the soil**	*apply to the listed waste now*	…… ……	*must comply with LDRs*
*did not apply to the listed waste when it contaminated the soil**	*apply to the listed waste now*	*the soil is determined to contain the listed waste when the soil is first generated*	*must comply with LDRs*
*did not apply to the listed waste when it contaminated the soil**	*apply to the listed waste now*	*the soil is determined not to contain the listed waste when the soil is first generated*	*need not comply with LDRs*

*did not apply to the listed waste when it contaminated the soil**	*do not apply to the listed waste now*	....	*need not comply with LDRs*
**To determine the date any given listed hazardous waste contaminated any given volume of soil, use the last date any given listed hazardous waste was placed into any given land disposal unit or, in the case of an accidental spill, the date of the spill.*			

B. Prior to land disposal, contaminated soil identified by Subsection A of this Section as needing to comply with LDRs must be treated according to the applicable treatment standards specified in Subsection C of this Section or according to the universal treatment standards specified in LAC 33:V.2233 applicable to the contaminating listed hazardous waste and/or the applicable characteristic of hazardous waste if the soil is characteristic. The treatment standards specified in Subsection C of this Section and the universal treatment standards may be modified through a treatment variance approved in accordance with LAC 33:V.2233.

C. Treatment Standards for Contaminated Soils. Prior to land disposal, contaminated soil identified by Subsection A of this Section as needing to comply with LDRs must be treated according to all the standards specified in this Subsection or according to the universal treatment standards specified in LAC 33:V.2233.

1. All Soils. Prior to land disposal, all constituents subject to treatment must be treated as follows.

a. For nonmetals except carbon disulfide, cyclohexanone, and methanol, treatment must achieve 90 percent reduction in total constituent concentrations, except as provided by Subparagraph C.1.c of this Section.

b. For metals and carbon disulfide, cyclohexanone, and methanol, treatment must achieve 90 percent reduction in constituent concentrations as measured in leachate from the treated media (tested according to the toxicity characteristic leaching procedure, TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by Subparagraph C.1.c of this Section.

c. When treatment of any constituent subject to treatment to a 90 percent reduction standard would result in a concentration less than 10 times the universal treatment standard for that constituent, treatment to achieve constituent concentrations less than 10 times the universal treatment standard is not required. Universal treatment standards are identified in LAC 33:V.2299.Appendix, Table 7.

2. *Soils That Exhibit the Characteristic of Ignitability, Corrosivity, or Reactivity. In addition to the treatment required by Paragraph C.1 of this Section, prior to land disposal, soils that exhibit the characteristic of ignitability, corrosivity, or reactivity must be treated to eliminate these characteristics.*

3. *Soils That Contain Nonanalyzable Constituents. In addition to the treatment requirements of Paragraphs C.1 and 2 of this Section, prior to land disposal, the following treatment is required for soils that contain nonanalyzable constituents:*

   a. *for soil that also contains only analyzable and nonanalyzable organic constituents, treatment of the analyzable organic constituents to the levels specified in Paragraphs C.1 and 2 of this Section; or*

   b. *for soil that contains only nonanalyzable constituents, treatment by the method(s) specified in LAC 33:V.2227 for the waste contained in the soil.*

D. *Constituents Subject to Treatment. When applying the soil treatment standards in Subsection C of this Section, constituents subject to treatment are any constituents listed in LAC 33:V.2299.Appendix, Table 7 (Universal Treatment Standards) that are reasonably expected to be present in any given volume of contaminated soil, except fluoride, selenium, sulfides, vanadium, and zinc, and that are present at concentrations greater than 10 times the universal treatment standard. PCBs are not a constituent subject to treatment in any given volume of soil that exhibits the toxicity characteristic solely because of the presence of metals.*

E. *Management of Treatment Residuals. Treatment residuals from treating contaminated soil identified by Subsection A of this Section as needing to comply with LDRs must be managed as follows:*

1. *soil residuals are subject to the treatment standards of this Section; and*

2. *nonsoil residuals are subject to:*

   a. *for soils contaminated by listed hazardous waste, the RCRA Subtitle C standards applicable to the listed hazardous waste; and*

   b. *for soils that exhibit a characteristic of hazardous waste, if the nonsoil residual also exhibits a characteristic of hazardous waste, the treatment standards applicable to the characteristic hazardous waste.*

The facility does not dispose of any contaminated soil on-site; therefore, this regulation does not apply.

2237. Exemption for Surface Impoundments Treating Hazardous Waste

A. *Wastes that are otherwise prohibited from land disposal under this Chapter may be treated in a surface impoundment or series of impoundments provided that:*

1. *Treatment of such wastes must occur in the exempt impoundment.*

2. *The following conditions must be met.*

a. *Sampling and Testing. For wastes with treatment standards and/or prohibition levels in LAC 33:V.Chapter 22.Subchapter A or RCRA Section 3004(d), the residues from the treatment must be analyzed, as specified in LAC 33:V.2245, 2247, or 2213.F and G to determine if they meet the applicable treatment standards or where no treatment standards have been established for the waste, the applicable prohibition levels. The sampling method, specified in the waste analysis plan under LAC 33:V.1519 or 4313, must be designed such that representative samples of the sludge and the supernatant are tested separately rather than mixed to form homogeneous samples.*

b. *Removal*

i. *The following treatment residues (including any liquid wastes) must be removed at least once every year:*

(a).residues which do not meet the treatment standards promulgated under LAC 33:V.Chapter 22.Subchapter A;

(b). residues which do not meet the prohibition levels established under Subchapter A of this Chapter or imposed by statute (where no treatment standards have been established);

(c). residues which are from the treatment of wastes prohibited from land disposal under Subchapter A of this Chapter (where no treatment standards have been established and no prohibition levels apply); or

(d). residues from the management of listed wastes which are not delisted by EPA or by the administrative authority.

ii. *If the volume of liquid flowing through the impoundment or series of impoundments in a one-year period is greater than the volume of the impoundment or impoundments, this flow-through constitutes removal of the supernatant for the purpose of this requirement.*

iii. *Reserved.*

iv. *The administrative authority may require removal of treatment residues more frequently than once per year.*

c. *Subsequent Management. Treatment residues may not be placed in any other surface impoundment for subsequent management.*

d. *Recordkeeping. Sampling and testing and recordkeeping provisions of LAC 33:V.1519 and 4313 apply.*

e. *Certification. Each waste analysis plan must be certified by a Louisiana licensed professional engineer (PE).*

3. *The impoundment must meet the applicable design requirements of LAC 33:V.Chapter 29 or 43, although the unit may not be new, expanded, or a replacement, and be in compliance with applicable groundwater monitoring requirements of LAC 33:V.Chapter 33 or 43 unless:*

a. *the impoundment is exempted in accordance with LAC 33:V.2903.J or K or 4462.C or D; or*

b. the owner or operator has applied for and the administrative authority, after notice and opportunity to comment, has granted a waiver of the design requirements on the basis that the surface impoundment:

i. has at least one liner (and there is no evidence that such liner is leaking) and one compacted clay or other department-approved liner;

ii. is located more than one-quarter mile from an underground source of drinking water; and

iii. is in compliance with generally applicable groundwater monitoring requirements for facilities with permits;

c. the owner or operator has applied for and the administrative authority, after notice and an opportunity to comment, has granted a modification to the design requirements on the basis of a demonstration that the surface impoundment is located, designed, and operated so as to ensure that no hazardous constituents will migrate into groundwater or surface water at any time.

4. The owner or operator must submit to the Office of Environmental Services, Permits Division a written certification that the requirements of Paragraph A.3 of this Section have been met and a copy of the waste analysis plan required under Paragraph A.2 of this Section. The following certification is required.

"I certify under penalty of law that the requirements of LAC 33:V.2237.A.3 have been met for all surface impoundments being used to treat prohibited wastes. I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

B. Evaporation of hazardous constituents as the principal means of treatment is not considered to be treatment for purposes of an exemption under this Section.

C. Surface Impoundment Exemptions

1. This Subsection defines additional circumstances under which an otherwise prohibited waste may continue to be placed in a surface impoundment.

2. Wastes which are newly identified or listed under LAC 33:V.2221 after November 8, 1984, and stored in a surface impoundment that is newly subject to Subtitle C of RCRA as a result of the additional identification or listing may continue to be stored in the surface impoundment for 48 months after the promulgation of the additional listing or characteristic, notwithstanding that the waste is otherwise prohibited from land disposal, provided that the surface impoundment is in compliance with the requirements of LAC 33:V.Chapter 43.Subchapter E within 12 months after promulgation of the listing or characteristic.

3. Wastes which are newly listed or identified under LAC 33:V.2221 after November 8, 1984 and treated in a surface impoundment that is newly subject to Subtitle C of RCRA as a result of the additional listing or identification may continue to be treated in that surface impoundment, notwithstanding that the waste is otherwise prohibited from land disposal, provided that the surface impoundment is in compliance with the requirements of LAC 33:Chapter

43.Subchapter E within 12 months after promulgation of the listing or characteristic. In addition, if the surface impoundment continues to treat hazardous waste after 48 months from promulgation of the addition listing or characteristic, it must then be in compliance with LAC 33:V.2237.A and B.

The facility does not treat any hazardous wastes in an on-site surface impoundment; therefore, this regulation is not applicable.

2239. Procedures for Case-by-Case Extensions of an Effective Date

A. Any person who generates, treats, stores, or disposes of a hazardous waste may submit an application to the Office of Environmental Services, Permits Division for an extension of the effective date of any applicable prohibition established under this Chapter. The applicant must provide the following, and in each case the burden of proof will be on the applicant:

1. written evidence of a good-faith effort to locate and contract with treatment, recovery, or disposal facilities nationwide to manage his or her waste in accordance with the effective date of the applicable prohibitions established under these regulations;

2. written evidence of a binding contractual commitment to construct or otherwise provide alternative treatment, recovery (e.g., recycling), or disposal capacity that meets the treatment standards specified in LAC 33:V.Chapter 22.Subchapter A or, where treatment standards have not been specified, evidence that such treatment, recovery, or disposal capacity is protective of human health and the environment;

3. written evidence that due to circumstances beyond the applicant's control, such alternative capacity cannot reasonably be made available by the applicable effective date. This demonstration may include a showing that the technical and practical difficulties associated with providing the alternative capacity will result in the capacity not being available by the applicable effective date;

4. written evidence that the capacity that will be provided by the applicant will be sufficient to manage the entire quantity of the waste that is the subject of the application;

5. a detailed schedule for obtaining required operating and construction permits and an outline of how and when alternative capacity will be available;

6. written evidence of arrangements for adequate capacity to manage the subject waste during an extension and documentation of the locations of all sites at which the waste will be managed;

7. documentation to demonstrate that any waste managed in a surface impoundment or landfill during the extension period will meet the requirements of LAC 33:V.2239.I.2; and

8. documentation that he or she has a program or plan in effect to reduce the volume and toxicity of the waste he or she generates and that he or she has sought out the best available technology to reduce the toxicity, corrosiveness, virulent, or infectious character, or volume of the waste and that the waste cannot be further reduced through production modifications, nor

can the waste or specific constituents of the waste be reclaimed or reused. The plan shall include:

a. *a schedule of implementation and anticipated reductions in quantity and toxicity;*

b. *a list of technical process reductions considered and those rejected and the reasons for the rejections; and*

c. *an analysis of the impact of the reduction program or plan on all operations of the facility affecting the environment, including air and water discharges.*

B. *An authorized representative signing an application described under Subsection A of this Section shall make the following certification.*

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

C. *After receiving an application for an extension, the administrative authority may request any additional information that he or she deems necessary to evaluate the application. Failure to segregate waste streams shall not constitute justification for a case-by-case extension for those wastes which are separable and treatable in an available facility.*

D. *Pending a decision on the application for an extension, the applicant is required to comply with all prohibitions on land disposal under this Chapter, except as may be allowed in LAC 33:V.2233.*

E. *An extension will apply only to the waste generated at the individual facility covered by the application; it will not apply to prohibited waste from any other facility.*

F. *On the basis of the information referred to in Subsection A of this Section, after notice and opportunity for public comment, and after consultation with appropriate state agencies in all affected states, the administrative authority may grant an extension of up to one year from the effective date of the prohibition. The administrative authority may renew this extension for up to one additional year at the applicant's request if the demonstration required in Subsection A of this Section can still be made. In no event will an extension extend beyond 24 months from the applicable effective date specified in this Subchapter. The length of any extension authorized will be determined by the administrative authority based on the time required to construct or obtain the type of capacity the applicant needs, as described in the completion schedule discussed in Paragraph A.5 of this Section. The administrative authority will give public notice of the intent to approve or deny a petition or for an extension and will provide an opportunity for public comment as provided in LAC 33:V.2243. The final decision on a petition or extension will be published in the official state journal.*

G. *Any person granted an extension under this Section must immediately notify the Office of Environmental Services, Permits Division as soon as he or she has knowledge of any change in the conditions certified in the application.*

H. *Any person granted an extension under this Section shall submit written progress reports at intervals designated by the Office of Environmental Services, Permits Division which may not exceed six months. Such reports must describe the overall progress made toward constructing or otherwise providing alternative treatment, recovery, or disposal capacity; must identify any event which may cause or has caused a delay in the development of the capacity, and must summarize the steps taken to mitigate the delay. The administrative authority can revoke the extension at any time if the applicant does not make a good-faith effort to meet the schedule for completion, if the department denies or revokes any required permit, if conditions certified in the application change, or for any violation of the Louisiana Environmental Quality Act or regulations promulgated thereto.*

I. *Whenever the administrative authority establishes an extension to an effective date under this Section, the following will apply during the period that such extension is in effect.*

1. *The storage prohibitions under LAC 33:V.2205.A are waived.*

2. *Such hazardous waste may be disposed of in a landfill or surface impoundment only if the unit is in compliance with the technical requirements of the following provisions, regardless of whether such unit is existing, new, or a replacement or lateral expansion.*

   a. *The landfill, if in interim status, is in compliance with the requirements of groundwater interim status standards LAC 33:V.4447-4461 and LAC 33:V.4495-4511 of these regulations.*

   b. *The landfill, if permitted, is in compliance with the requirements of LAC 33:V.Chapter 33 and LAC 33:V.2503.C-E.*

   c. *The surface impoundment, if in interim status, is in compliance with the requirements of LAC 33:V.4447-4461.*

   d. *The surface impoundment, if permitted, is in compliance with the requirements of LAC 33:V.Chapters 29 and 33.*

   e. *The surface impoundment, if newly subject to RCRA Section 3005(j)(1) due to promulgation of additional listings or characteristics for the identification of hazardous waste, is in compliance with the requirements of LAC 33:V.Chapter 43.Subchapter E within 12 months after the promulgation of additional listings or characteristics of hazardous waste, and with the requirements of LAC 33:V.4462.A, C, and D within 48 months after the promulgation of additional listings or characteristics of hazardous waste; and if a national capacity variance is granted during the period the variance is in effect, the surface impoundment, if newly subject to RCRA Section 3005(j)(1) due to the promulgation of additional listings or characteristics of hazardous waste, is in compliance with the requirements of LAC 33:V.Chapter 43.Subchapter E within 12 months after the promulgation of additional listings or characteristics of hazardous waste, and with the requirements of LAC 33:V.4462.A, C, and D within 48 months after the promulgation of additional listings or characteristics of hazardous waste.*

f. The landfill, if disposing of containerized liquid hazardous wastes containing PCBs at concentrations greater than or equal to 50 ppm but less than 500 ppm, is also in compliance with the requirements of 40 CFR 761.75 and LAC 33:V.Subpart 1.

J. Pending a decision on the application for an extension, the applicant is required to comply with all prohibitions on land disposal under this Chapter once the effective date has been reached.

The facility acknowledges the requirements associated with requests for case-by-case extensions of an effective date. The facility does not anticipate the need for such a request; however, if one is ever needed, the facility will follow the above requirements and/or any other requirements that may be in effect at such time.

2241. Exemptions to Allow Land Disposal of a Prohibited Waste Except by Deep Well Injection

A. Any person seeking an exemption to allow land disposal except by deep well injection of a prohibited hazardous waste in a particular unit or units must submit a petition to the Office of Environmental Services, Permits Division that meets the following requirements.

1. The petition must show that no economically or environmentally reasonable alternative to land disposal is available, and that where feasible the waste has undergone treatment by being stabilized, solidified, or encapsulated, or through approved land treatment technique. No exemption shall be granted to a generator for the land disposal of a waste stream if the waste stream can reasonably be eliminated or significantly reduced through waste reduction.

2. The petition must demonstrate, to a reasonable degree of certainty, that no hazardous constituents will migrate from the disposal unit for as long as the wastes remain hazardous. Migration prohibited by this Section includes migration into the air, land, or water. For the purpose of this Section, no migration means the waste is permanently confined within a department approved hazardous waste containment system.

B. Reserved.

C. The showing referred to in LAC 33:V.2241.A.1 must meet the following criteria.

1. The petitioner must show that he or she has made a good-faith effort, using economically and technically feasible and environmentally sound methods, to provide for use, reuse, reclamation, or other recycling of the waste other than for a use constituting disposal.

2. For each waste stream the petitioner must show that he or she has a program or plan in effect to reduce the volume and toxicity of the waste he or she generates and that he or she has sought out the best available technology to reduce the toxicity, corrosiveness, virulent or infectious character, and volume of the waste and that the waste cannot be further reduced through production modifications, nor can the waste or specific constituents of the waste be reclaimed or reused. The plan shall include:

a. a schedule of implementation and anticipated reductions in quantity and toxicity;

b. a list of technical process reductions considered and those rejected and the reasons for the rejections; and

c. an analysis of the impact of the reduction program or plan on all operations of the facility affecting the environment, including air and water discharges.

3. The petitioner must sign and present to the administrative authority the following certification.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this waste-reduction plan and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

4. The petitioner must submit a report describing in detail the efforts undertaken since 1984 to reduce the volume and toxicity of waste generated. The report shall provide data indicating the change in volume and toxicity of waste actually achieved during each year in comparison to previous years, to the extent that such information is available. The report shall also document for each hazardous waste stream proposed for disposal in a land disposal unit a waste reduction analysis (WRA) showing that the petitioner has considered the economic and technical feasibility of alternative disposal methods in the following order: reduction, recycling, treatment, and disposal. The WRA must include:

a. an analysis of alternatives considered;

b. the costs of alternatives considered;

c. an assessment of the impact on other operations of the facility affecting the environment, including impacts on air and water discharges; and

d. a description of the availability of alternate capacity for use of alternative technologies.

D. The demonstration submitted by the petitioner referred to in LAC 33:V.2241.A.2 must include the following components:

1. an identification of the specific waste and specific unit for which the demonstration will be made;

2. a waste analysis to describe fully the chemical and physical characteristics of the subject waste;

3. a comprehensive characterization of the disposal unit site, including an analysis of background air, soil, and water quality;

4. a monitoring plan which will detect migration from the disposal unit at the earliest practicable time; and

5. sufficient information to assure the administrative authority that the owner or operator of a land disposal unit receiving prohibited waste(s) will comply with other applicable federal, state, and local laws.

E. The demonstration referred to in LAC 33:V.2241.A.2 must meet the following criteria.

1. *All waste and environmental sampling, test, and analytical data must be accurate and reproducible to the extent that state-of-the-art techniques allow.*
2. *The administrative authority must approve all sampling, testing, and estimation techniques for chemical and physical properties of the waste and all environmental parameters.*
3. *Simulation models must be calibrated for the specific waste and site conditions, and verified for accuracy by comparison with actual measurements.*
4. *A quality assurance and quality control plan that addresses all aspects of the demonstration must be approved by the administrative authority.*
5. *An analysis must be performed to identify and quantify any aspects of the demonstration that contribute to uncertainty. This analysis must include an evaluation of the consequences of predictable future events, including, but not limited to, earthquakes, floods, severe storm events, droughts, or hurricanes or other natural phenomena.*

F. Each petition referred to in LAC 33:V.2241.A must include the following.

1. *A monitoring plan must be submitted that describes the monitoring program installed at and/or around the unit to verify continued compliance with the conditions of the exemption. The plan must provide information on the monitoring of the unit and/or the environment around the unit, including the following specific information:*
   a. *the media monitored in cases where monitoring of the environment around the unit is required;*
   b. *the type of monitoring conducted at the unit in cases where monitoring of the unit is required;*
   c. *the location of the monitoring stations;*
   d. *the monitoring interval (frequency of monitoring at each station);*
   e. *the specific hazardous constituents to be monitored;*
   f. *the implementation schedule for the monitoring program;*
   g. *the equipment used at the monitoring station;*
   h. *the sampling and analytical techniques employed;*
   i. *the data recording/reporting procedures; and*
   j. *the specific criteria and steps to be used to determine if hazardous constituents have migrated.*
2. *Where applicable, the administrative authority will specify as part of his or her approval of the petition the length of time that the monitoring program described in Paragraph F.1 of this Section must be in place before prohibited waste is received at the unit.*

3. *The monitoring data collected according to the monitoring plan specified under Paragraph F.1 of this Section must be sent to the administrative authority according to a format and schedule specified and approved in the monitoring plan.*

4. *A copy of the monitoring data collected under the monitoring plan specified under Paragraph F.1 of this Section must be kept on-site at the facility in the operating record.*

5. *The monitoring program specified under Paragraph F.1 of this Section shall meet the following criteria.*

   a. *All sampling, testing, and analytical methods must be approved by the administrative authority and must provide accurate and reproducible data.*

   b. *All estimation and modeling techniques must be approved by the administrative authority.*

   c. *A quality assurance and quality control plan addressing all aspects of the monitoring program must be provided to and approved by the administrative authority.*

G. *Each petition must be submitted to the Office of Environmental Services, Permits Division.*

H. *After a petition has been approved, the owner or operator must report any changes in conditions at the unit and/or the environment around the unit that depart from the conditions described in the exemption and that affect the potential for migration of hazardous constituents from the units as follows.*

1. *If the owner or operator plans to make changes to the unit design, construction, or operation, such changes must be proposed in writing, and the owner or operator shall submit a demonstration to the Office of Environmental Services, Permits Division at least 30 days before making the changes. The administrative authority will determine whether the proposed changes invalidate the terms of the petition and will determine the appropriate response. Any changes must be approved by the administrative authority prior to being made.*

2. *If the owner or operator discovers that a condition at the site which was modeled or predicted in the petition does not occur as predicted, this change must be reported, in writing, to the Office of Environmental Services, Permits Division within 10 days of discovery of the change. The administrative authority will determine whether the reported change from the terms of the petition requires further action, which may include termination of waste acceptance and revocation of the petition or petition modifications, or other responses.*

I. *If the owner or operator determines that hazardous constituent(s) are migrating from the unit, the owner or operator must immediately suspend receipt of prohibited wastes at the unit and notify the Office of Environmental Compliance within 24 hours and in writing within 10 days of the determination that a release has occurred. Following receipt of the notification, the administrative authority will determine within 60 days of receiving notification whether the owner or operator can continue to receive prohibited wastes in the unit and whether the exemption is to be revoked. The administrative authority shall also determine whether further examination of any migration is warranted under applicable provisions of LAC 33:V.Chapter 33 or 43.*

J. Each petition must include the following statement signed by the petitioner or a duly authorized representative and must be submitted to the Office of Environmental Services, Permits Division.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

K. After receiving a petition, the administrative authority may request any additional information that may be reasonably required to evaluate the demonstration.

L. A petition submitted in accordance with this Section must apply to land disposal of the specific prohibited waste at the individual disposal unit described in the showing and demonstration and will not apply to any other prohibited waste at that disposal unit or to that specific prohibited waste at any other disposal unit.

M. The administrative authority will give public notice of the intent to approve or deny a petition and will provide an opportunity for public comment in accordance with LAC 33:V.Chapter 7.Subchapter C and LAC 33:V.2243. Notice will also be given when a final decision on a petition is issued.

N. The term of an exemption granted under this Section shall be no longer than the term of the final operating permit if the disposal unit is operating under a final operating permit, or up to a maximum of five years from the date of approval if the unit is operating under interim status. In either case, the term of the exemption granted shall expire upon the termination, revocation, or denial of a final operating permit or upon the termination of interim status or when the volume limit of waste to be land disposed during the term of petition is reached. The exemption must be reviewed at least once every three years.

O. During the petition review process, the applicant is required to comply with all prohibitions on land disposal under this Chapter, unless a petition for an exemption has been approved by the EPA, and the administrative authority grants an emergency variance. If EPA has approved the exemption, the land disposal of the waste may continue for up to one year under an emergency variance issued by the administrative authority until the administrative authority makes a decision on the petition for exemption. In no case shall an emergency variance extend beyond one year after the date of issuance. After the administrative authority issues a decision on the exemption, the waste may be land disposed only in accordance with the provisions of the exemption.

P. The petition granted by the administrative authority does not relieve the petitioner from compliance with all other applicable regulations.

Q. Liquid hazardous wastes containing PCBs at concentrations greater than or equal to 50 ppm are not eligible for an exemption under this Section.

R. As a condition of the exemption, the petitioner must submit a report to the Office of Environmental Services, Permits Division by March 1 of each calendar year during the term of

the exemption that describes in detail the efforts undertaken during the preceding calendar year to reduce the volume and toxicity of the waste generated. The report shall provide data indicating the change in volume and toxicity of waste actually achieved during the year in comparison to previous years.

S. *Whenever the administrative authority determines that the basis for approval of a petition may no longer be valid, he or she shall require a new demonstration in accordance with this Section.*

T. *Termination of an Approved Petition*

1. *The administrative authority may terminate an exemption granted under this Section for the following causes:*

   a. *noncompliance by the petitioner with any condition of the exemption;*

   b. *the petitioner's failure in the petition or during the review and approval to disclose fully all relevant facts, or the petitioner's misrepresentation of any relevant facts at any time; or*

   c. *a determination that new information shows that the basis for approval of the petition is no longer valid.*

2. *The administrative authority shall terminate an exemption granted under this Section for the following cause: the petitioner's willful withholding during the review and approval of the petition of facts directly and materially relevant to the administrative authority's decision on the petition.*

3. *The administrative authority shall follow the procedures in LAC 33:V.323 in terminating any exemption under this Section.*

The facility does not dispose of any wastes on-site by way of deep well injection; therefore, this section is not applicable.

2243. Administrative Procedures for Exemptions under LAC 33:V.2241 and 2271, No-Alternative Determinations under LAC 33:V.2273, and Case-by-Case Extensions of an Effective Date under LAC 33:V.2239

A. *Before making a final decision on the exemption, determination, or extension request, the department will provide the person requesting the exemption, determination, or extension and the public, through a newspaper notice in the official state journal and the local newspaper in the affected area, the cost of which will be charged to the person requesting the exemption, determination, or extension, the opportunity to submit written comments on the request on the conditions of the exemption, determination, or extension, allowing a 45-day comment period. The notices referred to in this Section will be provided in the local newspaper in three separate issues; however, the comment or notice period shall begin with the notice in the official state journal. The administrative authority will also, in response to a request or at his or her own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning the exemption, determination, or extension request. The administrative authority will give public notice of the hearing at least 30 days before it occurs. (Public notice of the*

hearing may be given at the same time as notice of the opportunity for the public to submit written comments.)

The facility acknowledges these requirements but does not anticipate that they will be applicable to the facility.

2245. Generators' Waste Analysis, Recordkeeping, and Notice Requirements

A. Requirements for generators: determine if the waste has to be treated before being land disposed as follows: a generator of a hazardous waste must determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in LAC 33:V.2223, 2230, or 2236. This determination can be made in either of two ways: testing the waste or using knowledge of the waste. If the generator tests the waste, testing would normally determine the total concentration of hazardous constituents, or the concentration of hazardous constituents in an extract of the waste obtained using Test Method 1311 in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, as incorporated by reference in LAC 33:V.110, depending on whether the treatment standard for the waste is expressed as a total concentration or concentration of hazardous constituent in the waste's extract. In addition, some hazardous wastes, and some soils contaminated by such hazardous wastes, must be treated by particular treatment methods before they can be land disposed. These treatment standards are also found in LAC 33:V.2223, and are described in detail in LAC 33:V.2299.Appendix, Table 3. These wastes, and such soils contaminated by such wastes, do not need to be tested (however, if they are in a waste mixture, other wastes with concentration level treatment standards would have to be tested). If a generator determines they are managing a waste, or a soil contaminated with a waste, that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of LAC 33:V.2246 in addition to any applicable requirements in this Section.

B. If the waste or contaminated soil does not meet the treatment standard, with the initial shipment of waste to each treatment or storage facility, the generator must send a one-time written notice to each treatment or storage facility receiving the waste and place a copy in the file. The notice must include the information in column "LAC:33.V.2245.B" of the Generator Paperwork Requirements Table in Subsection D of this Section. No further notification is necessary until such time when the waste or facility changes, in which case a new notification must be sent and a copy placed in the generator's file.

1. For contaminated soil, the following certification statement should be included, signed by an authorized representative.

"I certify under penalty of law that I personally have examined this contaminated soil and it [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by LAC 33:V.2236.C."

C. If the waste or contaminated soil meets the treatment standard at the original point of generation:

1. with the initial shipment of waste to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each treatment, storage, or disposal facility receiving the waste and place a copy in the file. The notice must include the information indicated in column "LAC 33:V.2245.C" of the Generator Paperwork Requirements Table in Subsection D of this Section and the following certification statement, signed by an authorized representative.

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in LAC 33:V.2223-2233. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment";

2. for contaminated soil, with the initial shipment of wastes to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each facility receiving the waste and place a copy in the file. The notice must include the information in Subsection D of this Section of the Generator Paperwork Requirements Table;

3. if the waste changes, the generator must send a new notice and certification to the receiving facility, and place a copy in their files. Generators of hazardous debris excluded from the definition of hazardous waste under LAC 33:V.109.Hazardous Waste.6 are not subject to these requirements.

D. For reporting, tracking, and recordkeeping when exceptions allow certain wastes or contaminated soil that do not meet the treatment standards to be land disposed, there are certain exemptions from the requirement that hazardous wastes or contaminated soil meet treatment standards before they can be land disposed. These include, but are not limited to, case-by-case extensions under LAC 33:V.2239, disposal in a no-migration unit under LAC 33:V.2241, or a national capacity variance or case-by-case capacity variance under LAC 33:V.2209-2221. If a generator's waste is so exempt, then with the initial shipment of waste, the generator must send a one-time written notice to each land disposal facility receiving the waste. The notice must include the information indicated in column "LAC 33:V.2245.D" of the Generator Paperwork Requirements Table in this Subsection. If the waste changes, the generator must send a new notice to the receiving facility and place a copy in their files.

Required Information	LAC 33:V. 2245.B	2245.C	2245.D	2245.I
EPA Hazardous Waste Numbers and Manifest Numbers of first shipment.	*X*	*X*	*X*	*X*
Statement: This waste is not prohibited from land disposal.			*X*	
The waste is subject to the LDRs. The constituents of concern for F001-F005 and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.	*X*	*X*		

Required Information	LAC 33:V.			
	2245 B	2245 C	2245 D	2245 I
The notice must include the applicable wastewater/ nonwastewater category (see LAC 33:V.2203.A) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide).	X	X		
Waste analysis data (when available).	X	X	X	
Date the waste is subject to the prohibition.			X	
For hazardous debris, when treating with the alternative treatment technologies provided by LAC 33:V.2230: the contaminants subject to treatment, as described in LAC 33:V.2230; and an indication that these contaminants are being treated to comply with LAC 33:V.2230.			X	

Required Information	LAC 33:V.			
	2245 .B	2245 .C	2245 .D	2245 .I
For contaminated soil subject to LDRs as provided in LAC 33:V.2236.A, the constituents subject to treatment as described in LAC 33:V.2236.D, and the following statement: This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by LAC 33:V.2236.C or the universal treatment standards.	X	X		
A certification is needed (see applicable Section for exact wording).		X		X

E. If a generator is managing and treating a prohibited waste or contaminated soil in tanks, containers, or containment buildings regulated under LAC 33:V.1109.E to meet applicable LDR treatment standards found in LAC 33:V.2223, the generator must develop and follow a written waste analysis plan that describes the procedures the generator will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment

standards of LAC 33:V.2299.Appendix, Table 8, however, are not subject to these waste analysis requirements.) The plan must be kept on-site in the generator's records, and the following requirements must be met.

1. *The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and contain all information necessary to treat the waste(s) in accordance with the requirements of this Chapter, including the selected testing frequency.*
2. *Such plan must be filed with the Office of Environmental Services, Permits Division a minimum of 30 days prior to the treatment activity, with delivery verified.*
3. *Wastes shipped off-site in accordance with this Section must comply with the notification requirements of Subsection C of this Section.*

F. *If a generator determines that the waste or contaminated soil is prohibited solely on the basis of his or her knowledge of the waste, all supporting data used to make this determination must be retained on-site in the generator's files. If a generator determines whether the waste is prohibited on the basis of tests of this waste or an extract developed using the Test Method 1311 described in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, as incorporated by reference in LAC 33:V.110, all waste analysis data must be retained on-site in the generator's files.*

G. *If a generator determines that he is managing a prohibited waste that is excluded from the definition of hazardous or solid waste or exempted from regulation under LAC 33:V.Chapter 1 or 41 subsequent to the point of generation (including deactivated characteristic hazardous wastes managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified in LAC 33:V.105.D.1.b, or that are CWA-equivalent, or are managed in an underground injection well regulated by the Solid Disposal Waste Act, SDWA), the generator must place a one-time notice stating such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from the regulation under LAC 33:V.Subpart 1, and the disposition of the waste, in the facility's on-site file.*

H. *Generators must retain on-site a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced in accordance with this Section for at least three years from the date that the waste that is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the administrative authority. The requirements of this Paragraph apply to solid wastes even when the hazardous characteristic is removed prior to disposal, or when the waste is excluded from the definition of hazardous or solid waste under LAC 33:V.Chapter 1 or 41, or exempted from regulation under LAC 33:V.Subpart 1, subsequent to the point of generation.*

I. *If a generator is managing a lab pack that contains hazardous wastes and wishes to use the alternative treatment standard for lab packs found at LAC 33:V.2227.C.*

1. *With the initial shipment of waste to a treatment facility, the generator must submit a notice that provides the information in column "LAC 33:V.2245.I" in the Generator Paperwork*

Requirements Table of Subsection D of this Section and the following certification. The certification that must be signed by an authorized representative and must be placed in the generator's files, must say the following.

"I certify under penalty of law that I personally have examined and am familiar with the waste, and that the lab pack contains only wastes that have not been excluded under LAC 33:V.2299.Appendix, Table 6, and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at LAC 33:V.2227.C. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

2. *No further notification is necessary until such time that the wastes in the lab pack change or the receiving facility changes, in which case a new notice and certification must be sent and a copy placed in the generator's file.*
3. *If the lab pack contains characteristic hazardous wastes (D001-D043), underlying hazardous constituents (as defined in LAC 33:V.2203) need not be determined.*
4. *The generator must also comply with the requirements in Subsections F and G of this Section.*

J. *Certification. Each waste minimization plan must be certified by a Louisiana registered professional engineer (PE).*

K. *All large quantity generators shall develop and retain a waste minimization plan on-site. The plan shall be submitted to the administrative authority within 30 days of receipt of a request by the administrative authority. The plan shall include ongoing and proposed waste minimization projects and tentative beginning dates for proposed projects.*

The facility acknowledges the record keeping requirements of this part and will comply with them to the extent that they are applicable. In particular, as a generator, the facility will ensure that it properly characterizes all wastes generated and will adhere to the applicable notification requirements concerning off-site shipments. The facility also complies with the Waste Minimization Plan requirement and maintains the Waste Minimization Plan in the operating record. It is available for review by the Department and will be submitted as required above upon request of the Department.

2246. Special Rules Regarding Wastes That Exhibit a Characteristic

A. *The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under this Chapter. For purposes of this Chapter, the waste will carry the waste code for any applicable listing under LAC 33:V.4901. In addition, where the waste exhibits a characteristic, the waste will carry one or more of the characteristic waste codes (LAC 33:V.4903), except in the case when the treatment standard for the listed waste operates in lieu of the standard for the characteristic waste, as specified in Subsection B of this Section. If the generator determines that his waste displays a hazardous characteristic (and is not D001 nonwastewaters treated by CMBST, RORGS, or POLYM of LAC 33:V.2299.Appendix, Table 3), the generator must*

determine the underlying hazardous constituents (as defined in LAC 33:V.2203.A), in the characteristic waste.

B. *Where a prohibited waste is both listed under LAC 33:V.4901 and exhibits a characteristic under LAC 33:V.4903, the treatment standard for the waste code listed in LAC 33:V.4901 will operate in lieu of the standard for the waste code under LAC 33:V.4903, provided that the treatment standard for the listed waste includes a treatment standard for the constituent that causes the waste to exhibit the characteristic. Otherwise, the waste must meet the treatment standards for all applicable listed and characteristic waste codes.*

C. *In addition to any applicable standards determined from the initial point of generation, no prohibited waste that exhibits a characteristic under LAC 33:V.4903 may be land disposed unless the waste complies with the treatment standards under LAC 33:V.2299.Appendix, Table 2.*

D. *Wastes that exhibit a characteristic are also subject to the requirements of LAC 33:V.2245, except that once the waste is no longer hazardous, a one-time notification and certification must be placed in the generator or treaters files and sent to the Office of Environmental Services, Permits Division. The notification and certification must be updated if the process or operation generating the waste changes and/or if the solid waste disposal facility receiving the waste changes. However, the generator or treater need only notify the administrative authority on an annual basis if such changes occur. In such circumstances, a notification and certification must be sent to the administrative authority by the end of the calendar year, but no later than December 31.*

1. *The notification must include the following information:*

   a. *name and address of the RCRA Subtitle D facility receiving the waste shipment; and*

   b. *a description of the waste as initially generated, including the applicable EPA Hazardous Waste Number(s), treatability group(s), and underlying hazardous constituents (as defined in LAC 33:V.2203), unless the waste will be treated and monitored for all underlying hazardous constituents. If all underlying hazardous constituents will be treated and monitored, there is no requirement to list any of the underlying hazardous constituents on the notice.*

2. *The certification must be signed by an authorized representative and must state the language found in LAC 33:V.2247.C.*

3. *If treatment removes the characteristic but does not meet standards applicable to underlying hazardous constituents, then the certification found in LAC 33:V.2247.C.4 applies.*

E. *Generators or treaters who first claim that hazardous debris is excluded from the definition of hazardous waste under LAC 33:V.109 (i.e., debris treated by an extraction or destruction technology provided by LAC 33:V.2299.Appendix, Table 8, and debris that the administrative authority has determined does not contain hazardous waste) are subject to the following notification and certification requirements.*

1. *A one-time notification, including the following information, must be submitted to the Office of Environmental Services, Permits Division:*

a. *the name and address of the RCRA Subtitle D facility receiving the treated debris;*

b. *a description of the hazardous debris as initially generated, including the applicable EPA Hazardous Waste Number(s); and*

c. *for debris excluded under LAC 33:V.109.Hazardous Waste.6, the technology from LAC 33:V.2299.Appendix, Table 8, used to treat the debris.*

2. *The notification must be updated if the debris is shipped to a different facility and, for debris excluded under LAC 33:V.109.Hazardous Waste.6, if a different type of debris is treated or if a different technology is used to treat the debris.*

3. *For debris excluded under LAC 33:V.109.Hazardous Waste.6, the owner or operator of the treatment facility must document and certify compliance with the treatment standards of LAC 33:V.2299.Appendix, Table 8 as follows:*

a. *records must be kept of all inspections, evaluations, and analyses of treated debris that are made to determine compliance with the treatment standards;*

b. *records must be kept of any data or information the treater obtains during treatment of the debris that identifies key operating parameters of the treatment unit; and*

c. *for each shipment of treated debris, a certification of compliance with the treatment standards must be signed by an authorized representative and placed in the facility's files. The certification must state the following.*

"I certify under penalty of law that the debris has been treated in accordance with the requirements of LAC 33:V.2299.Appendix, Table 8. I am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment."

F. *Generators and treaters who first receive from the administrative authority a determination that a given contaminated soil subject to LDRs as provided in LAC 33:V.2236.A no longer contains a listed hazardous waste and generators and treaters who first determine that a contaminated soil subject to LDRs as provided in LAC 33:V.2236.A no longer exhibits a characteristic of hazardous waste must:*

1. *prepare a one-time only documentation of these determinations including all supporting information; and*

2. *maintain that information in the facility files and other records for a minimum of three years.*

If the facility generates any characteristically hazardous wastes, it will make the appropriate determinations concerning underlying hazardous constituents in accordance with this section. In addition, the notification paperwork requirements will be followed as applicable.

2247. Owners or Operators of Treatment or Disposal Facilities: Testing, Waste Minimization, Recordkeeping and Notice Requirements

A. Treatment facilities must test their wastes according to the frequency specified in their waste analysis plans, as required by LAC 33:V.1519 (for permitted TSDs) or 4313 (for interim status facilities). Such testing must be performed as provided in Paragraphs A.1-2 of this Section.

1. For wastes or contaminated soil with treatment standards expressed in the waste extract (Toxicity Characteristic Leaching Procedure, TCLP), the owner or operator of the treatment facility must test an extract of the treatment residues, using Test Method 1311 (the TCLP described in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, as incorporated by reference in LAC 33:V.110) to assure that the treatment residues extract meets the applicable treatment standards.

2. For wastes or contaminated soil with treatment standards expressed as concentrations in the waste, the owner or operator of the treatment facility must test the treatment residues (not an extract of such residues) to ensure that they meet the applicable treatment standards.

B. A one-time notice must be sent with the initial shipment of waste or contaminated soil to the land disposal facility. A copy of the notice must be placed in the treatment facility's file.

1. No further notification is necessary until such time that the waste or receiving facility changes, in which case a new notice must be sent and a copy placed in the treatment facility's file.

2. The one-time notice must include these requirements:

a. EPA Hazardous Waste Numbers and Manifest Numbers of the first shipment;

b. the waste is subject to the LDRs. The constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice;

c. the notice must include the applicable wastewater/nonwastewater category (see LAC 33:V.2203.A) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide);

d. waste analysis data (when available);

e. for contaminated soil subject to LDRs as provided in LAC 33:V.2236.A, the constituents subject to treatment as described in LAC 33:V.2236.D and the following statement.

"This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by LAC 33:V.2236.C"; and

f. a certification statement is needed (see applicable Section for exact wording).

C. The treatment facility must submit a one-time certification signed by an authorized representative with the initial shipment of waste or treatment residue of a restricted waste to the land disposal facility. The certification must state:

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in LAC 33:V.2223 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

A certification is also necessary for contaminated soil and it must state:

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in LAC 33:V.2235 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

1. *A copy of the certification must be placed in the treatment facility's on-site files. If the waste or treatment residue changes, or the receiving facility changes, a new certification must be sent to the receiving facility, and a copy placed in the file.*

2. *Debris excluded from the definition of hazardous waste under LAC 33:V.109.Hazardous Waste.6 (i.e., debris treated by an extraction or destruction technology provided by LAC 33:V.2299.Appendix, Table 8, and debris that the administrative authority has determined does not contain hazardous waste), however, is subject to the notification and certification requirements of LAC 33:V.2246.E rather than the certification requirements of this Subsection.*

3. *For wastes with organic constituents having treatment standards expressed as concentration levels, if compliance with the treatment standards is based in whole or in part on the analytical detection limit alternative specified in LAC 33:V.2223, the certification, signed by an authorized representative, must state the following.*

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with LAC 33:V.Chapter 31 or Chapter 43.Subchapter N, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and combustion units as specified in LAC 33:V.2299.Appendix, Table 3. I have been unable to detect the nonwastewater organic constituents despite having used best good-faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fines and imprisonment."

4. *For characteristic wastes that are subject to the treatment standards in LAC 33:V.2223 (other than those expressed as a required method of treatment), or LAC 33:V.2236 that contain*

underlying hazardous constituents as defined in LAC 33:V.2203; if these wastes are treated on-site to remove the hazardous characteristic, and are then sent off-site for treatment of underlying hazardous constituents, the certification must state the following.

"I certify under penalty of law that the waste has been treated in accordance with the requirements of LAC 33:V.2223 or 2236 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

5. *For characteristic wastes that contain underlying hazardous constituents as defined LAC 33:V.2203 that are treated on-site to remove the hazardous characteristic and to treat underlying hazardous constituents to levels in LAC 33:V.2233 Universal Treatment Standards, the certification must state the following.*

"I certify under penalty of law that the waste has been treated in accordance with the requirements of LAC 33:V.2223 to remove the hazardous characteristic and that underlying hazardous constituents, as defined in LAC 33:V.2203 have been treated on-site to meet the LAC 33:V.2233 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

D. *If the waste or treatment residue will be further managed at a different treatment or storage or disposal facility, the treatment, storage, or disposal facility sending the waste or treatment residue off-site must comply with the notice and certification requirements applicable to generators in LAC 33:V.2245.B and C.*

E. *Where the wastes are recyclable materials used in a manner constituting disposal subject to the provisions in LAC 33:V.4139.A.2-4 regarding treatment standards and prohibition levels, the owner or operator of a treatment facility (i.e., the recycler) is not required to notify the receiving facility, in accordance with Subsection B of this Section. With each shipment of such wastes the owner or operator of the recycling facility must submit a certification described in Subsection C of this Section and a notice which includes the information listed in Subsection B of this Section (except the manifest number) to the Office of Environmental Services, Permits Division. The recycling facility also must keep records of the name and location of each entity receiving the hazardous waste-derived product.*

F. *Except where the owner or operator is disposing of any waste that is a recyclable material used in a manner constituting disposal in accordance with LAC 33:V.4139.A.2-4, the owner or operator of any land disposal facility disposing of any waste subject to prohibitions under this Chapter must do the following:*

1. *he must have copies of the notice and certification specified in either Subsection B, C, D, or E of this Section; and*

2. *he must test the waste or an extract of the waste or treatment residue developed using Test Method 1311 (the Toxicity Characteristic Leaching Procedure, described in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, as incorporated by reference in LAC 33:V.110) to ensure that the wastes or treatment residues*

comply with the applicable treatment standards set forth in LAC 33:V.2223-2233. Such testing must be performed according to the frequency specified in the facility's waste analysis plan, as required by LAC 33:V.1519 or 4313.

G. *All treatment, storage, and disposal facilities shall develop and retain a waste minimization plan on site. The plan shall be submitted to the administrative authority within 30 days of receipt of request. The plan shall include ongoing and proposed waste minimization projects and tentative beginning dates for proposed projects.*

H. *Certification. Each waste minimization plan must be certified by a Louisiana registered professional engineer (PE).*

The facility performs a treatment process that is considered deactivation. Once the facility has completed this process, the resulting material is considered a newly generated waste, and the facility tests each batch of waste to determine its status as a hazardous or nonhazardous waste.

The facility has developed and retains a waste minimization plan on-site. The plan will be submitted to the Department as required above upon request. The plan is certified in accordance with the above requirements by a Louisiana registered professional engineer (PE).

Subchapter B. Hazardous Waste Injection Restrictions

2249. Purpose, Scope, and Applicability

A. *This Subchapter identifies hazardous wastes that are prohibited from disposal into Class I hazardous waste injection wells and defines those circumstances under which a waste, otherwise prohibited from injection, may be injected.*

2251. Dilution Prohibited as a Substitute for Treatment

A. *The prohibition of LAC 33:V.2207 shall apply to owners or operators of Class I hazardous waste injection wells.*

2253. Procedures for Case-by-Case Extensions to an Effective Date

A. *The owner or operator of a Class I hazardous waste injection well may submit an application to the Office of Environmental Services, Permits Division for an extension of the effective date of any applicable prohibition established under LAC 33:V.Chapter 22.Subchapter A according to the procedures of LAC 33:V.2239.*

2255. Waste Analysis

A. *Generators of hazardous wastes that are disposed into Class I injection wells, under LAC 33:V.2271, must comply with the applicable requirements of LAC 33:V.2245. Owners or operators of Class I hazardous waste injection wells must comply with the applicable requirements of LAC 33:V.2247.*

2257. Waste-Specific Prohibitions—Solvent Wastes

A. *Effective August 8, 1988, the spent solvent wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers F001, F002, F003, F004, and F005 are prohibited from underground injection unless the solvent waste is a solvent-water mixture or solvent-containing sludge containing less than 1 percent total F001-F005 solvent constituents listed in LAC 33:V.2257, Table A.*

B. *Effective August 8, 1990, all spent F001-F005 solvent wastes containing less than 1 percent total F001-F005 solvent constituents listed in LAC 33:V.2257, Table A are prohibited from injection.*

C. *Effective July 20, 1991, all spent F002 and F005 wastes containing solvent constituents listed in LAC 33:V.2257, Table B are prohibited from underground injection.*

D. *The requirements of LAC 33:V.2257.A-C do not apply if:*

1. *the wastes meet or are treated to meet the applicable treatment standards specified in LAC 33:V.Chapter 22.Subchapter A; or*

2. *an approval has been granted in response to a petition under LAC 33:V.2271, or a determination made under LAC:V.2273; or*

3. *during the period of extension of the applicable effective date, if an extension has been granted under LAC 33:V.2253.*

Table A	
Acetone	*Methylene chloride*
N-Butyl alcohol	*Methylene chloride (from the pharmaceutical industry)*
Carbon disulfide	*Methyl ethyl ketone*
Carbon tetrachloride	*Methyl isobutyl ketone*
Chlorobenzene	*Nitrobenzene*
Cresols and Cresylic acid	*Pyridine*
Cyclohexanone	*Tetrachloroethylene*
1,2-Dichlorobenzene	*Toluene*
Ethyl acetate	*1, 1, 1-Trichloroethane*
Ethyl benzene	*1, 2, 2-Trichloro-1, 2, 2-trifluoroethane*
Ethyl Ether	*Trichloroethylene*
Isobutanol	*Trichloroflurometh ane*
Methanol	*Xylene*

Table B	
Benzene	*2-Nitropropane*
2-Ethoxyethanol	*1, 1, 2-Trichloroethane*

2259. Waste-Specific Prohibitions—Dioxin-Containing Wastes

A. *Effective August 8, 1988, the dioxin-containing wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, F027, and F028 are prohibited from underground injection.*

B. *The requirements of LAC 33:V.2259.A do not apply if:*

1. *the wastes meet or are treated to meet the applicable treatment standards specified in LAC 33:V.Chapter 22.Subchapter A;*

2. *an approval has been granted in response to a petition under LAC 33:V.2271, or a determination made under LAC 33:V.2273; or*

3. *during the period of extension of the applicable effective date, if an extension has been granted under LAC 33:V.2253.*

2261. Waste-Specific Prohibitions—California List Wastes

A. *Effective August 8, 1988, liquid hazardous wastes listed in LAC 33:V.2261.B containing polychlorinated biphenyls at concentrations greater than or equal to 50 ppm or halogenated organic compounds at concentrations greater than or equal to 10,000 mg/kg are prohibited from underground injection.*

B. *Effective August 8, 1990, the following hazardous wastes are prohibited from underground injection:*

1. *liquid hazardous wastes, including free liquids associated with any solid or sludge, containing free cyanides at concentrations greater than or equal to 1,000 mg/L; and*

2. *liquid hazardous wastes, including free liquids associated with any solid or sludge, containing the following metals (or elements) or compounds of these metals (or elements) at concentrations greater than or equal to those specified below:*

Arsenic and/or compounds (as As)	*500 mg/L*
Cadmium and/or compounds (as Cd)	*100 mg/L*
Chromium (VI) and/or compounds (as Cr VI)	*500 mg/L*
Lead and/or compounds (as Pb)	*500 mg/L*
Mercury and/or compounds (as Hg)	*20 mg/L*
Nickel and/or compounds (as Ni)	*134 mg/L*
Selenium and/or compounds (as Se)	*100 mg/L*
Thallium and/or compounds (as Tl)	*130 mg/L*

3. *liquid hazardous waste having a pH less than or equal to 2.0; and*

4. *hazardous wastes containing halogenated organic compounds in total concentration less than 10,000 mg/kg but greater than or equal to 1,000 mg/kg.*

C. *The requirements of LAC 33:V.2261.A and B do not apply if:*

1. *the wastes meet or are treated to meet the applicable treatment standards specified in LAC 33:V.Chapter 22.Subchapter A;*

2. *an approval has been granted in response to a petition under LAC 33:V.2271, or a determination made under LAC 33:V.2273; or*

3. *during the period of extension of the applicable effective date, if an extension has been granted under LAC 33:V.2253.*

2263. Waste-Specific Prohibitions—First Third Wastes

A. *Effective January 1, 1991, the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers F006, F008, F009, F019, K001, K004, K008, K015, K016 (at concentrations greater than or equal to 1 percent), K017, K018, K019, K020, K021 (nonwastewaters generated by the process described in the waste listing description and disposed of after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K021 (wastewaters), K022, K024, K030, K031, K035, K036 (nonwastewaters generated by the process described in the waste listing description and disposed of after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K037, K044, K045, nonexplosive K046 (nonwastewaters), K046 (reactive nonwastewaters and all wastewaters), K047, K048, K049, K050, K051, K052, K060 (nonwastewaters generated by the process described in the waste listing description and disposed of after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K060 (wastewaters), K061, non-$CaSO_4$ K069 (nonwastewaters generated by the process described in the waste listing description and disposed of after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K069 ($CaSO_4$ nonwastewaters and all wastewaters), K071, K073, K083, K084, K085, K086, K087, K099, K101 (high arsenic nonwastewaters), K102 (high arsenic nonwastewaters), K103, K106, P001, P004, P005, P010, P011, P012, P015, P016, P018, P020, P030, P036, P037, P039, P041, P048, P050, P058, P059, P063, P068, P069, P070, P071, P081, P082, P084, P087, P089, P092, P094, P097, P102, P105, P108, P110, P115, P120, P122, P123, U007, U009, U010, U012, U016, U018, U019, U022, U029, U031, U036, U037, U041, U043, U044, U046, U050, U051, U053, U061, U063, U064, U066, U067, U074, U077, U078, U086, U089, U103, U105, U108, U115, U122, U124, U129, U130, U133, U134, U137, U151, U154, U155, U157, U158, U159, U171, U177, U180, U185, U188, U192, U200, U209, U210, U211, U219, U220, U221, U223, U226, U227, U228, U237, U238, U248, and U249 are prohibited from underground injection.*

B. *Effective August 8, 1990, the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers K062 and K104 are prohibited from underground injection.*

C. *Effective June 7, 1991, the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers K016 (at concentrations less than 1 percent) are prohibited from underground injection.*

D. *Effective June 8, 1991, the waste specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Number F007 and the wastes specified in LAC 33:V.Chapter 49 as K011 (nonwastewaters) and K013 (nonwastewaters) are prohibited from underground injection.*

E. *Effective May 8, 1992, the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers K011 (wastewaters), K013(wastewaters), and K014 are prohibited from underground injection.*

F. *The requirements of LAC 33:V.2263.A-E do not apply if:*

1. *the wastes meet or are treated to meet the applicable treatment standards specified in LAC 33:V.Chapter 22.Subchapter A;*

2. *an approval has been granted in response to a petition under LAC 33:V.2271, or a determination made under LAC 33:V. 2273; or*

3. *during the period of extension of the applicable effective date, if an extension has been granted under LAC 33:V.2253.*

2265. Waste-Specific Prohibitions—Second Third Wastes

A. *Effective January 1, 1991, the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers F010, F011, F012, F024, K009 (nonwastewaters), K010, K025 (nonwastewaters generated by the process described in the waste listing description and disposed of after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K025 (wastewaters), K027, K028, K029 (nonwastewaters), K038, K039, K040, K041, K042, K043, K095, K096, K097, K098, K105, K113, K114, K115, K116, P002, P003, P007, P008, P014, P026, P027, P029, P040, P043, P044, P049, P054, P057, P060, P062, P066, P067, P072, P074, P085, P098, P104, P106, P107, P111, P112, P113, P114, U002, U003, U005, U008, U011, U014, U015, U020, U021, U023, U025, U026, U028, U032, U035, U047, U049, U057, U058, U059, U060, U062, U070, U073, U080, U083; U092, U093, U094, U095, U097, U098, U099, U101, U106, U107, U109, U110, U111, U114, U116, U119, U127, U128, U131, U135, U138, U140, U142, U143, U144, U146, U147, U149, U150, U161, U162, U163, U164, U165, U168, U169, U170, U172, U173, U174, U176, U178, U179, U189, U193, U196, U203, U205, U206, U208, U213, U214, U215, U216, U217, U218, U235, U239, and U244 are prohibited from underground injection.*

B. *Effective June 8, 1991, the waste specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Number K009 (wastewaters) is prohibited from underground injection.*

C. *The requirements of LAC 33:V.2265.A and B do not apply if:*

1. *the wastes meet or are treated to meet the applicable treatment standards specified in LAC 33:V.Chapter 22.Subchapter A;*

2. *an approval has been granted in response to a petition under LAC 33:V.2271, or a determination made under LAC 33:V.2273; or*

3. *during the period of extension of the applicable effective date, if an extension has been granted under LAC 33:V.2253.*

2267. Waste-Specific Prohibitions—Third Third Wastes

A. *Effective January 1, 1991, the wastes specified in LAC 33:V.Chapter 49 as F039 (wastewaters), K002, K003, K005, K006, K007, K026, K032, K033, K034, K036 (wastewaters), K093, K094, K100 (wastewaters), K100 (generated by the process described in the waste listing description and disposed of after August 17, 1989, and not generated in the course of treating wastewater forms of these wastes), P006, P009, P013, P017, P022, P023, P024, P028, P031, P033, P034, P038 (wastewaters), P042, P045, P046, P047, P051, P056, P064, P065 (wastewaters), P073, P075, P076, P077, P078, P088, P093, P095, P096, P099, P101, P103, P116, P118, P119, U001, U004, U006, U017, U024, U027, U030, U033, U034, U038, U039, U042, U045, U048, U052, U055, U056, U068, U071, U072, U075, U076, U079, U081, U082, U084, U085, U087, U088, U090, U091, U096, U102, U112, U113, U117, U118, U120, U121, U123, U125, U126, U132, U136, U141, U145, U148, U152, U153, U156, U160, U166, U167, U181, U182, U183, U184, U186, U187, U190, U191, U194, U197, U201, U202, U204, U207, U222, U225, U234, U236, U240, U243, U246, and U247 and the following wastes identified as hazardous based on a characteristic alone designated as D001, D004 (wastewaters), D005, D006, D008 (except for lead materials stored before secondary smelting), D009 (wastewaters), D010, D011, D012, D013, D014, D015, D016, and D017 and newly listed F025 are prohibited from underground injection.*

B. *Effective January 1, 1991, mixed radioactive/hazardous wastes specified in LAC 33:V.2215, 2217, or 2219 that are radioactive and hazardous wastes are prohibited from underground injection. This effective date does not apply to the wastes listed in LAC 33:V.2261 that were prohibited from underground injection on August 8, 1990.*

C. *Effective May 8, 1992, the wastes specified in LAC 33:V.Chapter 49 as EPA Hazardous Waste Numbers F039 (nonwastewaters), P038 (nonwastewaters), P065 (nonwastewaters), and the wastes identified as hazardous based on a characteristic alone, designated as D002 (wastewaters and nonwastewaters), D003 (wastewaters and nonwastewaters), D004 (nonwastewaters), D007 (wastewaters and nonwastewaters), D008 (lead materials stored before secondary smelting), and D009 (nonwastewaters) are prohibited from underground injection. These effective dates do not apply to the wastes listed in LAC 33:V.2261 that were prohibited from underground injection on August 8, 1990.*

D. *The requirements of LAC 33:V.2267.A-C do not apply if:*

1. *the wastes meet or are treated to meet the applicable treatment standards specified in LAC 33:V.Chapter 22.Subchapter A;*

2. *an approval has been granted in response to a petition under LAC 33:V.2271, or a determination made under LAC 33:V.2273; or*

3. *during the period of extension of the applicable effective date, if an extension has been granted under LAC 33:V.2253.*

2269. Waste-Specific Prohibitions—Newly Listed Wastes

A. *Effective September 20, 1995, the wastes specified as EPA Hazardous Waste Numbers F037, F038, K107, K108, K109, K110, K111, K112, K117, K118, K123, K124, K125, K126, K131, K132, K136, K141, K142, K143, K144, K145, K147, K148, K149, K150, K151, U328, U353, and U359 are prohibited from underground injection.*

B. *Effective September 19, 1995, the wastes specified as D001 (High TOC Subcategory as specified at LAC 33:V.2299.Appendix, Table 2) and in LAC 33:V.4903.E as EPA Hazardous Waste Numbers D012, D013, D014, D015, D016 and D017 are prohibited from underground injection.*

C. *The requirements of LAC 33:V.2269.A do not apply if:*

1. *the wastes meet or are treated to meet the applicable treatment standards specified in LAC 33:V.Chapter 22.Subchapter A;*

2. *an exemption or an approval has been granted in response to a petition under LAC 33:V.2271, or a determination made under LAC 33:V.2273; or*

3. *during the period of extension of the applicable effective date, if an extension has been granted under LAC 33:V.2253.*

2271. Exemptions to Allow Land Disposal of a Prohibited Waste by Deep Well Injections

A. *Any person seeking an exemption to allow land disposal by deep well injection of a prohibited hazardous waste in a particular injection well or wells must submit a petition to the Office of Environmental Services, Permits Division that does the following.*

1. *The petition must show that no other economically and environmentally reasonable alternative to disposal into an injection well is available. No exemption shall be granted to a generator for the land disposal of a waste stream if the waste stream can reasonably be eliminated or significantly reduced through waste reduction.*

2. *The petition must demonstrate to a reasonable degree of certainty that the waste shall be permanently confined as required by R.S. 30:2193(A) and 2193(E)(2)(d). For the purposes of this Section, permanent confinement means that there will be no migration of hazardous constituents from the injection zone for as long as the wastes remain hazardous. Migration prohibited by this Section includes migration into the air, land or waters of the state where a discharge is not permitted.*

B. *A petition submitted pursuant to this Section must apply to land disposal of the specific prohibited waste into a specific injection well or wells described in the showing and demonstration and will not apply to any other prohibited waste at that injection well or wells or to that specific prohibited waste at any other injection well.*

C. *To comply with Paragraph A.1 of this Section, the petitioner must show the following.*

1. *The petitioner must show that he or she has made a good-faith effort, using economically and technically feasible and environmentally sound methods, to provide for use, reuse, reclamation, or other recycling of waste in a manner other than for a use constituting disposal.*

2. *For each waste stream, the petitioner must show that he or she has a program or plan in effect to reduce the volume and toxicity of the waste he or she generates and that he or she has sought out the best technology available to reduce the toxicity, corrosiveness, virulent, or infectious character, or volume of the waste and that the waste cannot be further reduced through production modifications, nor can the waste or specific constituents of the waste be reclaimed or reused. The plan shall include:*

   a. *a schedule of implementation and anticipated reductions in quantity and toxicity;*

   b. *a list of technical process reductions considered and those rejected and the reasons for the rejections;*

   c. *an analysis of the impact of the reduction program or plan on all operations of the facility affecting the environment, including air and water discharges; and*

   d. *each waste reduction program or plan must be certified by a Louisiana licensed professional engineer (PE).*

3. *The petitioner must sign and present to the administrative authority the following certification.*

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this waste reduction plan and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

4. *The petitioner must submit a report describing in detail the efforts undertaken since 1984 to reduce the volume and toxicity of waste generated. The report shall provide data indicating the change in volume and toxicity of waste actually achieved during each year in comparison to previous years, to the extent that such information is available. The report shall also document, for each hazardous waste stream proposed for disposal in a land disposal unit, a Waste Reduction Analysis (WRA) showing that the petitioner has considered the economic and technical feasibility of alternative disposal methods in the following order: reduction, recycling, treatment, and disposal. The WRA must include:*

   a. *an analysis of alternatives considered;*

   b. *the costs of alternatives considered;*

   c. *an assessment of the impact on other environmental programs of the facility, including impacts on air and water discharges; and*

   d. *a description of the availability of alternate capacity for use of alternative technologies.*

D. *The demonstration required in LAC 33:V.2271.A.2 must include sufficient information to assure the administrative authority of the following.*

1. *The hydrogeological and geochemical conditions at the sites and the physiochemical nature of the waste stream(s) are such that one of the following reliable predictions can be made.*

a. *Fluid movement conditions are such that the injected fluids will not migrate within 10,000 years, either:*

i. *vertically upward out of the injection zone; or*

ii. *laterally within the injection zone, to a point of discharge or interface with an underground source of drinking water (USDW).*

b. *If the injected fluids do migrate out of the injection zone or to a point of discharge or interface with a USDW within 10,000 years, the fluid will no longer be hazardous because of attenuation, transformation, or immobilization of hazardous constituents within the injection zone by hydrolysis, chemical interactions, or other means.*

2. *Any migration due to diffusion shall be accounted for in the demonstration required under Subparagraph D.1.a of this Section.*

3. *For each well the petitioner has done the following.*

a. *The petitioner has demonstrated that the injection well's area of review includes at least the 2-mile radius around the bore hole. The administrative authority may specify a larger area of review on the basis of the calculated cone of influence around the well.*

b. *Using a protocol acceptable to the administrative authority, the petitioner has located, identified, and ascertained the conditions of all wells within the injection well's area of review (as specified in Subparagraph D.2.a of this Section) that penetrate the injection zone or the confining zone.*

c. *The petitioner has submitted a corrective action plan that meets the substantive requirements of Subsection V of this Section; its implementation shall become a condition of petition approval.*

d. *The petitioner has submitted the results of pressure and radioactive tracer tests performed within one year prior to submission of the petition that may demonstrate the mechanical integrity of the well's long string casing, injection tube, annular seal, and bottom hole cement. In cases where the petition has not been approved or denied within one year after the initial demonstration of mechanical integrity, the administrative authority may require the owner or operator to perform the tests again and submit the results of the new tests.*

E. *A demonstration under LAC 33:V.2271.D.1.a shall identify the strata within the injection zone which will confine fluid movement above the injection interval and include a showing that this strata is free of known transmissive faults or fractures and that there is a confining zone above the injection zone.*

F. *A demonstration under LAC 33:V.2271.D.1.b shall identify the strata within the injection zone where waste transformation will be accomplished and include a showing that this strata is free of known transmissive faults or fractures and that there is a confining zone above the injection zone.*

G. *A demonstration may include information that:*

1. *treatment methods, the implementation of which shall become a condition of approval, will be used to reduce the toxicity or mobility of the wastes; or*

2. *a monitoring plan, the implementation of which shall become a condition of petition approval, will be used to enhance confidence in one or more aspects of the demonstration.*

H. *Any person who has been granted an exemption pursuant to this Section may submit a petition to the Office of Environmental Services, Permits Division for reissuance of the exemption to include an additional prohibited waste or wastes or to modify any conditions placed on the exemption by the administrative authority. The administrative authority may reissue the exemption if the petitioner complies with the requirements of LAC 33:V.2271.A-F.*

I. *Any person who has been granted an exemption pursuant to this Section may submit a petition to the Office of Environmental Services, Permits Division to modify an exemption to include an additional nonprohibited hazardous waste or wastes. The administrative authority may grant the modification if he or she determines, to a reasonable degree of certainty, that the additional waste or wastes will behave hydraulically and chemically in a manner similar to previously included wastes and that it will not interfere with the containment capability of the injection zone.*

J. *Information submitted in support of the exemption petition must meet the following criteria.*

1. *All waste analysis and any new testing performed by the petitioner should be accurate and reproducible and performed in accordance with quality assurance standards.*
2. *Estimation techniques shall be appropriate, and EPA-certified test protocols shall be used when available and appropriate.*
3. *Predictive models shall have been verified and validated; shall be appropriate for the specific site, waste streams, and injection conditions of the operation; and shall be calibrated for existing sites where sufficient data are available.*
4. *An approved quality assurance and quality control plan shall address all aspects of the demonstration.*
5. *Reasonably conservative values shall be used whenever values taken from the literature or estimated on the basis of known information are used instead of site-specific measurements.*
6. *An analysis shall be performed to identify and assess aspects of the demonstration that contribute significantly to uncertainty. The petitioner shall conduct a sensitivity analysis to determine the extent to which significant uncertainty may affect the demonstration. The demonstration shall then be based on conservative assumptions identified in the analysis.*

K. *Any petitioner under LAC 33:V.2271.D.1.a shall provide sufficient site-specific information to support the demonstration, such as:*

1. *thickness, porosity, permeability, and extent of the various strata in the injection zone;*
2. *thickness, porosity, permeability, extent, and continuity of the confining zone;*
3. *hydraulic gradient in the injection zone;*
4. *hydrostatic pressure in the injection zone; and*
5. *geochemical conditions of the site.*

L. In addition to the information in LAC 33:V.2271.K, any petitioner under LAC 33:V.2271.D.1.b shall provide sufficient waste-specific information to ensure reasonably reliable predictions about the waste transformation. The petitioner shall provide the information necessary to support the demonstration, such as:

1. a description of the chemical processes or other means that will lead to waste transformation; and

2. results of laboratory experiments verifying the waste transformation.

M. Any petition submitted to the administrative authority pursuant to this Section shall include the following components:

1. an identification of the specific waste or wastes and the specific injection well or wells for which the demonstration will be made;

2. a waste analysis to describe fully the chemical and physical characteristics of the subject wastes;

3. such additional information as is required by the administrative authority to support the petition under this Section; and

4. this statement signed by the petitioner or a duly authorized representative:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted for this petition and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

N. Ambient Monitoring

1. Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the administrative authority shall require the owner or operator to develop a monitoring program. At a minimum, the administrative authority shall require annual monitoring of the pressure build-up in the injection zone, including, at a minimum, a shutdown of the well for a time sufficient to conduct a valid observation of the pressure fall off curve.

2. The owner or operator shall include all of the following requirements in his or her monitoring program.

a. Continuous monitoring for pressure changes in the first aquifer overlying the confining zone shall be addressed. The owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the administrative authority.

b. The use of indirect, geophysical techniques shall be required to determine the position of the waste front, the water quality in a formation designated by the administrative authority, or to provide other site-specific data.

c. *Periodic monitoring of the groundwater quality in the first aquifer overlying the injection zone shall be required.*

d. *Periodic monitoring of the groundwater quality in the lowermost USDW shall be required.*

e. *Additional monitoring may be necessary to determine whether fluids are moving into or between USDWs.*

3. *The administrative authority may exempt the owner or operator from any requirements in Paragraph N.2 of this Section which he or she deems to be unnecessary or not feasible, or which pose undue risks.*

O. *The administrative authority may require seismicity monitoring when he or she has reason to believe that the injection activity could cause seismic disturbances.*

P. *The administrative authority shall provide public notice and an opportunity for public comment in accordance with the procedures in LAC 33:V.Chapter 7.Subchapter C, and LAC 33:V.2243, of the intent to approve or deny a petition. The administrative authority shall provide public notice of the final decision on a petition.*

Q. *If an exemption is granted it will apply only to the underground injection of the specific prohibited waste or wastes identified in the petition into a Class I hazardous waste injection well or wells specifically identified in the petition unless the exemption is modified or reissued pursuant to LAC 33:V.2271.H or I.*

R. *Whenever the administrative authority determines that the basis for approval of a petition may no longer be valid, he or she shall require a new demonstration in accordance with this Section.*

S. *Termination of an Approved Petition*

1. *The administrative authority may terminate an exemption granted under this Section for the following causes:*

a. *noncompliance by the petitioners with any condition of the exemption;*

b. *the petitioner's failure in the petition or during the review and approval to disclose fully all relevant facts, or the petitioner's misrepresentation of any relevant facts at any time; or*

c. *a determination that new information shows that the basis for approval of the petition is no longer valid;*

d. *should a petition be terminated pursuant to this Section for the reason that it has been determined that a technologically and economically feasible alternative to underground injection exists, the administrative authority may provide for a compliance schedule authorizing continued injection for the amount of time reasonably necessary to construct and/or implement such alternative.*

2. *The administrative authority shall terminate an exemption granted under this Section for the following causes:*

a. *the petitioner's willful withholding during the review and approval of the petition of facts directly and materially relevant to the administrative authority's decision on the petition;*

b. a determination that there has been migration from the injection zone or the well that is not in accordance with the terms of the exemption, except that the administrative authority may at his or her discretion decide not to terminate where:

i. the migration resulted from a mechanical failure of the well that can be corrected promptly through a repair to the injection well itself or from an undetected well or conduit that can be plugged promptly; and

ii. the requirements of LAC 33:V.2271.V are satisfied.

3. The administrative authority shall follow the procedures in LAC 33:V.323 in terminating any exemption under this Section.

T. Whenever the owner or operator obtains evidence that injected wastes may have been released into an unauthorized zone, he or she must do the following.

1. The owner or operator shall immediately cease injection of waste fluids and:

a. notify the Office of Environmental Compliance in the manner provided in LAC 33:I.3923 within 24 hours of obtaining such evidence;

b. take all necessary steps to identify and characterize the extent of any release;

c. comply with any remediation plan specified by the administrative authority;

d. implement any remediation plan approved by the administrative authority; and

e. where such release is into a USDW currently serving as a water supply, place a notice in a newspaper of general circulation.

2. The administrative authority may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger strata containing waters of the state where a discharge is not permitted.

U. Term of the Exemption

1. The term of an exemption granted under this Section shall be a maximum of five years from the date of approval.

2. The administrative authority may re-issue an exemption every five years after the initial petition approval, based on the submittal and review of all demonstrations stipulated in LAC 33:V.2271.C and Z.

3. At least once every 10 years, the administrative authority will require re-issuance of the exemptions based on a full technical review of each petition. The department will coordinate the timing of the review with the Department of Natural Resources (DNR) so that the petition review will coincide with DNR's UIC re-permitting review process.

4. The term of the exemption granted shall expire under the following conditions:

a. upon the revocation or denial of a Department of Natural Resources final permit; or

b. upon the termination of an EPA exemption; or

c. when the volume limit of waste to be land disposed during the term of petition is reached.

5. *The permittee shall submit a request to the Office of Environmental Services, Permits Division for reissuance of the exemption at least 180 days prior to the end of the term. If the applicant submits a timely and technically complete application, and the administrative authority, through no fault of the applicant, fails to act on the application for reissuance on or before the expiration date of the existing exemption, the permittee may, with the written approval of the administrative authority, continue to operate under the terms and conditions of the existing exemption which shall remain in effect until final action on the application is taken by the administrative authority.*

V. *Corrective Action for Wells in the Area of Review*

1. *The petitioner shall submit a plan to the Office of Environmental Assessment, Environmental Technology Division outlining the protocol used to:*

   a. *identify all wells penetrating the confining zone or injection zone within the area of review; and*

   b. *determine whether wells are adequately completed or plugged.*

2. *The petitioner shall identify the location of all wells within the area of review that penetrate the injection zone or the confining zone and shall submit the following information to the administrative authority:*

   a. *a tabulation of all wells within the area of review that penetrate the injection zone or the confining zone; and*

   b. *a description of each well or type of well and any records of its plugging or completion.*

3. *For wells that the administrative authority determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluids into strata containing waters of the state where a discharge is not permitted. Where the plan is adequate, the administrative authority shall incorporate it into the exemption as a condition. Where the administrative authority's review indicates that the petitioner's plan is inadequate (based at a minimum on the factors in Paragraph 5 of this Subsection), the administrative authority shall:*

   a. *require the applicant to revise the plan;*

   b. *prescribe a plan for corrective action as a condition of the exemption; or*

   c. *deny the exemption.*

4. *Requirements*

   a. *For existing hazardous waste injection wells, any exemption issued requiring corrective action other than pressure limitations shall include a compliance schedule requiring any corrective action accepted or prescribed under Paragraph V.3 of this Section. Any such compliance schedule shall provide for compliance no later than two years after issuance of the exemption and shall require observance of appropriate pressure limitations under Subparagraph V.4.c of this Section until all other corrective action measures have been implemented.*

b. *For new hazardous waste injection wells, no owner or operator may begin injection until all corrective actions required under this Section have been taken.*

c. *The administrative authority may require pressure limitations in lieu of plugging. If pressure limitations are used in lieu of plugging, the administrative authority shall require as a condition of the exemption that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into strata containing waters of the state where a discharge is not permitted.*

5. *In determining the adequacy of corrective action proposed by the applicant under Subsection V of this Section and in determining the additional steps needed to prevent fluid movement into strata containing waters of the state where a discharge is not permitted, the administrative authority shall consider the following criteria and factors:*

a. *nature and volume of injected fluid;*

b. *nature of native fluids or by-products of injection;*

c. *geology;*

d. *hydrology;*

e. *history of the injection operations;*

f. *completion and plugging procedures in effect at the time the well was closed;*

g. *closure procedures in effect at the time the well was closed;*

h. *hydraulic connections with USDWs;*

i. *reliability of the procedures used to identify abandoned wells; and*

j. *any other factors which might affect the movement of fluids into strata containing waters of the state where a discharge is not permitted.*

W. Emergency Variance

1. *During the petition review process, the applicant is required to comply with all prohibitions on land disposal under this Chapter, unless a petition for an exemption has been approved by the EPA, and the administrative authority grants an emergency variance. If EPA has approved the exemption, the land disposal of the waste may continue for up to one year under an emergency variance issued by the administrative authority until the administrative authority makes a decision on the petition for exemption. The administrative authority may extend an emergency variance beyond one year; however, such approval is solely based on the agency's inability to review the petition during the first one-year variance. The administrative authority shall either grant or deny the petition within the extended emergency variance period, no later than June 1, 1995, for petitions submitted prior to June 1, 1992. After the administrative authority issues a decision on the exemption, the waste may be land disposed only in accordance with the provision of the exemption.*

2. *If the exemption decision is vacated and/or remanded by a court on judicial review, the emergency variance shall be automatically reinstated and shall remain in effect until final*

action on the remand is taken by the administrative authority and any subsequent appeal process has been completed.

X. *The petition granted by the administrative authority does not relieve the petitioner from compliance with all other applicable regulations.*

Y. *Liquid hazardous wastes containing PCBs at concentrations greater than or equal to 50 ppm are not eligible for an exemption under this Section.*

Z. *As a condition of the exemption, the petitioner must submit a report to the Office of Environmental Services, Permits Division by March 1 of each calendar year during the term of the exemption, describing in detail the efforts undertaken during the preceding calendar year to reduce the volume and toxicity of the waste generated. The report shall provide data indicating the change in volume and toxicity of waste actually achieved during the year in comparison to previous years.*

2273. Petition for Determinations Concerning No Alternatives to Land Disposal of a Prohibited Waste by Deep Well Injection

A. *To the extent that the administrative authority has previously determined, through the issuance of an exemption under LAC 33:V.2271 or otherwise under LAC 33:V.Chapter 22, that no economically and environmentally reasonable alternatives to injection exist to the land disposal of a particular hazardous waste by injection well(s), such determination shall satisfy the requirement of and be deemed the determination by the administrative authority for purposes of R.S. 30:2193(G)(3). A formal petition in accordance with Subsection C of this Section may, but need not, be filed by the owner or operator of the injection well. The land disposal of the hazardous waste subject to the exemption shall be deemed to be excluded from the requirements of R.S. 30:2193(A-F), LAC 33:V.2205-2271, and any conditions of such exemption. The provisions set forth in Subsections D-L of this Section shall be applicable to such determination.*

B. *This Section is intended to provide the requirements to implement the exclusion provision set forth in R.S. 30:2193(G)(1)-(3). The implementation of this exclusion requires a determination from the administrative authority that there are no economically reasonable and environmentally sound alternatives to the land disposal of a hazardous waste by injection well. The requirements of R.S. 30:2193.A-F and LAC 33:V.2205-2271 shall not apply to the land disposal of a hazardous waste by injection well excluded under R.S. 30:2193(G)(1)-(3).*

C. *Any person seeking a determination of no alternatives must submit a petition to the Office of Environmental Services, Permits Division that does the following:*

1. *the petition must show that such land disposal has been exempted by the United States Environmental Protection Agency (EPA) from land disposal prohibitions contained in the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq.;*

2. *the petition must show that a permit has been issued for such injection well or wells by the Louisiana Department of Natural Resources, Office of Conservation, in accordance with Title 30. Subtitle I. Chapter 1 of the Louisiana Revised Statutes of 1950 and the Safe Drinking Water Act, 42 U.S.C. 300(f) et seq.;*

3. *the petition must show that for the injected hazardous waste there are no economically reasonable and environmentally sound alternatives to disposal into an injection well. The petition submitted in accordance with this Subsection must include:*

   a. *an analysis of alternatives considered for technical feasibility;*

   b. *an analysis of technically feasible alternatives, if any, showing whether any are economically reasonable;*

   c. *an assessment of the impact of those economically reasonable alternatives considered, if any, on other environmental programs and permits of the facility, including impacts on air and water discharges; and*

   d. *where applicable and appropriate, a description of the available capacity of economically reasonable and environmentally sound alternative technologies; and*

4. *the petition must include:*

   a. *a waste characterization that describes the chemical and physical characteristics of the wastes being or to be injected;*

   b. *a copy of the decision by the EPA exempting the land disposal from the prohibitions contained in the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., if issued;*

   c. *a copy of the permit issued for such injection well or wells by the Louisiana Department of Natural Resources, Office of Conservation, in accordance with Title 30. Subtitle I. Chapter 1 of the Louisiana Revised Statutes of 1950 and the Safe Drinking Water Act, 42 U.S.C. 300(f), et seq., if issued;*

   d. *such additional information as is required by the administrative authority to support the petition under this Section; and*

   e. *this statement signed by a duly authorized representative:*

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted for this petition and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

D. *Following a determination under this Section, the owner or operator of the injection well must submit a report to the administrative authority, by March 1 of each calendar year during the term of the determination, describing in detail the efforts undertaken during the preceding calendar year to identify any economically reasonable and environmentally sound alternatives to disposal into an injection well for any hazardous waste injected on site.*

E. *Except as otherwise provided in this Section, if a hazardous waste not subject to an existing determination is to be injected, a petition that addresses such hazardous waste must be submitted to the Office of Environmental Services, Permits Division and a determination of no alternatives be made prior to this waste being injected. The provisions contained in Subsection J of this Section, shall apply with respect to such hazardous waste.*

1. *If such hazardous waste is substantially similar in potential alternative technologies to a hazardous waste subject to an existing determination under this Section issued to the same owner or operator, a new petition is not necessary, and such hazardous waste shall be included within that determination upon the owner or operator providing notice to the administrative authority. The notice must include a brief showing that the alternatives determination for the existing hazardous waste is applicable to such hazardous waste.*

2. *If the administrative authority determines that the condition of Paragraph E.1 of this Section is not satisfied, the administrative authority shall require the owner or operator of the injection well to submit a petition under Subsection C of this Section that addresses such hazardous waste. In this circumstance such hazardous waste may be injected pending a final decision by the administrative authority on the petition.*

F. *If a new injection well(s) is to be used to inject a hazardous waste subject to an existing approved determination under this Section, a new petition is not necessary, provided the owner or operator submits a notice to the Office of Environmental Assessment, Environmental Technology Division. The notice shall include a copy of the EPA exemption approval for the new well(s) and a copy of the permit issued by the Louisiana Department of Natural Resources, Office of Conservation for the new well(s).*

G. *The administrative authority shall provide public notice and an opportunity for public comment, in accordance with the procedures in LAC 33:V.2243, of the intent to approve or deny a petition for no-alternatives determination. The administrative authority shall provide public notice of the final decision on such a petition.*

H. *Whenever the administrative authority determines that the basis for a determination may no longer be valid, the administrative authority may require a new petition in accordance with this Section.*

I. *Termination of a No-Alternatives Determination*

1. *The administrative authority may terminate a determination granted under this Section for any of the following causes:*

   a. *noncompliance by the facility with any condition of the determination;*

   b. *the facility's failure in the petition or during the review and determination to disclose fully all relevant facts or the facility's misrepresentation of any relevant facts at any time;*

   c. *a determination that new information shows the basis for a determination of the petition is no longer valid;*

   d. *upon the denial or termination of a Louisiana Department of Natural Resources, Office of Conservation final permit; or*

   e. *upon the denial or termination of an EPA exemption for injection.*

2. *Should a determination be terminated because an economically reasonable and environmentally sound alternative exists, the administrative authority shall issue a compliance schedule authorizing continued injection for the amount of time reasonably necessary to construct and/or implement such alternative.*

3. *If during the review and determination of the petition, the facility willfully withholds facts directly and materially relevant to the decision, the administrative authority may terminate the determination.*

4. *The administrative authority shall follow the procedures in LAC 33:V.323 in terminating any determination under this Section.*

J. *If a petition has been submitted in accordance with this Section and the EPA and the Louisiana Department of Natural Resources, Office of Conservation have approved the land disposal of prohibited waste by injection well, the land disposal of the waste by injection well may continue until the administrative authority makes a decision on the petition.*

K. *If a no-alternatives determination is vacated and/or remanded, the land disposal of the waste by injection well may continue until final action on the remand is taken by the administrative authority and all subsequent administrative and/or judicial appeal processes have been completed.*

L. *Term of the No-Alternatives Determination*

1. *The term of a determination granted under this Section shall be a maximum of 10 years from the date of the determination.*

2. *The petitioner shall submit a petition to the Office of Environmental Services, Permits Division for reissuance of a determination at least 180 days prior to the end of the term. If the petitioner submits a timely and technically complete petition and the administrative authority, through no fault of the petitioner, fails to act on the petition for reissuance on or before the expiration date of the existing determination, the petitioner may, with the written approval of the administrative authority, continue to operate under the terms and conditions of the existing determination, which shall remain in effect until final action on the petition is taken by the administrative authority and all subsequent administrative and/or judicial appeal processes have been completed.*

This entire subsection is not applicable because the facility does not operate an injection unit or any other type of land disposal unit. If the facility ever generates any waste that is disposed off-site by injection well, it will comply with the requirements of LAC 33.V.2245.

APPENDIX A

CERTIFICATION STATEMENT

CLEAN HARBORS COLFAX, LLC

CERTIFICATION STATEMENT

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to 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.

12/08/04

Scott Kuhn
Vice President of Environmental Compliance
Clean Harbors Environmental Services, Inc.

Date

APPENDIX B

SITE MAPS, SITE DRAWINGS, AND PHOTOGRAPHS

CLEAN HARBORS COLFAX, LLC
Part I/II RCRA Permit Drawing List
Appendix B

Drawing #	Title:
100	Aerial Photograph
101	Aerial Photograph Surrounding Land Use **(Revised 12/8/04)**
102	Topographical Map Land Use **(Deleted 12/8/04)**
103	Topographical Map Facility Layout and Surface Water Flow **(Revised 12/8/04)**
104	Topographical Map Well Water Locations **(Revised 12/8/04)**
105	Emergency Equipment and Security Equipment Locations **(Revised 12/8/04)**
106	USDA SCS Soils Map
107	Truck Staging and Parking
108	Storage Magazine/Truck Storage Area
109	Storage Magazine-Fence Elevations & Sections
110	Storage Magazine-Section Drawings
111	Preparation Building Floor Plan
112	Preparation Building Foundation plan
113	Preparation Building Detail Sheet
114	Deep Cross Section Location
115	Deep Cross-Section
116	Photograph of Site
117	Survey Plat with Legal Boundaries **(New 12/8/04)**

All drawing numbers not used are reserved for future use.

REQUEST AND APPROVAL FOR ALTERNATE MAP SCALE

CleanHarbors®
ENVIRONMENTAL SERVICES, INC.

November 22, 2004

Via Facsimile and Federal Express #: 7921 4286 8762

Mr. Michael Vince
Louisiana Department of Environmental Quality
Office of Environmental Services/Permits Division
602 North Fifth Street
Baton Rouge, Louisiana 70802

Attn: Ms. Karla Vidrine

Subject: **Request for Authorization to Utilize Alternate Map Scales**
Clean Harbors Colfax, LLC
EPA ID#: LAD 981 055 791 AI # 32096

Dear Mr. Vince/Ms. Vidrine:

As discussed during our 11/18/04 meeting, Clean Harbors Colfax, LLC hereby requests permission to utilize an alternate scale for some of the drawings included in the facility's Hazardous Waste Permit Renewal Application. Due to the size of the facility and the requirements for depicting significant surrounding distances, it would be cumbersome and is not practical in some cases to adhere to the Department's requested 1" $\leq$ 200' scale. In addition, some of the maps that are included were merely included as reference or to provide a general overview, with more specific information provided on other maps/drawings within the application. It is the facility's understanding that the Department's principal concern is that the maps be large enough to legibly read the required information, and the facility believes it can accomplish that goal using the map scales in this request.

Following a review of the maps and drawings in the application, the facility believes that the utilization of an alternate scale for some of the maps will still provide adequate detail to facilitate the review process. As a result, in accordance with LAC 33:V.517.B.13 and LAC 33:V.519, the facility requests that it be allowed to use the following scales for the drawings listed below that will accompany the forthcoming response to the September 28, 2004 Notice of Deficiencies.

Drawing #	Drawing Description	Requested Scale
101	Aerial Map with 2-mile radius/surrounding land use	1" $\leq$ 2000'
104	Topo Map with water well locations within 2 miles	1" $\leq$ 2000'
114	Map showing deep cross section location	1" = 1 mile
115	Deep cross section location map	1" = 1/2 mile
117	Survey plat with legal boundaries	1" = 300'

Clean Harbors Colfax, LLC appreciates the Department's consideration of this request and looks forward to continuing to work with the Department to resolve the remaining concerns regarding this pending permit renewal application. The facility would appreciate an expedited approval of this request in order for the facility to meet its December 20 deadline for responding to the NOD. If there are any questions related to the above information, please do not hesitate to contact me at (225) 778-3570. In the meantime, the facility looks forward to the Department's concurrence with this request.

Sincerely,

Paul L. Andrews

Paul L. Andrews
Sr. Compliance Manager
Clean Harbors Environmental Services, Inc., Louisiana Facilities

h:mv041122

State of Louisiana

Department of Environmental Quality

KATHLEEN BABINEAUX BLANCO
GOVERNOR

DEC 0 9 2004

MIKE D. McDANIEL, Ph.D.
SECRETARY

CERTIFIED MAIL 7003 2260 0001 2755 8651
RETURN RECEIPT REQUESTED

Mr. Paul L. Andrews
Sr. Environmental Compliance Manager
Clean Harbor Environmental Services, Inc. Louisiana Facilities
13351 Scenic Highway
Baton Rouge, Louisiana 70807-1021

Re: Clean Harbor Colfax, LLC
LAD 981 055 791
AI# 32096
Request for Alternate Map Scale

Dear Mr. Andrews:

The Water & Waste Permits Division has received and reviewed your letter, dated November 22, 2004 requesting alternate map scales based on the size of the facility. Based on this information and the information discussed in the November 18, 2004 meeting, your request for the alternate map scales for drawings 101, 104, 114, 115 and 117 is approved.

The alternate scales must be included in the operating permit renewal application NOD responses due December 20, 2004. If you have any questions regarding this matter, please contact Karla Vidrine of the Permits Division at (225) 219-3061.

Sincerely,

Beth Scardina

Beth Scardina
Environmental Scientist Manager

kav

N

SCALE

500 2000 6000

0 1000 4000

SOURCE: LA DNR GIS PHOTOGRAPHY

REFERENCE DRAWINGS

REV.	DESCRIPTION	DRAWN BY	DATE	APPROVED BY

ECO EcoScience Resource Group, L.L.C.
Evolving to Meet Tomorrow's Challenges

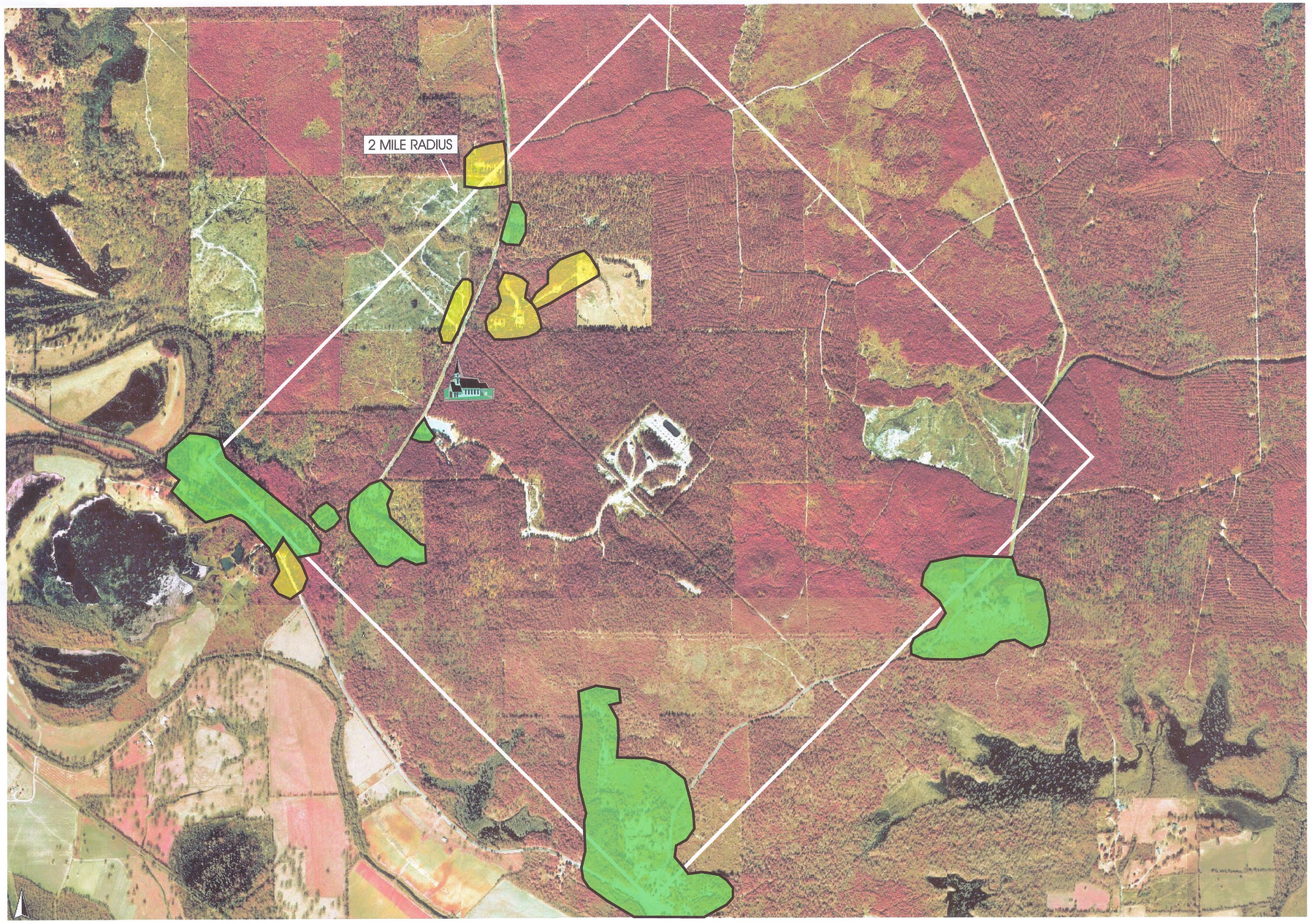
12010 Lakeland Park Blvd.
Suites 113, 117 & 121
Baton Rouge, Louisiana 70809
Tel.: (225) 755-8844
Fax: (225) 755-8845

CleanHarbors®

AERIAL PHOTOGRAPH
CLEAN HARBORS
COLFAX, LA

DATE	DRAWN BY	JOB NO.
12/15/04	MDH	11705
SCALE	APPROVED BY	DRAWING NO.
As Shown	JS	100

N



Legend

- Low Density Residential Single Family Domiciles
- Low Density Small Commercial Business
- Church

In accordance with LA Code (LAC) Title 33 Part V Section 517.T.6, the area above is primarily underdeveloped or agricultural except as noted above.

There are no public facilities or buildings within the 2-mile radius of Clean Harbors with the exception of the small church noted above.

There are no schools, daycare centers, hospitals, nursing homes, prisons, or libraries within this 2-mile radius.

As required by LAC 33 V Section 517.T.6.

SCALE

500 2000 6000

0 1000 4000

SOURCE: LA DNR GIS PHOTOGRAPHY

REFERENCE DRAWINGS

REV.	DESCRIPTION	DRAWN BY	DATE	APPROVED BY

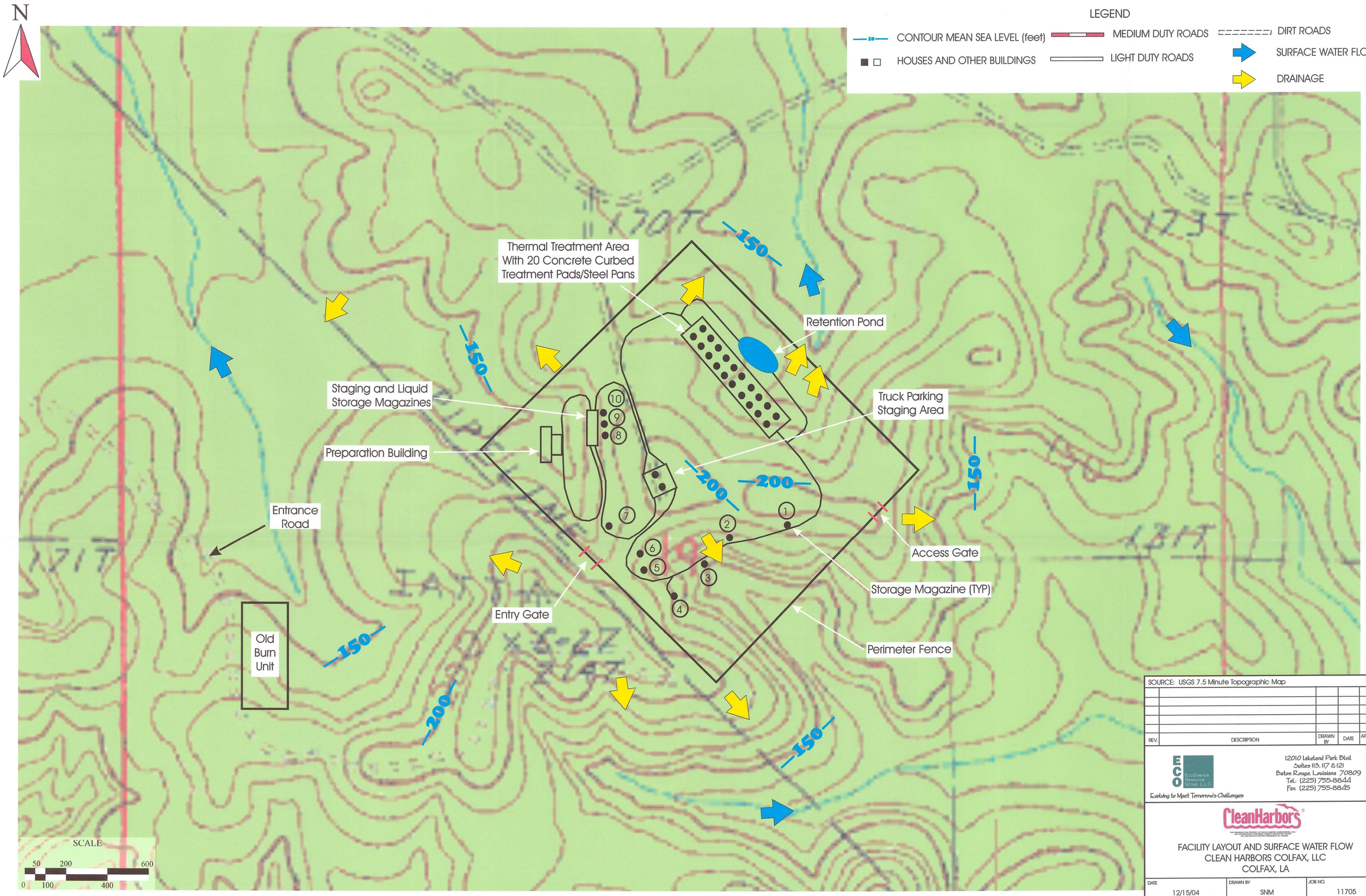
ECO EcoScience Resource Group, L.L.C.
Evolving to Meet Tomorrow's Challenges

12010 Lakeland Park Blvd.
Suites 113, 117 & 121
Baton Rouge, Louisiana 70809
Tel: (225) 755-8844
Fax: (225) 755-8845

CleanHarbors

AERIAL PHOTOGRAPH WITH SURROUNDING LAND USE
CLEAN HARBORS
COLFAX, LA

DATE	DRAWN BY	JOB NO.
12/15/04	SNM	11705
SCALE	APPROVED BY	DRAWING NO.
As Shown	JS	101



SOURCE: USGS 7.5 Minute Topographic Map

REV.	DESCRIPTION	DRAWN BY	DATE	APPROVED BY

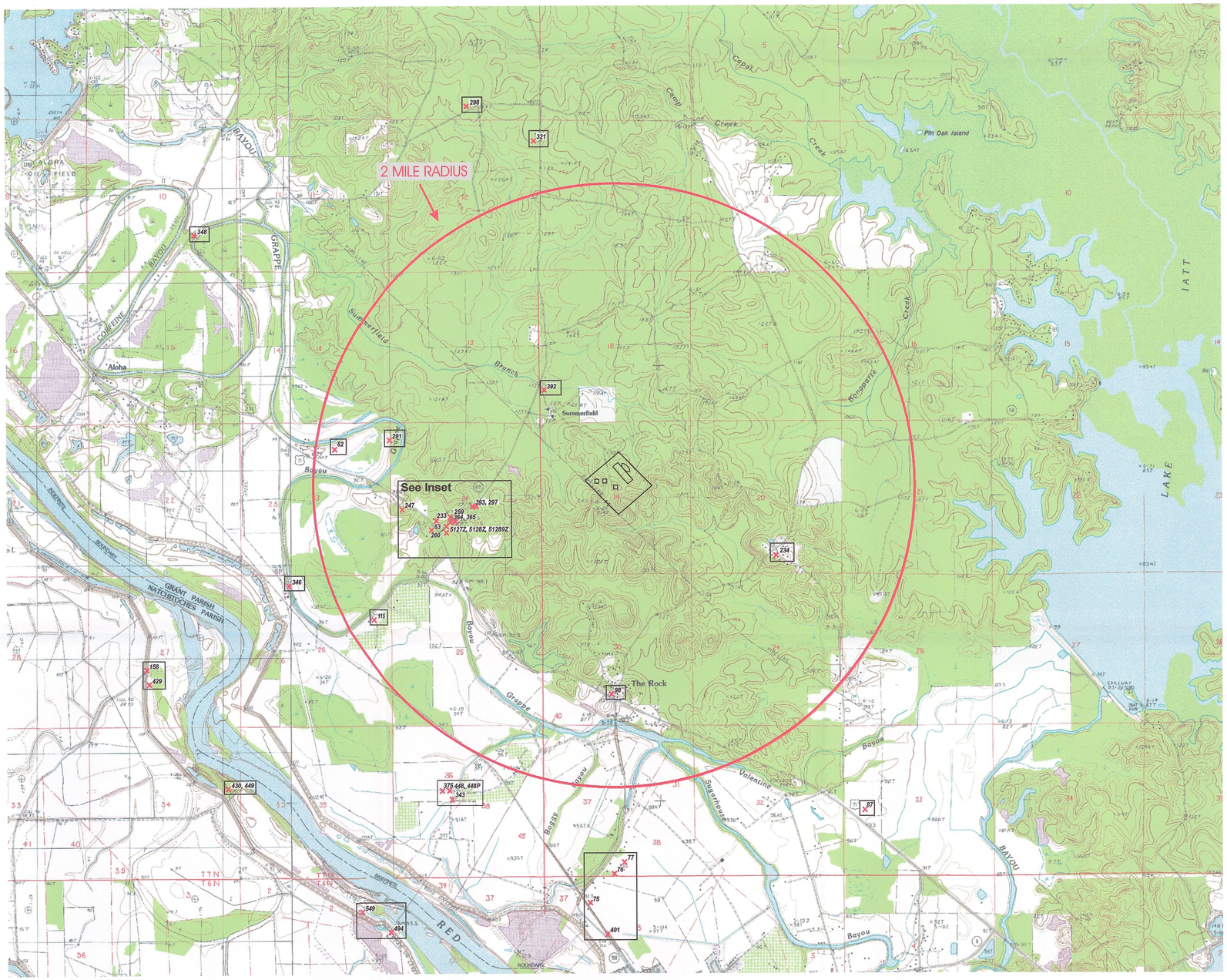
EcoScience Resource Group, L.L.C.
Evolving to Meet Tomorrow's Challenges
12010 Lakeland Park Blvd.
Suites 113, 117 & 121
Baton Rouge, Louisiana 70809
Tel: (225) 755-8844
Fax: (225) 755-8845

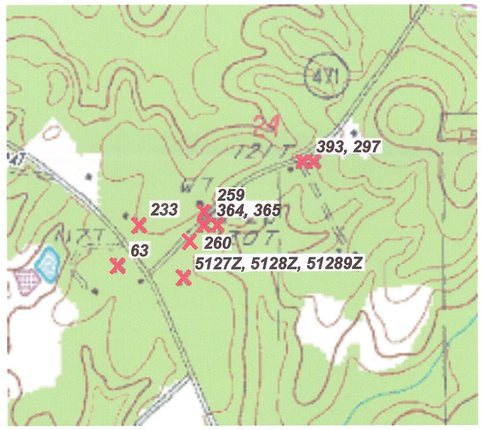
CleanHarbors

FACILITY LAYOUT AND SURFACE WATER FLOW
CLEAN HARBORS COLFAX, LLC
COLFAX, LA

DATE	DRAWN BY	JOB NO.
12/15/04	SNM	11705
SCALE	APPROVED BY	DRAWING NO.
As Shown	JS	103

N





Water Well Table

Parish	DOTD Well No.	Well Depth	Well Use
Grant	392	45	Public Supply
Grant	393	75	Public Supply
Grant	259	127	Plugged
Grant	5127Z	134	Monitor
Grant	5128Z	40	Monitor
Grant	5129Z	53	Monitor
Grant	62	25	Stock
Grant	63	35	Domestic
Grant	75	136	Domestic
Grant	76	30	Unknown
Grant	77	148	Stock
Grant	87	36	Stock
Grant	98	225	Domestic
Grant	115	609	Plugged
Grant	233	90	Domestic
Grant	234	260	Domestic
Grant	247	100	Domestic
Grant	260	70	Domestic
Grant	291	60	Abandoned
Grant	297	93	Plugged
Grant	298	42	Plugged
Grant	321	47	Domestic
Grant	343	93	Unknown
Grant	346	84	Observation
Grant	348	84	Observation
Grant	364	95	Abandoned
Grant	365	68	Abandoned
Grant	375	75	Plugged
Grant	401	28	Observation
Grant	448	74	Monitor
Grant	448P	23	Monitor
Natchitoches	158	108	Stock
Natchitoches	429	85	Plugged
Natchitoches	430	94	Plugged
Natchitoches	449	76	Observation
Natchitoches	494	108	Plugged
Natchitoches	549	115	Observation

SCALE

500 2000 6000

0 1000 4000

LEGEND

- 10 — CONTOUR MEAN SEA LEVEL
- LEGAL BOUNDARY OF FACILITY
- HOUSES AND OTHER BUILDINGS
- MEDIUM DUTY ROADS
- LIGHT DUTY ROADS
- DIRT ROADS
- X WATER WELLS

SOURCE: USGS 7.5 Minute Topographic Map

REFERENCE DRAWINGS

REV.	DESCRIPTION	DRAWN BY	DATE	APPROVED BY

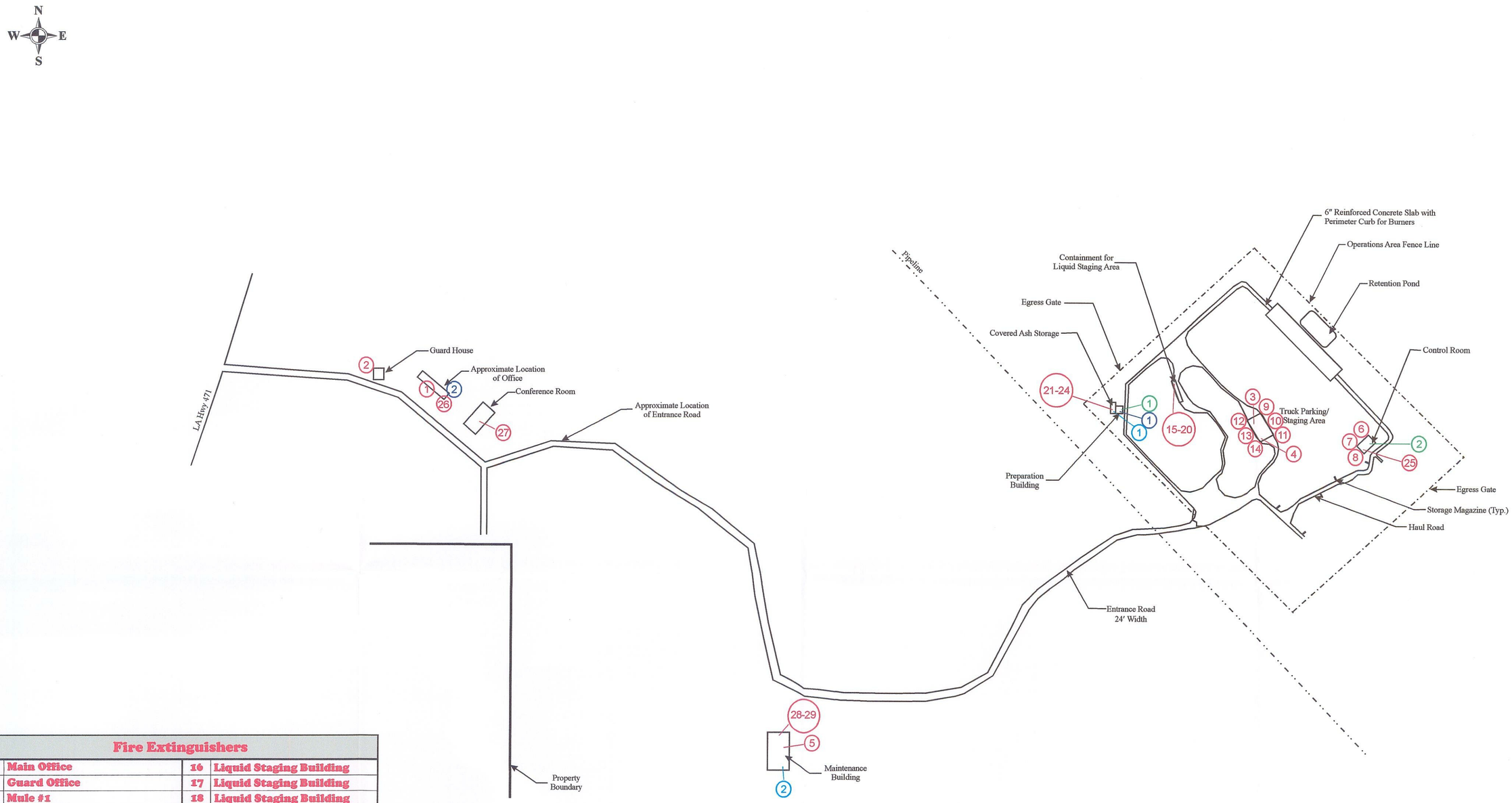
EcoScience Resource Group, L.L.C.
Evolving to Meet Tomorrow's Challenges

12010 Lakeland Park Blvd.
Suites 113, 117 & 121
Baton Rouge, Louisiana 70809
Tel.: (225) 755-8844
Fax: (225) 755-8845

Clean Harbors

WATER WELL LOCATIONS
CLEAN HARBORS COLFAX
COLFAX, LA

DATE	DRAWN BY	JOB NO.
12/15/04	MDH	11705
SCALE	APPROVED BY	DRAWING NO.
As Shown	JS	104



Fire Extinguishers			
1	Main Office	16	Liquid Staging Building
2	Guard Office	17	Liquid Staging Building
3	Mule #1	18	Liquid Staging Building
4	Mule #2	19	Liquid Staging Building
5	Tractor	20	Liquid Staging Building
6	Forklift	21	New Preparation Building
7	Control Building	22	New Preparation Building
8	Control Building Spare	23	New Preparation Building
9	Truck Staging Building	24	New Preparation Building
10	Truck Staging Building	25	Front End Loader
11	Truck Staging Building	26	Break Room
12	Truck Staging Building	27	Conference Room
13	Truck Staging Building	28	Maintenance Building
14	Truck Staging Building	29	Maintenance Building
15	Liquid Staging Building		

Eyewash Units	
1	Preparation Building
2	Maintenance Building

PPE Supply	
1	Preparation Building
2	Control Building

First Aid Kits	
1	Preparation Building
2	Office

ECO EcoScience Resource Group, L.L.C.
Evolving to Meet Tomorrow's Challenges

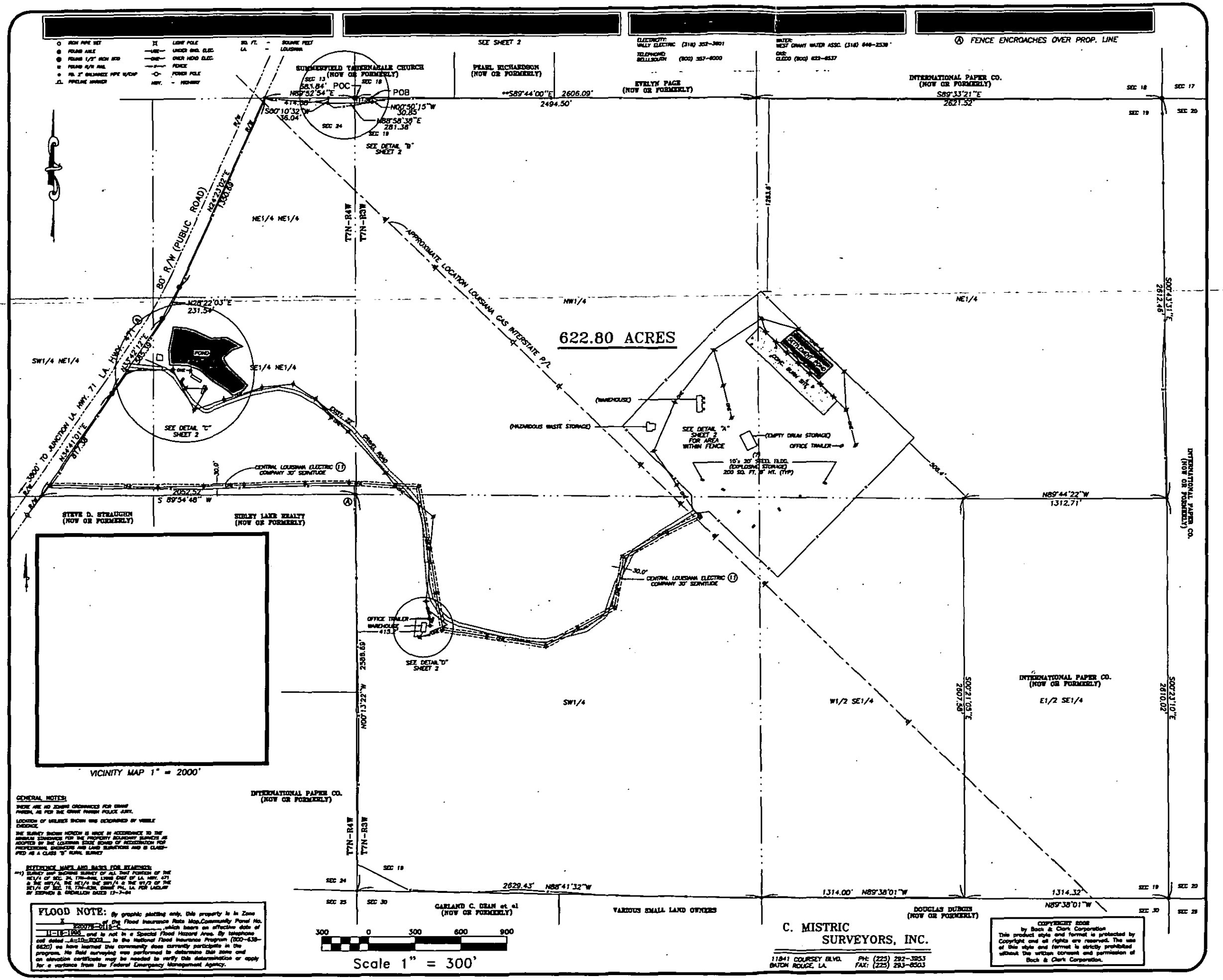
SCALE
0 100 200 400 600

LEGEND
(color-coded to match table)
Fire Extinguishers (red)
Emergency Eyewash (blue)
PPE Supply (green)
Emergency Eyewash (purple)

DATE	DRAWN BY	JOB NUMBER
12/15/04	SNM	11705
	APPROVED BY	DRAWING NUMBER
	PL	105

CleanHarbors

EMERGENCY EQUIPMENT LOCATIONS
CLEAN HARBORS
COLFAX, LA



GENERAL NOTES:

THERE ARE NO ZONING ORDINANCES FOR GRANT PARISH, AS PER THE GRANT PARISH POLICE JURY.

LOCATION OF UTILITIES SHOWN WAS DETERMINED BY VISIBLE EVIDENCE.

THE SURVEY SHOWN HEREON IS MADE IN ACCORDANCE TO THE MINIMUM STANDARDS FOR THE PROPERTY BOUNDARY SURVEYS AS ADOPTED BY THE LOUISIANA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS AND IS CLASSIFIED AS A CLASS "B" RURAL SURVEY.

REFERENCE MAPS AND BASIS FOR BEARINGS:

**1) SURVEY MAP SHOWING SURVEY OF ALL THAT PORTION OF THE NE1/4 OF SEC. 24, T7N-R4W, LYING EAST OF LA. HWY. 471 & THE NW1/4, THE NE1/4 THE SW1/4 & THE W1/2 OF THE SE1/4 OF SEC. 19, T7N-R3W, GRANT PAR., LA. FOR LADLAW BY STEPHEN B. GROMILLION DATED 12-7-94

FLOOD NOTE: By graphic plotting only, this property is in Zone X of the Flood Insurance Rate Map,Community Panel No. 220078-0110-C, which bears an effective date of 11-18-1981, and is not in a Special Flood Hazard Area. By telephone call dated 4-10-2002, to the National Flood Insurance Program (800-638-6620) we have learned this community does currently participate in the program. No field surveying was performed to determine this zone and an elevation certificate may be needed to verify this determination or apply for a variance from the Federal Emergency Management Agency.

RECORD LEGAL DESCRIPTION

THAT CERTAIN TRACT OR PARCEL OF LAND, KNOWN AND DESCRIBED AS THE SOUTHWEST QUARTER (SW/4) OF SECTION NINETEEN (19), TOWNSHIP SEVEN (7) NORTH, RANGE THREE (3) WEST, GRANT PARISH, LOUISIANA; AND THE WEST HALF (W/2) OF THE SOUTHEAST QUARTER (SE/4) OF SECTION NINETEEN (19), TOWNSHIP SEVEN (7) NORTH, RANGE THREE (3) WEST, GRANT PARISH, LOUISIANA; AND THE SOUTHWEST QUARTER (SW/4) OF THE NORTHWEST QUARTER (NW/4) OF SECTION NINETEEN (19), TOWNSHIP SEVEN (7) NORTH, RANGE THREE (3) WEST, GRANT PARISH, LOUISIANA; AND ALL THAT PART OF THE SOUTH HALF (S/2) OF THE NORTHEAST QUARTER (NE/4) OF SECTION THIRTY-FOUR (34), TOWNSHIP SEVEN (7) NORTH, RANGE FOUR (4) WEST, GRANT PARISH, LOUISIANA, LYING AND BEING EAST OF LOUISIANA HIGHWAY NO 471.

MEASURED LEGAL DESCRIPTION

A CERTAIN PIECE OR PORTION OF GROUND, TOGETHER WITH ALL BUILDINGS, STRUCTURES AND IMPROVEMENTS THEREON, BEING A 622.80 ACRE TRACT OF LAND SITUATED IN SECTION 19, T7N-R3W AND SECTION 34, T7N-R4W GRANT PARISH, LOUISIANA, BEING THE SAME TRACT OF IMMOVABLE PROPERTY AS SHOWN ON THAT CERTAIN SURVEY MAP ENTITLED "SURVEY OF ALL THAT PORTION OF THE NE1/4 OF SECTION 24, T7N-R4W, LYING EAST OF LA. HWY. 471 AND THE NW1/4, THE NE1/4, THE SW1/4, & THE W1/2 OF THE SE1/4 OF SECTION 19, T7N-R3W, GRANT PARISH, LA." FOR LADLAW BY STEPHEN BARNETT GROMILLION, REGISTERED LAND SURVEYOR, DATED DECEMBER 7, 1994, WITH SAID IMMOVABLE PROPERTY BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT 1/2" IRON ROD LOCATED AT THE NW CORNER SECTION 19, T7N-R3W AND PROCEED ALONG THE NORTHERLY LINE OF SAID SECTION S89°44'00"E A DISTANCE OF 111.38 FEET TO THE POINT OF BEGINNING.

THENCE, CONTINUE ALONG THE NORTHERLY LINE OF SAID SECTION 19 S89°44'00"E A DISTANCE OF 2494.50 FEET TO A 3" IRON PIPE; THENCE CONTINUE ALONG SAID NORTHERLY SECTION LINE S89°33'21"E A DISTANCE OF 2621.52 FEET TO A MILE LOCATED AT THE NE CORNER OF SECTION 19, T7N-R3W; THENCE PROCEED ALONG THE EASTERLY LINE OF SAID SECTION 19, S00°43'31"E A DISTANCE OF 2612.46 FEET TO A 3" IRON PIPE; THENCE LEAVING SAID EASTERLY SECTION LINE PROCEED N89°44'22"W A DISTANCE OF 1312.71 FEET TO A 3" IRON PIPE; THENCE PROCEED S00°12'10"E A DISTANCE OF 2607.58 FEET TO A POINT ON THE SOUTHERLY LINE OF SECTION 19, T7N-R3W; THENCE PROCEED ALONG THE SAID SOUTHERLY LINE OF SECTION 19, N89°38'01"W A DISTANCE OF 1314.00 FEET TO A 3" IRON PIPE; THENCE CONTINUE ALONG SAID SOUTHERLY LINE OF SECTION 19, N88°41'32"W A DISTANCE OF 2629.43 FEET TO A 3" IRON PIPE LOCATED AT THE SW CORNER OF SECTION 19, T7N-R3W; THENCE PROCEED ALONG THE WESTERLY LINE OF SAID SECTION 19, N00°13'22"W A DISTANCE OF 2588.69 FEET TO A 3" IRON PIPE; THENCE LEAVING SAID WESTERLY SECTION LINE PROCEED S89°54'48"W A DISTANCE OF 2052.52 FEET TO A 3" IRON PIPE LOCATED ON THE EASTERLY RIGHT OF WAY LINE OF LOUISIANA HIGHWAY NO. 471; THENCE PROCEED ALONG THE SAID EASTERLY RIGHT OF WAY THE FOLLOWING COURSES: N34°41'01"E A DISTANCE OF 817.39 FEET TO A 1/2" IRON ROD, N34°21'12"E A DISTANCE OF 885.39 FEET TO A 1/2" IRON ROD, N28°22'03"E A DISTANCE OF 231.54 FEET TO A 1/2" IRON ROD, N24°37'02"E A DISTANCE OF 1250.86 FEET TO A 1/2" IRON ROD BEING LOCATED ON THE NORTHERLY LINE OF SECTION 34, T7N-R4W; THENCE LEAVING THE SAID EASTERLY HIGHWAY RIGHT OF WAY ALONG THE SAID NORTHERLY LINE OF SECTION 34, N89°33'54"E A DISTANCE OF 414.88 FEET TO A 3" IRON PIPE; THENCE LEAVING THE SAID NORTHERLY LINE OF SECTION 34 PROCEED S00°10'32"W A DISTANCE OF 36.04 FEET TO A 3" IRON PIPE; THENCE PROCEED N88°58'38"E A DISTANCE OF 281.38 FEET TO A 3" IRON PIPE; THENCE PROCEED N00°50'15"W A DISTANCE OF 30.85 FEET BACK TO THE POINT OF BEGINNING, CONTAINING WITHIN SAID BOUNDS 622.80 ACRES MORE OR LESS.

THE ABOVE DESCRIBED PROPERTY IS THE SAME PROPERTY DESCRIBED IN LAWYERS TITLE INSURANCE CORPORATION TITLE COMMITMENT NO. 422888COM, DATED MARCH 7, 2002.

ALL FIELD MEASUREMENTS MATCHED RECORD DIMENSIONS WITHIN THE PRECISION REQUIREMENTS OF ALTA/ACSM SPECIFICATIONS UNLESS OTHER WISE SHOWN.

THERE WERE NO ADDRESSES POSTED FOR THE SUBJECT SITE.

for
SAFETY-KLEEN PROJECT
SITE NO. 5
#520
3763 HIGHWAY 471
COLFAX, LA. 71417

BASED UPON TITLE COMMITMENT No. 422888COM OF LAWYERS TITLE INSURANCE CORPORATION BEARING AN EFFECTIVE DATE OF MARCH 7, 2002

SURVEYOR'S CERTIFICATION

THE UNDERSIGNED, A RECORDED LAND SURVEYOR IN AND FOR THE STATE OF LOUISIANA, DOES HEREBY CERTIFY TO CLARK HARDWOOD, INC., LAWYERS TITLE INSURANCE CORPORATION, AND BOCK & CLARK CORPORATION AS FOLLOWS: (1) THAT HE IS A DULY REGISTERED LAND SURVEYOR OF THE STATE OF LOUISIANA; (2) THE SURVEY DEPICTED ON THIS PLAT WAS ACTUALLY MADE UNDER HIS SUPERVISION ON APRIL 10TH, 2002; AND (3) THAT THIS PLAT OF SURVEY IS MADE IN LINE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS" JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 1999, AND INCLUDES NO ADDITIONAL ITEMS OF TABLE A THEREOF.

RUDOLPH L. MISTRIC
REGISTRATION NO. 20288
IN THE STATE OF LOUISIANA
DATE OF SURVEY: 4-11-2002
DATE OF LAST REVISION: 7-18-2002

NETWORK PROJECT NO. 20028139-6

SURVEYOR PERFORMED BY:
C. MISTRIC SURVEYORS, INC.
11841 COURSEY BLVD.
BATON ROUGE LOUISIANA, LA 70816
PHONE: (225) 292-3253
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Bock & Clark's National Surveyors Network
National Coordinators of ALTA/ACSM Land Title Surveys
537 North Cleveland-Massillon Road Akron, Ohio 44333
Phone: (800) SURVEYS, Fax: (330) 666-3608 www.1800surveys.com

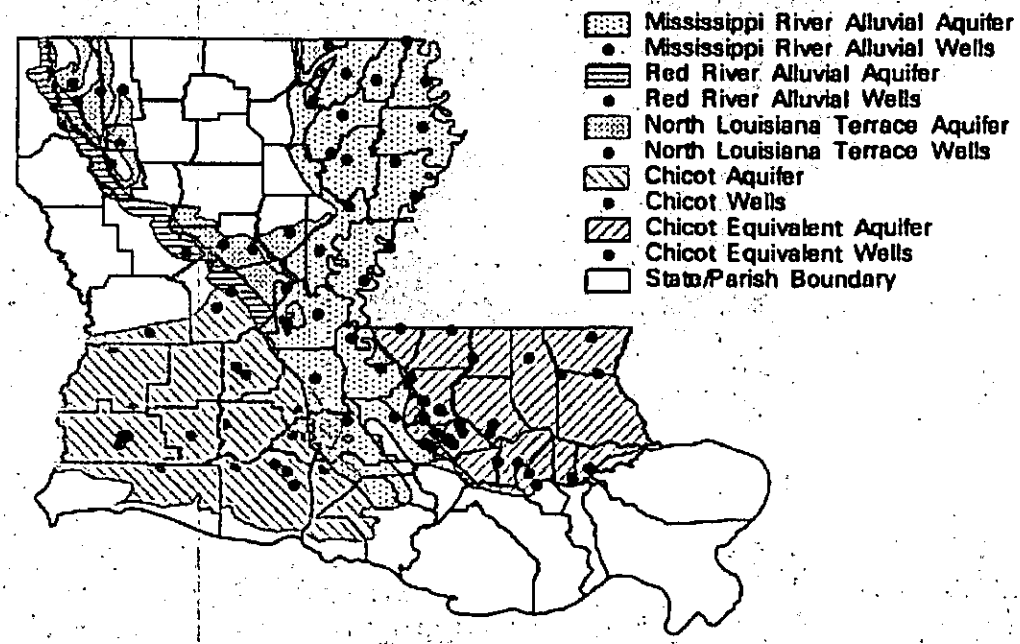
Drawing 117

MAP FILE 2-2-057A

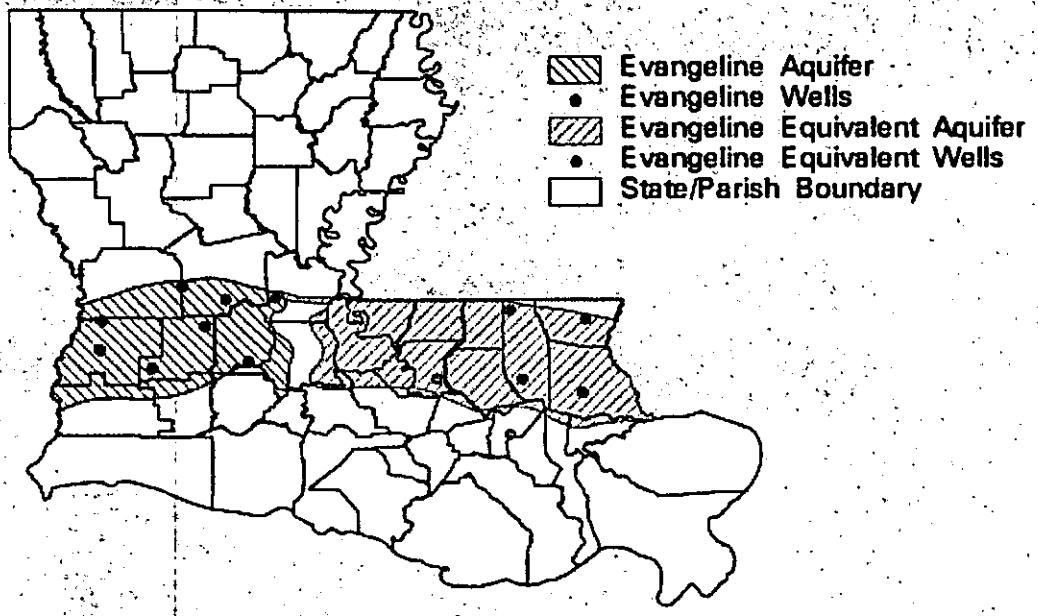
APPENDIX D

GEOLOGICAL INFORMATION

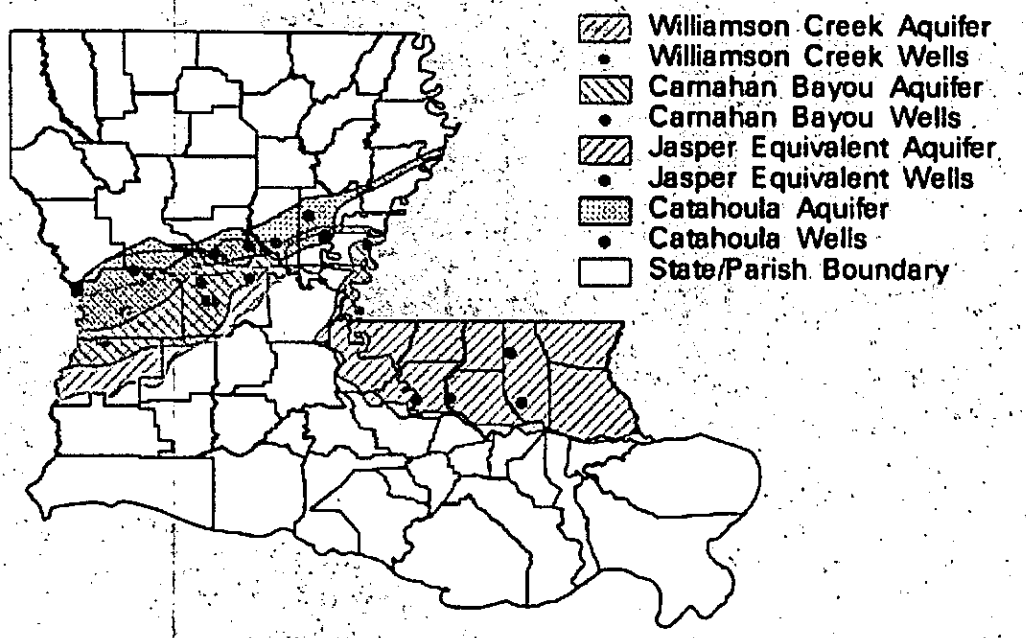
BASELINE MONITORING PROJECT WELLS OF PLEISTOCENE AGE AQUIFERS



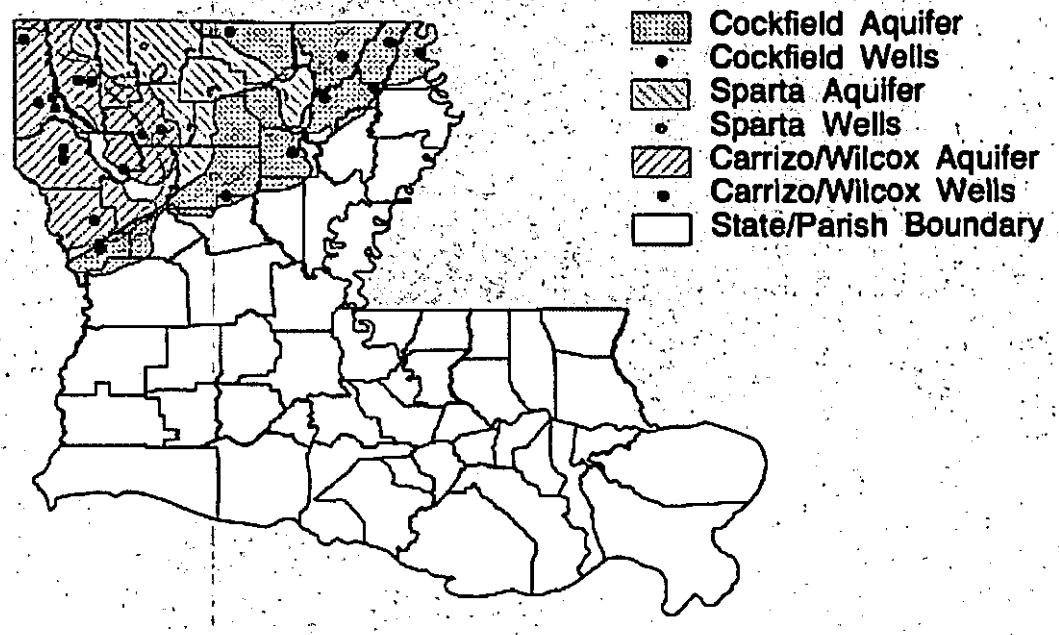
BASELINE MONITORING PROJECT WELLS OF PLIOCENE AGE AQUIFERS



BASELINE MONITORING PROJECT
WELLS OF MIOCENE AGE AQUIFERS



BASELINE MONITORING PROJECT WELLS OF EOCENE/PALEOCENE AGE AQUIFERS



RED RIVER ALLUVIAL AQUIFER SUMMARY

BASELINE MONITORING PROJECT, FY 2001

APPENDIX 3

OF THE

TRIENNIAL SUMMARY REPORT

FOR THE

ENVIRONMENTAL EVALUATION DIVISION

OF

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

PARTIAL FUNDING PROVIDED THROUGH 106 CWA

RED RIVER ALLUVIAL AQUIFER SUMMARY

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BACKGROUND

In order to better assess the water quality of a particular aquifer at a given point in time, an attempt was made during the project year to sample all Baseline Monitoring Project (Project or BMP) wells producing from a common aquifer in a narrow time frame. Also, to more conveniently and economically promulgate those data collected from a particular aquifer, a summary report on each aquifer sampled was prepared separately. Collectively, these aquifer summaries will make up part of the Project Triennial Summary Report.

Figure 3-1 shows the geographic locations of the Red River Alluvial aquifer and the associated Project wells, whereas Table 3-2 lists the wells in the aquifer along with their total depths and the use made of produced waters and date sampled.

In October of 2000 and April of 2001, five wells were sampled which produce from the Red River Alluvial aquifer. Two of the wells are classified as domestic, two are classified as irrigation wells, and one is an industrial well. The wells are located in four parishes from the central to the northwest part of the state.

Well data for registered water wells were obtained from the Louisiana Department of Transportation and Development's Water Well Registration Data file.

GEOLOGY

Red River alluvium consists of fining upward sequences of gravel, sand, silt, and clay. The aquifer is poorly to moderately well sorted, with fine-grained to medium-grained sand near the top, grading to coarse sand and gravel in the lower portions. It is confined by layers of silt and clay of varying thicknesses and extent.

HYDROGEOLOGY

The Red River Alluvial aquifer is hydraulically connected with the Red River and its major streams. Recharge is accomplished by direct infiltration of rainfall in the river valley, lateral and upward movement of water from adjacent and underlying aquifers, and overbank stream flooding. The amount of recharge from rainfall depends on the thickness and permeability of the silt and clay layers overlying it. Water levels fluctuate seasonally in response to precipitation trends and river stages. Water levels are generally within 30 to 40 feet of the land surface and movement is downgradient and toward rivers and streams. Natural discharge occurs by seepage of water into the Red River and its streams, but some water moves into the aquifer when stream stages are above aquifer water levels. The hydraulic conductivity varies between 10-530 feet/day.

The maximum depths of occurrence of freshwater in the Red River Alluvial range from 20 feet above sea level, to 160 feet below sea level. The range of thickness of the fresh water interval in the Red River Alluvial is 50 to 200 feet. The depths of the Red River Alluvial wells that were monitored in conjunction with the BMP range from 60 to 145 feet.

INTERPRETATION OF DATA

FIELD, WATER QUALITY, AND NUTRIENTS PARAMETERS

Table 3-3 lists the field parameters that are checked and the water quality and nutrients parameters that are sampled for at each well. It also shows the field results and the water quality and nutrients analytical results for each well. Table 3-5 provides an overview of field data, water quality data, and nutrients data for the Red River Alluvial aquifer, listing the minimum, maximum, and average results for these parameters.

Federal Primary Drinking Water Standards

Under the Federal Safe Drinking Water Act, EPA has established maximum contaminant levels (MCLs) for pollutants that may pose a health risk in public drinking water. An MCL is the highest level of a contaminant that EPA allows in public drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. While not all wells sampled were public supply wells, this Office does use the MCLs as a benchmark for further evaluation.

A review of the analyses listed on Table 3-3 shows that no primary MCL was exceeded for field, water quality, or nutrients parameters.

Federal Secondary Drinking Water Standards

EPA has set secondary standards that are defined as non-enforceable taste, odor, or appearance guidelines.

Field and laboratory data contained in Table 3-3 show that the following secondary MCLs (SMCL)s were exceeded.

Chloride – SMCL = 250 ppm)

RR-WILSON – 664 ppm

Color – SMCL = 15 PCU

CD-376 – 55 PCU
RR-WILSON – 22 PCU
CD-586 – 55 PCU, duplicate – 55 PCU

Total Dissolved Solids (TDS) – SMCL = 500 ppm

CD-376 – 754 ppm
NA-47 – 508 ppm
CD-586 – 924 ppm, duplicate – 916 ppm
RR-WILSON – 1,506 ppm

Comparison To Historical Data

Table 3-7 lists the current field, water quality, and nutrients data averages alongside those parameters' data averages for the two previous sampling rotations (three and six years prior). A comparison of these averages show that other than an increase in the chloride concentration, the water quality characteristics of ground water produced from the Red River Alluvial aquifer has not changed significantly since the 1995 fiscal year (FY) sampling.

INORGANIC PARAMETERS

Table 3-4 shows the inorganic (total metals) parameters that are sampled for and the analytical results for those parameters for each well. Table 3-6 provides an overview of inorganic data for the Red River aquifer, listing the minimum, maximum, and average results for these parameters.

Federal Primary Drinking Water Standards

A review of the analyses listed on Table 3-4 shows that no primary MCL was exceeded for total metals.

Federal Secondary Drinking Water Standards

Laboratory data contained in Table 3-4 show that the following secondary MCL (SMCL) was exceeded.

Iron – SMCL = 300 ppb

CD-376 – 10,661 ppb
RR-Wilson – 429 ppb

CD-586 – 5,871 ppb, duplicate – 5,716 ppb

Comparison To Historical Data

Table 3-8 lists the current inorganic data averages alongside the inorganic data averages for the two previous sampling rotations (three and six years prior). A comparison of these averages shows that some of the inorganic characteristics have fluctuated over the six-year period.

VOLATILE ORGANIC COMPOUNDS

Table 3-9 shows the volatile organic compound (VOC) parameters that are sampled for. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a VOC would be discussed in this section.

No VOC was detected during the FY 2001 sampling of the Red River Alluvial aquifer.

SEMIVOLATILE ORGANIC COMPOUNDS

Table 3-10 shows the semivolatile organic compound parameters that are sampled for. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a semivolatile would be discussed in this section.

Laboratory data show that all the Red River Alluvial wells that were sampled during FY 2001 exhibited values for bis(2-ethylhexyl)phthalate (BEHP). All these values were below BEHP's MCL of 6 parts per billion (ppb). Additionally, all the field blanks and laboratory blanks also showed BEHP values. Therefore, it is this Office's opinion that the values exhibited for BEHP are due to laboratory or field contamination and are considered invalid.

Taking into consideration the invalid BEHP concentrations, no semivolatile organic compounds were detected during the FY 2001 sampling of the Red River Alluvial aquifer.

PESTICIDES AND PCBS

Table 3-11 shows the pesticide and PCB parameters that are sampled for. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a pesticide or PCB would be discussed in this section.

No pesticide or PCB was detected during the 2001 sampling of the Red River Alluvial aquifer.

COMMON WATER CHARACTERISTICS

Table 3-1 below highlights some of the more common water characteristics that are considered when studying ground water quality. The minimum, maximum, and average values that were found during the current sampling of the Red River Alluvial aquifer for pH, TDS, hardness, chloride, iron, and nitrite-nitrate are listed in the table. Figures 3-2, 3-3, 3-4, and 3-5 respectively, represent the contoured data for pH, TDS, chloride, and iron. The data average for hardness shows that the ground water produced from this aquifer is very hard[1].

Table 3-1 Common Water Characteristics

Fiscal Year 2001

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
pH (SU)	7.08	8.35	7.64
TDS (ppm)	396.0	1506.0	817.6
Hardness (ppm)	<5	653.0	353.7
Chloride (ppm)	6.1	664.0	163.4
Iron (ppb)	<20	10661.00	3396.20
Nitrite-Nitrate, as N (ppm)	<0.05	<0.05	<0.05

[1] Classification based on hardness scale from: *Peavy, H.S. et al. Environmental Engineering, 1985.*

SUMMARY AND RECOMMENDATIONS

In summary, the data show that the ground water produced from this aquifer is very hard, but is of good quality when considering short-term or long-term health risk guidelines. Laboratory data show that no project well that was sampled during the Fiscal Year 2001 monitoring of the Red River Alluvial aquifer exceeded a primary MCL. The data also show that this aquifer is of poor quality when considering taste, odor, or appearance guidelines. A comparison to historical BMP data shows an increase in the chloride concentration and some fluctuations with the inorganic data. But for the most part the characteristics of the ground water produced from the Red River Alluvial aquifer has not changed significantly since the FY 1995 sampling.

It is recommended that the Project wells assigned to the Red River Alluvial aquifer be re-sampled as planned in approximately three years. In addition, several wells should be added to those currently in place to increase the well density for this aquifer.

Table 3-2 List of Project Wells Sampled

PROJECT NUMBER	PARISH	WELL NUMBER	DATE SAMPLED	OWNER	DEPTH (FEET)	WELL USE
199115	CADDO	CD-376	10/31/2000	CERTAINTEED	80	INDUSTRIAL
199301	CADDO	CD-586	10/31/2000	PRIVATE OWNER	60	IRRIGATION
199502	NATCHITOCHES	NA-47	10/30/2000	PRIVATE OWNER	80	IRRIGATION
200023	RAPIDES	R-5756Z	10/30/2000	PRIVATE OWNER	145	DOMESTIC
200107	RED RIVER	RR-WILSON	04/19/2001	PRIVATE OWNER	100	DOMESTIC

Table 3-3 Summary of Field, Water Quality, and Nutrients Data

WELL NUMBER	COND. MMHOS/CM	PH SU	SAL. PPT	TEMP. OC	ALK. PPM	CL PPM	COLOR PCU	COND. UMHOS/CM	SO4 PPM	TDS PPM	TSS PPM	TURB. NTU	NH3 (AS N) PPM	HARD. PPM	NITRITE-NITRATE (AS N) PPM	TKN PPM	TOT. P PPM
CD-376	1.233	7.34	0.62	21.34	507.0	56.90	55.0	1233.0	82.30	754.0	33.3	100.0	0.97	615.0	0.03	1.22	0.85
CD-586	1.389	7.38	0.70	19.82	510.0	70.90	55.0	1405.0	167.00	924.0	11.5	60.0	0.37	645.0	0.03	0.37	0.79
CD-586*	1.389	7.38	0.70	19.82	510.0	72.40	55.0	1404.0	171.00	916.0	12.0	60.0	0.30	653.0	<0.02	0.37	0.47
NA-47	0.886	7.08	0.44	20.33	454.0	19.30	8.0	896.0	4.70	508.0	13.7	60.0	0.93	397.0	0.04	1.00	0.52
R-5756Z	0.644	8.35	0.31	20.88	337.0	6.10	10.0	663.0	1.90	396.0	<4.0	1.1	0.18	<5.0	<0.02	0.55	0.38
RR-WILSON	2.49	8.03	1.29	20.13	422.0	664.00	22.0	2794.0	<1.25	1506.0	<4.0	2.5	1.95	101.0	<0.05	2.11	<0.05

* Denotes duplicate sample.

Table 3-4 Summary of Inorganic Data

WELL NUMBER	ANTIMONY PPB	ARSENIC PPB	BARIUM PPB	BERYLLIUM PPB	CADMIUM PPB	CHROMIUM PPB	COPPER PPB	IRON PPB	LEAD PPB	MERCURY PPB	NICKEL PPB	SELENIUM PPB	SILVER PPB	THALLIUM PPB	ZINC PPB
CD-376	<5.0	<5.0	459.0	<1.0	1.8	<5.0	<5.0	10,661.0	<10.0	<0.05	<5.0	<5.0	1.7	<2.0	27.7
CD-586	<5.0	<5.0	187.0	<1.0	1.9	<5.0	5.2	5,871.0	<10.0	<0.05	<5.0	<5.0	1.8	<2.0	50.9
CD-586*	<5.0	<5.0	181.0	<1.0	<1.0	<5.0	<5.0	5,716.0	<10.0	<0.05	<5.0	<5.0	1.5	<2.0	37.0
NA-47	<5.0	<5.0	415.0	<1.0	<1.0	<5.0	<5.0	<20.0	<10.0	<0.05	<5.0	<5.0	<1.0	<2.0	14.0
R-5756Z	<5.0	<5.0	16.8	<1.0	<1.0	<5.0	<5.0	<20.0	<10.0	<0.05	<5.0	<5.0	<1.0	<2.0	111.0
RR-WILSON	<5.0	<5.0	15.6	<1.0	<1.0	<5.0	<5.0	429.0	<10.0	<0.05	<5.0	<5.0	<1.0	<5.0	<10.0

* Denotes duplicate sample.

Table 3-5 Field, Water Quality, and Nutrients Statistics
Fiscal Year 2001

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
pH (SU)	7.08	8.35	7.64
Temperature °C	19.82	21.34	20.50
Sp. Conductivity (mmhos/cm) (Field)	0.644	2.490	1.328
Salinity (ppt)	0.31	1.29	0.67
TSS (ppm)	<4	33.3	12.5
TDS (ppm)	396.0	1506.0	817.6
Alkalinity (ppm)	337.0	510.0	446.0
Hardness (ppm)	<5	653.0	353.7
Turbidity (NTU)	1.10	100.00	44.72
Sp. Conductivity (umhos/cm) (Lab)	663.0	2794.0	1398.2
Color (PCU)	8.0	55.0	30.0
Chloride (ppm)	6.1	664.0	163.4
Sulfate (ppm)	<1.25	171.0	52.10
Nitrite-Nitrate, as N (ppm)	<0.05	<0.05	<0.05
Phosphorus (ppm)	<0.05	0.85	0.51
TKN (ppm)	0.37	2.11	1.05
Ammonia (ppm)	0.18	1.95	0.88

Table 3-6 Inorganic Statistics
Fiscal Year 2001

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
Antimony (ppb)	<5	<5	<5
Arsenic (ppb)	<5	<5	<5
Barium (ppb)	15.60	459.00	218.68
Beryllium (ppb)	<1	<1	<1
Cadmium (ppb)	<1	1.9	1.04
Chromium (ppb)	<5	<5	<5
Copper (ppb)	<5	5.17	<5
Iron (ppb)	<20.00	10661.00	3396.20
Lead (ppb)	<10	<10	<10
Mercury (ppb)	<0.05	<0.05	<0.05
Nickel (ppb)	<5	<5	<5
Selenium (ppb)	<5	<5	<5
Silver (ppb)	<1	1.8	1.0
Thallium (ppb)	<2	<2	<2
Zinc (ppb)	<10	111.00	41.72

Table 3-7 Three-year Field, Water Quality, and Nutrients Statistics

PARAMETER	FY 1995 AVERAGE	FY 1998 AVERAGE	FY 2001 AVERAGE
pH (SU)	6.67	6.81	7.64
Temperature °C	21.00	19.88	20.50
Sp. Conductivity (mmhos/cm) (Field)	1.128	1.060	1.328
Salinity (ppt)	0.54	0.53	0.67
TSS (ppm)	18.8	13.6	12.5
TDS (ppm)	716.0	699.2	817.6
Alkalinity (ppm)	504.4	485.2	446.0
Hardness (ppm)	506.8	453.8	353.7
Turbidity (NTU)	56.00	54.42	44.72
Sp. Conductivity (umhos/cm) (Lab)	1099.8	1093.6	1398.2
Color (PCU)	24.6	5.0	30.0
Chloride (ppm)	45.3	42.8	163.4
Sulfate (ppm)	69.32	62.16	52.10
Nitrite-Nitrate, as N (ppm)	<0.05	0.11	<0.05
Phosphorus (ppm)	0.79	0.38	0.51
TKN (ppm)	4.96	0.95	1.05
Ammonia (ppm)	1.27	0.54	0.88

Table 3-8 Three-year Inorganic Statistics

PARAMETER	FY 1995 AVERAGE	FY 1998 AVERAGE	FY 2001 AVERAGE
Antimony (ppb)	<5	<5	<5
Arsenic (ppb)	5.00	<5	<5
Barium (ppb)	400.98	102.08	218.68
Beryllium (ppb)	<5	<5	<1
Cadmium (ppb)	<5	<5	1.04
Chromium (ppb)	12.38	<5	<5
Copper (ppb)	19.90	968.66	<5
Iron (ppb)	6122.40	3339.54	3396.20
Lead (ppb)	32.30	<10	<10
Mercury (ppb)	<0.05	<0.05	<0.05
Nickel (ppb)	10.36	1041.40	<5
Selenium (ppb)	<5	<5	<5
Silver (ppb)	<5	<5	1.0
Thallium (ppb)	<5	<5	<2
Zinc (ppb)	185.60	<10	41.72

Table 3-9 List of VOC Analytical Parameters
BASELINE MONITORING PROJECT

VOLATILE ORGANICS BY EPA METHOD 624

COMPOUND	PQL (ppb)
CHLOROMETHANE	2
VINYL CHLORIDE	2
BROMOMETHANE	2
CHLOROETHANE	2
TRICHLOROFLUOROMETHANE	5
1,1-DICHLOROETHENE	2
METHYLENE CHLORIDE	2
TRANS-1,2-DICHLOROETHENE	2
METHYL-t-BUTYL ETHER	2
1,1-DICHLOROETHANE	2
CHLOROFORM	2
1,1,1-TRICHLOROETHANE	2
CARBON TETRACHLORIDE	2
BENZENE	2
1,2-DICHLOROETHANE	2
TRICHLOROETHENE	2
1,2-DICHLOROPROPANE	2
BROMODICHLOROMETHANE	2
CIS-1,3-DICHLOROPROPENE	2
TOLUENE	2
TRANS-1,3-DICHLOROPROPENE	2
1,1,2-TRICHLOROETHANE	2
TETRACHLOROETHENE	2
DIBROMOCHLOROMETHANE	2
CHLOROBENZENE	2
ETHYLBENZENE	2
P&M XYLENE	4
O-XYLENE	2
STYRENE	2
BROMOFORM	2
1,1,2,2-TETRACHLOROETHANE	2
1,3-DICHLOROBENZENE	2
1,4-DICHLOROBENZENE	2
1,2-DICHLOROBENZENE	2

PQL = Practical Quantitation Limit
ppb = parts per billion

Table 3-10 List of Semi-volatile Analytical Parameters
BASELINE MONITORING PROJECT

SEMIVOLATILE ORGANICS BY EPA METHOD 625

COMPOUND	PQL (ppb)
N-Nitrosodimethylamine	2
Chlorobenzene	2
Phenol	2
Bis(2-chloroethyl)ether	2
2-Chlorophenol	2
1,3-Dichlorobenzene	2
1,4-Dichlorobenzene	2
1,2-Dichlorobenzene	2
Bis(2-chloroisopropyl)ether	6
N-Nitroso-di-n-propylamine	4
Hexachloroethane	2
Nitrobenzene	2
Isophorone	2
2,4-Dimethylphenol	4
2-Nitrophenol	6
1,3,5-Trichlorobenzene	2
Bis(2-chloroethoxy)methane	2
1,2,4-Trichlorobenzene	2
Naphthalene	2
2,4-Dichlorophenol	4
Hexachlorobutadiene	2
1,2,3-Trichlorobenzene	2
4-Chloro-3-methylphenol	4
Hexachlorocyclopentadiene	6
1,2,4,5-Tetrachlorobenzene	2
2,4,6-Trichlorophenol	6
1,2,3,4-Tetrachlorobenzene	2
2-Chloronaphthalene	2
Dimethylphthalate	2
2,6-Dinitrotoluene	4
Acenaphthylene	2
4-Nitrophenol	6
2,4-Dinitrophenol	20
Acenaphthene	2
Pentachlorobenzene	2
2,4-Dinitrotoluene	6
Diethylphthalate	2
4-Chlorophenyl phenyl ether	2
Fluorene	2

Table 3-10 (Cont'd)
Semivolatile Parameters

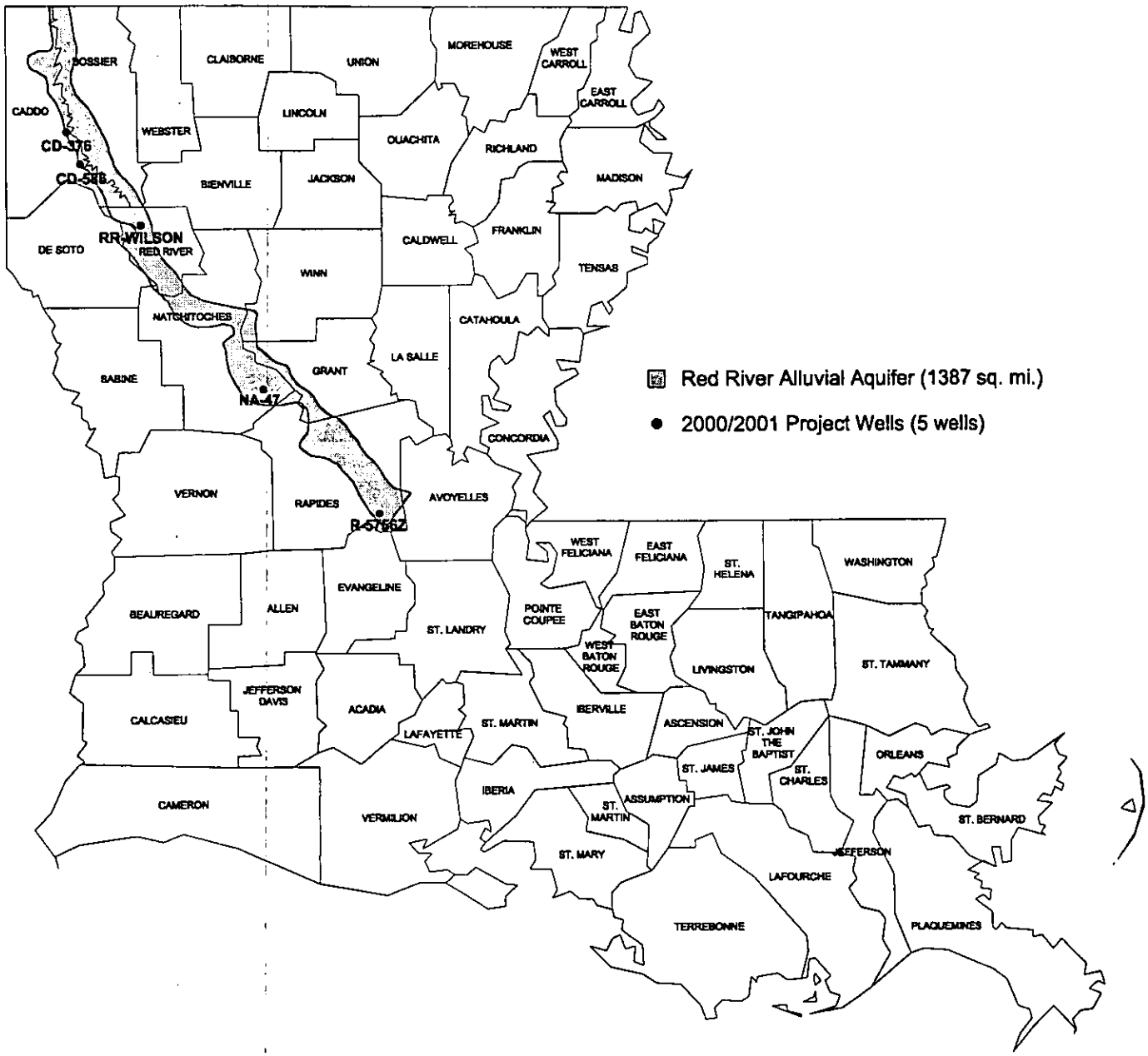
COMPOUND	PQL (ppb)
4,6-Dinitro-2-methylphenol	12
N-Nitrosodiphenylamine/Dipheny	2
4-Bromophenyl phenyl ether	2
Hexachlorobenzene	2
Pentachlorophenol	10
Phenathrene	2
Anthracene	2
Di-n-butylphthalate	2
Fluoranthene	2
Benzidine	20
Pyrene	2
Butylbenzylphthalate	2
Bis(2-ethylhexyl)phthalate	2
3,3'-Dichlorobenzidine	10
Benzo(a)anthracene	6
Chrysene	4
Di-n-octylphthalate	2
Benzo(b)fluoranthene	6
Benzo(k)fluoranthene	6
Benzo(a)Pyrene	6
Indeno(1,2,3-cd)pyrene	6
Dibenz(a,h)anthracene	6
Benzo(g,h,i)perylene	6

Table 3-11 List of Pesticide and PCB Analytical Parameters
BASELINE MONITORING PROJECT

SEMIVOLATILE ORGANICS BY EPA METHOD 625

COMPOUND	PQL (ppb)
Alpha BHC	2
Beta BHC	2
Gamma BHC	2
Delta BHC	2
Heptachlor	2
Aldrin	2
Heptachlor epoxide	2
Chlordane	2
Endosulfan I	2
4,4-DDE	2
Dieldrin	2
4,4-DDD	2
Endrin	2
Toxaphene	2
Endosulfan II	2
Endrin Aldehyde	2
4,4-DDT	2
Endosulfan Sulfate	2
Methoxychlor	2
Endrin Ketone	2
PCB 1221/ PCB 1232	10
PCB 1016/ PCB 1242	10
PCB 1254,	10
PCB 1248	10
PCB 1260	10

BASELINE MONITORING PROJECT WELLS OF THE RED RIVER ALLUVIAL AQUIFER



Aquifer boundary digitized from Louisiana Hydrologic Map No. 2: Areal Extent of Freshwater in Major Aquifers of Louisiana, Smoot, 1986; USGS/LDOTD Report 86-4150.

08/30/2001

Figure 3-1 Location Plat, Red River Alluvial Aquifer

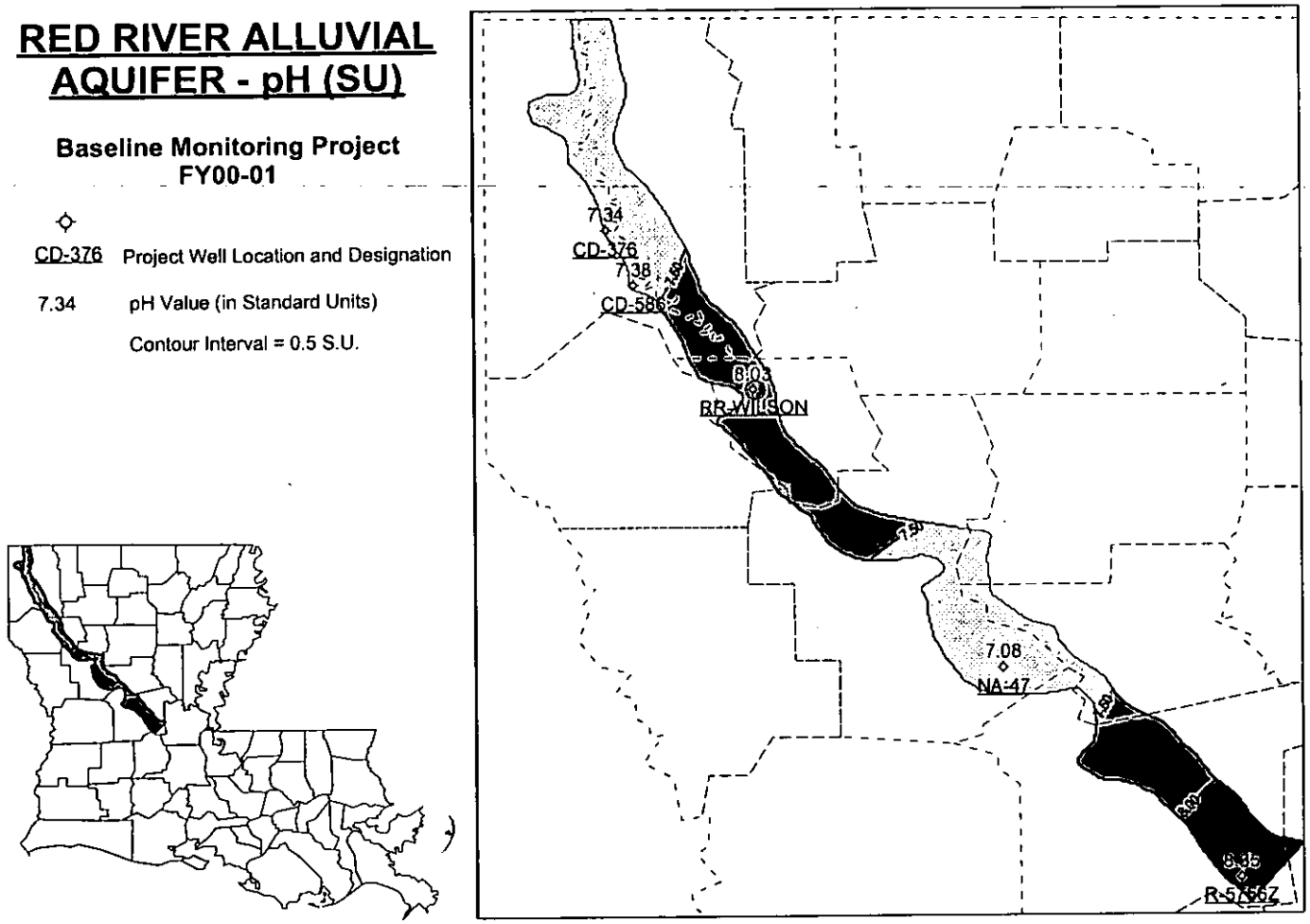


Figure 3-2 Map of pH Data

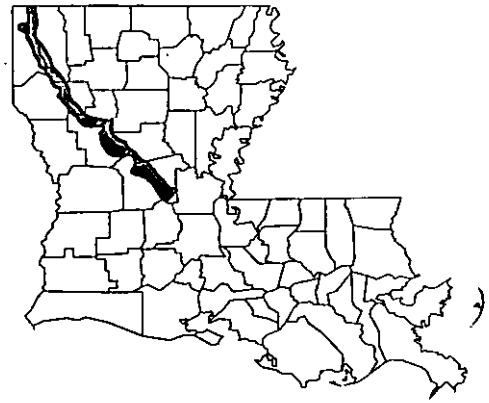
RED RIVER ALLUVIAL AQUIFER - TDS (PPM)

Baseline Monitoring Project
FY00-01

CD-376 Project Well Location and Designation

754 TDS Value (in Parts Per Million)

Contour Interval = 200 ppm



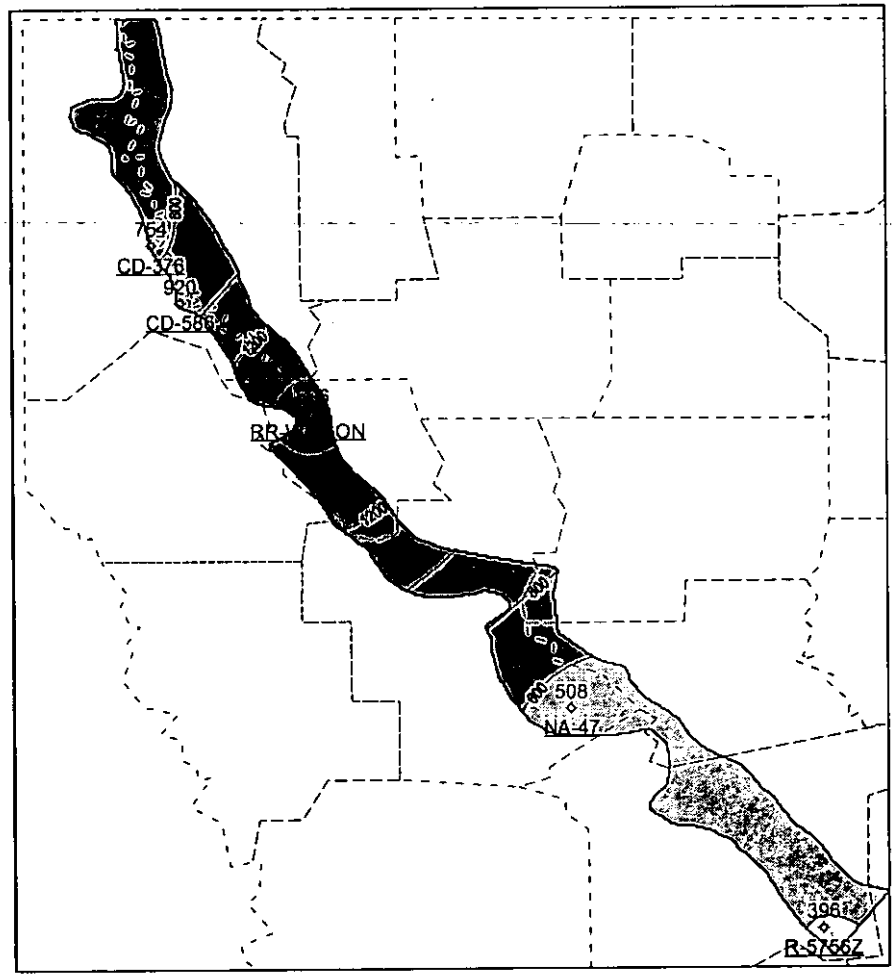


Figure 3-3 Map of TDS Data

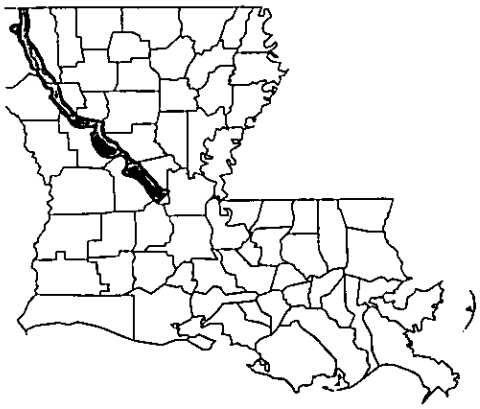
RED RIVER ALLUVIAL AQUIFER CHLORIDE (PPM)

Baseline Monitoring Project
FY00-01

CD-376 Project Well Location and Designation

56.9 Chloride Value (in Parts Per Million)

Contour Interval = 100 ppm



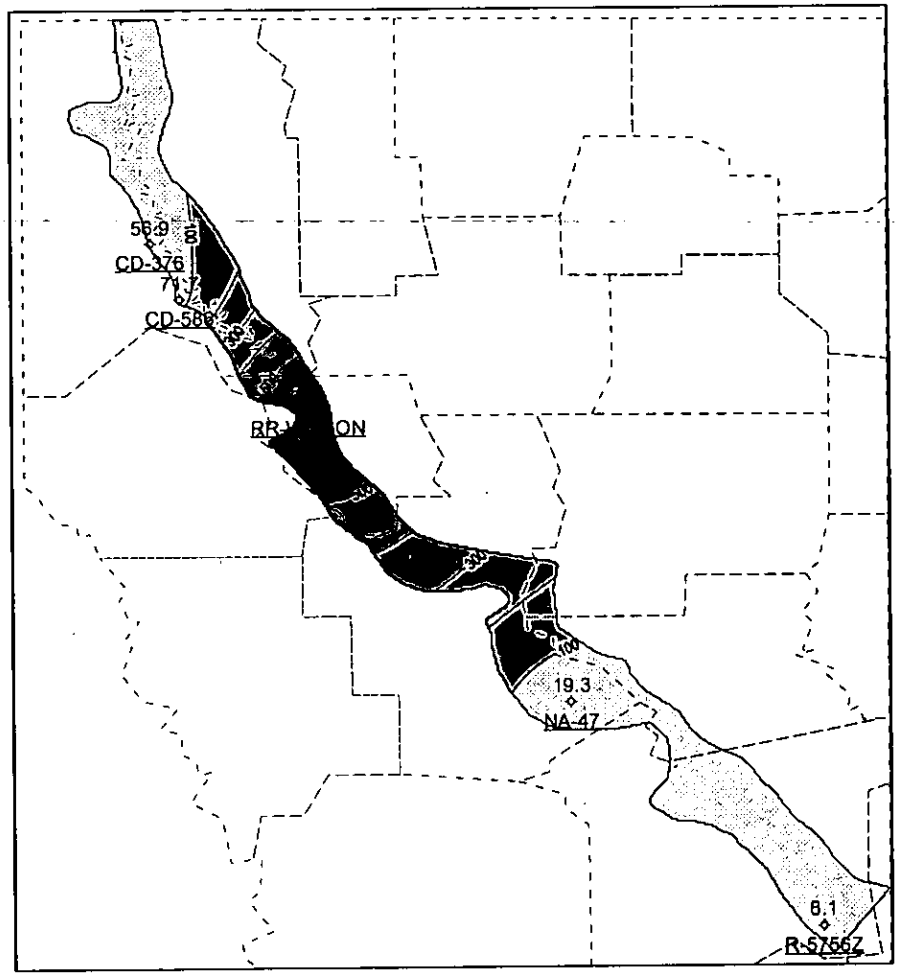


Figure 3-4 Map of Chloride Data

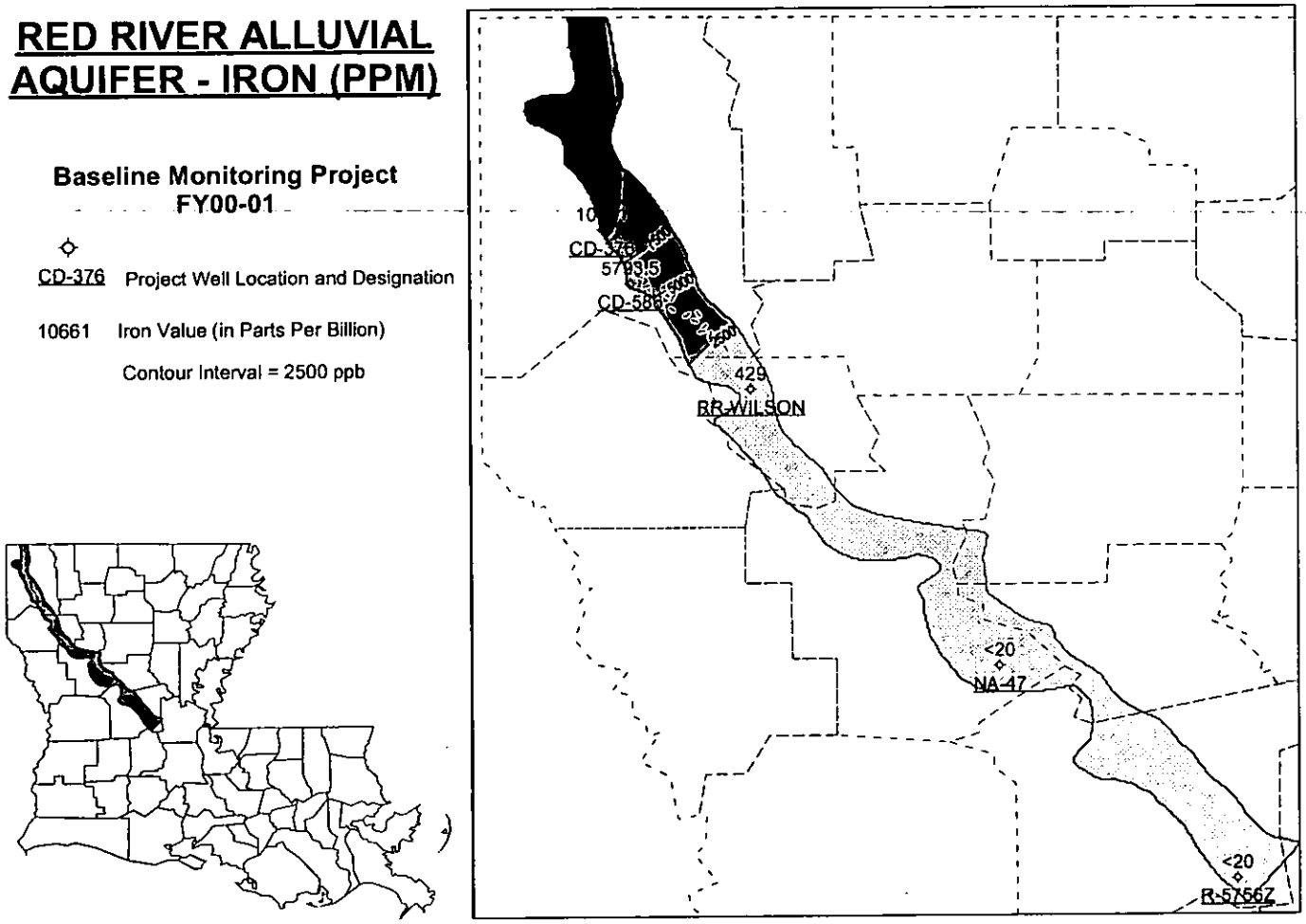


Figure 3-5 Map of Iron Data

CATAHOULA AQUFIER SUMMARY

BASELINE MONITORING PROJECT, FY 2001

APPENDIX 5

OF THE

TRIENNIAL SUMMARY REPORT

FOR THE

ENVIRONMENTAL EVALUATION DIVISION

OF

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

PARTIAL FUNDING PROVIDED THROUGH 106 CWA

CATAHOULA AQUIFER SUMMARY

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BACKGROUND

In order to better assess the water quality of a particular aquifer at a given point in time, an attempt was made during the project year to sample all project wells producing from a common aquifer in a narrow time frame. Also, to more conveniently and economically promulgate those data collected from a particular aquifer, a summary report on each aquifer sampled was prepared separately. Collectively, these aquifer summaries will make up the project Triennial Summary Report.

Figure 5-1 shows the geographic locations of the Catahoula aquifer and the associated project wells, whereas Table 5-2 lists the wells in the aquifer along with their total depths and the use made of produced waters and date sampled.

These data show that in February of 2001, six wells were sampled which produce from the Catahoula aquifer. Four of the six wells are classified as public supply, the remaining two are classified as domestic wells. The wells are located in five parishes in the central area of the state.

Well data for registered water wells were obtained from the Louisiana Department of Transportation and Development's Water Well Registration Data file.

GEOLOGY

The Catahoula Formation consists primarily of sands with some silty to sandy clays and overlies the regional confining clays of the Vicksburg and Jackson groups. Within the Catahoula, fine to coarse sands are discontinuous and interbedded with silt and clay.

HYDROGEOLOGY

Recharge takes place primarily as a result of the direct infiltration of rainfall in interstream, upland outcrop area, movement of water through overlying terrace deposits, and leakage from other aquifers. Saltwater ridges under the Red River and Little River valleys in central Louisiana divide the Catahoula aquifer. The hydraulic conductivity of the Catahoula varies between 20-260 feet/day.

The maximum depths of occurrence of freshwater in the Catahoula range from 250 feet above sea level, to 2,200 feet below sea level. The range of thickness of the fresh water interval in the Catahoula is 50 to 450 feet. The depths of the Catahoula wells that were monitored in conjunction with the BMP range from 125 to 1,477 feet.

INTERPRETATION OF DATA

FIELD, WATER QUALITY, AND NUTRIENTS PARAMETERS

Table 5-3 lists the field parameters that are checked and the water quality and nutrients parameters that are sampled for at each well. It also shows the field results and the water quality

and nutrients data results for each well. Table 5-5 provides an overview of field data, water quality data, and nutrients data for the Catahoula aquifer, listing the minimum, maximum, and average results for these parameters.

Federal Primary Drinking Water Standards

Under the Federal Safe Drining Water Act, EPA has established maximum contaminant levels (MCLs) for pollutants that may pose a health risk in public drinking water. An MCL is the highest level of a contaminant that EPA allows in public drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. While not all wells sampled were public supply wells, this Office does use the MCLs as a benchmark for further evaluation.

A review of the analyses listed in Table 5-3 shows that no primary MCL was exceeded for field, water quality, or nutrients parameters.

Federal Secondary Drinking Water Standards

EPA has set secondary standards that are defined as non-enforceable taste, odor, or appearance guidelines. Field and laboratory data contained in Table 5-3 show that the following secondary MCLs (SMCLs) were exceeded:

<u>PH – SMCL = 6.5 – 8.5 SU</u>
SA-429 – 8.66 SU

<u>Total Dissolved Solids (TDS) – SMCL = 500</u>
G-5196Z – 570 ppm

Comparison to Historical Data

Table 5-7 lists the current field, water quality, and nutrients data averages alongside those parameters' data averages for the two previous sampling rotations (three and six years prior). A comparison of these averages show that the most notable change in the water quality characteristics of ground water produced from the Catahoula aquifer is the increase in hardness and specific conductivity.

<u>INORGANIC PARAMETERS</u>

Table 5-4 shows the inorganic (total metals) parameters that are sampled for and the analytical results for those parameters for each well. Table 5-6 provides an overview of inorganic data for the Catahoula aquifer, listing the minimum, maximum, and average results for these parameters.

Federal Primary Drinking Water Standards

A review of the analyses listed in Table 5-4 show that no primary MCL was exceeded for total metals.

Federal Secondary Drinking Water Standards

Laboratory data contained in Table 5-4 show that the following secondary MCL (SMCL) was exceeded:

Iron – SMCL = 300 ppb
G-5196Z – 762 ppb
SA-429 – 595 ppb

Comparison to Historical Data

Table 5-8 lists the current inorganic data averages alongside the inorganic data averages for the two previous sampling rotations (three and six years prior). A comparison of these data shows general fluctuations in the average concentrations of barium and zinc, while the average concentration for copper decreased.

VOLATILE ORGANIC COMPOUNDS

Table 5-9 shows the volatile organic compound (VOC) parameters that are sampled for. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a VOC would be discussed in this section.

No VOC was detected during the 2001 sampling of the Catahoula aquifer.

SEMIVOLATILE ORGANIC COMPOUND

Table 5-10 show the semivolatile organic compound parameters that are sampled for. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a semivolatile compound would be discussed in this section.

Federal Primary Drinking Water Standards

Laboratory data show that no primary MCL was exceeded for semivolatile compound group of parameters. However, bis(2-ethylhexyl)phthalate (BEHP) was reported in three of the six wells sampled (3, 4, and 4 ppb), in the field blank (4 ppb), and in the two lab blanks (3 and 5 ppb). Taking into consideration that the field blank and lab blanks are as high or higher than any of the reported well concentrations, it is the opinion of this Office that the reported values for BEHP are due to laboratory contamination and are considered invalid.

Federal Secondary Drinking Water Standards

No semivolatile currently sampled have SMCLs established for them.

Detection of Semivolatiles with No Standards

There were no detections of semivolatiles that fit under this category.

PESTICIDES AND PCBS

Table 5-11 shows the pesticide and PCB parameters that are sample for. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a pesticide or PCB would be discussed in this section.

No Pesticide or PCB was detected during the 2001 sampling of the Catahoula aquifer.

COMMON WATER CHARACTERISTICS

Table 5-1 below highlights some of the more common water characteristics that are considred when studying ground water quality. The minimum, maximum, and average values that were found during the current sampling of the Catahoula aquifer for pH, TDS, hardness, chloride, iron, and nitrite-nitrate are listed in the table. Figures 5-2 through 5-5 respectively, represent the contoured data for pH, TDS, chloride, and iron. The data average for hardness shows that the ground water produced from this aquifer is soft[1].

Table 5-1 Common Water Characteristics
Fiscal Year 2001

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
PH (SU)	7.08	8.66	7.75
TDS (ppm)	217	570	317
Hardness (ppm)	<5	96.5	18.2
Chloride (ppm)	3.7	37.5	16.5
Iron (ppb)	36.7	762	318.67
Nitrite-Nitrate (ppm)	<0.05	<0.05	<0.05

[1] Classification based on hardness scale from: *Peavy, H. S. et al. Environmental Engineering, 1985.*

SUMMARY AND RECOMMENDATIONS

In summary, the data show that the ground water produced from this aquifer is soft, and is of good quality when considering short or long-term health risk guidelines. Laboratory data show that no project well that was sampled during the Fiscal Year 2001 monitoring of the Catahoula aquifer exceeded a primary MCL. The data also show that this aquifer is of good quality when considering taste, odor, or appearance guidelines. A comparison to historical BMP data show that while there are some general fluctuations, the characteristics of the ground water produced from the Catahoula aquifer has not changed significantly since the FY 1995 sampling.

It is recommended that the Project wells assigned to the Catahoula aquifer be re-sampled as planned in approximately three years. Additionally, several wells should be added to the six currently in place to increase the well density for this aquifer.

Table 5-2 List of Project Wells Sampled

PROJECT NUMBER	PARISH	WELL NUMBER	DATE SAMPLED	OWNER	DEPTH (FEET)	WELL USE
199507	CATAHOULA	CT-119	02/05/2001	CITY OF JONESVILLE	800	PUBLIC SUPPLY
199311	GRANT	G-295	02/05/2001	POLLOCK AREA WATER SYSTEM	188	PUBLIC SUPPLY
200105	GRANT	G-5196Z	02/05/2001	PRIVATE OWNER	125	DOMESTIC
199508	LA SALLE	LS-278	02/05/2001	ROGERS WATER SYSTEM	352	PUBLIC SUPPLY
200104	SABINE	SA-429	02/19/2001	PRIVATE OWNER	356	DOMESTIC
199801	VERNON	V-656	02/05/2001	EAST CENTRAL VERNON WATER SYS.	1477	PUBLIC SUPPLY

* Denotes duplicate sample.

Table 5-3 Summary Water Quality Parameters

WELL NUMBER	TEMP. °C	PH SU	SP. COND. MMHOS/CM	SAL. PPT	TSS PPM	TDS PPM	ALK. PPM	HARD. PPM	TURB. NTU	SP. COND. UMHOS/CM	COLOR PCU	CL PPM	SO_4 PPM	TOT. P PPM	TKN PPM	NH_3 (AS N) PPM	NITRITE-NITRATE (AS N) PPM
	FIELD PARAMETERS				*LABORATORY PARAMETERS*												
CT-119	22.50	7.08	0.298	No Data	<4.0	267.0	116.0	<5.0	<1.0	315.0	5.0	21.50	13.90	0.06	0.37	0.22	<0.05
G-295	19.32	7.84	0.335		4.5	288.0	173.0	<5.0	<1.0	362.0	5.0	10.90	<1.25	0.67	0.41	0.31	<0.05
G-5196Z	17.35	7.22	0.758		5.0	570.0	362.0	96.5	11.0	815.0	5.0	37.50	16.90	0.14	0.70	0.68	<0.05
LS-278	20.80	7.43	0.195		4.0	217.0	98.0	<5.0	<1.0	210.0	7.0	3.70	5.80	0.36	0.31	<0.10	<0.05
LS-278*	20.80	7.43	0.195		4.3	215.0	98.3	<5.0	<1.0	211.0	5.0	3.70	5.70	0.42	0.40	0.13	<0.05
SA-429	21.69	8.66	0.381	0.18	<4.0	268.0	176.0	<5.0	7.8	386.0	5.0	16.00	<1.25	0.38	0.39	0.28	<0.05
V-656	29.72	8.25	0.303	No Data	<4.0	292.0	152.0	<5.0	<1.0	330.0	10.0	9.50	<1.25	0.34	0.39	0.23	<0.05

* Denotes duplicate sample.

Table 5-4 Summary of Inorganic Data

WELL NUMBER	ARSENIC PPB	SILVER PPB	BARIUM PPB	BERYLLIUM PPB	CADMIUM PPB	CHROMIUM PPB	COPPER PPB	IRON PPB	MERCURY PPB	NICKEL PPB	ANTIMONY PPB	SELENIUM PPB	LEAD PPB	THALLIUM PPB	ZINC PPB
CT-119	<5.0	<5.0	8.3	<1.0	1.6	<5.0	7.6	208.7	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	12.0
G-295	<5.0	<5.0	8.1	<1.0	<1.0	<5.0	<5.0	39.6	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	20.1
G-5196Z	<5.0	<5.0	156.5	<1.0	<1.0	<5.0	<5.0	762.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	655.0
LS-278	<5.0	<5.0	3.7	<1.0	1.4	<5.0	7.4	270.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	36.5
LS-278*	<5.0	<5.0	3.3	<1.0	1.2	Not Reported	10.3	241.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	21.4
SA-429	<5.0	<5.0	2.4	<1.0	<1.0	<5.0	<5.0	595.0	<0.05	24.4	<5.0	<5.0	<10.0	<5.0	267.0
V-656	<5.0	<5.0	1.5	<1.0	<1.0	<5.0	<5.0	36.7	<0.05	Not Reported	<5.0	<5.0	<10.0	<5.0	32.2

* Denotes duplicate sample.

Table 5-5 Water Quality Statistics

Fiscal Year 2001

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
PH (SU)	7.08	8.66	7.75
Temperature °C	17.35	29.72	21.90
Sp. Conductivity (mmhos/cm) (Field)	0.195	0.758	0.378
Salinity (ppt)	0.18	0.18	0.18
TSS (ppm)	<4	5.0	<4
TDS (ppm)	217	570	317
Alkalinity (ppm)	98.0	362.0	179.5
Hardness (ppm)	<5	96.5	18.2
Turbidity (NTU)	<1	11.00	3.47
Sp. Conductivity (umhos/cm) (Lab)	210	815	403
Color (PCU)	5.0	10.0	6.2
Chloride (ppm)	3.7	37.5	16.5
Sulfate (ppm)	<1.25	16.90	6.41
Nitrite-Nitrate, as N (ppm)	<0.05	<0.05	<0.05
Phosphorus (ppm)	0.06	0.67	0.33
TKN (ppm)	0.31	0.70	0.43
Ammonia (ppm)	<0.1	0.68	0.30

Table 5-6 Inorganic Statistics

Fiscal Year 2001

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
Antimony (ppb)	<5	<5	<5
Arsenic (ppb)	<5	<5	<5
Barium (ppb)	1.5	156.50	30.08
Beryllium (ppb)	<5	<5	<5
Cadmium (ppb)	<5	<5	<5
Chromium (ppb)	<5	<5	<5
Copper (ppb)	<5	10.3	<5
Iron (ppb)	36.70	762.00	318.67
Lead (ppb)	<10	<10	<10
Mercury (ppb)	<0.05	<0.05	<0.05
Nickel (ppb)	<5	24.40	6.88
Selenium (ppb)	<5	<5	<5
Silver (ppb)	<5	<5	<5
Thallium (ppb)	<5	<5	<5
Zinc (ppb)	12.00	655.00	170.47

Table 5-7 Three-year Water Quality Statistics

PARAMETER	FY 1995 AVERAGE	FY 1998 AVERAGE	FY 2001 AVERAGE
PH (SU)	NA	6.43	7.75
Temperature ^{o}C	NA	22.61	21.90
Sp. Conductivity (mmhos/cm) (Field)	NA	0.256	0.378
Salinity (ppt)	NA	0.12	0.18
TSS (ppm)	<4	6.3	<4
TDS (ppm)	252.3	278	317
Alkalinity (ppm)	128.2	123.2	179.5
Hardness (ppm)	<5	<5	18.2
Turbidity (NTU)	1.23	<1	3.47
Sp. Conductivity (umhos/cm) (Lab)	297.7	299	403
Color (PCU)	7.5	5.0	6.2
Chloride (ppm)	15.8	16.3	16.5
Sulfate (ppm)	7.33	4.43	6.41
Nitrite-Nitrate, as N (ppm)	<0.05	<0.05	<0.05
Phosphorus (ppm)	0.35	0.25	0.33
TKN (ppm)	0.58	0.21	0.43
Ammonia (ppm)	0.25	0.18	0.30

Table 5-8 Three-year Inorganic Statistics

PARAMETER	FY 1995 AVERAGE	FY 1998 AVERAGE	FY 2001 AVERAGE
Antimony (ppb)	<5	<5	<5
Arsenic (ppb)	<5	<5	<5
Barium (ppb)	8.43	71.30	30.08
Beryllium (ppb)	<5	<5	<5
Cadmium (ppb)	<5	<5	<5
Chromium (ppb)	<5	<5	<5
Copper (ppb)	83.7	<5	<5
Iron (ppb)	388.33	340.62	318.67
Lead (ppb)	32.17	<10	<10
Mercury (ppb)	<0.05	<0.05	<0.05
Nickel (ppb)	7.23	<5	6.88
Selenium (ppb)	<5	<5	<5
Silver (ppb)	<5	<5	<5
Thallium (ppb)	<5	<5	<5
Zinc (ppb)	250.47	44.53	170.47

Table 5-9 List of VOC Analytical Parameters

BASELINE MONITORING PROJECT

VOLATILE ORGANICS BY EPA METHOD 624

COMPOUND	PQL (ppb)
CHLOROMETHANE	2
VINYL CHLORIDE	2
BROMOMETHANE	2
CHLOROETHANE	2
TRICHLOROFLUOROMETHANE	5
1,1-DICHLOROETHENE	2
METHYLENE CHLORIDE	2
TRANS-1,2-DICHLOROETHENE	2
METHYL-t-BUTYL ETHER	2
1,1-DICHLOROETHANE	2
CHLOROFORM	2
1,1,1-TRICHLOROETHANE	2
CARBON TETRACHLORIDE	2
BENZENE	2
1,2-DICHLOROETHANE	2
TRICHLOROETHENE	2
1,2-DICHLOROPROPANE	2
BROMODICHLOROMETHANE	2
CIS-1,3-DICHLOROPROPENE	2
TOLUENE	2
TRANS-1,3-DICHLOROPROPENE	2
1,1,2-TRICHLOROETHANE	2
TETRACHLOROETHENE	2
DIBROMOCHLOROMETHANE	2
CHLOROBENZENE	2
ETHYLBENZENE	2
P&M XYLENE	4
O-XYLENE	2
STYRENE	2
BROMOFORM	2
1,1,2,2-TETRACHLOROETHANE	2
1,3-DICHLOROBENZENE	2
1,4-DICHLOROBENZENE	2
1,2-DICHLOROBENZENE	2

PQL = Practical Quantitation Limit
ppb = parts per billion

Table 5-10 List of Semi-volatile Analytical Parameters

BASELINE MONITORING PROJECT

SEMIVOLATILE ORGANICS BY EPA METHOD 625

COMPOUND	PQL (ppb)
N-Nitrosodimethylamine	2
Chlorobenzene	2
Phenol	2
Bis(2-chloroethyl)ether	2
2-Chlorophenol	2
1,3-Dichlorobenzene	2
1,4-Dichlorobenzene	2
1,2-Dichlorobenzene	2
Bis(2-chloroisopropyl)ether	6
N-Nitroso-di-n-propylamine	4
Hexachloroethane	2
Nitrobenzene	2
Isophorone	2
2,4-Dimethylphenol	4
2-Nitrophenol	6
1,3,5-Trichlorobenzene	2
Bis(2-chloroethoxy)methane	2
1,2,4-Trichlorobenzene	2
Naphthalene	2
2,4-Dichlorophenol	4
Hexachlorobutadiene	2
1,2,3-Trichlorobenzene	2
4-Chloro-3-methylphenol	4
Hexachlorocyclopentadiene	6
1,2,4,5-Tetrachlorobenzene	2
2,4,6-Trichlorophenol	6
1,2,3,4-Tetrachlorobenzene	2
2-Chloronaphthalene	2
Dimethylphthalate	2
2,6-Dinitrotoluene	4
Acenaphthylene	2
4-Nitrophenol	6
2,4-Dinitrophenol	12
Acenaphthene	2
Pentachlorobenzene	2
2,4-Dinitrotoluene	6
Diethylphthalate	2
4-Chlorophenyl phenyl ether	2

Table 5-10 (Cont'd)
Semivolatile Parameters

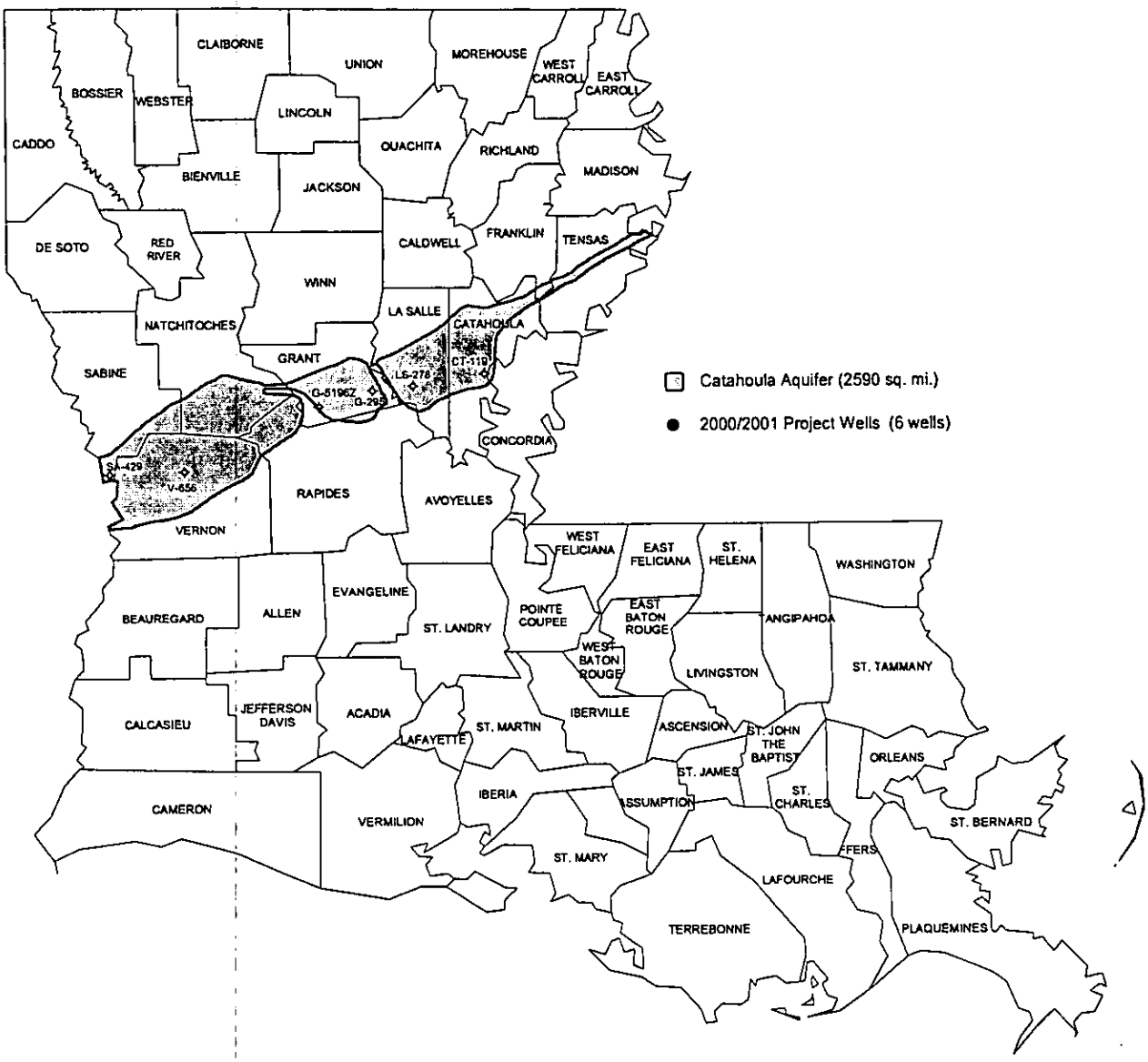
COMPOUND	PQL (ppb)
Fluorene	2
4,6-Dinitro-2-methylphenol	2
N-Nitrosodiphenylamine/Dipheny	2
4-Bromophenyl phenyl ether	2
Hexachlorobenzene	10
Pentachlorophenol	2
Phenathrene	2
Anthracene	2
Di-n-butylphthalate	2
Fluoranthene	20
Benzidine	2
Pyrene	2
Butylbenzylphthalate	2
Bis(2-ethylhexyl)phthalate	10
3,3'-Dichlorobenzidine	6
Benzo(a)anthracene	4
Chrysene	2
Di-n-octylphthalate	6
Benzo(b)fluoranthene	6
Benzo(k)fluoranthene	6
Benzo(a)Pyrene	6
Indeno(1,2,3-cd)pyrene	6
Dibenz(a,h)anthracene	6
Benzo(g,h,i)perylene	

Table 5-11 List of Pesticide and PCB Analytical Parameters
BASELINE MONITORING PROJECT

SEMIVOLATILE ORGANICS BY EPA METHOD 625

COMPOUND	PQL (ppb)
Alpha BHC	2
Beta BHC	2
Gamma BHC	2
Delta BHC	2
Heptachlor	2
Aldrin	2
Heptachlor epoxide	2
Chlordane	2
Endosulfan I	2
4,4'-DDE	2
Dieldrin	2
4,4'DDD	2
Endrin	2
Toxaphene	2
Endosulfan II	2
Endrin Aldehyde	2
4,4'DDT	2
Endosulfan Sulfate	2
Methoxychlor	2
Endrin Ketone	2
PCB 1221/ PCB 1232	10
PCB 1016/ PCB 1242	10
PCB 1254	10
PCB 1248	10
PCB 1260	10

BASELINE MONITORING PROJECT WELLS OF THE CATAHOULA AQUIFER



Aquifer boundary digitized from Louisiana Hydrologic Map No. 2: Areal Extent of Freshwater in Major Aquifers of Louisiana, Smoot, 1986; USGS/LDOTD Report 86-4150.

08/27/2001

Figure 5-1 Location Plat, Catahoula Aquifer

CATAHOULA AQUIFER - pH (SU)

Baseline Monitoring Project
FY00-01

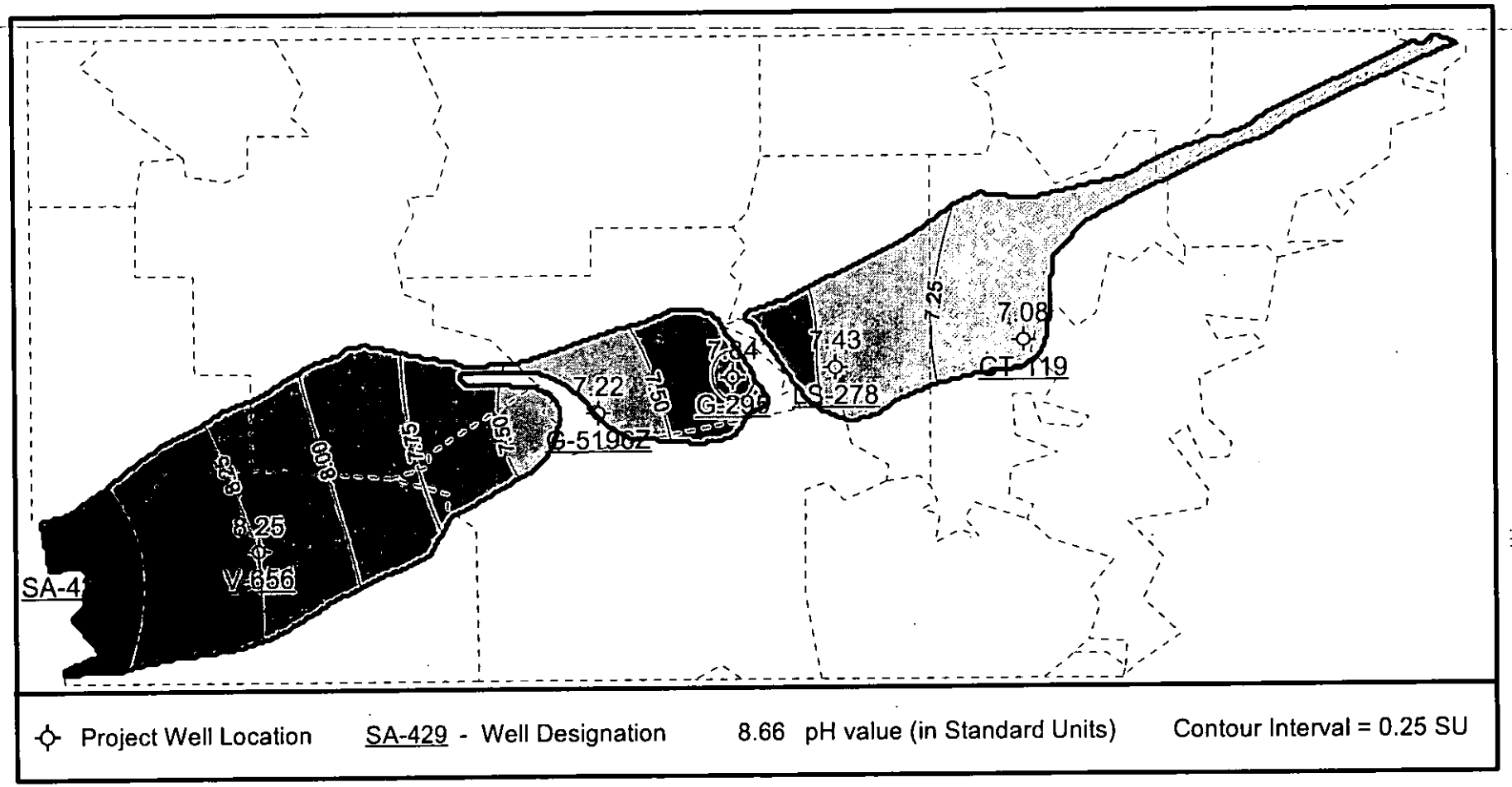


Figure 5-2 Map of pH Data

CATAHOULA AQUIFER - TDS (PPM)

Baseline Monitoring Project
FY00-01

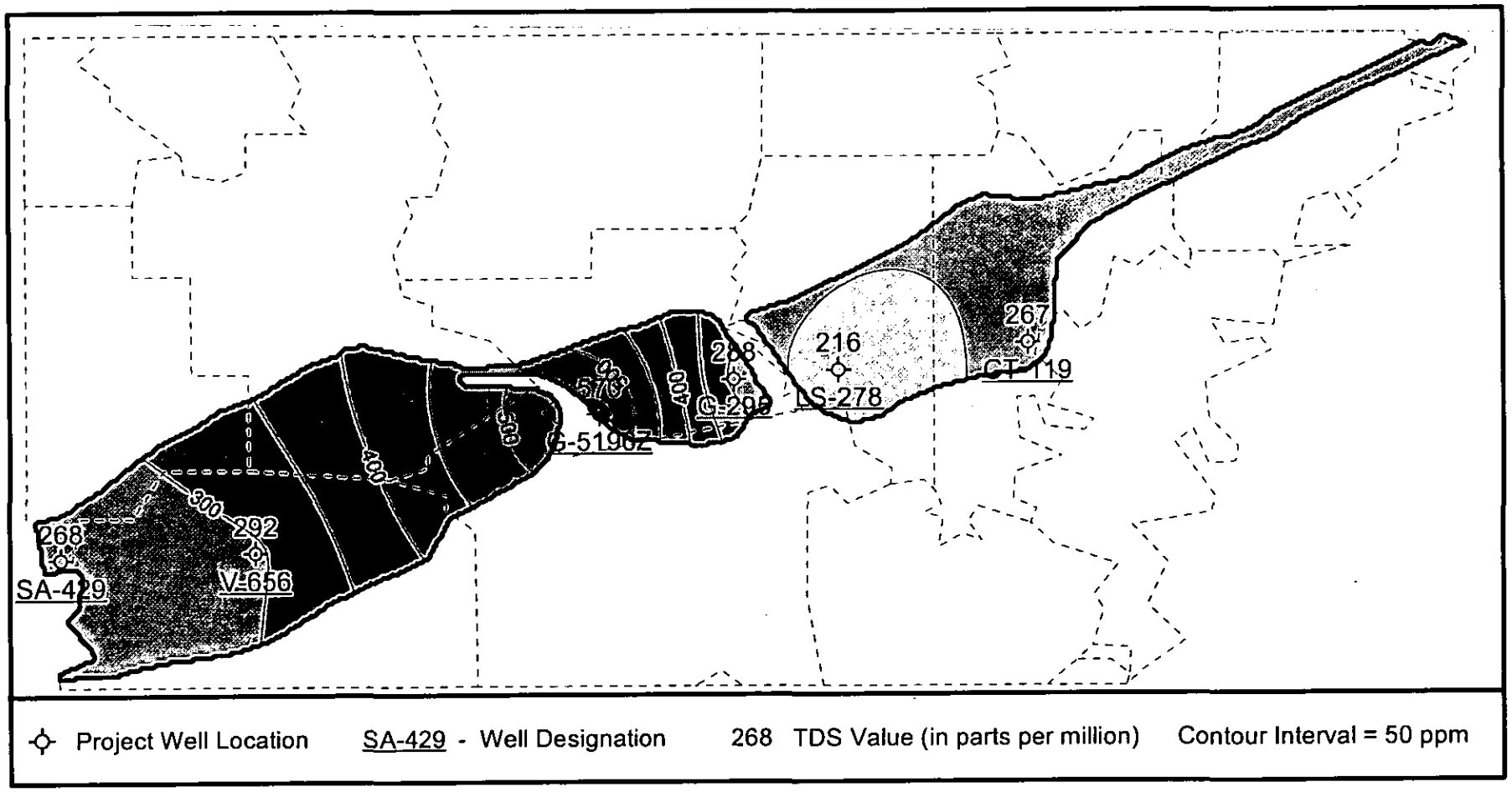


Figure 5-3 Map of TDS Data

CATAHOULA AQUIFER - CHLORIDE (PPM)

Baseline Monitoring Project
FY00-01

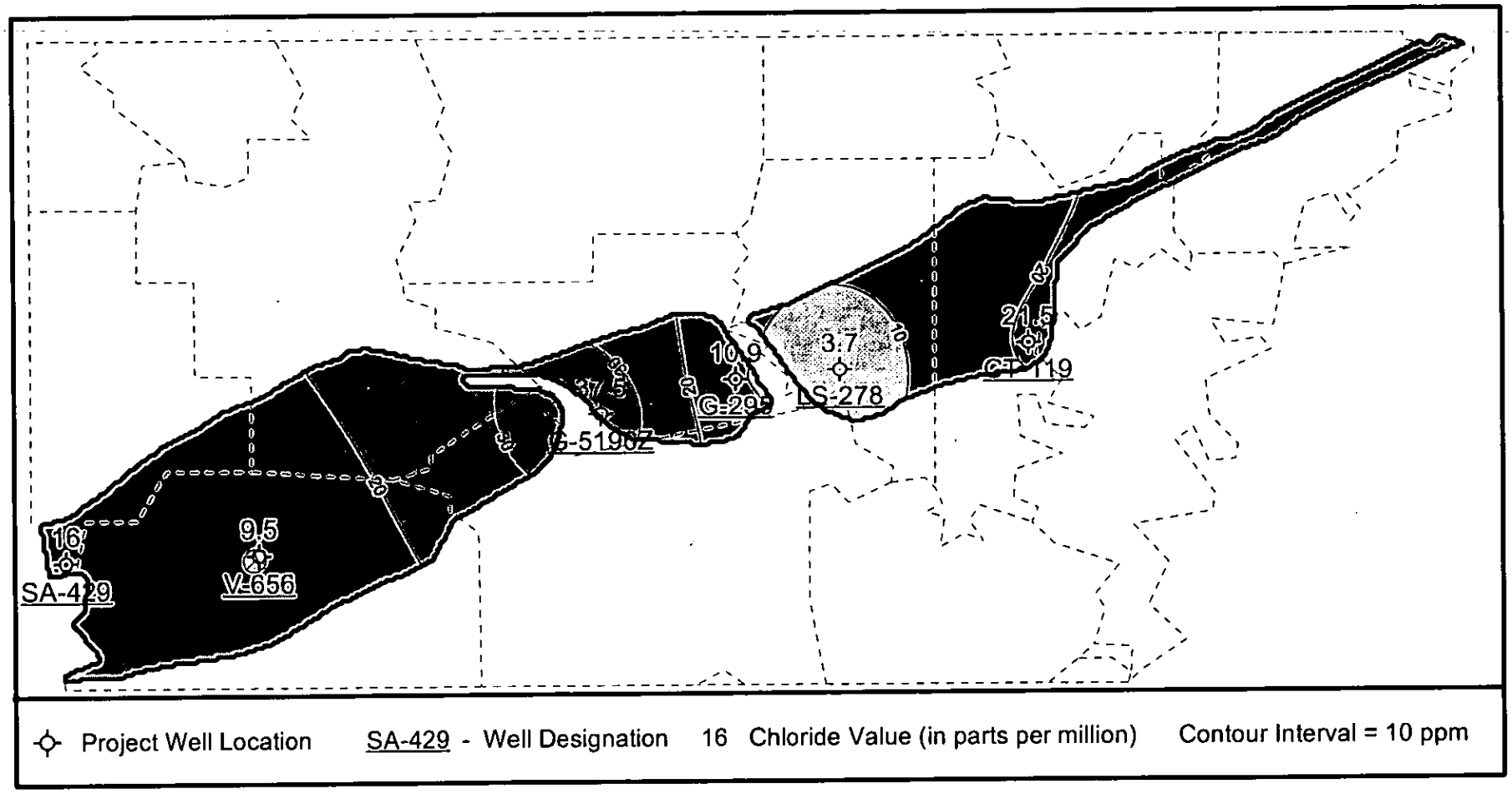


Figure 5-4 Map of Chloride Data

CATAHOULA AQUIFER - IRON (PPB)

Baseline Monitoring Project
FY00-01

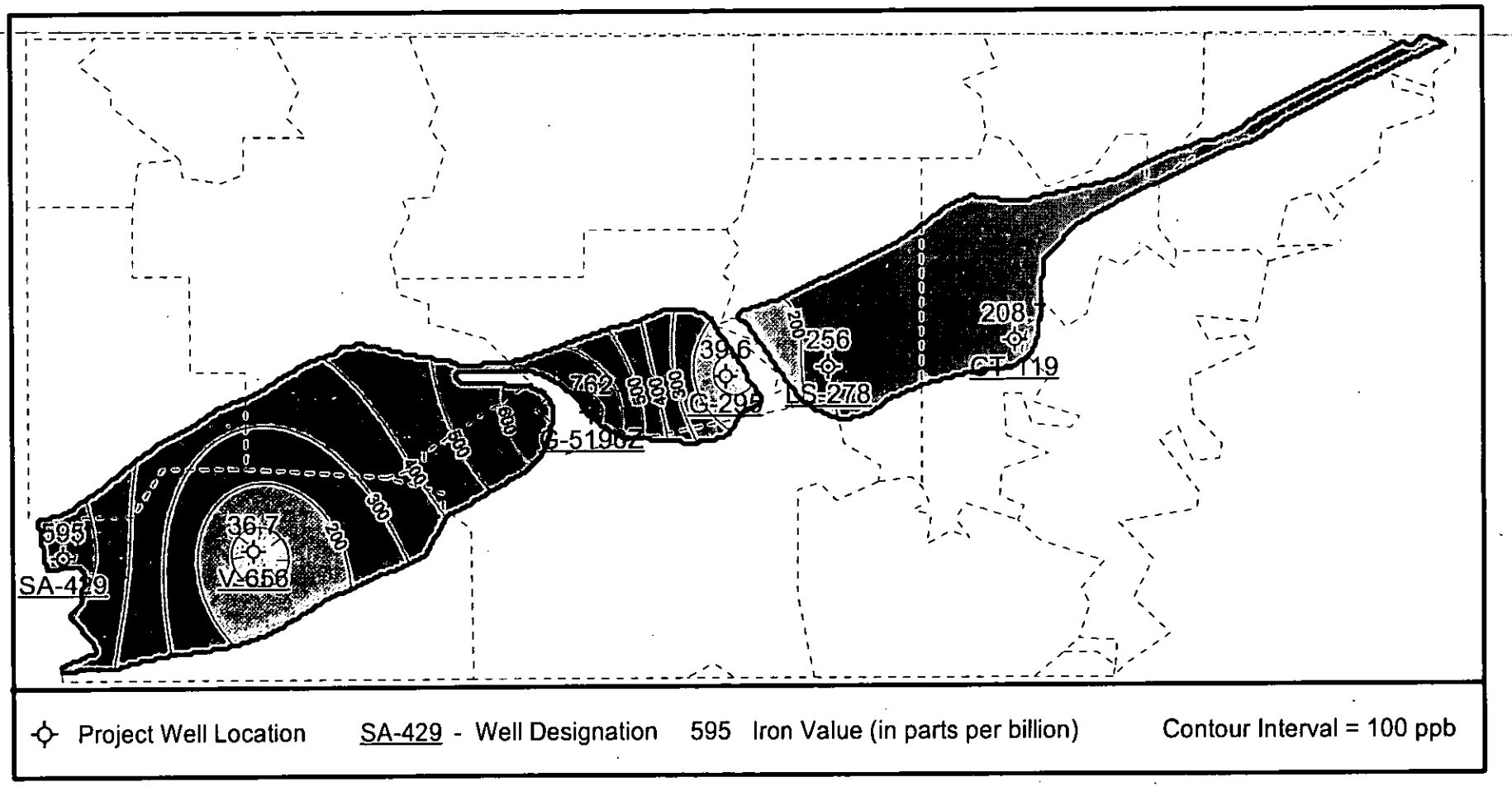


Figure 5-5 Map of Iron Data

There are 37 wells within a 3 mile radius of (lat/long) 31:34:05, -92:43:21

Wells Listing

Parish	DOTD Well #	Owner Name	Well Owner #	Driller's Name	Well Depth	Well Use	Casing Size (in)	Drill Date	Latitude	Longitude	Geologic Unit	Available Info
Grant	- 392	WEST GRANT WTR	NO 2	STAMM-SCHEELE	45	PUBLIC SUPPLY	6	10/73	31:34:52	-92:43:17	112MGMR	D Q W
Grant	- 393	WEST GRANT WTR	NO 3	STAMM-SCHEELE	75	PUBLIC SUPPLY	6	10/73	31:34:12	-92:43:46	122CTHL	Q W
Grant	- 259	LA PUBLIC WORKS	TEST#1	THOMAS, DOYLE	127	PLUGGED		1969	31:34:08	-92:43:55	122CTHL	DM
Grant	- 5127Z	R & D	PGI-MW-1	GROUNDWATER/	134	MONITOR	4	06/93	31:34:03	-92:43:57	122CTHL	D W
Grant	- 5128Z	R & D	PGI-MW-2	GROUNDWATER/	40	MONITOR	4	07/93	31:34:03	-92:43:57	122CTHL	D W
Grant	- 5129Z	R & D	PGI-MW-3	GROUNDWATER/	53	MONITOR	4	07/93	31:34:03	-92:43:57	122CTHL	D W
Grant	- 62	GOZA, PAUL		OWNER	25	STOCK	6	1938	31:34:32	-92:44:42	112RRVA	Q W
Grant	- 63	ETHRIDGE, E A		UNKNOWN	35	DOMESTIC	6	07/39	31:34:04	-92:44:03	122CTHL	W
Grant	- 75	TEAL, LOUISE		FRANK HARPER	136	DOMESTIC	4	11/39	31:31:55	-92:42:59	122CTHL	Q
Grant	- 76	NORMAN, N L		FRANK HARPER	30	UNKNOWN	2	11/39	31:32:05	-92:42:49	112RRVA	Q
Grant	- 77	NORMAN, N L		FRANK HARPER	148	STOCK	2	11/39	31:32:09	-92:42:45	122CTHL	Q
Grant	- 87	LURRY, WALTER		UNKNOWN	36	STOCK	2	03/40	31:32:27	-92:41:07	112RRVA	Q
Grant	- 98	DUKE, PAUL A		CROOKS B M	225	DOMESTIC	2	02/44	31:33:07	-92:42:50	122CTHL	D Q
Grant	- 115	RICHARDSON, A		ACME PLUMB	609	PLUGGED		03/58	31:33:33	-92:44:27	11200NWM	E
Grant	- 233	WAMPLER, ALLEN		REX WTR	90	DOMESTIC	2	1958	31:34:07	-92:44:01	122CTHL	Q
Grant	- 234	INTERNAT PAPER		CROOKS B M	260	DOMESTIC	2	1960	31:33:55	-92:41:43	122CTHL	Q
Grant	- 247	DUBOIS, L H		UNKNOWN	100	DOMESTIC	2	11/68	31:34:11	-92:44:15	122CTHL	Q
Grant	- 260	WAMPLER, ALLEN		REX WTR	70	DOMESTIC	2	1958	31:34:07	-92:43:54	122CTHL	Q

Grant	- 291	DAVIS, LOUIS V		UNKNOWN	60	ABANDONED	3	1965	31:34:35	-92:44:20	112RRVA	Q W
Grant	- 297	U S GEOL SURVEY		U.S.G.S.	93	PLUGGED		09/71	31:34:12	-92:43:45	11200NWM	D
Grant	- 298	U S GEOL SURVEY		U.S.G.S.	42	PLUGGED		09/71	31:36:30	-92:43:18	11200NWM	D
Grant	- 321	JONES, JOHN M		GREEN SELF	47	DOMESTIC	1.25	1948	31:36:18	-92:43:21	112MGMR	Q W
Grant	- 343	U S GEOL. SURVEY		U.S.G.S.	93	UNKNOWN	1.25	02/73	31:32:31	-92:43:55	112RRVA	D Q W
Grant	- 346	U S GEOL SURVEY		U.S.G.S.	84	OBSERVATION	1.25	10/72	31:33:45	-92:45:01	112RRVA	D Q W
Grant	- 348	U S GEOL SURVEY		U.S.G.S.	84	OBSERVATION	1.25	10/72	31:35:46	-92:45:39	112RRVA	D Q W
Grant	- 364	WEST GRANT WTR		STAMM-SCHEELE	95	ABANDONED	10	1973	31:34:07	-92:43:55	122CTHL	E W
Grant	- 365	WEST GRANT WTR		STAMM-SCHEELE	68	ABANDONED	10	1973	31:34:07	-92:43:55	122CTHL	W
Grant	- 375	U S GEOL SURVEY		U.S.G.S.	75	PLUGGED	1.25	06/74	31:32:34	-92:43:59	112RRVA	D Q W
Grant	- 401	U S GEOL SURVEY		U.S.G.S.	28	OBSERVATION	1.25	02/78	31:31:44	-92:42:52	112RRVA	D Q W
Grant	- 448	U S GEOL SURVEY		U.S.G.S.	74	MONITOR	1.25	08/88	31:32:34	-92:43:56	112RRVA	D Q W
Grant	- 448P	U S GEOL SURVEY		U.S.G.S.	23	MONITOR	2	08/88	31:32:34	-92:43:56	112RRVA	D
Natchitoches	- 158	ABRAHAM LAND CO		UNKNOWN	108	STOCK	2	1951	31:33:16	-92:45:59	112RRVA	
Natchitoches	- 429	U S GEOL SURVEY		U.S.G.S.	85	PLUGGED	1.25	08/73	31:33:11	-92:45:58	112RRVA	Q W
Natchitoches	- 430	U S GEOL SURVEY		U.S.G.S.	94	PLUGGED	1.25	08/73	31:32:35	-92:45:26	112RRVA	Q W
Natchitoches	- 449	U S GEOL SURVEY		U.S.G.S.	76	OBSERVATION	1.25	07/82	31:32:35	-92:45:26	112RRVA	D W
Natchitoches	- 494	U S GEOL SURVEY		U.S.G.S.	108	PLUGGED	1.25	10/82	31:31:45	-92:44:20	112RRVA	D Q W
Natchitoches	- 549	U S GEOL SURVEY		U.S.G.S.	115	OBSERVATION	1.25	11/92	31:31:52	-92:44:32	112RRVA	W

Wells Home

List of Aquifers and Confining Units

March 7, 2002

Computer Code	Name of Aquifer or Confining Unit
00000000	AQUIFER CODE NOT ASSIGNED
111DLTCY	DELTAIC DEPOSITS, YOUNGER
111HLCN	HOLOCENE ALLUVIUM
111NLLV	NATURAL LEVEE DEPOSITS
111NORLC	NEW ORLEANS AQ. SYS. SURFICIAL CONFINING UNIT
111PNBR	POINT-BAR DEPOSITS
111SLNO	SHALLOW AQUIFERS OF NEW ORLEANS AREA
11111111	AQUIFER UNKNOWN
112ACFL	ATCHAFALAYA AQUIFER
112ALVL	ALLUVIAL AQUIFERS, UNDIFFERENTIATED
112ALVLC	ALLUVIAL AQUIFERS SURFICIAL CONFINING UNITS
112CHCT	CHICOT AQUIFER, UNDIFFERENTIATED
112CHCTC	CHICOT AQ. SYSTEM SURFICIAL CONFINING UNIT
112CHCTE	CHICOT EQUIVALENT AQUIFER SYSTEM (S.E. LA.)
112CHCTL	CHICOT AQUIFER, LOWER SAND UNIT
112CHCTS	CHICOT AQUIFER, SHALLOW SAND UNIT
112CHCTU	CHICOT AQUIFER,UPPER SAND UNIT
112DDMRO	DELTAIC DEPOSITS OF MISS. RIVER VALLEY,OLDER
112GRMC	GRAMERCY AQUIFER
112GZNO	GONZALES-NEW ORLEANS AQUIFER
112MGMR	MONTGOMERY AQUIFER
112MRVA	MISSISSIPPI RIVER ALLUVIAL AQUIFER
112MRVAC	MISS. RIVER ALLUVIAL AQ. SURF. CONFINING UNIT
112NORC	NORCO AQUIFER
112NORLC	NEW ORLEANS AQ. SYS. SURFICIAL CONFINING UNIT
112ORVA	OUACHITA RIVER ALLUVIAL AQUIFER
112ORVAC	OUACHITA RIVER ALLUVIAL AQ. SURF. CONF. UNIT
112PLQM	PLAQUEMINE AQUIFER
112PLSC	PLEISTOCENE SERIES
112PNCLU	UPPER PONCHATOULA AQUIFER
112PRIR	PRAIRIE AQUIFER
112RRVA	RED RIVER ALLUVIAL AQUIFER
112RRVAC	RED RIVER ALLUVIAL AQ. SURF. CONFINING UNIT
112SESC	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT
112SLBR	SHALLOW SANDS OF BATON ROUGE AREA
112UPTC	UPLAND TERRACE AQUIFER
112UPTCC	UPLAND TERRACE AQUIFER SURF. CONFINING UNIT
112WLBN	WILLIANA-BENTLY AQUIFER
11200NWM	NO WELL MADE, LOG DEPTH SHOWN
11202LC	"200-FOOT" SAND OF LAKE CHARLES AREA
11204BR	"400-FOOT" SAND OF BATON ROUGE AREA
11205BR	"400 & 600 FOOT" SANDS OF BATON ROUGE AREA
11205LC	"500-FOOT" SAND OF LAKE CHARLES AREA
11206BR	"600-FOOT" SAND OF BATON ROUGE AREA
11207BR	"600 & 800 FOOT" SANDS OF BATON ROUGE AREA
11207LC	"700-FOOT" SAND OF LAKE CHARLES AREA
11212NO	"1200-FOOT" SAND OF NEW ORLEANS AREA
120ABIT	ABITA AQUIFER
120CVGN	COVINGTON AQUIFER
120KNTD	KENTWOOD AQUIFER
120SLDL	SLIDELL AQUIFER

121BGBC	BIG BRANCH AQUIFER
121EVGL	EVANGELINE AQUIFER (PLIOCENE-MIOCENE)
121EVGLC	EVANGELINE AQUIFER SURFICIAL CONFINING UNIT
121EVGLE	EVANGELINE EQUIVALENT AQ. SYSTEM (S.E. LA.)
121PNCLL	LOWER PONCHATOULA AQUIFER
12101FP	ZONE 1 FLORIDA PARISHES & POINT COUPEE PARISH
12102FP	ZONE 2 FLORIDA PARISHES & POINT COUPEE PARISH
12203FP	ZONE 3 FLORIDA PARISHES & POINT COUPEE PARISH
12108BR	"800-FOOT" SAND OF BATON ROUGE AREA
12109BR	"800 & 1200 FOOT" SANDS OF BATON ROUGE AREA
12110BR	"1000-FOOT" SAND OF BATON ROUGE AREA
12111BR	"1000 & 1200 FOOT" SANDS OF BATON ROUGE AREA
12112BR	"1200-FOOT" SAND OF BATON ROUGE AREA
12113BR	"1200 & 1500 FOOT" SANDS OF BATON ROUGE AREA
12115BR	"1500-FOOT" SAND OF BATON ROUGE AREA
12116BR	"1500 & 1700 FOOT" SANDS OF BATON ROUGE AREA
12117BR	"1700-FOOT" SAND OF BATON ROUGE AREA
122AMIT	AMITE AQUIFER
122BKVL	BURKVILLE AQUICLUDE
122CRCK	CASTOR CREEK AQUIFER
122CRCKC	CASTOR CREEK CONFINING UNIT
122CRNB	CARNAHAN BAYOU AQUIFER
122CTHL	CATAHOULA AQUIFER
122CTHLE	CATAHOULA EQUIVALENT AQ. SYSTEM (S.E. LA.)
122DGHL	DOUGH HILLS AQUIFER
122DGHLC	DOUGH HILLS CONFINING UNIT
122FRKL	FRANKLINTON AQUIFER
122HMND	HAMMOND AQUIFER
122JSPR	JASPER AQUIFER SYSTEM
122JSPRC	JASPER AQ. SYSTEM SURFICIAL CONFINING UNIT
122JSPRE	JASPER EQUIVALENT AQUIFER SYSTEM (S.E. LA.)
122LENAC	LENA CONFINING UNIT
122MOCN	MIOCENE SERIES
122RMSY	RAMSAY AQUIFER
122TCFC	TCHEFUNCTA AQUIFER
122WMCK	WILLIAMSON CREEK AQUIFER
12219BR	"1700 & 2000 FOOT" SANDS OF BATON ROUGE AREA
12220BR	"2000-FOOT" SAND OF BATON ROUGE AREA
12223BR	"2000 & 2400 FOOT" SANDS OF BATON ROUGE AREA
12224BR	"2400-FOOT" SAND OF BATON ROUGE AREA
12226BR	"2400 & 2800 FOOT" SANDS OF BATON ROUGE AREA
12228BR	"2800-FOOT" SAND OF BATON ROUGE AREA
123VKBJC	VICKSBURG-JACKSON CONFINING UNIT
124CCKF	COCKFIELD AQUIFER
124CCKFC	COCKFIELD AQUIFER SURFICIAL CONFINING UNIT
124CKMN	COOK MOUNTAIN AQUIFER
124CKMNC	COOK MOUNTAIN CONFINING UNIT
124CRRZ	CARRIZO AQUIFER
124CRVR	CANE RIVER AQUIFER
124CRVRC	CANE RIVER CONFINING UNIT
124CRWL	CARRIZO-WILCOX AQUIFER
124CRWLC	CARRIZO-WILCOX AQ. SURFICIAL CONFINING UNIT
124DLHL	DOLET HILLS AQUIFER
124NBRN	NABORTON AQUIFER
124NBRNC	NABORTON CONFINING UNIT
124SPRT	SPARTA AQUIFER
124SPRTC	SPARTA AQUIFER SURFICIAL CONFINING UNIT
124WLCX	WILCOX AQUIFER
124WLCXU	WILCOX AQUIFER, UPPER

124WILCXU	WILCOX AQUIFER, UPPER
210CRCS	CRETACEOUS SYSTEM

List of Aquifers (Superceded or Archaic Group)

Computer Code	Name of Aquifer or Confining Unit
100CNZC	CENOZOIC ERATHEM
100LMYN	LE MOYEN FORMATION
100PNCL	PONCHATOULA AQUIFER, UNDIFFERENTIATED
110QRNR	QUATERNARY SYSTEM
111MRMN	MERMENTAU MEMBER OF LE MOYEN FORMATION
112ABVL	ABBEVILLE AQUIFER
112BNTL	BENTLEY FORMATION
112GZLS	GONZALES AQUIFER
112LEBU	LEBEAU MEMBER OF LE MOYEN FORMATION
112NORL	NEW ORLEANS AQUIFER SYSTEM
112SLGZ	SHALLOW AQUIFER OF GONZALES AREA
112SRVA	SABINE RIVER ALLUVIAL AQUIFER
112WLLN	WILLIANA FORMATION
11202NO	"200-FOOT" SAND OF NEW ORLEANS AREA
11204NO	"400-FOOT" SAND OF NEW ORLEANS AREA
11207NO	"700-FOOT" SAND OF NEW ORLEANS AREA
120TRTR	TERTIARY SYSTEM
121BLCK	BLOUNTS CREEK AQUIFER
121FOLY	FOLEY FORMATION
121MMOU	MAMOU MEMBER OF FOLEY FORMATION
121PCMC	PLIOCENE-MIOCENE SERIES
121PLCN	PLIOCENE SERIES
121SPGL	STEEP GULLY MEMBER OF FOLEY FORMATION
122FLMG	FLEMING FORMATION
123OGCE	OLIGOCENE-EOCENE SERIES
123OLGC	OLIGOCENE SERIES
123SNDL	SANDEL FORMATION
123VKBG	VICKSBURG GROUP
124CLBR	CLAIBORNE GROUP
124ECPC	EOCENE-PALEOCENE SERIES
124EOCN	EOCENE SERIES
124JCKS	JACKSON GROUP
125CLTN	CLAYTON FORMATION
125MDWY	MIDWAY GROUP
125PRCK	PORTERS CREEK CLAY

Public Works & Water Resources Division
Water Resources Section

Wells located within 3 mile radius
of Latitude 31°34'05" and Longitude 92°43'21"

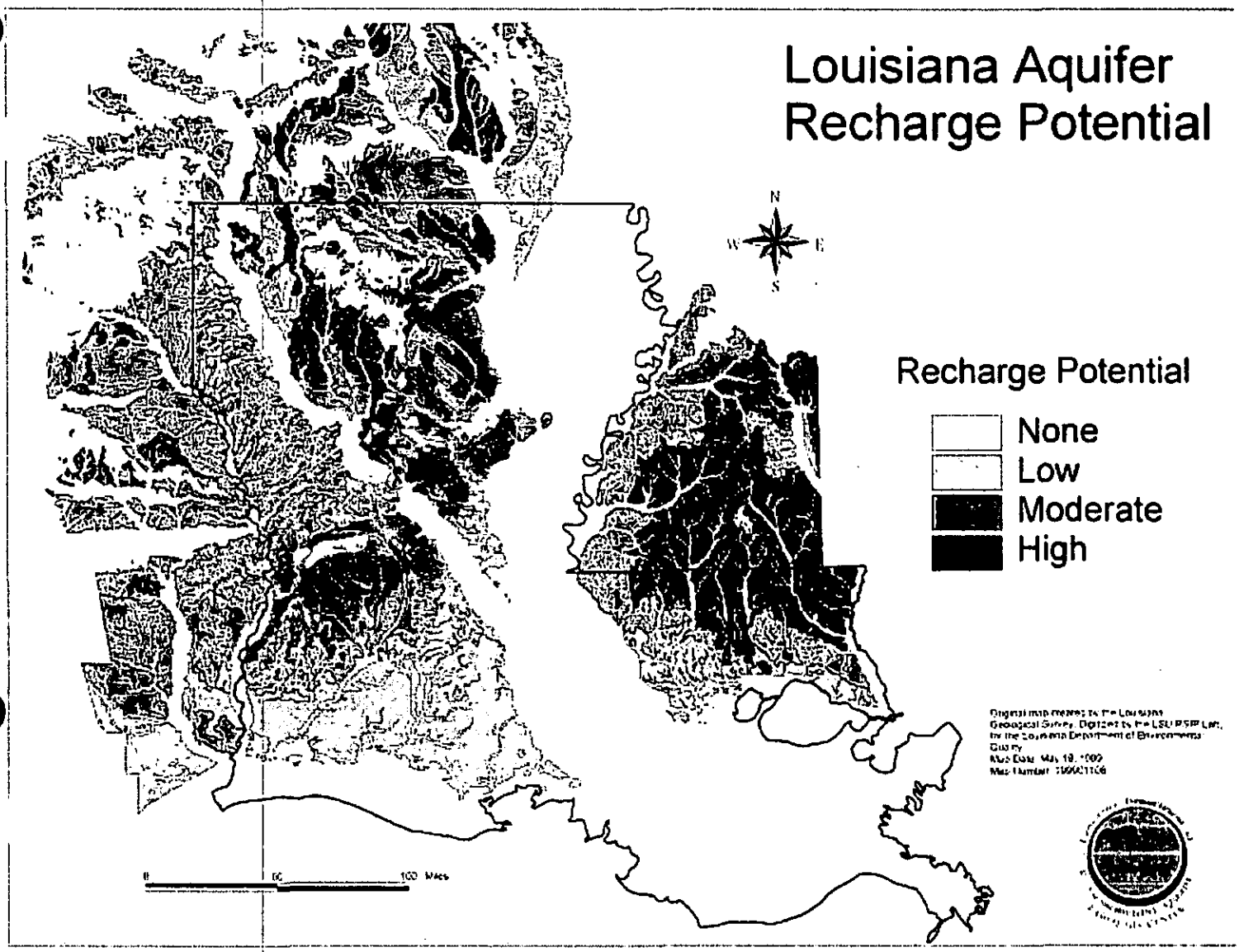
Parish	Section	Owner Name	DOTD Well #	Owner Well #	Driller's Name	Well Depth (ft)	Well Use	Casing Size (in)	Drill Date	Water Level (ft)	W.L. Date Measured	Geologic Unit	Latitude	Longitude	Avail Info	Distance in Miles
Grant	23	GOZA, PAUL	-62		OWNER	25	STOCK	6	1938	15	7/1/1939	112RRVA	313432	924442	Q W	1.42
Grant	24	ETHRIDGE, E A	-63		UNKNOWN	35	DOMESTIC	6	Jul-39	30	7/1/1939	122CTHL	313404	924403	W	0.69
Grant	8	TEAL, LOUISE	-75		FRANK HARPER	136	DOMESTIC	4	Nov-39			122CTHL	313155	924259	Q	2.51
Grant	38	NORMAN, N L	-76		FRANK HARPER	30	UNKNOWN	2	Nov-39			112RRVA	313205	924249	Q	2.35
Grant	38	NORMAN, N L	-77		FRANK HARPER	148	STOCK	2	Nov-39			122CTHL	313209	924245	Q	2.3
Grant	33	LURRY, WALTER	-87		UNKNOWN	36	STOCK	2	Mar-40			112RRVA	313227	924107	Q	2.88
Grant	30	DUKE, PAUL A	-98		CROOKS B M	225	DOMESTIC	2	Feb-44			122CTHL	313307	924250	D Q	1.22
Grant	26	RICHARDSON, A	-115		ACME PLUMB	609	PLUGGED		Mar-58			11200NWM	313333	924427	E	1.24
Grant	24	WAMPLER, ALLEN	-233		REX WTR	90	DOMESTIC	2	1958			122CTHL	313407	924401	Q	0.65
Grant	20	INTERNAT PAPER	-234		CROOKS B M	260	DOMESTIC	2	1960			122CTHL	313355	924143	Q	1.61
Grant	24	DUBOIS, L H	-247		UNKNOWN	100	DOMESTIC	2	Nov-68			122CTHL	313411	924415	Q	0.89
Grant	24	LA PUBLIC WORKS	-259	TEST#1	THOMAS, DOYLE	127	PLUGGED		1969			122CTHL	313408	924355	DM	0.56
Grant	24	WAMPLER, ALLEN	-260		REX WTR	70	DOMESTIC	2	1958			122CTHL	313407	924354	Q	0.54
Grant	23	DAVIS, LOUIS V	-291		UNKNOWN	60	ABANDONED	3	1965	5	5/29/1971	112RRVA	313435	924420	Q W	1.12
Grant	24	U S GEOL SURVEY	-297		U.S.G.S.	93	PLUGGED		Sep-71			11200NWM	313412	924345	D	0.41
Grant	1	U S GEOL SURVEY	-298		U.S.G.S.	42	PLUGGED		Sep-71			11200NWM	313630	924318	D	2.78
Grant	12	JONES, JOHN M	-321		GREEN SELF	47	DOMESTIC	1.25	1948	36	00/00/56	112MGMR	313618	924321	Q W	2.55
Grant	36	U S GEOL SURVEY	-343		U.S.G.S.	93	UNKNOWN	1.25	Feb-73	11.23	2/6/1973	112RRVA	313231	924355	D Q W	1.88
Grant	26	U S GEOL SURVEY	-346		U.S.G.S.	84	OBSERVATION	1.25	Oct-72	17.42	10/19/1972	112RRVA	313345	924501	D Q W	1.67

Grant	10	U S GEOL SURVEY	-348		U.S.G.S.	84	OBSERVATION	1.25	Oct-72	16.79	10/17/1972	112RRVA	313546	924539	D Q W	2.97
Grant	24	WEST GRANT WTR	-364		STAMM-SCHEELE	95	ABANDONED	10	1973	33.21	8/13/1973	122CTHL	313407	924355	E W	0.56
Grant	24	WEST GRANT WTR	-365		STAMM-SCHEELE	68	ABANDONED	10	1973	33.34	8/13/1973	122CTHL	313407	924355	W	0.56
Grant	36	U S GEOL SURVEY	-375		U.S.G.S.	75	PLUGGED	1.25	Jun-74	8.46	6/15/1974	112RRVA	313234	924359	D Q W	1.85
Grant	13	WEST GRANT WTR	-392	NO 2	STAMM-SCHEELE	45	PUBLIC SUPPLY	6	Oct-73	7	10/4/1973	112MGMR	313452	924317	D Q W	0.9
Grant	24	WEST GRANT WTR	-393	NO 3	STAMM-SCHEELE	75	PUBLIC SUPPLY	6	Oct-73	33	10/3/1973	122CTHL	313412	924346	Q W	0.43
Grant	8	U S GEOL SURVEY	-401		U.S.G.S.	28	OBSERVATION	1.25	Feb-78	1	3/20/1978	112RRVA	313144	924252	D Q W	2.74
Grant	36	U S GEOL SURVEY	-448		U.S.G.S.	74	MONITOR	1.25	Aug-88	13.35	9/7/1988	112RRVA	313234	924356	D Q W	1.83
Grant	36	U S GEOL SURVEY	- 448P		U.S.G.S.	23	MONITOR	2	Aug-88			112RRVA	313234	924356	D	1.83
Grant	24	R & D	-5127Z	PGI-MW 1	GROUNDWATER/	134	MONITOR	4	Jun-93	75	6/16/1993	122CTHL	313403	924357	D W	0.59
Grant	24	R & D	-5128Z	PGI-MW 2	GROUNDWATER/	40	MONITOR	4	Jul-93	25	7/14/1993	122CTHL	313403	924357	D W	0.59
Grant	24	R & D	-5129Z	PGI-MW 3	GROUNDWATER/	53	MONITOR	4	Jul-93	24	7/15/1993	122CTHL	313403	924357	D W	0.59
Natchitoches	27	ABRAHAM LAND CO	-158		UNKNOWN	108	STOCK	2	1951			112RRVA	313316	924559		2.74
Natchitoches	27	U S GEOL SURVEY	-429		U.S.G.S.	85	PLUGGED	1.25	Aug-73	18.5	8/8/1973	112RRVA	313311	924558	Q W	2.76
Natchitoches	34	U S GEOL SURVEY	-430		U.S.G.S.	94	PLUGGED	1.25	Aug-73	13.19	8/30/1973	112RRVA	313235	924526	Q W	2.67
Natchitoches	34	U S GEOL SURVEY	-449		U.S.G.S.	76	OBSERVATION	1.25	Jul-82	16.24	8/10/1982	112RRVA	313235	924526	D W	2.67
Natchitoches	45	U S GEOL SURVEY	-494		U.S.G.S.	108	PLUGGED	1.25	Oct-82	21.33	11/9/1982	112RRVA	313145	924420	D Q W	2.85
Natchitoches	45	U S GEOL SURVEY	-549		U.S.G.S.	115	OBSERVATION	1.25	Nov-92	22.77	12/1/1992	112RRVA	313152	924432	W	2.8

Available Information:
E - Geophysical Log
D - Driller's Log
M - Mechanical Analysis
Q - Quality of Water
P - Pumping Test
W - Water Level
B - Bacteriological Analysis

[Parish Codes] [Well Use Sub-Use Codes] [Explanation of Terms]

Louisiana Aquifer Recharge Potential



Compliance with the Seismic Standard (LAC33:V:517.T)
Clean Harbors Colfax, L.L.C.

In order to evaluate the Colfax facility for seismic activity within Holocene time (10,000 B.P.), federal regulations, published geologic studies, aerial photographs and topographic maps were examined. Supplemental information is attached for reference.

Federal Regulations
The Federal Register (40 CFR –Chapter I-Part 264, Appendix VI) was reviewed. Appendix VI contains political jurisdictions in which compliance with 264.18(a), the seismic standard, must be demonstrated. Louisiana is not listed. Therefore the federal regulations demonstrate that the requirements of the section do not apply as per LAC 33:V.517.T.1.a.i.(a).

Geologic Studies
The site is approximately 3.5 miles north of Colfax. According to the Geologic Map of Louisiana (1984), the site is underlain by Quaternary Pleistocene Age soils (>10,000 years B.P.). The presence of faults in these soils does not indicate that there has been seismic activity within Holocene time.

There are no known major faults defined in Grant Parish according to the publication entitled, Earthquakes in Louisiana, by Donald Stevenson and Richard McCulloh (Louisiana Geological Survey Public Information Series No. 7). The Geologic Map of Louisiana (1984) depicts the outcropping geologic formations in Grant Parish and does not indicate the presence of faults of any age in Grant Parish within 5 miles of the site.

The publication, Geology of Grant and LaSalle Parishes (Louisiana Geological Survey (LGS) Geologicial Bulletin No. 10, 1938) indicates one probable fault in T.7 N., R.1.E at the base of the Jackson Group (Upper Eocene) at 500 to 1,000 feet below mean sea level. This fault is not apparent in the overlying Catahoula Formation (Miocene) and therefore must be older than the Miocene age strata. Marginal folding and associated faulting is described as occurring from post-Miocene to late Pleistocene time. The Geological Map of Grant Parish in LGS Bulletin No. 10 does indicate the presence of faults in the Pleistocene outcrop underlying the site.

Aerial Photographs
Fault structures may be visibly identified as straight or gently curving lineaments (linear features) from aerial photographs. An aerial photography company (Gulf Coast Aerial Mapping) was asked to search for historical and recent photographs of the site and within a 5-mile radius of the site. None were available. Recent aerial photographs were printed from the Louisiana Department of Natural Resources web site. Two different scales were printed for the 5-mile radius and 3,000-foot radius. Examination of this photograph for lineaments indicative of fault scarps within 5 miles or a 3,000-foot radius of the site did not indicate evidence of fault structures. A series of adjoining photographs were taken to the Louisiana State University Geology Department and viewed under a stereoscope. Stereoscopic vision creates a three-dimensional effect to see length, width and depth.

Fault lineaments or scarps with relief would be discernible. No fault structure was evident within 5 miles or a 3,000-foot radius of the site.

Topographic Maps

Faults are typically indicated by linear or gently curving fault-lines with offset from the upthrown side to the downthrown side so topographic relief is apparent. The site slopes in numerous directions toward the lower areas in what appears to be sinuous erosional features. No distinct offset relief in a linear or gently curving pattern is evident.

In my opinion, there is no evidence that Holocene age faults are present within 5 miles of the Colfax facility based on this geologic study. I have 25 years of experience as a geologist and geophysicist in fault identification and delineation.

PBLee

Peter B. Lee, P.G., P.H.
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Registered Professional Geologist in Arkansas No. 1132 (1991)
Registered Professional Geologist in Mississippi No. 574 (1999)

Electronic Code of Federal Regulations (e-CFR)

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Title 40: Protection of Environment

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES
Subpart B—General Facility Standards

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§ 264.18 Location standards.

(a) *Seismic considerations.* (1) Portions of new facilities where treatment, storage, or disposal of hazardous waste will be conducted must not be located within 61 meters (200 feet) of a fault which has had displacement in Holocene time.

(2) As used in paragraph (a)(1) of this section:

(i) "Fault" means a fracture along which rocks on one side have been displaced with respect to those on the other side.

(ii) "Displacement" means the relative movement of any two sides of a fault measured in any direction.

(iii) "Holocene" means the most recent epoch of the Quarternary period, extending from the end of the Pleistocene to the present.

[*Comment:* Procedures for demonstrating compliance with this standard in part B of the permit application are specified in §270.14(b)(11). Facilities which are located in political jurisdictions other than those listed in appendix VI of this part, are assumed to be in compliance with this requirement.]

(b) *Floodplains.* (1) A facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout or any hazardous waste by a 100-year flood, *unless* the owner or operator can demonstrate to the Regional Administrator's satisfaction that:

(i) Procedures are in effect which will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters; or

(ii) For existing surface impoundments, waste piles, land treatment units, landfills, and miscellaneous units, no adverse effects on human health or the environment will result if washout occurs, considering:

(A) The volume and physical and chemical characteristics of the waste in the facility;

(B) The concentration of hazardous constituents that would potentially affect surface waters as a result of washout;

(C) The impact of such concentrations on the current or potential uses of and water quality standards established for the affected surface waters; and

(D) The impact of hazardous constituents on the sediments of affected surface waters or the soils of the 100- year floodplain that could result from washout.

[*Comment:* The location where wastes are moved must be a facility which is either permitted by EPA under part 270 of this chapter, authorized to manage hazardous waste by a State with a hazardous waste management program authorized under part 271 of this chapter, or in interim status under parts 270 and 265 of this chapter.]

(2) As used in paragraph (b)(1) of this section:

(i) "100-year floodplain" means any land area which is subject to a one percent or greater chance of flooding in any given year from any source.

(ii) "Washout" means the movement of hazardous waste from the active portion of the facility as a result of flooding.

(iii) "100-year flood" means a flood that has a one percent chance of being equalled or exeeded in any given year.

[*Comment:* (1) Requirements pertaining to other Federal laws which affect the location and permitting of facilities are found in §270.3 of this chapter. For details relative to these laws, see EPA's manual for SEA (special environmental area) requirements for hazardous waste facility permits. Though EPA is responsible for complying with these requirements, applicants are advised to consider them in planning the location of a facility to help prevent subsequent project delays.]

(c) *Salt dome formations, salt bed formations, underground mines and caves.* The placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave is prohibited, except for the Department of Energy Waste Isolation Pilot Project in New Mexico.

[46 FR 2848, Jan. 12, 1981, as amended at 47 FR 32350, July 26, 1982; 48 FR 14294, Apr. 1, 1983; 48 FR 30115, June 30, 1983; 50 FR 4514, Jan. 31, 1985; 50 FR 28746, July 15, 1985; 52 FR 46963, Dec. 10, 1987]

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Facility location information;

(i) In order to determine the applicability of the seismic standard [§ 264.18(a)] the owner or operator of a new facility must identify the political jurisdiction (e.g., county, township, or election district) in which the facility is proposed to be located. [*Comment:* If the county or election district is not listed in appendix VI of part 264, no further information is required to demonstrate compliance with § 264.18(a).]

(ii) If the facility is proposed to be located in an area listed in appendix VI of part 264, the owner or operator shall demonstrate compliance with the seismic standard. This demonstration may be made using either published geologic data or data obtained from field investigations carried out by the applicant. The information provided must be of such quality to be acceptable to geologists experienced in identifying and evaluating seismic activity. The information submitted must show that either:

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Title 40: Protection of Environment

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES
Subpart EE—Hazardous Waste Munitions and Explosives Storage

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Appendix VI to Part 264—Political Jurisdictions [1] in Which Compliance With §264.18(a) Must Be Demonstrated

Alaska

- Aleutian Islands
- Anchorage
- Bethel
- Bristol Bay
- Cordova-Valdez
- Fairbanks-Fort Yukon
- Juneau
- Kenai-Cook Inlet
- Ketchikan-Prince of Wales
- Kodiak
- Lynn Canal-Icy Straits
- Palmer-Wasilla-Talkeena
- Seward
- Sitka
- Wade Hampton
- Wrangell Petersburg
- Yukon-Kuskokwim

Arizona

- Cochise
- Graham
- Greenlee
- Yuma

California

- All
-

Colorado

- Archuleta
- Conejos
- Hinsdale
- Mineral
- Rio Grande
- Saguache

Hawaii

- Hawaii
-

Idaho

- Bannock
- Bear Lake
- Bingham
- Bonneville
- Caribou
- Cassia
- Clark
- Franklin
- Fremont
- Jefferson
- Madison
- Oneida
- Power
- Teton

Montana

- Beaverhead
- Broadwater
- Cascade
- Deer Lodge
- Flathead
- Gallatin
- Granite
- Jefferson
- Lake
- Lewis and Clark
- Madison

- Meagher
- Missoula
- Park
- Powell
- Sanders
- Silver Bow
- Stillwater
- Sweet Grass
- Teton
- Wheatland

Nevada

- All
-

New Mexico

- Bernalillo
- Catron
- Grant
- Hidalgo
- Los Alamos
- Rio Arriba
- Sandoval
- Sante Fe
- Sierra
- Socorro
- Taos
- Torrance
- Valencia

Utah

- Beaver
- Box Elder
- Cache
- Carbon
- Davis
- Duchesne
- Emery
- Garfield
- Iron
- Juab
- Millard
- Morgan
- Piute
- Rich
- Salt Lake

- Sanpete
- Sevier
- Summit
- Tooele
- Utah
- Wasatch
- Washington
- Wayne
- Weber

Washington

- Chelan
- Clallam
- Clark
- Cowlitz
- Douglas
- Ferry
- Grant
- Grays Harbor
- Jefferson
- King
- Kitsap
- Kittitas
- Lewis
- Mason
- Okanogan
- Pacific
- Pierce
- San Juan Islands
- Skagit
- Skamania
- Snohomish
- Thurston
- Wahkiakum
- Whatcom
- Yakima

Wyoming

- Fremont
- Lincoln
- Park
- Sublette
- Teton
- Uinta
- Yellowstone National
- Park

[46 FR 57285, Nov. 23, 1981; 47 FR 953, Jan. 8, 1982]

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APPENDIX G

WASTE ANALYSIS PLAN

CLEAN HARBORS COLFAX, LLC

WASTE ANALYSIS PLAN

CLEAN HARBORS COLFAX, LLC

WASTE ANALYSIS PLAN

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EXHIBIT B - Waste Profile Sheet

EXHIBIT C - LDR Form

EXHIBIT D - WAP Certification

WASTE ANALYSIS PLAN

1.0 INTRODUCTION

In accordance with the regulatory requirements set forth in LAC 33:V.1519, Clean Harbors Colfax, LLC has developed this Waste Analysis Plan (WAP). As required by LAC 33:V.517.E, Clean Harbors Colfax, LLC has included this WAP as an integral part of the Part II Permit Application for its hazardous waste treatment facility located near Colfax, Louisiana. Implementation of the procedures set forth in this plan will ensure that this facility remains in compliance with all requirements of LAC 33:V.1519. A copy of this plan will be available at the facility at all times.

The purpose of this Waste Analysis Plan is to document the necessary sampling methodologies, analytical techniques and overall procedures that are undertaken for all hazardous and nonhazardous wastes (hereinafter "wastes") that enter this facility for storage, treatment and disposal. Specifically, the plan delineates the following:

- **Pre-Acceptance Procedures** (Section 2.0) to determine the acceptability of a particular waste stream pursuant to facility permit conditions and operating capabilities prior to any shipment of that waste to the facility.

- **Incoming Waste Evaluation** (Section 3.0) to verify that the delivered waste matches the accompanying manifest, pre-acceptance documentation, and the conditions of the facility permit.

- **Site Generated Waste Evaluation** (Section 4.0) to ensure site generated waste is properly characterized and managed in accordance with applicable regulatory requirements.

- **Process Operations** (Section 5.0) to maintain safe and appropriate methods of storage, treatment, disposal or movement of wastes within the facility.

It is the policy of Clean Harbors Colfax, LLC that wastes handled by this facility will be subjected to these procedures. Strict compliance with this policy will ensure that this facility will be in compliance with applicable permits and regulations and is operated in a safe and environmentally sound manner.

2.0 PRE-ACCEPTANCE PROCEDURES

Pre-acceptance control is the mechanism for deciding to reject or accept a particular type of waste, prior to its shipment to the facility, based on the conditions or limitations of existing permits and regulations, and its compatibility with other wastes being stored, treated and/or disposed at the facility, in compliance with LAC 33:V.1519.A.1.

For each new waste stream that is a candidate for delivery to the facility, the following procedures are implemented:

- Each generator who wishes to ship waste to the facility will provide a completed and signed Waste Profile Form, shown on Exhibit B, (or an equivalent form) in compliance with LAC 33:V.1519.B.6. The generator may also supply developed data and existing published or documented data on the waste or wastes generated from similar processes in compliance with LAC 33:V.1519.A.2.

- Clean Harbors Colfax, LLC will review and verify the information contained on the Waste Profile Form. In addition, certain information contained on the form will be confirmed through the expertise of facility personnel based on historical knowledge of similar wastes that have been processed at the facility in the past.

- After reviewing all available data, Clean Harbors Colfax, LLC will determine the acceptability of the waste based on: (1) the permit conditions for the facility, and (2) the on-site availability of the proper and safe waste management techniques. At this facility, proper and safe waste management techniques involve the detonation of the waste materials on burn pads. If a waste is considered too volatile or too reactive (i.e., such that it could cause a damaging detonation), then that waste would either not be accepted or would only be managed in very small quantities so as to avoid undesirable results (such as damage to the burn units).

- In compliance with LAC 33:V.1519.A.3 and 1519.B.4, the pre-acceptance evaluation will be repeated when a generator notifies Clean Harbors Colfax, LLC that the process generating the waste has changed, although due to the uniqueness of each waste stream processed at the facility, the likelihood of process changes is considered small. Similarly, the pre-acceptance evaluation may also need to be repeated if the facility has reason to suspect that the waste does not conform to pre-acceptance documentation. Otherwise, the pre-acceptance evaluation will be completed on an annual basis for all wastes that continue to be shipped to the facility to assure the waste characteristics and other information on the Waste Profile Form have not significantly changed.

- Following the pre-acceptance evaluation the generator will be informed whether or not the waste stream will be acceptable at Clean Harbors Colfax, LLC. The notification will include documentation that the facility has the appropriate permits for the waste the generator is

shipping and that the facility will accept said waste.

3.0 INCOMING WASTE EVALUATION

Incoming wastes will arrive in containers, generally ranging from very small boxes to 55-gallon drums, although other size containers may be utilized in accordance with DOT and ATF shipping requirements. Facility personnel will visually examine the waste containers to evaluate whether the actual type and quantity of waste received matches the representations on the manifest. Due to the reactive nature of the waste managed at the facility, no physical samples of incoming waste will be collected. If necessary, the analyses used to determine acceptability of the waste will be reviewed to ensure that the waste received is consistent with original representations.

Facility personnel who conduct the sampling and analysis will classify the waste as being non-conforming or off specification if it is significantly different in any characteristics from the information provided on the Waste Profile Form or if it is significantly different in composition or volume from that shown on the manifest.

Waste found to be off specification will be rejected, or it may be re-evaluated for possible acceptance by the facility despite the variance (possibly under an alternate Waste Profile). The re-evaluation will be based on the following criteria:

- Permit authorization,
- Additional testing,
- Discussions with the generator,
- Facility conditions, and
- General Manager's judgment

Facility personnel will discuss and attempt to resolve with the generator any discrepancy between the actual waste and the information indicated on the manifest. In the case of significant discrepancies, the generator will be asked to provide a written document noting the non-conformance and reasons for the occurrence.

If the load is accepted, the General Manager, or designee, will sign and date the manifest.

An incoming waste report will be prepared for each shipment accepted. The report will note the manifest number, quantity, type, and on-site storage destination of each shipment.

The report will be updated each time wastes are moved to different storage magazines or treatment areas. The updated information will consist of the appropriate manifest document number, type and quantity of waste, and previous and new locations.

The use of the incoming waste report constitutes the primary Quality Assurance and quality Control procedure at the facility. As previously stated, this report is updated each time the waste is managed (e.g., removal from the magazine to the preparation building, removal from the preparation building to the thermal treatment unit, etc.). If at any time a discrepancy or other unusual situation develops, facility personnel will immediately contact the site QA/QC manager to determine an appropriate course of action.

4.0 SITE GENERATED WASTE EVALUATION

4.1 General. This section addresses waste generated from the thermal treatment process. Specific waste streams include:

- Residue remaining from treating characteristic (D003) hazardous waste, and
- Residue remaining from treated listed hazardous waste.

All ash and residue resulting from the thermal treatment process will be stored on-site within a contained area prior to shipment off-site for disposal. Residue from the treatment of characteristic waste will be kept separate from the residue generated in the treatment of listed waste. This waste analysis plan contains methods for evaluating the ash from the treatment of characteristic waste to determine the proper method of handling and disposal. For additional information on the management of the ash residues, refer to Exhibit A, Ash Management SOP.

4.2 Waste Characterization - Residues from Treatment of Characteristic Waste. As previously stated, residue from the treatment of characteristic waste will be separated from residue from the treatment of listed waste. The frequency of sampling will be based on the rate of filling the container, rather than a chronological interval. Sampling will be conducted as follows:

- Three sub-samples will be taken from each container to be shipped, as it is being filled. These will be composited after the final sub-sample is obtained and analyzed as a single sample.

- Sub-samples will be collected as follows; Sub-sample No. 1 will be collected from the ash surface near one end of the container, Sub-sample No. 2 will be collected from the middle of the container at mid-depth of the ash, and Sub-sample No. 3 collected from the opposite end of the container near the bottom.

- Sub-samples will be held and composited for final analysis.

The composite sample will be analyzed to determine if the residue exhibits the characteristic of toxicity for the metals listed in LAC 33:V.4903. Testing will be in accordance with the methods published U.S. Environmental Protection Agency (EPA) *Test Methods for Evaluating Solid Waste*; SW-846; Third Edition. Extraction protocol will comply with SW-846 Method 1310A; analysis for metals will be in accordance with SW-846 methods.

QA/QC documentation to be provided by the contract analytical laboratory will include:

- sample documentation;

- documentation of initial and continuing calibration;
- determination and documentation of detection limits;
- analyte identification and quantification;
- matrix spike recoveries;
- performance evaluation samples;
- analytical error determination; and
- total measurement error determination.

Sample containers will be provided by the laboratory, and will be used as received. Sample containers will be labeled to provide information on the sample location, date, time, sampling personnel, and the parameters for which the waste is to be analyzed. Strict chain-of-custody will be followed.

Any equipment which is used for sampling will be decontaminated prior to use. Decontamination will involve a detergent wash with a non-phosphate detergent followed by triple rinsing with distilled water. After decontamination, the sampling equipment will be wrapped in aluminum foil if not used immediately.

4.3 Waste Characterization - Residue from the Treatment of Listed Hazardous Waste. The ash residue from the burners used to treat listed hazardous waste will be assigned the waste codes applicable to the waste prior to thermal treatment. This waste will be sent under manifest to a permitted disposal facility.

As required under LAC 33:V, Chapter 22, Clean Harbors Colfax, LLC will evaluate these wastes to determine whether land ban disposal restrictions apply, and if so, whether further treatment is required to reach permissible disposal concentrations. In such cases, the subject ash will be analyzed for the constituent specified in Chapter 22 for the applicable waste code. All Sampling protocol and analytical methods, including QA/QC requirements, will be as specified in Section 4.2 above.

This section specifies the parameters for which each waste will be analyzed and the rationale for the selection of these parameters, in compliance with LAC 33:V.1519.B.1.

5.0 PROCESS OPERATIONS

Existing and anticipated process operations at the facility include the following:

- Storage (in magazines)
- Preparation Building
- Thermal Treatment by Open Detonation/Burning

These units are described in detail in the Part B Permit Application for the facility. A summary of the design and capabilities of each unit is included below.

The storage magazines are 10 feet by 20 feet in area and 8 feet high. The interior roof, doors, floors, and walls are lined with hardwood paneling. Vents are installed to permit proper ventilation and to prevent the build-up of extreme heat or pressure. The ventilation openings are screened. The openings are turned downward to prevent rainfall from entering. In addition, the screens prevent the entry debris, insects, reptiles, small mammals, or other objects. The magazines are grounded to prevent the occurrence of an accidental fire or explosion from a lightning strike. The doors of the magazines are double locked with 5 tumbler locks that are covered with steel hoods. A covered truck staging area is adjacent to the entrance of three of the storage magazines that are labeled as Nos. 8, 9, and 10. The secondary containment at the truck staging area will contain any spills of liquids that may occur during transfer.

The preparation building is 40 feet wide by 40 feet long in plan area with a concrete apron at the entrance. The preparation building is supplied with electric power to operate the drill press and band saw used for preparation activities. All electrical switches, motors, controls, and lights conform to the requirements of Class II, Division 2 of the National Electric Code. A container storage area is located at the rear of the preparation building. This area measures 18 feet wide by 60 feet long in plan with a 6" high berm to provide secondary containment. Generally, the only hazardous ash will be the minimal amounts of ash collected from the treatment of wastes that include listed waste codes (F, P, K, or U codes) since the treatment process typically removes any characteristically hazardous constituents.

The thermal treatment area is constructed on a 700' by 130' reinforced concrete slab (6" thick). The thermal treatment units consist of twenty (20) concrete curbed treatment pads atop the slab, each equipped with an interchangeable burner assembly. The burner assemblies consist either of an open steel pan or a steel-lined concrete burn chamber. The open steel pans are constructed of 3/16-inch (minimum) steel with eight-inch high sidewalls. The concrete burn chambers are constructed of 48-inch (inside diameter) reinforced concrete pipe. They are three feet in length, and equipped with a 14-gauge steel cover plate. Each of the treatment units is equipped with a retractable roof structure to prevent rainfall accumulation.

EXHIBIT A

ASH MANAGEMENT SOP

Clean Harbors Colfax, LLC
Standard Operating Procedure
Ash Management

1.0 Purpose/Scope:

1.1 To ensure the proper management of ash and residues in accordance with the facility's operating permit, applicable hazardous waste management regulations, and company policy.

2.0 Procedure:

2.1 All ash and residue from the burners will be collected and appropriately stored on-site pending off-site disposal.

2.2 Ash collected from waste burners 1-5 and 11-15 will be considered nonhazardous as long as no listed waste or characteristically hazardous waste other than D003 is thermally treated in these burners.

2.3 Each roll off container of ash residue will be sampled and analyzed for the parameters listed below:

arsenic	barium	cadmium	chromium
lead	mercury	selenium	silver

2.4 The sampling procedure will be as described in the Waste Analysis Plan:

2.4.1 Three samples will be taken from each roll off to be shipped.

2.4.2 Samples will be collected as the roll off container is filled and held for final analysis.

2.4.3 The first sample will be collected from the ash surface near one end of the container; the second sample will be collected from the middle of the container at mid depth of the ash; and the third sample will be collected from the opposite end of the container near the bottom.

2.5 Ash collected from waste burners 6-10 and 16-20 will be considered hazardous since listed wastes are thermally treated in these burners.

2.6 Each container of ash and residue from these burners will also be analyzed for the parameters listed in Section 2.3 of this procedure.

2.7 The EPA waste codes associated with these materials will be all those listed wastes that have been thermally treated in the burners since the time they were last replaced. These waste codes can be determined by

reviewing the incoming manifests and daily operating records for each unit.

2.8 During the time while ash and residue are being accumulated on-site, the following standards will apply

2.8.1 The residue resulting from the listed waste burners will be accumulated for not longer than 3 days once the quantity reaches 55 gallons of hazardous waste (or 1 quart of acutely hazardous waste (P-listed)) outside the permitted storage unit and up to 365 days within the permitted storage unit. During this time, each container will be marked and managed as hazardous waste and will remain closed at all times except when necessary to add waste to or remove waste from the container.

2.8.2 The residue resulting from the burners in which only D003 wastes were managed will be accumulated in containers such as a roll off that may be left open as long as they are stored in areas that protect them from accumulating precipitation. It will be assumed that these materials are nonhazardous unless the analytical results suggest otherwise. In the event that the analytical results do indicate that the material is hazardous, the affected container(s) will immediately be provided with an appropriate cover and a completed hazardous waste label. Arrangements for off-site shipment will be made in due course, but under no circumstances should the material be allowed to remain on site for longer than those time constraints identified previously for hazardous waste.

2.9 Shipments of ash and residue must be accompanied by the appropriate paperwork, generally consisting of a hazardous waste manifest and an LDR form (as needed). Nonhazardous waste shipments may be shipped on a bill of lading.

2.10 Records of all shipments must be maintained in the operating record for the facility. In the case of hazardous waste shipments, complete information regarding the amount generated and other information related to the off-site management of the material must be included in the facility's annual hazardous waste report.

3.0 SOP Management:

This SOP should be reviewed annually for consistency with the facility's permit, applicable regulations, and company policy. Any changes to this policy or deviations from the policy should immediately be conveyed to the management of the facility and the compliance manager.

EXHIBIT B

WASTE PROFILE SHEET

CleanHarbors

ENVIRONMENTAL SERVICES, INC.

Generator's Waste Material Profile Sheet

CleanHarbors

ENVIRONMENTAL SERVICES, INC.

Generator's Waste Material Profile Sheet

CleanHarbors
ENVIRONMENTAL SERVICES, INC.

Profile Number CH 201244

D. COMPOSITION (Must add up to at least 100%. Include inert materials and/or debris if applicable. Actual percent or range is acceptable.)

_____	_____	—	_____%	_____	_____	—	_____%
_____	_____	—	_____%	_____	_____	—	_____%
_____	_____	—	_____%	_____	_____	—	_____%
_____	_____	—	_____%	_____	_____	—	_____%
_____	_____	—	_____%	_____	_____	—	_____%

☐ Check if MSDS attached.

E. CONSTITUENTS — Attach any available analysis. Enter values or ranges where known. For TCLP values, BRL signifies below regulatory level. None, unknown, and present are also acceptable answers.

Are these values based on ☐ Knowledge or ☐ Testing?

INORGANIC

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l
D004	ARSENIC	5.0		
D005	BARIUM	100.0		
D006	CADMIUM	1.0		
D007	CHROMIUM	5.0		
D007	CHROMIUM CR+6			
D008	LEAD	5.0		
D009	MERCURY	0.2		
D010	SELENIUM	1.0		
D011	SILVER	5.0		

OTHER METALS	TOTAL
ALUMINUM	
ANTIMONY	
BERYLLIUM	
CALCIUM	
COPPER	
MAGNESIUM	
MOLYBDENUM	
NICKEL	
POTASSIUM	
SILICON	
SODIUM	
THALLIUM	
TIN	
VANADIUM	
ZINC	

NON-METALS	WT%
SULFUR	
BROMINE	
CHLORINE	
FLUORINE	
IODINE	
	PPM
AMMONIA	
REACTIVE SULFIDE	
CYANIDE-TOTAL	
CYANIDE AMENABLE	
CYANIDE REACTIVE	

ORGANIC

VOLATILE COMPOUNDS		REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l
D018	BENZENE	0.5		
D019	CARBON TETRACHLORIDE	0.5		
D021	CHLOROBENZENE	100.0		
D022	CHLOROFORM	6.0		
D028	1,2-DICHLOROETHANE	0.5		
D029	1,1-DICHLOROETHYLENE	0.7		
D035	METHYL ETHYL KETONE	200.0		
D039	TETRACHLOROETHYLENE	0.7		
D040	TRICHLOROETHYLENE	0.5		
D043	VINYL CHLORIDE	0.2		

SEMI-VOLATILE COMPOUNDS		REGULATORY LEVEL (mg/l)	TCLP	TOTAL
D023	o-CRESOL	200.0		
D024	m-CRESOL	200.0		
D025	p-CRESOL	200.0		
D026	CRESOL (TOTAL)	200.0		
D027	1,4-DICHLOROBENZENE	7.5		
D030	2,4-DINITROTOLUENE	0.13		
D032	HEXACHLOROBENZENE	0.13		
D033	HEXACHLOROBUTADIENE	0.5		
D034	HEXACHLOROETHANE	3.0		
D036	NITROBENZENE	2.0		
D037	PENTACHLOROPHENOL	100.0		
D038	PYRIDINE	5.0		
D041	2,4,5-TRICHLOROPHENOL	400.0		
D042	2,4,6-TRICHLOROPHENOL	2.0		

PESTICIDES AND HERBICIDES		REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l
D012	ENDRIN	0.02		
D013	LINDANE	0.4		
D014	METHOXYCHLOR	10.0		
D015	TOXAPHENE	0.5		
D016	2,4-D	10.0		
D017	2,4,5-TP (SILVEX)	1.0		
D020	CHLORDANE	0.03		
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008		

OTHER

PHENOL _____PPM

TOTAL PETROLEUM HYDROCARBONS (SOILS ONLY)_____ PPM

PCB'S
☐ NONE
☐ < 50 PPM
☐ ≥ 50 PPM

IF PCB'S ARE PRESENT <50 PPM, IS THE WASTE REGULATED BY TSCA 40 CFR 761?
☐ YES ☐ NO

HOC'S
☐ NONE
☐ < 1000 PPM
☐ ≥ 1000 PPM

OTHER HAZARDS	YES		YES		YES		YES
WATER REACTIVE	☐	PESTICIDE	☐	SHOCK SENSITIVE	☐	DEA REGULATED SUBSTANCE	☐
REACTIVE	☐	HERBICIDE	☐	THERMALLY SENSITIVE	☐	OXIDIZER	☐
DIOXIN	☐	EXPLOSIVE	☐	INFECTIOUS, PATHOGENIC, OR ETIOLOGICAL AGENT	☐	REDUCING AGENT	☐
OSHA REGULATED CARCINOGENS	☐	SPONTANEOUSLY IGNITES WITH AIR	☐	ASBESTOS	☐	NONE OF THE ABOVE	☐

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED? YES ☐ NO ☐ (If yes, explain)

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CleanHarbors
ENVIRONMENTAL SERVICES, INC.

Profile Number CH 201244

REGULATORY STATUS

] ☐ USEPA HAZARDOUS WASTE? (IF Yes List codes.) _____
] ☐ DO ANY GENERATOR STATE WASTE CODES APPLY? IF YES, LIST STATE CODES _____
ST ANY FEDERAL OR STATE WASTE CODES WHICH MAY VARY FROM SHIPMENT TO SHIPMENT: _____

WILL THE DECISION TO VARY THESE WASTE CODES BE BASED ON ☐ KNOWLEDGE OR ☐ TESTING (check one).
IF KNOWLEDGE, DESCRIBE BASIS OF KNOWLEDGE: _____

☐ IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?
THIS WASTE IS A: ☐ WASTEWATER ☐ NON WASTEWATER PER USEPA DEFINITION IN 40 CFR 268.2.
☐ IF ANY WASTE CODES D001, D002, D003 (OTHER THAN REACTIVE CYANIDE OR REACTIVE SULFIDE), D004-D011, D012-D017 NON-WASTEWATERS, OR D018-D043 APPLY, ARE THERE ANY UNDERLYING HAZARDOUS CONSTITUENTS (UHC'S) PRESENT ABOVE UNIVERSAL TREATMENT STANDARDS (UTS)?
☐ DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?
☐ IS THIS WASTE SUBJECT TO CATEGORICAL PRETREATMENT DISCHARGE STANDARDS?
IF YES, SPECIFY POINT SOURCE CATEGORY LISTED IN 40 CFR PART 401. _____
☐ IS THIS WASTE REGULATED UNDER THE BENZENE NESHAP RULES? (IS THIS WASTE FROM A CHEMICAL MANUFACTURING, COKE BY-PRODUCT RECOVERY, OR PETROLEUM REFINERY PROCESS?)
☐ DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS ≥ 500 PPM?
☐ DOES THIS WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE ≥ .3KPA (.044 psia)?
☐ DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE GREATER THAN 77 KPa (11.2psia)?

D.O.T. INFORMATION: List all shipping names that may be used. Attach additional page if necessary.

D.T. SHIPPING NAME _____
_____ DOT HAZARD CLASS: _____

I/NA #_____ PACKING GROUP (Circle 1) I II III HAZARD ZONE (Circle 1) A B C D
LL THIS SHIPPING NAME VARY? ☐ Y ☐ N IF YES, WILL ASSIGNMENT OF PROPER SHIPPING NAME BE BASED ON ☐ KNOWLEDGE OR TESTING? (check one) IF KNOWLEDGE, DESCRIBE BASIS OF KNOWLEDGE: _____

SPORTATION REQUIREMENTS
ATED SHIPMENT FREQUENCY: ☐ ONE TIME ☐ WEEKLY ☐ SEMI-MONTHLY ☐ MONTHLY ☐ QUARTERLY ☐ OTHER _____

BULK LIQUID
GALLONS/SHIPMENT: _____GAL.
___ FROM TANKS: TANK SIZE _____GAL.
___ FROM DRUMS
VEHICLE TYPE:
___ VAC TRUCK
___ TANK TRUCK
___ RAILROAD TANK CAR
CHECK COMPATIBLE STORAGE MATERIALS:
___ STEEL ___ STAINLESS STEEL (316)
___ RUBBER LINED ___ FIBERGLASS LINED
___ OTHER _____

☐ BULK SOLD
_____TON/YD PER SHIPMENT
STORAGE CAPACITY _____TON/YD
VEHICLE TYPE:
____ DUMP TRAILER
____ ROLL OFF BOX
____ INTERMODAL ROLLOFF BOX
____ CUSCO/VACTOR
____ OTHER _____

☐ CONTAINERIZED
_____ CONTAINERS/SHIPMENT
STORAGE CAPACITY: _____ CONTAINERS
CONTAINER TYPE:
____ CUBIC YARD BOX
____ PALLET
____ TOTE TANK
____ DRUM SIZE: _____
CONTAINER MATERIAL:
____ STEEL
____ FIBER
____ PLASTIC
____ OTHER _____

SAMPLE STATUS
REPRESENTATIVE SAMPLE HAS BEEN SUPPLIED. ☐ YES ☐ NO SAMPLED BY _____ DATE SAMPLED _____

SPECIFIC DISPOSAL RESTRICTIONS OR REQUESTS: _____

SPECIAL WASTE HANDLING REQUIREMENTS: _____

OTHER COMMENTS OR REQUESTS: _____

BIENNIAL/ANNUAL REPORTING INFORMATION.
SIC CODE _____ SOURCE CODE _____ FORM CODE _____ ORIGIN CODE _____

GENERATOR'S CERTIFICATION

eby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted epresentative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to n ofile, as Clean Harbors deems necessary, to reflect the discrepancy.

HORIZED SIGNATURE	NAME (PRINT)	TITLE	DATE

CLEAN HARBORS USE ONLY
CHI REPRESENTATIVE COMPLETING PROFILE: _____

EXHIBIT C

LDR FORM

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION FORM LDR-1

MANIFEST NO_____

THE HAZARDOUS WASTES IDENTIFIED ON THE HAZARDOUS WASTE MANIFEST IDENTIFIED ABOVE AND BEARING THE EPA HAZARDOUS WASTE CODES LISTED BELOW ARE RESTRICTED WASTES WHICH ARE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT UNDER THE LAND DISPOSAL RESTRICTIONS, 40 CFR PART 268 .7 (a)(2), AND RCRA SECTION 3004(D). IN ACCORDANCE WITH 40 CFR 268.7(a), THE EPA WASTE CODE, WASTE SUBCATEGORY, AND TREATABILITY GROUPS, AS APPLICABLE, ARE INCLUDED BELOW.

INSTRUCTIONS – COMPLETE ALL SECTIONS. REFER TO PAGE 3 OF THIS FORM FOR KEY TERMS/DEFINITIONS.

Column 1 - Line Item: Enter the manifest line item number (e.g., 11a) that corresponds to the waste code(s).

Column 2 - Waste Codes/Subcategory: Check off all applicable waste codes. For D001 through D043, also check applicable subcategory; for F001 through F005, check applicable constituents.

Column 3 - Wastewater/Non-wastewater: Check off "WW" for wastewater and "Non-WW" for non-wastewaters.

Column 4 - LDR Handling Code: Circle the appropriate handling code, as follows:

1 = The waste is a characteristic hazardous waste D001, D002, D003, D004-D011, or D018-43 which is intended for treatment/disposal in a CWA system, CWA-equivalent system, or Class I SDWA system. Underlying Hazardous Constituents (UHC's) are NOT required to be identified.

1A = The waste is a characteristic hazardous waste D001 High TOC Ignitable Liquids Subcategory (i.e., greater than or equal to 10% TOC). Pursuant to 40 CFR 268.40, the waste must be treated using organic recovery (RORGS) or combustion (CMBST) technology. UHC's are NOT required to be identified.

2 = The waste is a characteristic hazardous waste D001 (other than High TOC Ignitable Liquids), D002, D003 Explosive, Water Reactive or Other Reactive subcategory, D004-D011, D012-17 non-wastewater, or D018-43 which is intended for treatment/disposal in a non-CWA system, non-CWA-equivalent system, or non-Class I SDWA system located in the United States. All UHC's which are reasonably expected to be present must be identified, except for D001 waste that is intended to be treated using organic recovery (RORGS) or combustion (CMBST) technologies. Identify UHC's by completing Sections I and IV of CHI Form LDR-1 Addendum and attach completed Addendum to this form.

3 = The waste is a characteristic (i.e., D-code) or listed (i.e., F-, K-, U-, or P-code) hazardous waste which is intended for export and treatment/disposal at a facility located outside the United States. LDR treatment standards do not apply to hazardous waste treated/disposed in a foreign country, and per USEPA guidance, the identification of UHC's (if applicable) is not required for hazardous waste that is intended to be exported. Note however that if the exported waste is subsequently returned for treatment/disposal in the United States, all applicable LDR regulations would apply and a revised LDR notification would be required.

4 = The waste meets the definition of hazardous debris pursuant to 40 CFR 268.2(h) and is intended for treatment/ disposal in compliance with the alternate debris treatment technologies of 40 CFR 268.45. In accordance with the requirements of 40 CFR 268.7(a)(2) : the contaminants subject to treatment (CSTT's) must be identified as part of this notification. Identify CSTT's by completing Section III and IV of the CHI Form LDR-1 Addendum and attach completed Addendum to this form. These constituents are being treated to comply with 40 CFR 268.45.

5 = The waste is a characteristic waste D003 Reactive Sulfide, Reactive Cyanide, or Unexploded Ordnance subcategory, a characteristic waste D012- 17 wastewater, or a listed (i.e., F-, K-, U-, or P-code) hazardous waste. UHC's are NOT required to be identified.

6 = The waste is a lab pack that is intended for incineration using the alternative lab pack treatment standard under 40 CFR 268.42(c). UHC's are NOT required to be identified; however, the generator must complete and attach the lab pack certification statement on CHI Form LDR-LP. Note that in accordance with 40 CFR Part 268 Appendix IV, lab packs which contain waste codes D009, F019, K003, K004, K005, K006, K062, K071, K100, K106, P010, P011, P012, P076, P078, U134, and U151 are not eligible for alternative lab pack treatment standard.

*** **NOTE: IF THE WASTE IS A SOIL CONTAMINATED WITH A LISTED OR CHARACTERISTIC WASTE AND THE GENERATOR WANTS TO USE THE ALTERNATE TREATMENT STANDARD FOR SOILS, CONTACT CORPORATE COMPLIANCE FOR THE APPROPRIATE LDR NOTIFICATION FORM.**

SECTION I. CHARACTERISTIC WASTES D001 THROUGH D043

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	[ ] D001 Ignitables, except High TOC subcategory	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D001 High TOC Ignitable Liquids Subcategory (Greater than or equal to 10% TOC)	[ ] Non-WW only	1A 3 6
_____	[ ] D002 Corrosives	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D003		
	[ ] Reactive Sulfide, per 261.23 (a)(5)	[ ] WW [ ] Non-WW	1 3 4 5 6
	[ ] Reactive Cyanide, per 261.23(a)(5)	[ ] WW [ ] Non-WW	1 3 4 5 6
	[ ] Explosive, per 261.23(a)(6), (7) & (8)	[ ] WW [ ] Non-WW	1 2 3 4 6
	[ ] Water Reactive, per 261.23(a)(2), (3) & (4)	[ ] Non-WW only	1 2 3 4 6
	[ ] Other Reactive, per 261.23(a)(1)	[ ] WW [ ] Non-WW	1 2 3 4 6
	[ ] Unexploded Ordnance, Emergency Response	[ ] WW [ ] Non-WW	1 3 4 5 6
_____	[ ] D004 Arsenic	[ ] WW [ ] Non-WW	1 3 4 5 6
_____	[ ] D005 Barium	[ ] WW [ ] Non-WW	1 3 4 5 6
_____	[ ] D006		
	[ ] Cadmium	[ ] WW [ ] Non-WW	1 2 3 4 6
	[ ] Cadmium Containing Batteries	[ ] Non-WW only	2 3 6
_____	[ ] D007 Chromium	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D008		
	[ ] Lead	[ ] WW [ ] Non-WW	1 2 3 4 6
	[ ] Lead Acid Batteries	[ ] Non-WW only	2 3 6

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION FORM LDR-1

MANIFEST NO_____

SECTION I. CHARACTERISTIC WASTES D001-43 (CONTINUED)

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	[ ] D009		
	[ ] Low Mercury, less than 260 mg/kg Mercury	[ ] WW [ ] Non-WW	1 2 3 4
	[ ] High Mercury Organic Subcategory	[ ] Non-WW only	2 3 4
	[ ] High Mercury Inorganic Subcategory	[ ] Non-WW only	2 3 4
_____	[ ] D010 Selenium	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D011 Silver	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D012 Endrin	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D013 Lindane	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D014 Methoxychlor	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D015 Toxaphene	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D016 2,4-D	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D017 2,4,5-TP (Silvex)	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D018 Benzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D019 Carbon tetrachloride	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D020 Chlordane	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D021 Chlorobenzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D022 Chloroform	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D023 o-Cresol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D024 m-Cresol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D025 p-Cresol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D026 Cresol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D027 1,4-Dichlorobenzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D028 1,2-Dichloroethane	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D029 1,1-Dichloroethylene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D030 2,4-Dinitrotoluene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D031 Heptachlor (and its epoxide)	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D032 Hexachlorobenzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D033 Hexachlorobutadiene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D034 Hexachloroethane	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D035 Methyl ethyl ketone	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D036 Nitrobenzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D037 Pentachlorophenol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D038 Pyridine	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D039 Tetrachloroethylene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D040 Trichloroethylene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D041 2,4,5-Trichlorophenol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D042 2,4,6-Trichlorophenol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D043 Vinyl Chloride	[ ] WW [ ] Non-WW	1 2 3 4 6

SECTION II. SPENT SOLVENT WASTES F001 THROUGH F005

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	[ ] F001 [ ] F002 [ ] F003 [ ] F004 [ ] F005	[ ] WW [ ] Non-WW	3 4 5 6

_____ [ ] 1. ALL F001-F005
_____ [ ] 2. Acetone
_____ [ ] 3. Benzene
_____ [ ] 4. n-Butyl alcohol
_____ [ ] 5. Carbon disulfide
_____ [ ] 6. Carbon tetrachloride
_____ [ ] 7. Chlorobenzene
_____ [ ] 8. o-Cresol
_____ [ ] 9. m-Cresol (difficult to distinguish from p-cresol)
_____ [ ] 10. p-Cresol (difficult to distinguish from m-cresol)
_____ [ ] 11. Cresol - mixed isomers (sum of o-, m- and p-cresol)

_____ [ ] 12. Cyclohexanone
_____ [ ] 13. o-Dichlorobenzene
_____ [ ] 14. 2-Ethoxyethanol (F005 only)
_____ [ ] 15. Ethyl acetate
_____ [ ] 16. Ethyl benzene
_____ [ ] 17. Ethyl ether
_____ [ ] 18. Isobutyl alcohol
_____ [ ] 19. Methanol
_____ [ ] 20. Methylene chloride
_____ [ ] 21. Methyl ethyl ketone
_____ [ ] 22. Methyl isobutyl ketone
_____ [ ] 23. Nitrobenzene
_____ [ ] 24. 2-Nitropropane (F005 only)

_____ [ ] 25. Pyridine
_____ [ ] 26. Tetrachloroethylene
_____ [ ] 27. Toluene
_____ [ ] 28. 1,1,1-Trichloroethane
_____ [ ] 29. 1,1,2-Trichloroethane
_____ [ ] 30. Trichloroethylene
_____ [ ] 31. 1,1,2-Trichloro-1,2,2-trifluoroethane
_____ [ ] 32. Trichloromonofluoromethane
_____ [ ] 33. Xylene - mixed isomers (sum of o-, m-, and p-xylene)

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION FORM LDR-1

MANIFEST NO_____

SECTION III. CALIFORNIA LIST WASTES

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	Hazardous waste containing one or more of the following California List constituents:	[ ] WW [ ] Non-WW	1 2 3 4 6

[ ] ALL CALIFORNIA LIST CONSTITUENTS
[ ] Liquids with nickel greater than or equal to 134 mg/l
[ ] Liquids with thallium greater than or equal to 130 mg/l
[ ] Liquids with PCB's > or = 50 ppm
[ ] Waste containing HOC's > or = 1,000 mg/kg

SECTION IV. OTHER LISTED WASTES (F006-12, F019-F028, F037-38, F039, K-, U-, AND P-CODES)

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6

[ ] CHECK HERE IF ADDITIONAL LISTED WASTE CODES ARE PRESENT. COMPLETE AND ATTACH LDR-1 CONTINUATION SHEET.
[ ] CHECK HERE IF WASTE CODE F039 (MULTISOURCE LEACHATE) IS PRESENT. IDENTIFY F039 CONSTITUENTS BY COMPLETING SECTIONS II AND IV OF CHI FORM LDR-1 ADDENDUM AND ATTACH COMPLETED ADDENDUM TO THIS FORM.

SECTION V. CONTACT NAME AND DATE

Print Name: _____ Date: _____

KEY TERMS/DEFINITIONS

CLASS I SDWA SYSTEM means a Class I deep well facility regulated under the Safe Drinking Water Act (SDWA).

CWA SYSTEM means a centralized wastewater treatment facility discharging under a Clean Water Act (CWA) permit. For example, a CWA facility would treat organic or inorganic aqueous wastes and discharge the treated effluent to the local sewer system. Examples of CWA treatment systems owned and operated by Clean Harbors include the wastewater treatment operations at Baltimore (including the CES system), Bristol, Chicago, Cincinnati and Cleveland.

CWA-EQUIVALENT SYSTEM means a "zero discharge system" that engages in "CWA-equivalent" treatment before land disposal. Zero-discharge facilities treat hazardous wastes using "CWA-equivalent" treatment methods, but do not discharge the treatment effluent to a sewer or water body (e.g., spray irrigation land farm). "CWA-equivalent" treatment methods means biological treatment for organics, alkaline chlorination, or ferrous sulfate precipitation for cyanide, precipitation/ sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

HIGH TOC IGNITABLE LIQUIDS SUBCATEGORY means an ignitable liquid hazardous waste (waste code D001) which contains greater than or equal to 10% total organic carbon (TOC). Pursuant to 40 CFR 268.40, such wastes must be treated using organic recovery (RORGS) or combustion (CMBST) technology. Examples of RORGS technologies include the CES unit at Clean Harbors of Baltimore. Examples of CMBST technologies include hazardous waste fuel blending and subsequent reuse at a cement kiln, or destruction at a RCRA incinerator.

WASTEWATERS are wastes that contain less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS). [See 40 CFR 268.2(f)]

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION NOTIFICATION FORM LDR-1 ADDENDUM Manifest No._____

SECTION I. UNDERLYING HAZARDOUS CONSTITUENTS (UHC'S)

[ ] Check here if one or more of the constituents listed in Section IV below are reasonably expected to be present as an "Underlying Hazardous Constituent" in the waste. Then in Section IV, check off each constituent. Note that per the definition of UHC in 40 CFR 268.2, fluoride, selenium, sulfides, vanadium and zinc are NOT regulated as UHC's.

[ ] Check here if NONE of the UHC constituents listed in Section IV are expected to be present in the waste.

SECTION II. MULTI-SOURCE LEACHATE (WASTE CODE F039)

[ ] Check here if one or more of the constituents listed in Section IV are present as a constituent in the multi-source leachate (F039) waste. Then in Section IV below, check off each constituent. Note that constituents which are identified by an asterisk (*) are NOT regulated as F039 constituents.

[ ] Check here if NONE of the F039 constituents listed in Section IV are present in the waste.

SECTION III. HAZARDOUS DEBRIS CONTAMINANTS SUBJECT TO TREATMENT (CSTT)

[ ] Check here if one or more of the constituents listed in Section IV is a CSTT for hazardous debris that is intended for treatment using the alternate treatment technologies in 40 CFR 268.45. To identify CSTT's, refer to the "Regulated Hazardous Constituent" column in the Treatment Standard Table in 40 CFR 268.40. Then, in Section IV below, check off the constituents that appear for each waste code used to identify the debris.

[ ] Check here if the entry in the "Regulated Hazardous Constituent" column in the Treatment Standard Table in 40 CFR 268.40 is "Not Applicable", i.e. D001, D002, and D003 (non-cyanides subcategories only).

SECTION IV. LIST OF CONSTITUENTS - INCLUDE MANIFEST LINE ITEM

34.____ [ ] Acenaphthylene
35.____ [ ] Acenaphthene
36.____ [ ] Acetone
37.____ [ ] Acetonitrile
38.____ [ ] Acetophenone
39.____ [ ] 2-Acetylaminofluorene
40.____ [ ] Acrolein
41.____ [ ] Acrylamide (*)
42.____ [ ] Acrylonitrile
251.____ [ ] Aldicarb sulfone (*)
43.____ [ ] Aldrin
44.____ [ ] 4-Aminobiphenyl
45.____ [ ] Aniline
46.____ [ ] Anthracene
47.____ [ ] Antimony
48.____ [ ] Aramite
49.____ [ ] Arsenic
50.____ [ ] alpha-BHC
51.____ [ ] beta-BHC
52.____ [ ] delta-BHC
53.____ [ ] gamma-BHC
252.____ [ ] Barban (*)
54.____ [ ] Barium
253.____ [ ] Bendiocarb (*)
255.____ [ ] Benomyl (*)
55.____ [ ] Benzene
56.____ [ ] Benz(a)anthracene
57.____ [ ] Benzal chloride (*)
58.____ [ ] Benzo(b)fluoranthene (difficult to distinguish from Benzo(k)fluoranthene)
59.____ [ ] Benzo(k)fluoranthene (difficult to distinguish from Benzo(b)fluoranthene)
60.____ [ ] Benzo(g,h,i)perylene
61.____ [ ] Benzo(a)pyrene
62.____ [ ] Beryllium
63.____ [ ] Bromodichloromethane
64.____ [ ] Bromomethane (Methyl bromide)
65.____ [ ] 4-Bromophenyl phenyl ether
66.____ [ ] n-Butyl alcohol
256.____ [ ] Butylate (*)
67.____ [ ] Butyl benzyl phthalate
68.____ [ ] 2-sec-Butyl-4,6-dinitrophenol (Dinoseb)
69.____ [ ] Cadmium
257.____ [ ] Carbaryl (*)
258.____ [ ] Carbendazim (*)
259.____ [ ] Carbofuran (*)
260.____ [ ] Carbofuran phenol (*)
70.____ [ ] Carbon disulfide
71.____ [ ] Carbon tetrachloride
261.____ [ ] Carbosulfan (*)
72.____ [ ] Chlordane (alpha and gamma isomers)
73.____ [ ] p-Chloroaniline
74.____ [ ] Chlorobenzene
75.____ [ ] Chlorobenzilate
76.____ [ ] 2-Chloro-1,3-butadiene
77.____ [ ] Chlorodibromomethane
78.____ [ ] Chloroethane
79.____ [ ] bis(2-Chloroethoxy)methane
80.____ [ ] bis(2-Chloroethyl)ether
81.____ [ ] Chloroform
82.____ [ ] bis(2-Chloroisopropyl)ether
83.____ [ ] p-Chloro-m-cresol
84.____ [ ] 2-Chloroethyl vinyl ether (*)
85.____ [ ] Chloromethane (Methyl Chloride)
86.____ [ ] 2-Chloronaphthalene
87.____ [ ] 2-Chlorophenol
88.____ [ ] 3-Chloropropylene
89.____ [ ] Chromium (Total)
90.____ [ ] Chrysene
91.____ [ ] o-Cresol
92.____ [ ] m-Cresol (difficult to distinguish from p-Cresol)
93.____ [ ] p-Cresol (difficult to distinguish from o-Cresol)
262.____ [ ] m-Cumenyl methylcarbamate (*)
94.____ [ ] Cyanides (Total)
95.____ [ ] Cyanides (Amenable)
263.____ [ ] Cycloate (*)
96.____ [ ] Cyclohexanone
97.____ [ ] 1,2-Dibromo-3-chloropropane
98.____ [ ] 1,2-Dibromoethane (Ethylene dibromide)
99.____ [ ] Dibromomethane
100.____ [ ] 2,4-Dichlorophenoxyacetic acid (2,4-D)
101.____ [ ] o,p'-DDD
102.____ [ ] p,p'-DDD
103.____ [ ] o,p'-DDE
104.____ [ ] p,p'-DDE
105.____ [ ] o,p'-DDT
106.____ [ ] p,p'-DDT
107.____ [ ] Dibenz(a,h)anthracene
108.____ [ ] Dibenzo(a,e)pyrene
109.____ [ ] m-Dichlorobenzene
110.____ [ ] o-Dichlorobenzene
111.____ [ ] p-Dichlorobenzene

112. _____ [ ] Dichlorodifluoromethane
113. _____ [ ] 1,1-Dichloroethane
114. _____ [ ] 1,2-Dichloroethane
115. _____ [ ] 1,1-Dichloroethylene
116. _____ [ ] trans-1,2-Dichloroethylene
117. _____ [ ] 2,4-Dichlorophenol
118. _____ [ ] 2,6-Dichlorophenol
119. _____ [ ] 1,2-Dichloropropane
120. _____ [ ] cis-1,3-Dichloropropylene
121. _____ [ ] trans-1,3-Dichloropropylene
122. _____ [ ] Dieldrin
123. _____ [ ] Diethyl phthalate
124. _____ [ ] 2,4-Dimethyl phenol
125. _____ [ ] Dimethyl phthalate
126. _____ [ ] Di-n-butyl phthalate
127. _____ [ ] 1,4-Dinitrobenzene
128. _____ [ ] 4,6-Dinitro-o-cresol
129. _____ [ ] 2,4-Dinitrophenol
130. _____ [ ] 2,4-Dinitrotoluene
131. _____ [ ] 2,6-Dinitrotoluene
132. _____ [ ] Di-n-octyl phthalate
133. _____ [ ] p-Dimethylaminoazobenzene (*)
134. _____ [ ] Di-n-propylnitrosoamine
135. _____ [ ] 1,4-Dioxane (*)
136. _____ [ ] Diphenylamine (difficult to distinguish from
137. _____ [ ] Diphenylnitrosamine (difficult to distinguish from
diphenylamine)
138. _____ [ ] 1,2-Diphenylhydrazine
139. _____ [ ] Disulfoton
266. _____ [ ] Dithiocarbamates (Total) (*)
140. _____ [ ] Endosulfan I
141. _____ [ ] Endosulfan II
142. _____ [ ] Endosulfan sulfate
143. _____ [ ] Endrin
144. _____ [ ] Endrin aldehyde
267. _____ [ ] EPTC (*)
145. _____ [ ] Ethyl acetate
146. _____ [ ] Ethyl cyanide (propanenitrile)
147. _____ [ ] Ethyl benzene
148. _____ [ ] Ethyl ether
149. _____ [ ] bis(2-Ethylhexyl)phthalate
150. _____ [ ] Ethyl methacrylate
151. _____ [ ] Ethylene oxide
152. _____ [ ] Famphur
153. _____ [ ] Fluoranthene
154. _____ [ ] Fluorene
155. _____ [ ] Fluoride
268. _____ [ ] Formetanate hydrochloride (*)
156. _____ [ ] Heptachlor
157. _____ [ ] Heptachlor epoxide
158. _____ [ ] Hexachlorobenzene
159. _____ [ ] Hexachlorobutadiene
160. _____ [ ] Hexachlorocyclopentadiene
161. _____ [ ] HxCDDs (All hexachlorodibenzo-p-dioxins)
162. _____ [ ] HxCDFs (All hexachlorodibenzo-furans)
163. _____ [ ] Hexachloroethane
164. _____ [ ] Hexachloropropylene
165. _____ [ ] Indeno (1,2,3-c,d)pyrene
270. _____ [ ] 3-Iodo-2-propynyl n-butylcarbamate (*)
166. _____ [ ] Iodomethane
167. _____ [ ] Isobutyl alcohol
168. _____ [ ] Isodrin
169. _____ [ ] Isosafrole
170. _____ [ ] Kepone
171. _____ [ ] Lead
172. _____ [ ] Mercury--Nonwastewater from Retort
173. _____ [ ] Mercury--All others
174. _____ [ ] Methacrylonitrile
175. _____ [ ] Methanol
176. _____ [ ] Methapyrilene
272. _____ [ ] Methiocarb (*)
273. _____ [ ] Methomyl (*)
177. _____ [ ] Methoxychlor
178. _____ [ ] 3-Methylcholanthrene
179. _____ [ ] 4,4-Methylene-bis(2-chloroaniline)
180. _____ [ ] Methylene chloride
181. _____ [ ] Methyl ethyl ketone
182. _____ [ ] Methyl isobutyl ketone
183. _____ [ ] Methyl methacrylate
184. _____ [ ] Methyl methansulfonate
185. _____ [ ] Methyl parathion
274. _____ [ ] Metolcarb (*)
275. _____ [ ] Mexacarbate (*)
276. _____ [ ] Molinate (*)
186. _____ [ ] Naphthalene
187. _____ [ ] 2-Naphthylamine
188. _____ [ ] Nickel
189. _____ [ ] o-Nitroaniline (*)
190. _____ [ ] p-Nitroaniline
191. _____ [ ] Nitrobenzene
192. _____ [ ] 5-Nitro-o-toluidine
193. _____ [ ] o-Nitrophenol (*)
diphenylnitrosamine)
194. _____ [ ] p-Nitrophenol
195. _____ [ ] N-Nitrosodiethylamine
196. _____ [ ] N-Nitrosodimethylamine
197. _____ [ ] N-Nitroso-di-n-butylamine
198. _____ [ ] N-Nitrosomethylethylamine
199. _____ [ ] N-Nitrosomorpholine
200. _____ [ ] N-Nitrosopiperidine
201. _____ [ ] N-Nitrosopyrrolidine
277. _____ [ ] Oxamyl (*)
202. _____ [ ] Parathion
203. _____ [ ] Total PCBs (sum of all PCB isomers, or all Arochlors)
278. _____ [ ] Pebulate (*)
204. _____ [ ] Pentachlorobenzene
205. _____ [ ] PeCDDs (All pentachlorodibenzo- p-dioxins)
206. _____ [ ] PeCDFs (All pentachlorodibenzofurans)
207. _____ [ ] Pentachloroethane (*)
208. _____ [ ] Pentachloronitrobenzene
209. _____ [ ] Pentachlorophenol
210. _____ [ ] Phenacetin
211. _____ [ ] Phenanthrene
212. _____ [ ] Phenol
213. _____ [ ] Phorate
214. _____ [ ] Phthalic acid (*)
215. _____ [ ] Phthalic anhydride
280. _____ [ ] Physostigmine (*)
281. _____ [ ] Physostigmine salicylate (*)
282. _____ [ ] Promecarb (*)
216. _____ [ ] Pronamide
283. _____ [ ] Propham (*)
284. _____ [ ] Propoxur (*)
285. _____ [ ] Prosulfocarb (*)
217. _____ [ ] Pyrene
218. _____ [ ] Pyridine
219. _____ [ ] Safrole
220. _____ [ ] Selenium
221. _____ [ ] Silver
222. _____ [ ] Silvex (2,4,5-TP)
223. _____ [ ] Sulfide
224. _____ [ ] 2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
225. _____ [ ] 1,2,4,5-Tetrachlorobenzene
226. _____ [ ] TCDDs (All tetrachlorodibenzo- p-dioxins)
227. _____ [ ] TCDFs (All tetrachlorodibenzofurans)
228. _____ [ ] 1,1,1,2-Tetrachloroethane
229. _____ [ ] 1,1,2,2-Tetrachloroethane
230. _____ [ ] Tetrachloroethylene

231. _____ [ ] 2,3,4,6-Tetrachlorophenol
232. _____ [ ] Thallium
286. _____ [ ] Thiodicarb (*)
287. _____ [ ] Thiophanate-methyl (*)
233. _____ [ ] Toluene
234. _____ [ ] Toxaphene
289. _____ [ ] Triallate (*)
235. _____ [ ] Tribromomethane (Bromoform)
236. _____ [ ] 1,2,4-Trichlorobenzene
237. _____ [ ] 1,1,1-Trichloroethane
238. _____ [ ] 1,1,2-Trichloroethane
239. _____ [ ] Trichloroethylene
240. _____ [ ] Trichloromonofluoromethane
241. _____ [ ] 2,4,5-Trichlorophenol
242. _____ [ ] 2,4,6-Trichlorophenol
243. _____ [ ] 1,2,3-Trichloropropane
244. _____ [ ] 1,1,2-Trichloro-1,2,2-trifluoroethane
290. _____ [ ] Triethylamine (*)
245. _____ [ ] tris-(2,3-Dibromopropyl)phosphate
246. _____ [ ] Vanadium (*)
291. _____ [ ] Vernolate (*)
247. _____ [ ] Vinyl chloride
248. _____ [ ] Xylenes–mixed isomers (sum of o-, m-, and p-xylene concentrations)
249. _____ [ ] Zinc (*)

KEY TERMS/DEFINITIONS

CONTAMINANTS SUBJECT TO TREATMENT (CSTT) are the specific constituents listed by waste code number in the Treatment Standard Table in §268.40. CSTT's must be identified for all hazardous debris wastes that are intended for treatment using one of the hazardous debris alternate treatment technologies described in §268.45.

REASONABLY EXPECTED TO BE PRESENT means that the generator is relying on knowledge of the raw materials used, the process, and potential reaction products, or on the results of a one-time analysis for the entire list of UHC's that may be present in the untreated hazardous waste. If a one-time analysis of the entire list of UHC's is conducted, subsequent analyses are required for only those pollutants which would reasonably be expected to be present in the waste as generated, based on the previous sampling and analysis results.

UNDERLYING HAZARDOUS CONSTITUENT (UHC) means any constituent listed in §268.48 Table UTS - Universal Treatment Standards (except fluoride, selenium, sulfides, vanadium and zinc) which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standard. [See 40 CFR 268.2]

EXHIBIT D

WAP CERTIFICATION

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to 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.

John C. Arbuthnot, P.E.
Louisiana Registration No. 17688
Senior Remediation Officer
Clean Harbors Environmental Services, Inc.

12/13/04
Date

STATE OF LOUISIANA
JOHN C. ARBUTHNOT
REG. No. 17688
REGISTERED
PROFESSIONAL ENGINEER
IN

APPENDIX H

INSPECTION PLAN

CLEAN HARBORS COLFAX, LLC

INSPECTION PLAN

CLEAN HARBORS COLFAX, LLC

INSPECTION PLAN

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FIGURES

Figure 1 Daily Process Unit Inspection
Figure 2 Monthly Emergency Equipment Inspection

INSPECTION PLAN

In accordance with the regulatory requirements set forth in the Louisiana Administrative Code (LAC) Title 33, Part V.1509, Clean Harbors Colfax, LLC has developed this Inspection Plan as an integral section of the Part II Permit Application for its thermal treatment located near Colfax, Louisiana. The procedures set forth in this plan are intended to show how this facility will be in compliance with applicable requirements of the LAC. A copy of this plan will be available at the facility at all times.

1.0 INTRODUCTION

This Inspection Plan is intended to provide a mechanism to minimize and detect system malfunctions, equipment deterioration and operator errors which if allowed to continue without remedy may ultimately lead to a release of hazardous waste constituents to the environment or create a threat to human health. The Inspection Plan is designed to provide an early warning of the potential for such events in order that corrective and preventive actions may be taken in a timely manner.

The Inspection Plan is divided into two segments: (1) the daily process unit inspection and (2) the monthly emergency equipment inspection. The first one focuses on each individual area of the operation such as the burn area, the control building, the preparation building, and the storage magazines. The second segment involves site-wide emergency response equipment and miscellaneous related items.

The Inspection Program is implemented by qualified individuals who are assigned the responsibility to detect any unsafe conditions at the facility and prevent adverse consequences. The designated individuals have the training and authority to: (1) implement the required inspections; (2) perform necessary evaluations and hazard assessments; and (3) order appropriate corrective or remedial actions.

Inspections are performed according to a pre-determined schedule based on engineering knowledge and operational experience with the systems and processes involved. Each inspection item has the content and frequency necessary to alert facility personnel prior to development of a serious problem. A trained inspector evaluates, and assesses each item indicated for potential malfunctions, equipment deterioration or operation error through regular observation of the process and procedures. The level of response and its timing is determined by the nature and seriousness of the problem identified, with protection of personnel and the prevention of adverse environmental impact being of paramount concern.

2.0 INSPECTION PROGRAM ADMINISTRATION

The General Manager is fully responsible for implementation of the Inspection Program. The inspection function operates independently of all other facility functions related to operations. Properly trained personnel are designated with the staff responsibility for the inspections. Reports of the results of the inspections with appropriate documentation are completed each operating day and made available to the General Manager. The General Manager is responsible for ensuring that the appropriate corrective measures are implemented in a timely manner.

2.1 Personnel Qualifications

Personnel responsible for conducting inspections are trained in hazardous waste management, fundamentals of material hazards assessment, inspection and follow-up procedures, documentation and record-keeping requirements, and various safety and contingency plan procedures.

2.2 Hazard Assessment and Evaluation Procedures

The designated inspector must be familiar with the location of the equipment and systems to be inspected and their normal configuration. For any discrepancy observed, the inspector shall determine the potential for personnel injury or for release of hazardous waste constituents, and assess the nature and timing of remedial action required. His determination considers (1) the location and nature of the problem, (2) the presence of secondary containment or control, (3) the amount and type of waste material involved, (4) the potential for human exposure, and (5) the likelihood of waste migration.

The inspector maintains open lines of communication with the General Manager and other facility personnel who may assist with the corrective actions.

When an inspection indicates equipment malfunction or deterioration, or any other improper condition, at a minimum, the following actions are to be taken as appropriate:

- Assess the situation.
- Determine the corrective/remedial measures needed in response to the situation, including appropriate interim measures.
- Establish the time frame within which the remedial action must occur. For emergency or near-emergency situations, prompt verbal reports are made to the General Manager, to be followed later with written reports.

For minor discrepancies, routine written reporting procedures, as discussed later, will be followed.

- Provide adequate follow-up to verify that the specified response has occurred and that the situation has been resolved satisfactorily.

In general, all remedial actions and re-inspections are expected to be completed within the week following the initial inspection in which a deficiency was noted. In specific cases where urgent action is required, appropriate coordination with facility personnel and frequent monitoring of the situation by the inspector will be continued until remedial actions are completed. In cases where physical and/or operational constraints (e.g., replacement equipment availability) may require longer time frames to complete the corrective measures, the inspection report will document completion of the work.

2.3 Documentation and Record Keeping

Inspections are conducted and documented using forms specifically designed to contain pertinent information. Completed inspection forms are filed in the facility's Operating Record following completion of all applicable notations regarding corrective actions. In some instances, a remedial work order that describes more complex corrective actions may also accompany the inspection documents. All completed forms and attachments are accumulated in the facility operating record. These are retained at the facility for a minimum period of three years from the date of an inspection.

Separate inspection forms are provided for specified daily, weekly, monthly or other scheduled inspections. Each periodic inspection form (see Figures 1 through 5 for examples) includes required information, such as the identification of the facility unit, the name of the inspector, and the date and time of the inspection. These forms may be periodically modified (without necessitating a formal Permit Modification) to accommodate the changing needs of the facility. If the equipment or unit is not in use, it is inspected routinely, and a notation of its operational status is made. The inspector's assessments, including notations regarding the urgency of the required response, are marked on the form. Any significant discrepancy is reported immediately to the General Manager.

In summary, the inspector observes facility operations and equipment on a periodic basis in accordance with a specified schedule and inspection elements. The inspector will initiate the required corrective actions and note them on the inspection form. In the event that the corrective actions are too extensive or require additional actions on the part of the General Manager, a remedial work order form may be

created, and then corrective action is initiated. In any case, the corrective actions will be noted on the applicable inspection forms.

In cases where specialized outside contractors are used to perform testing or inspection services (i.e., fire extinguisher repairs, etc.), the results are reported on the contractor's forms. Such documentation is made part of the Operating Record when received.

3.0 DAILY PROCESS UNIT INSPECTIONS

The process unit inspection activity encompasses the facility perimeter and those items within the permitted property (interior 43 acres) that are process-specific. These inspection activities encompass the following:

- Burn (Thermal Treatment) Area
- Control Building
- Preparation Building
- Storage Magazines and associated areas
- General Site and miscellaneous concerns

The general inspection schedules, including inspection parameters and frequencies, are determined by the types of problems that can potentially occur.

3.1 Types of Potential Problems

The following considerations are pertinent to identification of the types of problems that may occur related to facility operations:

- Breach of security, which may occur due to: (1) failure of the surveillance system, (2) damage to fences, natural barriers or entry control structures, or (3) obstruction, damage or loss of warning signs.

- Unplanned releases not detected by environmental monitoring equipment due to malfunction or failure. Such problems may occur due to failure of flood protection or other containment structures if these are not kept in good repair.

- Health and safety equipment failure, absence or inaccessibility.

3.2 Inspection Schedules

The inspection schedules are based on the facility's operational mode, potential failure modes, and an assessment of the hazard magnitude posed by a particular

malfunction, failure or discrepancy. The inspection schedules are included as attachments to this Inspection Plan. The schedules include each inspection element, the types of potential problems that could be encountered, and the frequency (at a minimum) at which the inspections will occur. All "daily" inspections will be completed during each operating day. Inasmuch as the regulatory requirements for these units involve only weekly inspection frequencies, this inspection schedule significantly exceeds the regulatory requirements. Therefore, weekend or holiday inspections are not considered necessary.

4.0 MONTHLY EMERGENCY EQUIPMENT INSPECTIONS

On no less than a monthly basis, the facility will conduct inspections of its emergency equipment. This inspection includes such items as fire extinguishers, PPE supplies, First Aid Kits, and Safety Showers. These inspections notwithstanding, the facility recognizes that it must replace or replenish any emergency supplies that may be utilized during an actual emergency. This activity is done as quickly as practical following a situation where one or more pieces of emergency equipment are utilized.

FIGURE 1

DAILY PROCESS UNIT INSPECTION

Clean Harbors Colfax, LLC
Daily Process Unit Inspection

Date: _____ Inspector: _____

Time: _____ Reviewed By: _____

Instructions: Inspections must be conducted once per day when the facility is in operation. If the item/area is fully satisfactory, place a circle around the "S". If the item/area is unsatisfactory, place a circle around the "U". If comments are warranted, (whether satisfactory or not), circle the "C" and include any comments. All unsatisfactory items must include corrective actions, the date of the corrective actions, and the initials of the person completing or confirming the corrective actions.

Item/Area	Potential Problems	Observations	Comments or Corrective Action
Burn Area			
Igniter Stand, Cords	Broken, loose, exposed wiring	S U C	
Slab Valves	Leaks, nonfunctional, damaged, or clogged	S U C	
Control Building			
Control Switches (Box)	Nonfunctional, unsecured	S U C	
Locks (1 each)	Damaged, tampered	S U C	
Warning Signal/Horn	Light out, horn broken, wire damaged	S U C	
Preparation Building			
Floor	Deterioration of concrete, spillage, cracks, pits	S U C	
Walls/Roof/Support	Deterioration of metal, wood, cracks, holes sprung fasteners, bent supports	S U C	
Locks (5 each)	Damaged, tampered	S U C	
Hazardous Ash Storage Area	Leaks/spills, markings/labels, not in designated area, standing water	S U C	
Saws (3 each)	Visual inspection only-hydraulic leaks, saw missing, contamination present	S U C	
Storage Magazines			
Shell/Roof/Floor	Deterioration of wood and metal, holes, cracks, bulges, corrosion	S U C	
Door	Deterioration of wood and metal, holes, cracks, bulges, corrosion, sticking, damaged door handles	S U C	
Locks (2 per magazine)	Deterioration, malfunction, corrosion, tampered/damaged, not secured	S U C	
Vents	Holes, rips, or blockage of vents	S U C	
Containers (boxes, crates, drums, etc.)	Aisle space, stack heights, improper labeling, damaged labels, leaks,	S U C	
Explosive Signs	Missing, not visible, damaged	S U C	
Magazine Buffer Zone (25')	Leaves, tall grass, trash on ground, spilled materials	S U C	
Housekeeping	Trash in magazines, dirty floors, tools left in magazines	S U C	
General			
Fence Condition (43-acre Perimeter)	Deterioration of chain links or barbed wire, corrosion, holes, dented, bent, tampered, damaged	S U C	
Gates # 1, 2, 3 and 4	Not closed, unsecured, damaged, malfunction of locks	S U C	
Communications Equipment (Radios)	Non-operational	S U C	
Danger Signs	Missing, not visible, damaged	S U C	
Roads, Fire Lanes	Erosion, holes, grading not maintained	S U C	
Housekeeping	Trash, tall grass, trees/limbs on ground	S U C	

FIGURE 2

MONTHLY EMERGENCY RESPONSE EQUIPMENT INSPECTION

Clean Harbors Colfax, LLC
Monthly Emergency Equipment Inspection

Date: _____ Completed By: _____

Time: _____ Reviewed By: _____

Instructions: Inspections must be conducted once per month. If the item/area is fully satisfactory, place a check mark in the space. If there are problems, note them in the comments section. All comments related to unsatisfactory items must be addressed by noting the corrective actions, the date of the corrective actions, and the initials of the person completing or confirming the corrective actions.

Fire Extinguishers	In Place	Charge	Seal	Inspection Date/Tag	Comments
1. Company Truck (red)					
2. Company Truck (grey)					
3. Main Office					
4. Guard Office					
5. Mule # 1					
6. Mule # 2					
7. Tractor					
8. Fork Lift					
9. Control Building					
10. Control Building Spare					
11. Truck Staging Building					
12. Truck Staging Building					
13. Truck Staging Building					
14. Truck Staging Building					
15. Truck Staging Building					
16. Truck Staging Building					
17. Liquid Staging Building					
18. Liquid Staging Building					
19. Liquid Staging Building					
20. Liquid Staging Building					
21. Liquid Staging Building					
22. Liquid Staging Building					
23. New Preparation Building					
24. New Preparation Building					
25. New Preparation Building					
26. New Preparation Building					
27. Front End Loader					
28. Break Room					
29. Conference Room					
30. Maintenance Building					
31. Maintenance Building					

Lighting	Operable	Non-Operable or Inadequate	Comments
Waste Management Area Lighting/Floodlights			

Eyewash Units	Water Pressure	Operable	Non-Operable	Comments
1. Preparation Building				
2. Maintenance Building				

PPE, First Aid Kits, Absorbent	In Place	Missing or Inadequate	Comments
1. PPE Supply (Prep Bldg/Control Bldg)			
2. First Aid Kits (Prep Bldg/Office/Trucks)			
3. Emergency Response Kits			

Additional Comments:

APPENDIX I

CONTINGENCY PLAN

CLEAN HARBORS COLFAX, LLC

CONTINGENCY PLAN

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3 Evacuation Plan

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APPENDIX

A Fire Fighting Equipment
B Spill Control Equipment
C Decontamination Equipment

COPIES OF THE CLEAN HARBORS COLFAX, LLC CONTINGENCY PLAN

Official copies of the approved Contingency Plan (approved by the Louisiana Department of Environmental Quality) can be found at the locations indicated below. Whenever this Contingency Plan is modified, revisions will be provided in order to replace all copies of the Plan.

Clean Harbors Colfax, LLC, Colfax, Louisiana:

General Manager's Office
Operation Manager's Office
Guard's Office
Control Room at Burn Unit

Additionally, copies of the Contingency Plan will be provided to the following organizations:

Louisiana Department of Environmental Quality
Hazardous Waste Division
Baton Rouge, Louisiana

Grant Medical Center
Colfax, Louisiana

Grant Parish Sheriff's Office
Colfax, Louisiana

Colfax Volunteer Fire Department
Colfax, Louisiana

Grant Parish Office of
Louisiana Emergency Preparedness Committee (LEPC)
Colfax, Louisiana

Louisiana State Police Emergency Response
Baton Rouge, Louisiana

I. INTRODUCTION AND PURPOSE

This Contingency Plan has been prepared in accordance with the State of Louisiana Hazardous Waste Regulations (LAC 33:V.1513) and as required by the hazardous waste permit for the facility. The Contingency Plan was approved along with the general permit to operate a TSD facility by the USEPA, Region 6 and the Louisiana Department of Environmental Quality on May 16, 1993. The purpose of this plan is to document procedures designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned, sudden or non-sudden release of hazardous waste to air, soil or surface water at the Clean Harbors Colfax, LLC facility. Provisions of the plan will be implemented immediately whenever there is a fire, explosion or the release of hazardous waste, which could threaten human health or the environment.

II. GENERAL INFORMATION

This Contingency Plan has been prepared for the Clean Harbors Colfax, LLC facility located on Louisiana Highway 471, 5 miles northeast of Colfax, Louisiana.

Clean Harbors Colfax, LLC specializes in the thermal treatment of hazardous waste explosives and reactives. Residues are collected and sent to proper disposal facilities.

Every effort has been made to anticipate any fire, explosion or unplanned, sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface waters that could occur at this facility.

A. Hazardous Waste Units

The hazardous waste units at Clean Harbors Colfax, LLC include 10 storage magazines (explosives), 20 treatment units on a concrete pad, one truck staging building, one unloading building, and one preparation building. The locations of these facilities and general facility layout are shown on Figure 2. Figure 1 shows the approximate location of the facility in Grant Parish.

B. Hazardous Wastes

The specific hazardous wastes handled for treatment at Clean Harbors Colfax, LLC are listed in the Part A Application for the facility. Essentially all incoming wastes are hazardous and include the D003 EPA waste code designation. The materials are explosive or otherwise reactive and may also be flammable. The following EPA waste codes may be managed at the facility: D001, D002, D003, D004, D005, D006, D007, D008, D010, D011, D030, K044, K045, K046, P009, P048, P065, P081, P105, P112, U069, U088, U096, U105, U108, U115, U117, U133, U160, and U234.

III. IMPLEMENTATION OF THE CONTINGENCY PLAN

A. Contingency Plan Implementation Criteria

The decision to implement the Contingency Plan depends upon whether or not an imminent or actual incident could threaten human health or the environment. The purpose of this Section is to provide guidance to the Emergency Coordinator in making this decision by providing decision-making criteria.

The Contingency Plan will be implemented in the following situations:

1. Fire and/or Explosion

   a. A fire causes the release of toxic fumes.

   b. The fire spreads and could possibly ignite materials at other locations on-site or could cause heat-induced explosions.

   c. The fire could possibly spread to off-site areas.

   d. An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.

   e. An imminent danger exists that an explosion could ignite other hazardous waste at the facility.

   f. An imminent danger exists that an explosion could result in the release of toxic material.

   g. An explosion has occurred.

2. Spills or Material Release

   a. The spill could result in release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.

   b. The spill could cause the release of toxic liquid fumes.

3. Hurricane Events

B. Emergency Response Procedures

Emergency response procedures will be implemented for the following situations:

1. Fires and/or explosions

2. Discharge, release or spills

3. Hurricane events (that threaten employee safety or facility property)

1. **Fires and/or Explosions**

In the event of a fire or explosion, the following procedures will be implemented:

a. If an employee observes an incident -- Notify Emergency Coordinator immediately, using telephone or plant radio. During holidays, weekends and off hours, the guard shall notify the Colfax Volunteer Fire Department. The guard shall also notify one of the coordinators listed in Section IV.

b. Remain in the area at a safe distance until help arrives.

c. The Emergency Coordinator will immediately review the incident and summon additional assistance as needed. Section VII.A provides the list of available outside assistance.

d. Duties of the Emergency Coordinator are described in Section IV.A.

e. No effort will be made to fight fires involving explosives on the facility.

2. **Discharges, Releases, or Spills**

Any person observing, being involved with or recognizing a discharge, release or spill of hazardous waste is responsible to:

a. Identify the problem to the best of his ability, taking his own safety into account.

b. Immediately notify the Emergency Coordinator or alternate, providing a brief description of the problem.

c. Take the following measures to stop and/or contain the release only if there is no danger to human health:

1. Stop the container from leaking if it can be accomplished without endangering human health.

2. Contain the spill if possible.

3. Apply absorbent material on spill.

d. Await further inspections from the Emergency Coordinator. Following notification, the Emergency Coordinator or alternate will direct responses for containment clean-up and disposal in the case of a discharge, release or spill.

Major Spills

Release of hazardous substances above the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), Section 102(a) "reportable quantity" (referred to as major releases throughout this Plan) might occur in areas inside and outside of diked areas. Response to releases within the diked areas, which provide immediate containment and outside of diked areas, are addressed separately. Procedures for notification of major spills are provided in Subsection 2.c. Appendix B lists the available emergency equipment and location of such equipment for responding to major spills. Figure 2 provides a site plan with the emergency equipment.

a. Within Diked Areas

Diked areas are present around all hazardous waste liquid storage areas. Upon the detection of a spill by any plant personnel, the emergency coordinator (or an alternate emergency coordinator) will be notified immediately.

Under the direction of the Emergency Coordinator, the following procedures will be used to respond to a release inside a diked area.

1. Immediately secure leaking equipment, either by temporary or permanent means.

2. Immediately prevent the spread of the spill outside of the diked area, if possible, or secure an absorbent material (i.e., floor dry, sand, earth, etc.) or any material to minimize the spread of the spill.

3. Personnel performing clean up must wear the appropriate personal protection equipment as specified by the Emergency Coordinator. Additional safety equipment may be necessary depending upon the type of spill.

4. Recover the spilled material, if appropriate. Unrecoverable materials will be cleaned up by using the appropriate absorbent materials and disposed of in the appropriate manner.

5. All materials cleaned up or utilized during clean up of the spill that are contaminated are to be prepared for storage and/or disposal in the appropriate manner.

6. All materials cleaned up or utilized during clean up of the spill that are contaminated are to be prepared for storage and/or disposal. All material must be put into DOT approved containers and properly labeled. All containers are to be moved to the appropriate area until disposal can be arranged. All information about the containers prepared for storage is to be recorded by the Emergency Coordinator.

7. After clean up of a spill, all contaminated materials will be disposed of in an appropriate, approved manner.

b. Outside Diked Areas

Under the direction of the Emergency Coordinator, the following procedures will be used to respond to a release outside of a diked area.

1. Immediately secure the leaking equipment either by temporary or permanent means.

2. Immediately prevent the spread of the spill outside of the diked area, if possible, or secure an absorbent material (i.e., floor dry, sand, earth, etc.) or any material to minimize the spread of the spill.

3. Personnel performing clean up must wear the appropriate personal protection equipment as specified by the Emergency Coordinator. Additional safety equipment may be necessary depending upon the type of spill.

4. Recover the spilled material, if appropriate. Unrecoverable materials will be cleaned up by using the appropriate absorbent materials and/or disposed in the appropriate manner.

5. All materials cleaned up or utilized during clean up of the spill that are contaminated are to be prepared for storage and/or disposal. All material must be put into DOT approved containers and properly labeled. All containers are to be moved to the appropriate area until disposal can be arranged. All information about the containers prepared for storage is to be recorded by the Emergency Coordinator.

6. After clean up of a spill, all contaminated materials will be disposed of in an appropriate, approved manner.

c. Notification of Major Spills

In the event of a major spill at the facility, the following agencies must be notified by the Emergency Coordinator or designee:

- National Response Center	800-424-8802
- U. S. EPA, Region 6	214-655-2222
- LA State Police Hazardous Materials Unit	225-925-6925
- Louisiana Department of Environmental Quality	225-219-5181
- Grant Parish Sheriff's Office	318-627-3261

These notifications will be completed in accordance with regulatory requirements either by the Primary Emergency Coordinator or designee or by the Environmental Compliance Manager for the facility.

Minor Spills

Small volume spills on plant floors, outdoor drives, etc., will be immediately cleaned up with absorbent materials and placed in DOT approved containers and labeled. All precautions will be taken to prevent such spills from reaching floor drains or storm sewers. Appendix B lists the available spill control equipment, including the equipment necessary to respond to minor spills. Any spill that exceeds the reportable quantities requires notification to the appropriate agencies. The DOT regulations list the reportable quantities for each type of waste that may be processed at the Colfax facility.

3. Hurricane Procedures

The purpose of this section of the procedure is to reduce, to the extent possible, the likelihood of injury to personnel, damage to property or loss of production due to a hurricane. Although in most cases when a hurricane hits the coastal areas, significant weakening occurs prior to reaching the Colfax area, there are occasions when hurricanes can produce very strong winds and torrential rainfall in the area of the facility. For this reason, these procedures are considered necessary. The hurricane season in the Atlantic, Caribbean, and Gulf of Mexico runs from June 1-November 30 of each year.

In general, the approach will be to take preliminary steps to minimize damage due to winds

and flooding and then, if the hurricane approaches, curtail operations in such a manner as to have the facility in the safest condition under the circumstances.

Included in these plans is a shut down schedule for the facility. This is a guide and will be adjusted or modified to best meet the conditions existing at the time.

Food and sleeping accommodations will be provided for those required to remain at the facility on a continuous basis, if deemed necessary by the Emergency Coordinator.

To efficiently carry out all of these hurricane emergency plans, certain people have been given special hurricane emergency assignments as indicated on the following pages.

Definitions:

Hurricane Watch - means a hurricane may threaten an area within 24-48 hours.

Hurricane Warning - means a hurricane is expected to strike an area within 24 hours.

National Hurricane Center - means the agency responsible for issuing advisories concerning hurricanes and other tropical systems.

Weather Bureau Report - means the official National Weather Service or similar agency that provides weather reports and guidance generally issued at four hour intervals by National Weather Service in New Orleans, Louisiana

a. Phase I (Beginning of Season)

1. Survey all guy wires and need for any wires (temporary buildings).

2. Survey drainage and make sure all sewers and drainage areas are in good order. Make sure any sump pumps work.

3. Survey all emergency generators and standby equipment.

4. Survey all metal coverings and roofing for likelihood of being blown loose and have necessary repairs made.

5. Check portable generators for operability. Store in an accessible area.

b. Phase II (Hurricane Watch 24-48 Hours in Advance)

1. General clean up campaign. Eliminate or secure all loose objects.

2. Survey all metal coverings and roofing for likelihood of being blown loose and have necessary repairs made.

3. Survey all guy wires and need for guy wires (temporary buildings, etc.).

4. Survey all emergency generators and standby equipment.

5. Survey drainage and make sure all sewers are draining and in good order.

6. Determine need for air compressor.

7. Ample supply of flashlights and batteries should be assured.

8. Since the facility currently has only mobile offices, the plant will be shut down and employees sent home in the event that hurricane-force winds are anticipated.

9. Contractors working in the plant will be required to clean up their construction area (remove scaffold boards, tie down portable buildings, etc.).

10. The Facility Manager or designated alternate, will see to the coordination of all hurricane preparations and, when necessary, facility shutdown.

c. Phase III (Hurricane Warning - 12 Hours in Advance)

1. Secure all containers, scaffold material, etc., that could be blown by wind. When feasible, tie individual items into large bundles or groups to help prevent movement from the wind.

2. Tie down all portable buildings, especially in the vicinity of critical equipment such as transformer stations.

3. All booms, cranes, dock booms, etc., should be lowered and secured. All gantries should be secured.

4. Spot portable generators at maintenance building.

5. Tape all glass that has both dimensions larger than 18".

6. Fill all trucks and other equipment with fuel. (Cannot pump gasoline

during power failure.) Fill 55-gallon containers and have hand pumps available.

7. Emergency drinking water should be stored.

8. The course and speed of the hurricane will be monitored by the Facility Manager. When it becomes apparent that a hurricane will move into the Colfax area, the following steps will be taken:

   - About eight (8) hours before the hurricane is expected to hit, volunteers will be called to the facility to begin preparation of facility shutdown.

   - About six (6) hours before the hurricane-force winds are expected to hit, the order to shut down the facility will be given by the Facility Manager. At this time, the shutdown plans will go into effect.

   - The loss of electrical power during the hurricane is to be expected.

   - The office personnel will cover equipment to protect them from windows blowing out or leaking roofs. Offices will be expected to get wet, so efforts will be made to store papers and books in appropriate places.

9. Operating personnel at the plant will be released at least two (2) hours prior to a hurricane hitting the area.

IV. HAZARDOUS WASTE EMERGENCY COORDINATORS

Clean Harbors Colfax, LLC maintains a list of employees who are capable of carrying out the responsibilities of Emergency Coordinator at all times in the event of an emergency. A primary Emergency Coordinator has been designated from this list and is responsible for coordinating emergency response measures. In the event the primary Emergency Coordinator is not available, a designated alternate Emergency Coordinator will be responsible for coordinating all emergency response measures. A designated Emergency Coordinator will be at the Clean Harbors Colfax, LLC facility at all times or will be available on an on-call basis.

The first person to be called during an emergency will be the primary Emergency Coordinator. If the primary Emergency Coordinator is unavailable, the alternate Emergency Coordinator will act as Emergency Coordinator and will be responsible for coordinating the emergency response measures. In the event of an emergency, the Emergency Coordinator responding to the emergency must call all others on the following list:

Primary Emergency Coordinator

Jim Gallion
General Manager

Home Address:	9726 Hwy 8 Colfax, LA71417
Work Phone:	318-627-3443
Home Phone:	318-627-2961
Mobile:	318-201-6602

Alternate Emergency Coordinators

Ken Michels
Operations Manager

Home Address:	375 Barron Road Pollock, LA 71467
Work Phone:	318-627-3443
Home Phone:	318-765-9691
Mobile:	318-201-6603

David Lasyone
Explosive Technician Supervisor

Home Address:	126 O'Quinn Spur Road Colfax, LA 71417
Work Phone:	318-627-3443
Home Phone:	318-627-3771

A. Responsibilities and Duties

The Emergency Coordinator or alternate is responsible for insuring that the Contingency Plan is implemented during an emergency situation and has complete authority from Clean Harbors Colfax, LLC to commit funds necessary to carry out any emergency procedure. The Emergency Coordinator determines, by report or actual observation, if an emergency exists at a hazardous waste facility. If an emergency exists, the Emergency Coordinator has the responsibility to:

1. Activate communication system to notify all plant personnel;

2. Notify appropriate emergency response and regulatory agencies;

3. Immediately identify the character, exact source, amount and extent of area of any released materials;

4. Assess hazard to human health or the environment due to direct and indirect effects of any toxic, irritating or asphyxiating gases that are generated or the effects of any hazardous surface waste run-off from water or chemical agents used to control fire and heat-induced explosions.

5. If the Emergency Coordinator believes the emergency could threaten human health or the environment outside Clean Harbors Colfax, LLC property, he must immediately:

   Notify the Louisiana Department of Environmental Quality Emergency Response Section and provide his name and telephone number, the name and address of the facility, time and type of incident, name and quantity of material(s) involved, the extent of injuries, if any, and the possible hazards to human health or the environment outside the plant. If evacuation of local areas may be advisable, immediately notify the appropriate local authorities;

6. Implement all measures necessary to ensure that fires, explosions and releases do not occur or spread to other hazardous wastes at the plant. These measures may include stopping operations, collecting and containing released waste and removing or isolating containers;

7. If the plant stops operation in response to a fire, explosion or release, take measures necessary to monitor the facility;

8. Directly following the emergency, provide for the treatment, storage or disposal of recovered waste, contaminated soil, surface water or other contaminated material resulting from the emergency;

9. Ensure that clean-up is complete before managing any waste that may be incompatible with the released waste;

10. Insure that all emergency equipment is cleaned and fit for use before operations are resumed.

After the emergency, the Emergency Coordinator is responsible for certain reporting requirements. The Louisiana Department of Environmental Quality and appropriate state and local authorities must be notified that the plant is in compliance before operations are resumed. It must be noted in the Clean Harbors Colfax, LLC operating record the time, date and details of the emergency. Also, within 15 days of an emergency requiring implementation of the Contingency Plan, a written report must be submitted to the Louisiana Department of Environmental Quality which includes the following information:

1. Name, address and telephone number of owner;
2. Name, address and telephone number of plant;
3. Date, time and type of incident;
4. Name and quantity of material(s) involved;
5. The extent of injuries, if any;
6. An assessment of actual or potential hazards to human health or the environment, where applicable, and;
7. Estimated quantity and disposition of recovered material that resulted from the emergency.

B. Emergency Contacts

The following table lists the organizations that can be contacted by the Emergency Coordinator in the event of an emergency.

Emergency	Organization	Number
Injury/ Illness	Grant Medical Center Colfax, LA	318-627-3101
	Rapides Regional Hospital	318-473-3000

	Med Express Colfax, LA (ambulance/helicopter)	911
	Acadian Ambulance Alexandria, LA	911
Fire or Explosion	LA DEQ Baton Rouge, LA	225-219-3181
	Grant Parish Sheriff	318-627-3261 or 911
	Colfax Volunteer Fire Department	911
RQ Spill	Grant Parish LA Emergency Preparedness Committee	318-627-3261
	Louisiana State Police Hazardous Materials Unit	225-925-6925
	LA DEQ	225-219-3181

V. EMERGENCY EQUIPMENT

The following sections describe the emergency equipment available at Clean Harbors Colfax, LLC, which could be used during an emergency. Each list of emergency equipment can be found in the appropriate sections of the appendices. The location of the emergency equipment at the facility is shown on Figure 2.

A. Fire Fighting Equipment

The list of fire fighting equipment and fire fighting systems, the locations and capabilities at Clean Harbors Colfax, LLC is located in Appendix A.

B. Spill Control Equipment

The list of the equipment available at Clean Harbors Colfax, LLC that may be used in the event of a hazardous waste spill is located in Appendix B.

C. Communications and Alarm Systems

Clean Harbors Colfax, LLC maintains an internal communications system for notification and instruction of personnel in case of an emergency. The communications system consists of an internal telephone network and two-way radios. In the event of an emergency, facility personnel have access to the communications system at the following locations:

Control Room (near burn pad)
Administrative Office Building
Guard House

Two-way radios are carried by operations personnel for communications purposes.

D. Decontamination Equipment

The list of the equipment available at Clean Harbors Colfax, LLC that may be used in the event of a hazardous waste spill can be found in Appendix C.

Employees will utilize the equipment listed as needed to ensure that any impacted areas that become contaminated are properly decontaminated. If there is a liquid spill onto a concrete area, the spilled material will be covered with absorbent and then cleaned up using shovels, brooms, or other tools as appropriate. Spills of solid materials onto concrete areas will be removed using brooms, shovels, or other appropriate tools. Concrete areas may be pressure washed to remove any remaining residues if necessary. Any spills that occur outside of containment areas will be removed by over-excavating until all visible waste is removed.

All personnel who handle waste materials will utilize the proper PPE to minimize direct contact with waste. In the event of direct contact with waste, the employee will utilize the eye wash units or other water sources to remove contaminants.

All clean up materials and used PPE will be properly disposed in accordance with state and federal hazardous waste management regulations.

VI. CLEAN HARBORS COLFAX, LLC EVACUATION PLAN

An evacuation plan has been developed for use in emergency situations when personnel must leave a portion of the plant due to a danger to human health. Sufficient aisle space is maintained at the facility to allow unobstructed movement of personnel, fire protection equipment and decontamination equipment to any area of the facility. Clean Harbors Colfax, LLC personnel will be notified to evacuate the facility via two-way radios in the event an emergency situation warrants evacuation. Employees shall leave the plant through the exit gate and proceed to the administrative office building. This point was selected as the primary rendezvous area, and it is sufficiently large enough to accommodate a mass exit of the entire work force. The entrance gate to the burn site has been chosen as a secondary rendezvous area. Figure 3 provides a diagram of the primary and secondary evacuation routes and rendezvous point.

Upon arrival at the rendezvous point, all supervisors will locate those employees assigned to their area. Missing employees will be reported to the Emergency Coordinator. The guard will proceed to the rendezvous point with the visitor sign-in logbook noting the on-site visitors. Any missing visitor will be reported to the Emergency Coordinator.

Although the facility does not anticipate that its operations could ever necessitate any evacuations of the surrounding community, if the situation warrants, the facility will coordinate any external evacuations with the Grant Parish Sheriff's Department who will notify any surrounding residents of the need to evacuate. Due to the size of the facility and the wooded buffer zone surrounding the property, it is unlikely that any such evacuation will ever be needed.

VII. COORDINATION WITH OUTSIDE EMERGENCY AGENCIES

Clean Harbors Colfax, LLC has contacted and has made arrangements with outside emergency response agencies in order that these agencies become familiar with the facility. These arrangements include coordination with the Louisiana State Police Emergency Response Team in the event of a serious hazardous waste emergency at the plant that requires their assistance. The Colfax Clinic in Colfax, LA and Rapides Regional Hospital in Alexandria, LA will be provided with a description of the types of hazardous waste handled at Clean Harbors Colfax, LLC in order to be prepared for any injuries associated with a hazardous waste accident.

A. Arrangements with Police, Fire Department and Emergency Response Teams

Copies of the Clean Harbors Colfax, LLC Contingency Plan will be supplied to the outside emergency agencies listed below. Written requests have been made to these agencies for assistance in the event an emergency situation occurs at the facility. Furthermore, these agencies have been offered the opportunity to visit the plant to become familiar with the plant layout, the hazardous waste facility locations and the emergency response systems. In addition to the written requests, meetings have been held with the local emergency response agencies to better explain and familiarize these agencies with the safety plans at Clean Harbors Colfax, LLC.

Louisiana Department of Environmental Quality
Hazardous Waste Division
P.O. Box 4314
Baton Rouge, LA 70821-4314

Grant Medical Center
340 Webb Smith Drive
Colfax, LA 71417

Grant Parish Sheriff Department
P.O. Box 223
Colfax, LA 71417

Colfax Volunteer Fire Department
Colfax, LA 71417

Louisiana State Police
Emergency Response Section
P.O. Box 66614
Baton Rouge, LA 70896

Grant Parish Office of
Louisiana Emergency Preparedness Committee
(LEPC - Old Civil Defense)
P.O. Box 223
Colfax, LA 71417

B. Designated Primary Authority

In the event of an emergency at the Clean Harbors Colfax, LLC site requiring outside assistance, the designated primary on-scene coordinator will be an emergency response team member from the Louisiana Department of Environmental Quality's Emergency Response Team.

VIII. AMENDMENTS TO THE CONTINGENCY PLAN

This Contingency Plan will be reviewed and immediately amended, if necessary, whenever:

1. The Contingency Plan fails in an emergency.

2. The Clean Harbors Colfax, LLC facility changes its design, construction, operations, maintenance or other circumstances in a way that materially increases the potential for fires, explosions or releases of hazardous waste or hazardous waste constituents.

3. The list of Emergency Coordinators changes.

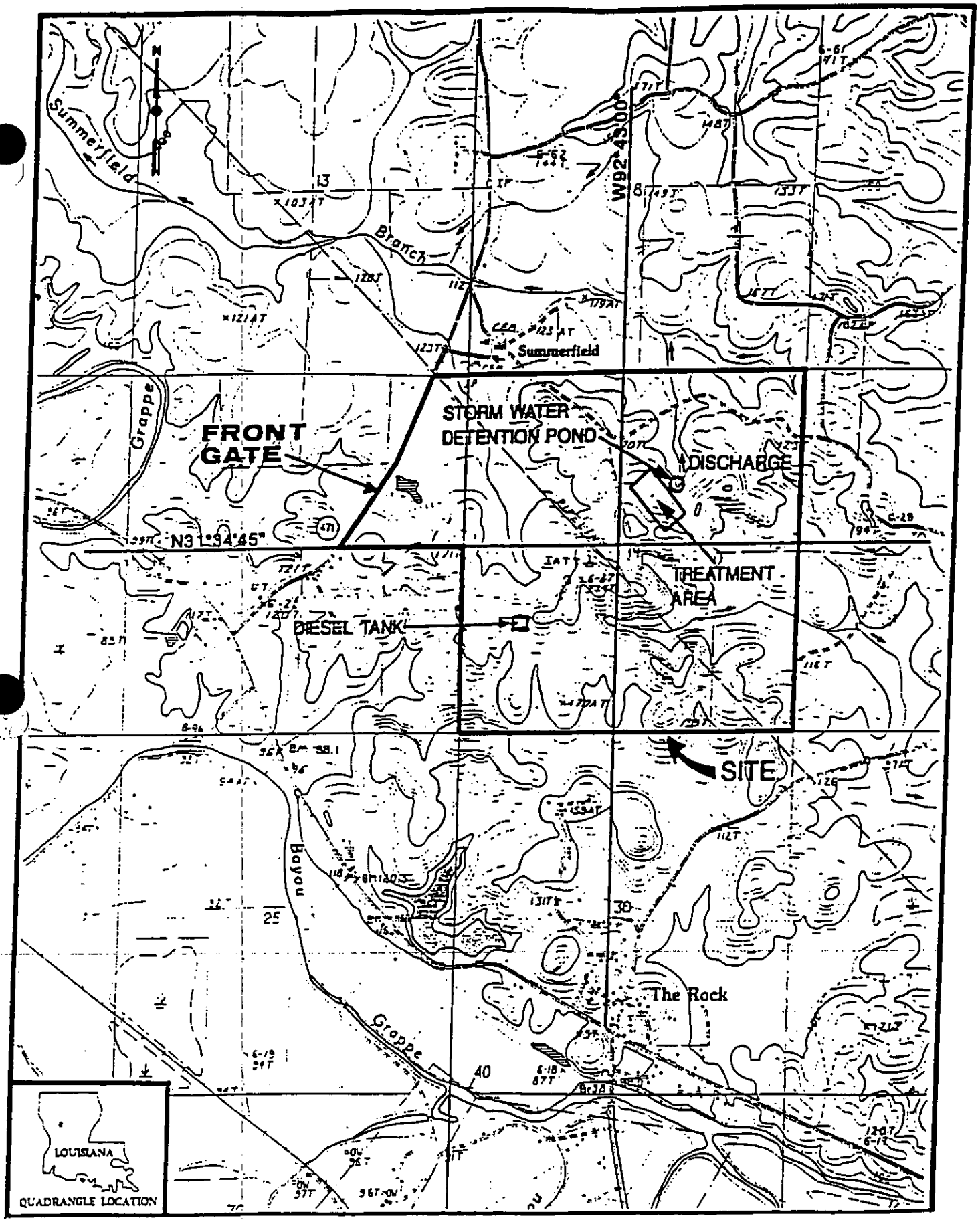
4. The list of emergency equipment changes.

5. Changes occur to the response necessary in an emergency.

Whenever there has been an approved amendment to the Contingency Plan, all official copies of the Plan must be updated. For the list of official copies, refer to Page 5 of this Plan.

FIGURE 1

SITE LOCATION MAP

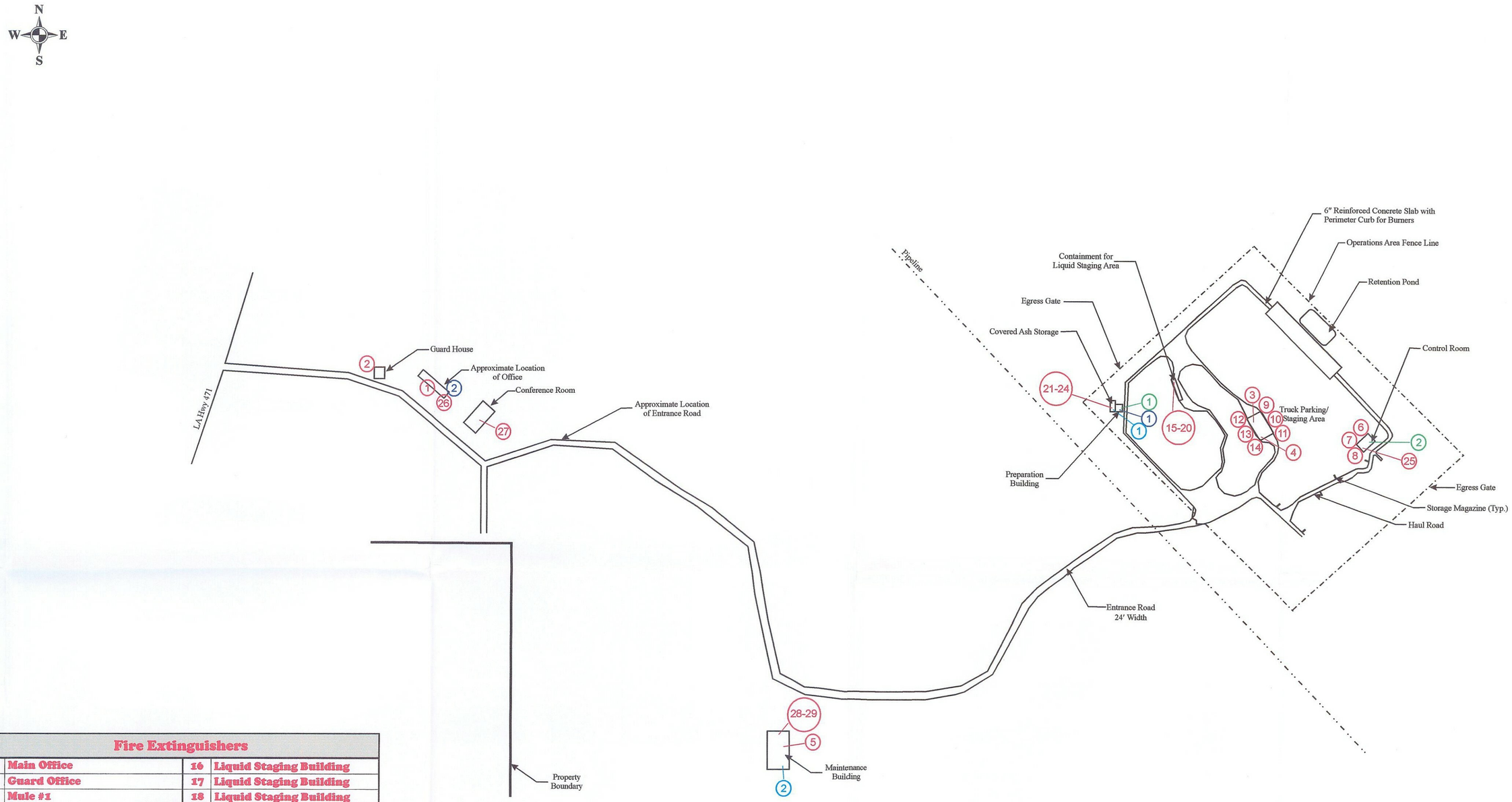


COLFAX QUAD

FIGURE 1
SITE LOCATION MAP
SCALE:1"=2000'

FIGURE 2

LOCATION OF EMERGENCY EQUIPMENT



Fire Extinguishers			
1	Main Office	16	Liquid Staging Building
2	Guard Office	17	Liquid Staging Building
3	Mule #1	18	Liquid Staging Building
4	Mule #2	19	Liquid Staging Building
5	Tractor	20	Liquid Staging Building
6	Forklift	21	New Preparation Building
7	Control Building	22	New Preparation Building
8	Control Building Spare	23	New Preparation Building
9	Truck Staging Building	24	New Preparation Building
10	Truck Staging Building	25	Front End Loader
11	Truck Staging Building	26	Break Room
12	Truck Staging Building	27	Conference Room
13	Truck Staging Building	28	Maintenance Building
14	Truck Staging Building	29	Maintenance Building
15	Liquid Staging Building		

Eyewash Units	
1	Preparation Building
2	Maintenance Building

PPE Supply	
1	Preparation Building
2	Control Building

First Aid Kits	
1	Preparation Building
2	Office

ECO EcoScience Resource Group, L.L.C.
Evolving to Meet Tomorrow's Challenges

SCALE
0 100 200 400 600

LEGEND
(color-coded to match table)
Fire Extinguishers (red)
Emergency Eyewash (blue)
PPE Supply (green)
Emergency Eyewash (purple)

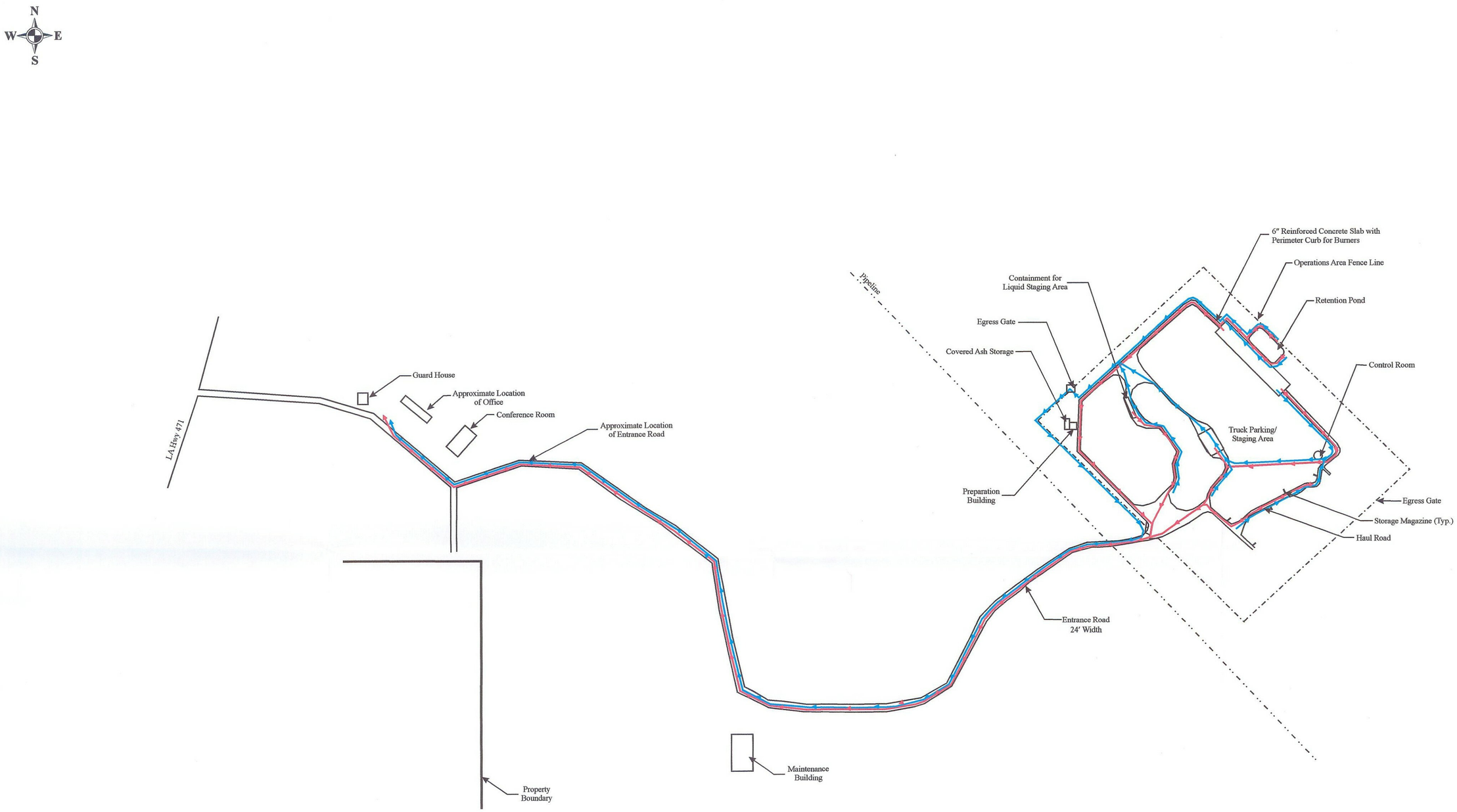
DATE	DRAWN BY	JOB NUMBER
12/15/04	SNM	11705
	APPROVED BY	FIGURE NUMBER
	PL	2 Contingency Plan

CleanHarbors

EMERGENCY EQUIPMENT LOCATIONS
CLEAN HARBORS
COLFAX, LA

FIGURE 3

EVACUATION PLAN



EcoScience Resource Group, L.L.C.
Evolving to Meet Tomorrow's Challenges

SCALE

0 100 200 400 600

LEGEND

Primary Evacuation Route

Secondary Evacuation Route

DATE	DRAWN BY	JOB NUMBER
12/15/04	SNM	11705
	APPROVED BY	FIGURE NUMBER
	PL	3 Contingency Plan

CleanHarbors

PRIMARY AND SECONDARY EVACUATION ROUTES
CLEAN HARBORS
COLFAX, LA

APPENDIX A

LIST OF FIRE FIGHTING EQUIPMENT

Quantity	Equipment	Location	Capability
31*	ABC Dry Chemical	Throughout Plant Area	Ten and twenty Pound units to be used on ABC type fires

*Including one each in the two pick-up trucks.

APPENDIX B

LIST OF SPILL CONTROL EQUIPMENT

Quantity	Equipment	Location	Capability
1	Forklift	Mobile	Can be dedicated immediately to remove contaminated material
1	Front End Loader	Mobile	Can be dedicated immediately to remove contaminated material or dig containment areas
1	Tractor	Mobile	Can be dedicated immediately to farm blade and build fire disc lanes
Multi	Shovels	Preparation Building	Will be used for spill containment and cleanup
3	Spill Kits*	Truck Staging and Truck Parking	Will be used for spill containment and cleanup
Multi	Spill Kit Replacements	Preparation Building	Replace materials for those used

*Spill kits consist of absorbent, containment booms, and a poly shovel.

APPENDIX C

DECONTAMINATION EQUIPMENT

Quantity	Equipment	Location(s)	Capability
6	First Aid Kits	Administrative Office Prep Building Pickup Trucks	This equipment intended for minor injuries only.
3	Utility Vehicles	Mobile	Emergency transport
2	Eyewash	Preparation and Maintenance Building	To remove chemical contaminants if needed.
1	Pressure Washer	Maintenance Building	To clean off any contaminated equipment

Protective Equipment

The following protective equipment is available in the Preparation Building and/or the Control Room for Clean Harbors Colfax, LLC employees during a hazardous waste emergency.

Disposable suits (Tyveks)
Hard hats
Cartridge air purifying respirators (full-face)
Appropriate Cartridges for Respirators
Gloves with chemical protection
Rubber boots with chemical protection
Safety goggles and glasses
Flame Retardant Clothing
Face Shields

ARRANGEMENTS WITH LOCAL AUTHORITIES

Sheriff L.R. "Pops" Hataway
Grant Parish Sheriff's Department
220 Cedar Street
Colfax, Louisiana 71417

I, the undersigned, have previously received a copy of the Contingency Plan for the hazardous waste management facility operated by Clean Harbors Colfax, LLC located at 3763 Highway 471, Colfax, LA. I understand that this plan contains information concerning the layout of the facility (including roads and evacuation routes) and the procedures to be undertaken at the facility in the event of an emergency situation.

It is agreed that the organization listed above will, as appropriate, respond to and/or provide emergency services for Clean Harbors Colfax, LLC.

Signature: L.R. Pops Hataway Title: Sheriff

Date Signed: 10-28-04

lh041019

Fire Chief
Colfax Fire Department
405 8th Street
Colfax, Louisiana 71417

I, the undersigned, have previously received a copy of the Contingency Plan for the hazardous waste management facility operated by Clean Harbors Colfax, LLC located at 3763 Highway 471, Colfax, LA. I understand that this plan contains information concerning the layout of the facility (including roads and evacuation routes) and the procedures to be undertaken at the facility in the event of an emergency situation.

It is agreed that the organization listed above will, as appropriate, respond to and/or provide emergency services for Clean Harbors Colfax, LLC.

Signature: Patricia A. Mosley Title: Adm. Asst.

Date Signed: October 21, 2004

cf041019

Manager/Administrator
Med Express
390 Griffith Street
Pineville, Louisiana 71360

I, the undersigned, have previously received a copy of the Contingency Plan for the hazardous waste management facility operated by Clean Harbors Colfax, LLC located at 3763 Highway 471, Colfax, LA. I understand that this plan contains information concerning the layout of the facility (including roads and evacuation routes) and the procedures to be undertaken at the facility in the event of an emergency situation.

It is agreed that the organization listed above will, as appropriate, respond to and/or provide emergency services for Clean Harbors Colfax, LLC.

Signature: _____ Title: DIRECTOR OF EMS

Date Signed: 10/27/04

mc041019

Hospital Administrator
Rapides Regional Hospital
211 Fourth Street
Alexandria, Louisiana 71301

I, the undersigned, have previously received a copy of the Contingency Plan for the hazardous waste management facility operated by Clean Harbors Colfax, LLC located at 3763 Highway 471, Colfax, LA. I understand that this plan contains information concerning the layout of the facility (including roads and evacuation routes) and the procedures to be undertaken at the facility in the event of an emergency situation.

It is agreed that the organization listed above will, as appropriate, respond to and/or provide emergency services for Clean Harbors Colfax, LLC.

Signature: _____ Title: CEO

Date Signed: 11/16/04

gt 10-22-04

m041019

APPENDIX K

TRAINING PLAN

APPENDIX K

CLEAN HARBORS COLFAX, LLC

TRAINING PLAN

Training Program

In accordance with the regulatory requirements of the Louisiana Administrative Code (LAC) Title 33 Part V.1515, Clean Harbors Colfax, LLC has developed this Training Program, and it is an integral part of the Part II Permit Application for its facility located near Colfax, Louisiana. A copy of this program is available at the facility at all times.

1.0 INTRODUCTION

Proper training is essential for the safety and well being of all employees and the surrounding community as well as for the efficient and safe operation of all facility processes. Training helps to ensure rapid and effective response to emergency situations. It is the policy of Clean Harbors Colfax, LLC that all employees be trained to perform in a manner that emphasizes accident prevention to safeguard human health and the environment.

1.1 General Training Concept

The training program is designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- Key parameter for automatic waste feed cut-off systems;
- Communications or alarm systems;
- Responses to fires or explosions;
- Responses to surface soils, surface water, and groundwater contamination incidents; and
- Shutdown of operations.

Each new employee is trained in the general orientation and operation of the facility. A training program related to the specified duties of each job function is specifically tailored for the position. No employee is permitted to work unsupervised until he has successfully completed all elements of the tailored training program. A certification of training completion will occur within six months of the new employee's entry into a specific job. In addition, every employee will participate in continuing training as determined necessary by the company to maintain proficiency, to learn new techniques and procedures, and to reinforce safety and quality consciousness.

Training records are maintained in accordance with applicable regulatory requirements. The records are maintained continuously during an employee's tenure and for a minimum of three years for former employees. At a minimum, each employee's training file will

include the employee's current job title, a written job description, and records documenting the dates and types of training the employee has been provided. The written job description will include detailed information as to the type and amount of introductory and continuing training is required for that job title.

1.2 Program Implementation

Implementation of the training program encompasses:

- Identification of training requirements (for each job)
- Design of training modules and tests
- Selection of qualified instructors
- Employee testing
- Documentation of each training session

Responsibility for the training program rests with the General Manager. He or she, in conjunction with the corporate training personnel, designates qualified instructors, approves the training program content and format, provides the necessary resources, and maintains employee training records.

2.0 FACILITY ORGANIZATION

Training is tailored to prepare the employees to safely and effectively perform the functions of their position. Job descriptions are the key to designing responsibilities and duties of each position, and likewise the specific training necessary to accomplish those duties. Personnel with the following position titles are employed from time to time at this facility:

- General Manager
- Operations Manager
- Operator
- Shared Services Administrator (SSA)

A current facility organization chart is maintained on-site at all times. The position descriptions, including basic function, duties and job requirements presented for each of the above listed position titles are also maintained on-site at all times.

3.0 TRAINING PROGRAM

3.1 Orientation

All new employees participate in an orientation program designed to familiarize the employee with their new surroundings. To ensure that all appropriate topics are covered, an

orientation checklist is completed and signed by all participating in the orientation. The completed checklist is then placed in the employee's personnel training file as a permanent record.

The following is a description of the Orientation Training:

1. Completion of all applicable personnel forms.
2. Discussion with the General Manager
   a. Welcome
   b. Organization and goals of:
      (i) Facility
      (ii) Company

3. Policies and Benefits
4. Safety
   a. Safety Policy
   b. Individual Responsibility
   c. Accident and Incident Reporting
   d. Issue and Discuss Safety Equipment (as appropriate)
      (i) Safety Glasses
      (ii) Respirator
      (iii) Gloves
      (iv) Rain Gear
      (v) Rubber Boots

5. Regulatory Review
6. Job Description and Duties (as applicable)
7. Facility Tour
   a. Storage Magazines
   b. Preparation Building
   c. Unloading Area
   d. Burn Pad

3.2 Safety

Clean Harbors Colfax, LLC has a policy that no job shall be performed if that job endangers the safety or health of any person. The company ensures that all employees are trained to safely perform assigned tasks. All workers assigned to work in an area of the facility where the potential exists for exposure to hazardous waste must complete an intense safety training as mandated by OSHA 29 CFR 1910.120. This training consists of a minimum of 24 hours, and up to 40 hours of classroom activity followed by 24 hours of On-The-Job supervised field activity. In addition to this initial training, employees working in any

hazardous area receive an additional 8 hours of refresher training (at a minimum) annually thereafter. A list of topics covered, but not limited to, is as follows:

1. Possible Site Hazards
   a. Chemical Exposure
   b. Fire and Explosion
   c. Oxygen Deficiency
   d. Biological Hazards
   e. Electrical Hazards
   f. Heat and Cold Emergencies

2. Emergency Response
   a. Planning and Organization
   b. Site Control
   c. Emergency Contingency Plan
   d. Emergency Equipment
   e. Emergency Shutdown Procedures
   f. Decontamination

3. Medical Program and Health Monitoring
4. Use and Care of Personnel Protection Equipment
5. First Aid and Cardio-Pulmonary-Resuscitation
6. Handling Hazardous Waste
7. Confined Space Entry
8. Spill Response and Corrective Measures

All supervisory personnel are required to have 8 hours of supervisory training in the related safety training areas in addition to the above. Within six months of an employee's initial assignment to a job, this training will be conducted and documented in the employee's training file.

All personnel are benefited by additional safety training through safety meetings and discussion, provided by management on a regular basis. On-The-Job training is continuous and ongoing, to further reinforce the emphasis of safety.

3.3 Environmental Protection

Second only to employee safety is the commitment by Clean Harbors Colfax, LLC to environmental protection. All employees are trained to perform assigned tasks in a safe, environmentally sound manner. Employees are instructed as to the most current standards and regulations in regard to the waste treatment operation conducted at the Colfax facility.

Additional training is provided to ensure that in the unlikely event of an emergency, personnel are knowledgeable as to the proper procedure to follow regarding corrective action as well as in reporting and documenting these circumstances. All employees are instructed in necessary emergency cleanup operations and decontamination .

3.4 Operations

The General Manager is responsible for ensuring that each operations employee has been properly trained and can demonstrate knowledge and proficiency in all areas of his job assignment. Each operations employee shall complete an annual review of the Standard Operating Procedures necessary for his/her particular job assignment.

1. Operator
   a. General Safety
      (l) Review of Facility Safety Rule and Regulations
      (2) Use and Location of Fire Extinguishers
      (3) Location and Operation of Emergency Showers and Eye Wash Stations
   b. Equipment Operation
      (1) Truck Unloading Area
      (2) Preparation Building/Associated Equipment
      (3) Burn Pad Units
   c. Environmental Compliance
      (l) Laws and Regulations
      (2) Site Permit Requirements
      (3) Compliance Methods
      (4) Specific Duties
   d. Material Familiarization
      (l) Waste Classification
      (2) Review Waste Safety Sheets
   e. Emergency Procedures (Review of Contingency Plan)
      (l) Fire and/or Explosion
      (2) Injury
      (3) Spills
      (4) Surface Soils, Surface Water, and Groundwater Contamination
      (5) Shutdown of Operations

In addition to the above training topics, all employees who manage wastes that may be subject to violent reactions are trained to recognize this possibility and to ensure that in these cases, only small quantities of such wastes are to be burned at a given time.

3.5 Clerical/Shared Services Administrator

All clerical employees will be trained in those areas that are deemed to be desirable to complement the basic secretarial and clerical skills already possessed. The General Manager is responsible for ensuring that all secretarial and clerical employees are properly trained to efficiently and courteously perform all assigned duties.

1. Telephone Usage and Etiquette
   - (a) Proper Identification Upon Answering Telephones
   - (b) Proper Emergency Notification Procedures
2. Form Recognition
   - (a) Standard Forms Utilized by the Company
   - (b) Various Waste Identification Forms
3. Required Record Keeping
   - (a) Clean Harbors Records Management
   - (b) State Records
   - (c) Reports/Operating Record
     - (1) Type of Documents Maintained/Required
     - (2) Dates Required
     - (3) Distribution
4. Filing
5. Environmental Compliance
   - (a) Laws and Regulations
   - (b) Site Permit Requirements
   - (c) Compliance Methods
   - (d) Specific Duties

3.6 Supervisory

ALL Supervisory Employees will be trained to perform effectively in all areas of their assigned jobs. Additionally, each supervisor will be trained so that he is knowledgeable, experienced, and capable of training other employees. The General Manager is responsible for ensuring that each supervisor and staff employee is properly trained.

1. General Safety
   - (a) Review of Facility Safety Rules and Regulations
   - (b) Use of Personal Protective Equipment
   - (c) Use and Location of Fire Extinguishers
   - (d) Location and Operation of Emergency Showers and Eye Wash Stations
2. Emergency Procedures (Contingency Plan)
   - (a) Fire and/or Explosion
   - (b) Injury

(c) Spills
(d) Surface Soils, Surface Water, and Groundwater Contamination
(e) Shutdown of Operations

3. Regulatory Familiarization
   (a) Review of Federal RCRA Regulations
   (b) Review of OSHA Regulations
   (c) Review of Louisiana DEQ Regulations
   (d) Review of all Site Permit Requirements
   (e) Review of ATF Regulations
4. Material Familiarization
   (a) Waste Material Classification
   (b) Waste Safety Sheets and/or MSDS Information
5. Supervisory Techniques (A series of instruction courses completed as needed to strengthen weaknesses and complement strengths.)
6. Safety Training for Supervisors (A programmed instruction course to be completed under the leadership of the Health and Safety Department)
7. Accident - Incident Investigation (A course to be presented by the Health and Safety Department covering the techniques of investigation and report writing)
8. Company Policies
   (a) Review of Procedures Manual
   (b) Benefit Programs

3.7 Contractors/Outside Emergency Response Personnel

All contractors and/or outside emergency response personnel (to the extent applicable) will be provided safety indoctrination to ensure the continued safe operations of the facility. Outside emergency personnel will also be periodically invited to visit the facility for tours of the site and informational training sessions to familiarize them with the layout of the facility, the evacuation routes, and the locations of on-site emergency response equipment. The General Manager will be responsible for ensuring that all contractor employees and emergency response personnel have been properly informed in all aspects of facility safety.

1. Facility Safety Policies and Procedures - The contractor's supervisor and/or foreman, along with all other contract personnel, will be provided a copy of the facility's safety policy and pertinent procedures to ensure safety.

2. Emergency Procedures - The contractor's supervisor and/or foreman, along with all other contract personnel, will be made familiar with Facility Contingency Plan.

3. Waste Safety Sheets - Copies of the Waste Safety Sheets, MSDS's, or other similar documents that include safety information will be made available for contractors based upon potential exposure. The General Manager will be responsible for

providing this information to all contract employees.

4. Emergency Equipment - The General Manager will inform all contractors as well as outside emergency response personnel regarding the location of fire extinguishers, safety showers, emergency eyewash stations, and first aid materials. Contractors will be provided a plot plan showing the location of all emergency equipment.

5. Security - The General Manager will provide security instructions to all contractors.

6. Environmental Compliance - The General Manager or the Compliance Manager will provide a compliance overview to all contractors.

3.8 Regulatory Requirements

Clean Harbors Colfax, LLC will provide training programs to all affected employees as required by various regulatory agencies. The following is a listing of training that is presently required by regulations.

1. OSHA Requirements
   - (a) 24 or 40 Hour Initial Hazardous Waste Training (in accordance with 29 CFR 1910)
   - (b) Respiratory Protection and Fit Testing
   - (c) Confined Space Entry
   - (d) Handling Carcinogenic Compounds
   - (e) Electrical Safety
   - (f) Moveable Vehicle including Fork Truck Training
   - (g) Emergency Response Procedures (in accordance with 29 CFR 1910)
   - (h) Welding and Cutting Operations
   - (i) 8-Hour Annual Refresher Training (in accordance with 29 CFR 1910)
2. DOT Requirements
   - (a) Equipment Inspection
   - (b) Notification of Deficiency
3. RCRA Requirements
   - (a) Emergency Equipment
     - i. Location
     - ii. Proper Usage
     - iii. Inspection Procedures
     - iv. Repair or Replacement Procedures
   - (b) Emergency Operations Shutdown
     - i. Location
     - ii. Proper Usage

iii. Inspection Procedures
iv. Repair or Replacement Procedures

(c) Emergency Response
i. Contingency Plan
ii. Spill Prevention
iii. Spill Remediation, when necessary

(d) Monitoring Equipment, Communications
i. Location
ii. Proper Usage
iii. Inspection Procedures
iv. Repair or Replacement Procedures

(e) Annual Review of Initial Training (in accordance with LDEQ and RCRA)

4. ATF Regulatory Review
(a) Transportation of Explosives
(b) Storage of Explosives
(c) Thermal Treatment of Explosives

5. Waste Minimization

APPENDIX L

CLOSURE PLAN

CLEAN HARBORS COLFAX, LLC

CLOSURE PLAN

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I. PURPOSE

The primary purpose of this plan is to provide a comprehensive analysis of the resources that will be needed to conduct closure and post-closure activities at Clean Harbors Colfax, LLC. In addition, this plan is an integral part of the RCRA Part B Permit for the facility. This plan also provides the Louisiana Department of Environmental Quality (LDEQ) and the U.S. Environmental Protection Agency with documentation of Clean Harbors' intentions, preparations, and capabilities to properly close its thermal treatment facility near Colfax, Louisiana. The plan demonstrates and ensures the technical and financial capabilities of Clean Harbors Colfax, LLC as the owner and operator to carry out closure requirements. This plan describes closure in writing and in detail, so that independently planned steps can be anticipated, enforced, and recorded as actual work progresses. Finally, this plan is comprehensive so that closure work meet the following criteria:

- Safe Completion of Closure Activities - Designed to pose no threat of illness or injury to workers involved in closure activities, to persons using or occupying surrounding property, or to outsiders who may inadvertently approach the facility during closure.

- Orderly and Timely Completion of Closure Activities - Follows preplanned and agreed upon schedules for beginning and completing each step of closure.

- Environmental Soundness of Closure Activities - Designed to present no current or future endangerment to human health or the environment by ensuring that there is no escape of hazardous wastes into the environment.

- 100% RCRA Compliant Closure Activities - Meets requirements of the Hazardous Waste Management Regulations as described by the Louisiana Administrative Code (LAC) and RCRA.

In the unlikely event that all or some portion of the structures and media cannot be adequately decontaminated by way of the means described herein, the facility will propose contingent methodology at such time as it becomes necessary. Prior to implementing such changes to the Closure Plan, the facility will obtain the necessary approvals from LDEQ in accordance with the requirements of LAC 33:V.Chapter 35.

II. SCOPE

This closure plan was developed to describe the activities necessary to close the RCRA-permitted units located at the facility. In the development of the closure process for the subject RCRA units, the facility has assumed that the thermal treatment units can be used for the disposal of all wastes remaining in inventory at the time closure commences as well as some of the waste generated resides as a result of the closure activities. (For cost

purposes, the facility assumed that the on-site treatment activities would be completed by third party personnel.) Closure of the thermal treatment units will occur following the completion of all other RCRA closure activities described in this plan.

Details regarding the scope of the closure of the RCRA units at the facility are described below. Also included is brief summary of the ongoing Risk Based Corrective Action Evaluation Workplan for the "Old Burn Area." Details of the workplan and closure work completed to date are contained in subject workplan (November 1998) in Appendix M of the permit renewal application.

This closure plan includes closure procedures for the storage and treatment units. Detailed closure procedures are presented herein. In addition, brief information regarding the background of the facility and its layout is included below:

A. Site History

The facility initiated operations in June 1985 to assist the Louisiana State Police in treatment of explosives. The hazardous waste management storage units consisted of ATF approved storage magazines. The thermal treatment units were concrete pots or steel troughs located on top of concrete pads.

The facility was contacted by both military and non-military personnel regarding the potential treatment of reactive materials. Reactives and explosives were treated by the facility under a series of Emergency Permits issued by the LDEQ until the final RCRA permit became effective in May 1993.

B. Description of Units

The storage units consist of ten storage magazines that are designed in accordance with requirements established by the Bureau of Alcohol, Tobacco, and Firearms. The magazines are 10 feet by 20 feet in area and 8 feet high. The interior roof, doors, floors, and walls are lined with hardwood paneling (approximately 4 inches thick). Vents are installed in the walls and roofs to permit proper ventilation and to prevent the build-up of extreme heat or pressure.

Liquid storage magazines 8, 9 and 10 are equipped with 12-inch high thresholds at the door openings. The floor vents in these magazines are equipped with 12-inch high extensions.

All magazines are grounded to prevent the occurrence of an accidental fire or explosion from a lightning strike. The doors of the magazines are double locked with 5 tumbler locks and steel hoods. Appendix B of the permit renewal application contains typical cross sections of the magazines.

The thermal treatment area is constructed on a 700' by 130' reinforced concrete slab (6"

thick). The thermal treatment units consist of twenty (20) concrete curbed treatment pads (approximately 16' x 16' x 12 inches high) atop the slab, each equipped with an interchangeable burner assembly. Ten (10) of the burn pads are equipped with a 48-inch diameter by 4-foot tall reinforced concrete culvert topped by a steel cover (14 gauge). The burner assemblies for these ten pads consist of an open 42-inch diameter by 8-inch high steel pan. The other burner assemblies consist of a 6' by 6' square by 20 inches high open steel pan. All metal pans are constructed of 3/16-inch minimum steel thickness. Each of the treatment units is equipped with a retractable roof structure to prevent rainfall accumulation.

The preparation building is 40 feet wide by 40 feet long in plan with a concrete apron at the entrance. There is an L-shaped containment area in the back (approximately 18' x 60' and 10' x 12'). The structure is enclosed on three sides with a roll-up door on the front. The polyethylene washwater tank is located on the perimeter of the main floor area for this unit. The preparation building is supplied with electric power to operate the drill press and band saw used for preparation activities. All electrical switches, motors, controls, and lights conform to the requirements of Class II, Division 2 of the National Electric Code. The building floor plan is shown in Appendix B of the permit renewal application.

A covered truck staging/parking area is provided for overnight parking within the fenced treatment area. The staging/parking area consists of 4 bays constructed of reinforced concrete (approximately 16' x 75' each). Each bay is self-contained with raised curbs and sumps. Appendix B of the permit renewal application shows the foundation plan and details for this unit.

The liquid storage magazines loading/unloading unit is a reinforced concrete secondary containment area (approximately 28' x 75') located adjacent to storage magazines 8, 9 and 10. This area is covered to minimize precipitation accumulation and is designed to contain spilled liquid. The concrete base is sloped toward a centralized sump and raised curbs are located on the perimeter. Appendix B of the permit renewal application shows the foundation plan and details.

The maximum extent of operations that will be active during the life of the facility is the storing of the wastes in the ten storage magazines, ash storage in the ash container storage area, the use of the preparation building, and the treatment of wastes in the twenty open burners. The truck staging and containment areas will only be used for temporary staging of trucks waiting to unload and will not be used to hold waste inventory.

Final closure of the facility will occur when all stored wastes have been treated, treatment by-products have been removed from the site, and all waste management units have been cleaned. The storage magazines and preparation building will remain in service until all stored wastes have been prepared and removed for treatment. The open burners will remain in service until all onsite wastes, storage magazine wood interiors, and spill residues have been treated.

The "Old Burn Area" consisted of ten (10) burn pads and four (4) storage magazines. Operations ceased at the Old Burn Area in 1993 and transferred to the New Burn Area currently in use. Partial closure of this area was completed in 1997. Work included the removal of the burn pads and magazines, excavation of some underlying soils, sampling and analytical testing. Subsequently, a "Risk Based Corrective Action Evaluation Workplan" was submitted to the LDEQ for review and approval in November 1998. Details of the historical and proposed work activities are described in detail in the workplan located in Appendix M of the permit renewal application. This workplan outlined work activities required to complete the site assessment and evaluate the site's risks in accordance with the LDEQ Risk Evaluation/Corrective Action Program (RECAP). The implementation of this workplan will follow its own time schedule and will be completed prior to implementing the facility closure. However, closure cost estimate for this unit are provided in this plan. The workplan should be referenced for closure details. The cost estimate assumes that the results of the RECAP investigation/evaluation will demonstrate that the Old Burn Area in its current condition does not pose an unacceptable threat to human health and the environment and meets the criteria for "no further action at this time."

III. PRE-CLOSURE PREPARATION

A. Waste Scheduling

Generators, transporters, customers, and other parties involved in the shipment of wastes to the facility will be given appropriate notice of impending closure. The Closure Coordinator will ensure that the final shipments are scheduled to allow for disposal prior to the commencement of closure activities.

B. Equipment Inventory

The Closure Coordinator will prepare an equipment inventory, determining the proposed disposition of each item. The inventory will include the extent to which any item will be decontaminated and list the intended destination of any item to be removed from the site.

IV. CLOSURE ACTIVITIES

A. Closure of the Burn Unit and Associated Structures

At closure, the wastes stored in the magazines will be moved to the preparation building, and then the materials will be thermally treated in the burners. Untreated reactive material

spilled during the preparation and treatment procedures will be collected immediately and thermally treated. Ash residue generated from treatment will be collected and containerized for proper disposal. Disposal will comply with the Land Disposal Restrictions contained in LAC 33:V.Chapter 22. The treatment area concrete pad will be cleaned with mechanical sweepers or by manual sweeping and scrubbing, as needed. Residues will be disposed at an appropriate permitted facility.

Subsequent to final treatment and removal of waste, the steel burner assemblies (pans) and retractable roof covers will be dismantled and scrapped (smelter and not for reuse). The concrete burn pads will be removed and disposed at an appropriate permitted facility.

The treatment area concrete pad will then be pressure washed using an industrial detergent followed by a clean water rinse(s). The final rinsate from the pad will be sampled to demonstrate clean closure. The final rinsate from the pad will be sampled in each of the sump areas and analyzed for VOCs (SW-846 Method 8260, total metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Cu, Ni, V, Zn, Sb, Tl and Be) using SW-846 Method 6010B and SW-846 Method 7470A, and extractable explosives (SW846 Method 8330). If the rinsate target constituent concentrations exceed TCLP, the rinsate will be treated as hazardous waste. Any contaminated rinsate will be pumped into a tanker truck or mobile storage tank (e.g., frac tanks) prior to being transported offsite to an approved permitted facility in accordance with all applicable requirements of LAC 33:V Chapter 22. If constituent concentrations are below background levels, the rinsate will be disposed of offsite as non-hazardous.

The detention pond was constructed to control the discharge rate of surface water offsite and is not a regulated storage unit. A 60 mil HDPE liner was placed over compacted subgrade to prevent migration of liquid to subsurface soil. Liquid head over the liner, which is the driving force for liquid migration through the liner, is a temporary phenomenon that occurs during significant storm events. The permeability of the liner is negligible. Therefore, impact to subsurface soil from detention of surface water is considered to be highly unlikely. The pond discharge is regulated through the Federal NPDES Storm Water program and is sampled in accordance with permit requirements. Any change in the discharge water quality will be detected and assessed through this program.

Even though the detention pond is not a RCRA regulated unit, the facility will examine subsurface soil below the pond in order to address LDEQ concerns regarding potential impact of surface water flow. Initially, accumulated sediment inside the pond, if any, will be sampled and analyzed for volatile organic compounds (VOCs) using SW-846 Method 8260, metals (using SW-846 Method 6010B and SW-846 Method 7470A), and extractable explosives by SW-846 Method 8330.

In addition to sampling accumulated sediment, the facility will sample soil beneath the HDPE liner at the location most likely to be impacted by surface water contaminant migration. This worst case area is located at the tie-in of the HDPE to the concrete discharge structure since the liquid head is greatest at this point. Discrete soil samples will be collected at this location at the surface and at a depth of 16 inches.

All samples will be collected using procedures described in the Sampling and Analysis Plan and will be analyzed for VOCs, total metals and extractable organics using the appropriate SW-846 Methods as identified in the previous section. Sediment and subsurface soil will be considered potentially impacted if the target constituents exceed the criteria described in Section G of this closure plan.

If accumulated sediment contains target compound concentrations greater than the closure criteria levels, it will be removed and disposed offsite at an approved permitted facility in accordance with the requirements of LAC 33:V.Chapter 22. If concentrations of target compounds exceeding closure criteria levels are found in soil beneath the liner a soil assessment plan for the detention pond will be developed. This assessment plan will address the vertical and horizontal extent of contamination. The plan will be submitted to the LDEQ for approval within 60 days of receipt of initial soil analytical results and will contain a schedule of implementation.

Other areas to be closed including the storage magazines, preparation building, truck staging and containment areas, and the ash container storage area will then be closed. The buildings and concrete pads will remain onsite or be removed at the facility's discretion.

The maximum extent of operations that will be active during the life of the facility is the storing of the wastes in the ten storage magazines, ash storage in the ash container storage area, the use of the preparation building, and the treatment of wastes in the twenty open burners. The truck staging and containment areas will only be used for temporary staging of trucks waiting to unload and will not be used to hold waste inventory.

Final closure of the facility will occur when all stored wastes have been treated, treatment by-products have been removed from the site, and all waste management units have been cleaned. The storage magazines and preparation building will remain in service until all stored wastes have been prepared and removed for treatment. The open burners will remain in service until all onsite wastes, storage magazine wood interiors, and spill residues have been treated.

B. Closure of the Truck Staging Area

Although this area is not a permitted waste management unit, the ash container storage area will be closed after all ash, spill residue and burner units have been removed from site. The truck staging and containment areas will no longer be required for receiving wastes when closure is initiated; however, they will remain in service for equipment decontamination as required until closure of other areas/units is complete.

The maximum inventory of untreated waste that would be onsite at any time during the operating life of the facility is provided in Table II of Part I. This value assumes all magazines are full, the burn pads are loaded, the preparation building has a full day's burn in processing, and the truck unloading area has a full day's burn waiting to be unloaded. The

specific activities required to meet the closure performance standard for existing and proposed units are discussed below.

Once all equipment has been decontaminated, the concrete containment areas will be pressure washed with a water/detergent followed by a fresh water rinse. Samples of the fresh water rinse will be collected from each sump and analyzed as described above for the direct burn area.

C. Closure of the Storage Magazines

Once all of the waste has been removed from the storage magazines, the wood interior will be manually swept to remove any loose debris. This material will be thermally treated in burn pans. Following this, the wood interiors will be removed and either thermally treated onsite and/or shipped offsite for disposal. Subsequent to removal and thermal treatment of the wood interiors, all ten magazines (storage units) shall be torched to remove any trace of reactive material. The interior will be then pressure washed with fresh water.

The final rinsewater for each magazine shall be sampled (one sample per magazine) within the unit and analyzed for VOCs (SW846 Method 8260), total metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Cu, Ni, V, Zn, Sb, Tl and Be) using SW-846 Method 6010B and SW-846 Method 7470A, and extractable explosives (SW846 Method 8330).

If extractable explosives or volatile organic compounds are detected based upon the lower detectable limits established by the analytical method, or if the concentrations of metals exceed background levels as established through analysis of source water, a decision will be made to repeat decontamination procedures or to declare the unit hazardous and dispose in a permitted facility. It is anticipated that one decontamination event will be required per unit in order to clean close. If the rinsewater clean closure criteria constituents are below background levels, the facility will dispose offsite as non-hazardous.

Once decontamination is complete, the magazine's metal exterior shell may be left in place and/or scrapped (smelter and not for reuse).

Following closure of the liquid storage magazines, the concrete unloading area will be pressure washed with a water/detergent followed by a fresh water rinse. A sample of the fresh waster rinse will be collected from the sump following the procedures described above.

D. Closure of the Preparation Building

The preparation building will be closed by first cleaning and removing all equipment. Equipment will be cleaned by pressure washing with a water/detergent followed by a fresh water rinse. The equipment will then be removed from the building for further use at the owner's discretion.

After equipment removal, the building floor and walls will be pressure washed with a water/detergent followed by a fresh water rinse. Any deposits not removed by water washing will be scraped using hand tools. Washwater will be analyzed and handled as described for the storage magazines. Decontamination will be confirmed through final rinse analysis following the same procedures as described above.

E. Soil Sampling and Analysis

After all waste has been thermally treated, soil in the vicinity of the storage and treatment areas will be examined for signs of spillage. It is not anticipated that spilled waste will be present; however, any spilled waste will be removed with hand tools. Hand tools will be cleaned by detergent wash and clean water rinse with the washwater going to the polyethylene washwater tank. If at least one half of the removed media is spilled waste, then this removed media should be treated in the burners. If the spilled waste makes up less than one half of the removed media, then, the media must be sent to a permitted facility for treatment or disposal in accordance with Land Disposal Restrictions. Also, a surface soil sample will be collected after removal of the spilled material to verify the area is clean. The surface sample will be analyzed for VOCs (SW846 Method 8260), total metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Cu, Ni, V, Zn, Sb, Tl and Be) using SW-846 Method 6010B and SW-846 Method 7470A, and extractable explosives (SW-846 Method 8330).

After storage magazines 1 - 7 have been closed, a discrete surface soil sample will be collected from an area adjacent to each entry. The discrete samples will be analyzed for the same constituents as listed above. If the levels of detectable compounds exceed the established criteria for clean closure, the following procedures will be implemented. Otherwise, the soil will be considered to be at background levels.

For the magazine(s) that show target constituents above closure criteria levels, the top six (6) inches of soil will be excavated from an area approximately four (4) feet by six (6) feet immediately adjacent to the concrete slab at the front entrance of the magazine. This will result in approximately 0.5 cubic yards of soil per unit where excavation is required. This soil will be sent to a permitted facility for disposal. Disposal will comply with the Land Disposal Restrictions contained in LAC 33:V.Chapter 22. Subsequent to soil removal a confirmation surface soil sample will be collected from the excavated area. The confirmation sample will be analyzed for the above stated parameters. If the confirmation sample meets the established criteria for clean closure described above, then the storage magazine area will be considered clean closed.

All soil samples collected for VOC analysis will be collected in accordance with SW-846 Method 5035, and all analyses will be completed by an LDEQ accredited laboratory. For purposes of establishing clean closure, all sample results will be compared to RECAP values.

F. Disposal of Residuals

After the reactive wastes, storage magazine wood interiors, and any spill residues are thermally treated, the ash will be removed from the burners and containerized for disposal offsite. Disposal will comply with the Land Disposal Restrictions contained in LAC 33:V.Chapter 22. The metal trough burners, grates and retractable roof covers will be scrapped (smelter and not for reuse). The concrete burners pads will be disposed. These materials will be removed and containerized, or they will be loaded directly onto trucks for disposal at an approved facility. The burners, ash, spill residue, and concrete burn pads from burner locations which handled listed waste will be containerized and disposed of at a hazardous waste landfill site.

If VOCs or extractable explosives are detected above the lower detectable limits established by the analytical method, or if the concentrations of metals exceeds closure criteria levels, a decision will be made either to repeat decontamination procedures or to declare the unit hazardous and dispose in a permitted facility in accordance with the Land Disposal Restrictions of LAC 33:V.Chapter 22. It is anticipated that one decontamination event will be required per unit in order to clean close.

The soil surrounding the treatment area will be assessed through the Soil Monitoring Plan (Appendix Z). Soil sampling locations 13, 14, 15, 16, and 17 are located in the immediate vicinity of the treatment area. If closure occurs later than 180 days after the last Soil Monitoring Plan sampling event and treatment has occurred within that period, these sampling locations will be resampled and analyzed in accordance with the Plan. If it is determined that the soil in the vicinity of the treatment area has been impacted, an assessment plan will be developed as described previously for the detention pond.

At this time it is anticipated that an appropriate, approved and permitted landfill will be used to dispose of solid treatment residues for the purpose of this closure plan. Disposal will comply with the Land Disposal Restrictions contained in LAC 33:V.Chapter 22.

An appropriate, approved and permitted liquids treatment facility will be used to dispose of washwater and rinsate. The basis for the quantities of wastes, residues and decontamination liquids are provided in Exhibit III. All materials will collected, containerized and disposed offsite at an approved permitted facility in accordance with the Land Disposal Restrictions of LAC 33:V. Chapter 22.

G. General Sampling, Analysis and Evaluation Requirements

All soil and water samples will be collected and analyzed in accordance with approved methods under SW-846. All sampling procedures will be designed to minimize the possibility of cross contamination and sample mismanagement. Sample containers which have been prepared by the receiving laboratory will be used with no further field preparation. All samples will be collected in accordance with the procedures outline in

LDEQ's "Risk Evaluation/Corrective Action Program" (RECAP) document, latest edition, where applicable.

All soil and sediment samples taken for VOCs will be collected in accordance with USEPA SW-846 Method 5035. Otherwise soil and sediment samples will be collected using stainless steel spoons or a gloved hand to place the sample into the sample container. Sampling personnel shall wear a separate pair of disposable latex gloves for each sampling point.

Water samples will be collected directly from the final rinsate subsequent to cleaning operations. At each sampling location sampling personnel will wear a separate pair of disposable latex gloves. All sample containers for organic analysis will be filled completely to minimize or eliminate headspace between the sample and the container cap. Care will be taken to minimize disturbance of the sample.

Sample locations will be marked in the field and identification numbers will be assigned to each point. All sample containers will be labeled immediately after sample collection with a unique identification number to reflect the location and depth at which the sample was taken. Other information which will be provided includes the names of sampling personnel, time and date.

Sample containers will be cooled to 4 degrees Celsius and will be shipped to the laboratory within 24 hours of collection. A chain-of-custody record will accompany the shipment and every precaution will be taken to ensure that the sample integrity is maintained from point of collection to the laboratory.

An LDEQ accredited laboratory will complete all analyses. As required by RECAP, the laboratory will utilize SW-846 methods that will provide sample quantitation limits at the lowest practical quantitation limits (PQLs). These PQLs will generally be at or lower than any risk-based corrective action level (i.e. RECAP Screening Standard, background level, or other derived RECAP standard). The LDEQ accredited laboratory prior to initiating closure activities will confirm the PQLs for all constituents. Any detection limit variances required by the laboratory will be reported to the LDEQ.

The rinsate, soil and sediment sample results will be compared to RECAP values. The naturally occurring constituents (e.g. metals) will be compared to background values, and/or screening standards. Background levels will be developed in accordance with RECAP standards. Non-naturally occurring constituents (e.g. VOCs and extractable explosives) sample results will be compared to the RECAP Screening Standards, unless a higher tier of RECAP evaluation is performed and approved by the LDEQ. Prior to closure, the source of water for these proposed closure activities will also be sampled for both the naturally and non-naturally constituents. These sampling results will form the basis for background values to be used in evaluating the final rinsate samples. Additional decontamination and re-sampling efforts are anticipated, and a reasonable cost estimate is included in this plan for such purposes.

V. STAFFING

A. Closure Coordinator

1. Qualifications:

The Closure Coordinator will have a technical education and experience in management of a hazardous waste facility. He/she will be well versed in thermal treatment of reactive materials and will be intimately familiar with the details of this plan. During pre-closure and closure periods, the General Manager may serve as Closure Coordinator.

2. Duties:

In preparation prior to closure, the Closure Coordinator will keep this plan current with periodic updates to reflect changes in the facility, in cost of implementation, or in applicable regulations. During closure, the Closure Coordinator will manage the facility until all wastes are thermally treated using standard operating procedures. After waste treatment operations are completed, the balance of closure procedures will be carried out under the supervision of the Closure Coordinator. He/she will serve as the Clean Harbors Colfax, LLC contact person for LDEQ inspection, evaluation, and approval activities. Finally, he/she will ensure that post-closure inspection and maintenance activities are accomplished as scheduled.

B. Closure Engineer

1. Qualifications

The Closure Engineer will be a Registered Louisiana Professional Engineer. He will be familiar with the design and operation of the facility. He will be thoroughly knowledgeable regarding all aspects of this plan. During closure, the Closure Engineer may also serve as Closure Coordinator.

2. Duties

The Closure Engineer will be available to consult in the formulation and any necessary revisions in this plan. He will be present to supervise the closure, so that closure activities are accomplished in accordance with this plan. After closure, the Closure Engineer will prepare and submit the certification required by the LAC 33:V.3517. Upon completion of post-closure care, the Closure Engineer will be responsible for the preparation and submittal of the certification required by LAC 33:V.3523.

VI. ADMINISTRATIVE REQUIREMENTS

A. Plan Review and Updating

1. Periodic Review

This plan will be reviewed by the Closure Coordinator and revised as necessary. The scope of planned closure activities will be expanded to include any modifications in processes, new construction, or changes in the capacity of wastes stored, treated, or disposed at the facility.

Costs of the above plan changes will also be included in the plan cost estimates. The cost estimate for closure will also be adjusted for inflation on an annual basis as required by LAC 33:V.3705 and 3709.

After a plan review, updating, and re-evaluation of costs, a revised plan will be prepared. Copies of the revised plan will be made available to the LDEQ and will be maintained at all time at the facility.

2. Other Required Reviews

After any significant changes in the facility operations or equipment and associated permit modifications, this plan will be reviewed to determine if changes are necessary.

Prior to the anticipated closure, this plan will be reviewed to ensure that all proposed actions and estimated costs are accurate and up-to-date. The plan schedules will be converted from elapsed time to actual dates. A final implementation revision of the plan will be prepared and submitted to the Office of Environmental Services, Permits Division of LDEQ, at the time of notification of intention to close.

B. Notification of Intention to Close

1. Closure Engineer

The Closure Engineer will be notified of intended closure well in advance of closure activities. If necessary, he/she should provide consultation in preparing the final implementation revision of this plan, and support pre-closure preparations.

2. Office of Environmental Services, Permits Division (OESPD)

The Closure Coordinator will give written notification to the OESPD at least

180 days before commencing any closure activities. The following information will be provided:

a. date of planned closure;
b. requested changes, if any, in the closure plan which take advantage of new technology, unforeseen situations, and other requests which improve the safety of the closed facility;
c. closure schedule and estimated costs of each phase of the closure plan; and
d. request for release of closure funds in amounts and times as required by the closure schedule (to the extent applicable).

VII. COST ESTIMATES

A. Basis of Cost Estimates

Costs are based on the most expensive set of normal operating circumstances. This assumes a greatest extent/worst case situation but does not presuppose any spills or other accidental occurrences.

The cost for labor to thermally treat the remaining inventory assumes the cost necessary to pay third party personnel to manage the materials in the on-site thermal treatment unit.

The closure cost basis calculations and references are included in Exhibit III.

All costs estimates are based on 2004 dollars.

B. Total Costs Summary

Costs are summarized for Closure activities. A contingency of 10 percent is included. Refer to Exhibit IV.

IX. FINANCIAL ASSURANCE - CLOSURE

In accordance with LAC 33:V.3509.B, Clean Harbors Colfax, LLC will comply with the "Financial Assurance for Closure", LAC 33:V.4403, by providing OESPD with financial assurance in the form of insurance, providing OESPD with sufficient funds to cover the anticipated closure activities. Financial assurance documentation is provided in Appendix N.

EXHIBIT I

MAXIMUM PERMITTED OFF-SITE WASTE INVENTORY

Waste Status	Amount	
Storage in Containers	593	cubic yards
Total hazardous waste storage inventory at closure: (50,000 pounds Net Explosive Weight)	**593**	**cubic yards**

Including waste in process, the total that might be present at the site (worst case) is 55,950 pounds of Net Explosive Weight.

EXHIBIT II

CLOSURE SCHEDULE

Action to be Taken	Days from Closure Start Date
Revise Plan (if needed)	-240 to -180
Notify LDEQ	by -180
Prepare Equipment Inventory	-180 to -30
Prepare Waste Schedule	-30 to -5
Receive Wastes	to -1
Begin Closure	0
Treat Stored Wastes	0 to +18
Closure Engineer to Inspect Empty Magazines	+18 to +25
Mobilize Decontamination Contractor	+25 to +32
Decontaminate Equipment, Removal & Clean-up	+32 to +65
Closure Engineer to Verify Decontamination	+65 to +125
LDEQ and Closure Engineer Inspection	+125 to +155
Conduct Measures to Achieve LDEQ Approval	+155 to +180
Complete Closure	by +180
Submit Closure Certification to LDEQ	by +240

EXHIBIT III

CLOSURE COST BASIS CALCULATIONS

Closure Plan – Closure Cost Estimates Quantities
Assumptions: Detergent Wash @ 800sf/hour
Fresh Water Rinse @ 800sf/hour
Disposal of Waters @ Deep Well in Plaquemine, La @ $0.13/gal.
Transportation Colfax to Plaquemine = 202.6 miles @ $3.10/mi. = $628.06/load or $628.06/5500 gal/load = $0.12/gal.
Total T&D = $0.25/gal.
On-site Disposal Cost $5,000/day
Disposal of Residues/Debris @ Chem Waste Carlyss @ $150/cy
Transportation Colfax to Carlyss = 146.3 miles @ $3.10/mi. = $453.53/load
Sampling and Analytical Testing Costs – Rinsate = $400/ea.
Sampling and Analytical Testing Costs – Soil/Sediment = $500/ea.
Closure Supervisor - $50.00/hr.
Closure Engineer - $75.00/hr.
Wash Water generated at 4 gallons/square foot (EPA OSWER Directive 9476.00-6).

Waste Disposal (Inventory)

55,950 pounds maximum weight (net explosives)

Burn rate @ 3,150#/day = 55,950/3150 = 18 days

Waste Residues = 30 cy or 2 roll off containers = 2 loads

10 each Storage Magazines (Reference Drawings 108-110)

10 feet x 20 feet x 8 feet high; Interior floor, walls, ceiling and doorway covered with 4-inch thick hardwood.

Total surface area per magazine = 2(10'x20') + 2(10'x8') + 2(20'x8') = 880 sf.

Total surface area = 10 x 880 = 8800 sf.

Volume of Wood = 8800 sf x 4"/12 = 2933.3 cf

Add 10% for 2x4 nailer = 2933.3 x 0.10 = 293.3 cf

Total Volume of Wood = 3,227 cf or = 3,227/27 = 120 cy.

Removal of Wood @ 1 hours/magazine x 10 = 10 hours

Torching of Magazines @ 1 hours/magazine x 10 = 10 hours

Time required per wash cycle = 8800/800 = 11 hours

Time required per rinse cycle = 8800/800 = 11 hours

Assume 1 additional wash/rinse cycle required for 1 magazine = 880/800 + 880/800 = 2.2 hours

Total time for 1 wash and 1 rinse cycles = 24.2 hours

Amount of water generated for wash and rinse cycles = 4,840 x 4 = 35,200 gallons

Truck Parking/Staging Area:

Floor surface area (4 bays) = 68' x 75' = 5100 sf (Reference Drawing # 107)

Curb surface area = 8 x 1.33 x 75' = 798 sf

Sumps surface area = 4 x 2' x 2' x 5 = 80 sf

Total surface area = 5100 + 798 + 80 = 5978 sf

Total surface area per bay = 5978/4 = 1494.5 sf

Time required for wash cycle = 5978/800 = 7.5 hours

Time required for rinse cycle = 5978/800 = 7.5 hours

Assume 1 additional wash/rinse cycle for 1 bay = 1494.5/800 + 1494.5/800 = 1.9 + 1.9 = 3.8 hours

Total hours = 7.5 + 7.5 + 3.8 = 18.8 hours

Amount of water generated for wash and rinse cycles = 5,978 x 4 = 23,912 gallons

Preparation Building:

Total Floor Surface Area = (39.6' x 40') + (18'x60') + (10'x12') = 2,784 sf (Ref. Drawings 111-113)

Time required per wash cycle = 2784/800 = 3.5 hours

Time required per rinse cycle = 2784/800 = 3.5 hours

Total hours = 7.0 hours

Assume 10% of area requires additional wash/rinse = 0.7 hours

Total hours = 7.7 hours

Amount of water generated for wash and rinse cycles = 2,784 x 4 = 11,136 gallons

Truck Unloading – Liquid Storage Magazine Area:

Floor Surface Area = 28' x 75' = 2100 sf (Reference Drawing 107)

Sumps = 2' x 2' x 5 sides = 20 sf

Curbs = (6"/12) x 2 x 75' = 75 sf

Total Surface Area = 2100 + 20 + 75 = 2,195 sf

Assume 10% of Area requires additional wash/rinse = 2,195 x 0.10 = 220 sf

Total Surface Area = 2195 + 220 = 2,415 sf

Time required for wash cycle = 2415/800 = 3.0 hours

Time required for rinse cycle = 2415/800 = 3.0 hours

Total hours = 6.0 hours

Amount of water generated during wash/rinse cycles = 2,415 x 4 = 9,660 gallons

Burn Pad Area:

Removal of burn pad pedestals @ 1 hours each x 20 = 20 hours

Volume of concrete burn pad pedestals = (20 x 16' x 16' x 1.5') + 10[(3.14x4') x 4' x (4"/12)]

= 5120 + 14 = 5,136 cf or 5,136/27 = 190 cy

Transportation = 190/20 = 10 loads

Metal burn pans and retractable roof covers – assume scrapped (scrap value = transportation costs)

Floor Surface Area = 700' x 130' = 91,000 sf

Sumps = 3 each x 2' x 2' x 5 = 60 sf

Curbs = (700' x 6"/12) + 2(130'x1.25') + (700x2') = 2075 sf

Total = 91,000 + 60 + 2075 = 93,135 sf

Assume 10% of area requires additional wash/rinse cycle = 93,135 x 0.10 = 9,314 sf

Total surface area = 93,135 + 9314 = 102,449 sf

Time required for wash cycle = 102,449/800 = 128.1 hours

Time required for rinse cycle = 102,449/800 = 128.1 hours

Total hours = 128.1 + 128.1 = 256.2 hours

Amount of water generated during wash/rinse cycles = 256.2 x 200 = 51,240 gallons

Total hours = 10 + 10 +24.2 + 18.8 + 7.7 + 6 + 20 + 256.2 = 352.9 hours

Assume 2 men @ 10 hour/day = 352.9/2x10 = 18 work days or 36 man-days

Total Volume of water = 102,449 x 4 = 409,796 gallons

Analytical Samples:

Rinsate Samples = Water Source (1) + Magazines (10 + 1) + Truck Parking/Staging Area (4 +1) + Preparation Building (1+1) + Truck Unloading (1+1) + Burn Pad (3 +1) = 25

Soil/Sediment Samples = Pond (2 +1) + Magazines (7 + 1) + Burn Pad (Annual Soil Sampling –17) = 28

Equipment Rental – assume 1 month:

Pressure Washer – $450/month

Frac Tank – $500/month

Vacuum Unit – $4,500/month

Vacuum Box – $270/month

PPE – $25/man day

Excavator/Loader - $1,575/month

Contingency Soil Excavation and Removal – Magazines and Pond Areas:

Assume 10 cy each removed from Magazine and Pond Areas

Assume 5 confirmation soil samples required

Closure Coordinator and Closure Engineer:

Closure Coordinator – 1 month or 175 hours

Closure Engineer – 80 hours

Exhibit IV

Closure Cost Estimate

Facility Closure

Disposal of Remaining Waste Inventory	Quantity	Unit	$	/Unit	Total
Onsite Preparation and Treatment of Waste	18	days	$ 5,000.00	day	$90,000
Residue Disposal	30	cy	$ 150.00	cy	$4,500
Analytical	1	ea	$ 500.00	ea	$500
Transportation (2 loads)	2	ea	$ 455.00	ea	$910
	Sub-Total				$95,910

Decontamination of Magazines	Quantity	Unit	$	/Unit	Total
Wood Removal/Torching-Labor	20	hr	$ 22.00	hr	$440
Ash Disposal	20	cy	$ 150.00	cy	$3,000
Ash Transportation	1	ea	$ 455.00	ea	$455
Analytical	1	ea	$ 500.00	ea	$500
Pressure Wash/Rinse Rinse-Labor	24.2	hr	$ 22.00	hr	$532
Washwater Transportation and Disposal	35200	gal	$ 0.25	gal	$8,800
	Sub-Total				$13,727

Truck Parking/Staging Area	Quantity	Unit	$	/Unit	Total
Pressure Wash/Rinse Floors (Labor)	18.8	hr	$ 22.00	hr	$414
Washwater Transportation and Disposal	23912	gal	$ 0.25	gal	$5,978
	Sub-Total				$6,392

Preparation Building Decontamination	Quantity	Unit	$	/Unit	Total
Equipment Cleaning/Removal (Labor)	8	hr	$ 22.00	hr	$176
Pressure Wash/Rinse Floors-Labor	7.7	hr	$ 22.00	hr	$169
Washwater Transportation and Disposal	11136	gal	$ 0.25	gal	$2,784
	Sub-Total				$3,129

Truck Unloading - Liquid Storage Mag. Area	Quantity	Unit	$	/Unit	Total
Pressure Wash/Rinse-Labor	6	hr	$ 22.00	hr	$132
Washwater Transportation and Disposal	9660	gal	$ 0.25	gal	$2,415
	Sub-Total				$2,547

Treatment (Burn) Area Concrete Pad Decon	Quantity	Unit	$	/Unit	Total
Removal of Burn Pad Pedestals-Labor	20	hr	$ 22.00	hr	$440
Disposal of Concrete	190	cy	$ 150.00	cy	$28,500
Transportation of Concrete	10	loads	$ 455.00	load	$4,550
Pressure Wash/Rinse Floors-Labor	256.2	hr	$ 22.00	hr	$5,636
Washwater Transportation and Disposal	409796	gal	$ 0.25	gal	$102,449
	Sub-Total				$141,575

Soil/Rinse Water Sampling and Analysis	Quantity	Unit	$	/Unit	Total
Rinsate Samples	25	ea	$ 400.00	ea	$10,000
Soil/Sediment Samples	28	ea	$ 500.00	ea	$14,000
	Sub-Total				$24,000

Excavation/Disposal of Soils	Quantity	Unit	$	/Unit	Total
Storage Magazines	10	cy	$ 150.00	cy	$1,500
Detention Pond	10	cy	$ 150.00	cy	$1,500
Transportation (one truck)	1	ea	$ 455.00	ea	$455
Confirmation Samples	5	ea	$ 750.00	ea	$3,750
	Sub-Total				$7,205

Misc. Equipment and Supplies	Quantity	Unit	$	/Unit	Total
Mobile Tank Rental (1 month)	1	mo	$ 500.00	mo	$500
Pressure Washer (2 each for 1 month)	2	mo	$ 450.00	mo	$900
Vacuum Unit (1 month)	1	mo	$ 4,500.00	mo	$4,500
Roll Off/Vacuum Boxes (2 total for 1 month)	2	mo	$ 270.00	mo	$540
Excavator/Loader (1 month)	1	mo	$ 1,575.00	mo	$1,575
Biodegradable Detergent	1	ea	$ 200.00	ea	$200
Personnel Protective Equipment	36	man-days	$ 25.00	ea	$900
Sampling Supplies and Misc. Costs (Shipping and Handling)	1	ea	$ 2,000.00	ea	$2,000
Decontamination of Hand Tools and Misc. Cleanup Activities	1	ea	$ 1,500.00	ea	$1,500
	Sub-Total				**$12,615**

Engineering Certification/Inspections	Quantity	Unit	$	/Unit	Total
Closure Coordinator	175	hr	$ 50.00	ea	$8,750
Closure Engineer	80	hr	$ 75.00	ea	$6,000
	Sub-Total				**$14,750**

Sub-Total Facility Closure Cost Estimate	**$321,851**
Contingency (10%)	**$32,185**
Total Facility Closure Cost Estimate	**$354,036**

RECAP Closure of "Old Burn Area"

Field Work	Quantity	Unit	$	/Unit	Total
Field Sampling Crew	8	days	$ 2,200.00	ea	$17,600
Surveying-Field	2	days	$ 1,250.00	ea	$2,500
Surveying-Office	2	days	$ 500.00	ea	$1,000
Analytical Testing-Soil Samples	90	ea	$ 500.00	ea	$45,000
Sample Shipment	1	lump sum	$ 3,000.00	ea	$3,000
	Sub-Total				**$69,100**

RECAP Data Evaluation and Reporting	Quantity	Unit	$	/Unit	Total
Project Manager	240	hr	$ 72.00	hr	$17,280
Technician	240	hr	$ 56.00	hr	$13,440
Clerical	60	hr	$ 32.00	hr	$1,920
Drafting	60	hr	$ 45.00	hr	$2,700
Principal	40	hr	$ 96.00	hr	$3,840
Reproduction	1	lump sum	$ 4,500.00	ea	$4,500
	Sub-Total				**$43,680**

Sub-Total RECAP Closure Cost Estimate	**$112,780**
Contingency (10%)	**$11,278**
Total RECAP Facility Closure Cost Estimate	**$124,058**

Total Facility and RECAP Closure Cost Estimate	**$478,094**

APPENDIX M

RISK-BASED CORRECTIVE ACTION EVALUATION WORKPLAN

REVISED SITE INVESTIGATION WORKPLAN
OLD BURN AREA

CLEAN HARBORS COLFAX, LLC.
3763 HIGHWAY 471
COLFAX, LOUISIANA
EPA FACILITY ID NO. LAD 981 055 791
AGENCY INTEREST NO. 32096

PREPARED BY:

CAMERON-COLE

5777 CENTRAL AVE. #100
BOULDER, COLORADO 80301

DECEMBER 16, 2004

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1. INTRODUCTION

This document presents a Revised Site Investigation Workplan describing a proposed risk-based corrective action data collection and evaluation approach for the Old Burn Area at the Clean Harbors Colfax, LLC Facility (formerly Safety-Kleen [Colfax], Inc. and, prior to that, Laidlaw Environmental Services Thermal Treatment [LESTT] Facility) located in Colfax, Louisiana (EPA Facility ID Number LAD 981 055 791). Effective September 7, 2002, Clean Harbors, Inc. and certain of its subsidiaries, purchased from Safety-Kleen Services, Inc. and certain of its domestic subsidiaries, certain of the assets of the Chemical Services Division of Safety-Kleen Corp. The sale included the operating assets of 56 of the seller's subsidiaries in the United States. As a result of the sale, Clean Harbors Colfax, LLC is, as of September 7, 2002, the new owner and operator of the regulatory permits, equipment and assets located at 3763 Highway 471 in Colfax, Louisiana, which were formerly owned and operated by Safety-Kleen (Colfax), Inc. The Louisiana Department of Environmental Quality (LDEQ) acknowledged the transfer of permits to this new company in a letter dated August 30, 2002.

The Old Burn Area at the Clean Harbors Colfax, LLC Facility (the "facility") was used for the thermal treatment of explosive and reactive wastes from 1985 until 1993. Operations at the Old Burn Area were discontinued in 1993 and closure activities for the Old Burn Area began in 1995. A closure plan was approved for the Old Burn Area by the Louisiana Department of Environmental Quality (LDEQ) on November 15, 1995. Closure activities were initiated in March 1996. As stated in an LDEQ letter dated April 28, 1997, the closure permit was allowed to expire by mutual agreement of the facility and LDEQ due to the unreliable nature of soils metal data, and to allow for additional investigation that would be used to support risk-based closure alternatives. LDEQ acknowledged the facility's intent to develop a risk-based closure plan in a June 3, 1997 letter. Subsequently, a workplan was submitted to LDEQ for review in September 1997.

Upon review of the 1997 workplan, LDEQ provided comments in a letter dated April 29, 1998. The comments addressed a few specific issues, and generally recommended that the risk-based closure workplan be revised to reflect the LDEQ's Proposed Risk Evaluation/Corrective Action Program (RECAP) as described in an April 1998 guidance document. Therefore, the facility revised the 1997 workplan to address these LDEQ recommendations. The revised workplan, dated November 12, 1998, was submitted to LDEQ for review. In a letter received by the facility on September 28, 2004, the LDEQ requested that the 1998 workplan be updated to reflect the requirements of the currently promulgated RECAP program (October 20, 2003). The revised workplan was to be submitted along with the responses to the Notice of Deficiencies for the Hazardous Waste Operating Revised Renewal Permit Application dated August 14, 2003.

The facility is submitting this revised workplan for additional data collection as a revision to the 1998 workplan. This revised workplan incorporates RECAP 2003 screening standards and general concepts that have changed since the draft RECAP guidance was published in 1998. Specifically, the designation

of "potential surface soils" has been removed, and all soils at the site from depths of 0 to 15 feet below ground surface (bgs) are designated as "surface soils." Also, several RECAP Screening Standards and Management Option standards for metals have been revised, and are updated in this workplan.

Two surface sampling events were performed during the Old Burn Area closure activities conducted in 1996. Three extractable explosive compounds and several metals were identified as constituents of concern (COCs). However, when select soil locations were re-sampled and independently analyzed for metals in May 1996, the metals data from the original analytical laboratory were found to be unreliable. Therefore, in an October 29, 1996 letter, LDEQ approved a request to disregard all previous soils metal data. Groundwater samples were also collected from two open soil borings. Extractable explosives and volatile organic compounds were not detected in groundwater above respective detection limits. Six metals were detected in the borehole groundwater samples.

RECAP screening standards calculated for the metals and extractable explosive compounds previously detected in soil and groundwater are presented in this revised workplan, and updated as necessary to reflect RECAP 2003 standards. Results from soil samples collected during implementation of this revised workplan will be compared to the RECAP 2003 screening standards for purposes of identifying areas, media, or COCs requiring further evaluation under the Screening Option or the tiered Management Option approach. The results of the proposed soil sampling will also be used to assess the potential for soils to impact groundwater or surface water.

2. WORKPLAN SCOPE AND OBJECTIVE

The purpose of this revised workplan is to document the methodology proposed to further investigate the Old Burn Area site and a former explosives storage magazine area under the RECAP 2003 Screening Option and tiered Management Option approaches. The workplan objective is to collect sufficient data to:

- define the nature and extent of potential contamination at the Old Burn Area site, and
- support a statistical analysis of the data that will lead to a determination of either No Further Action (NFA), or the need for additional investigation or remediation.

In this revised workplan, Clean Harbors proposes a statistically-based sampling plan for soil sample collection from the following locations:

- Ten former burn pad areas. As part of previous closure activities, these concrete burn pads have been removed and shallow excavation of surface soils around each burn pad has been performed. The nature and extent of potential contamination has not been fully identified.
- Within the Old Burn Area exclusive of the burn pads. The lateral and vertical extent of potential contamination associated with the burn pads has not been fully identified.
- Along three small natural drainage features in the vicinity of the Old Burn area. Sediment samples will be collected.
- At a former explosive material storage magazine. Previous sampling indicated that one of four storage magazines (Storage Magazine #4) had detectable concentrations of explosive materials residue.

Based upon the results of previous site investigations and closure activities, additional soil data collection is required. Soil samples will be collected from the Old Burn Area, ten former burn pad locations, three drainage features crossing the Old Burn Area, and from former Storage Magazine #4. Eight RCRA metals (plus copper and zinc) and three extractable explosive parameters have been identified in this workplan as potential COCs requiring further delineation within the Old Burn Area. Sample collection will focus on evaluation of surface and near-surface soils at the former burn pads and immediately surrounding areas. The need for future groundwater sample collection via temporary or permanent monitoring wells will be assessed based upon the soil sample analytical results and the potential for any detected COCs in soil to impact groundwater quality. Following implementation of this workplan, a RECAP Site Investigation Report consistent with the most recent version of RECAP (October 20, 2003) will be prepared and submitted to LDEQ.

3. BACKGROUND AND SITE DESCRIPTION

The Clean Harbors Colfax, LLC Facility is located at 3763 Highway 471 in Colfax, Louisiana. The general site location is presented on a topographic base map as Figure 1. Figure 2 provides a vicinity map of the site, and identifies surrounding land ownership and use. R&D Fabricating and Manufacturing, Inc. (R&D) originally owned the facility and began the thermal treatment of explosive and reactive wastes in the Old Burn Area in June 1985. The facility has operated since March 1993 under a RCRA Subpart X Permit that allows for the thermal destruction of explosive and reactive wastes. R&D was acquired by LESTT in July 1993. Waste treatment operations were terminated at the Old Burn Area in 1993 and transferred to the New Burn Area located in the central portion of the property. The final amended Closure Plan for the Old Burn Area dated May 1995 (prepared by ViroGroup) was submitted to LDEQ. Approval of the Closure Plan was granted by LDEQ permit, effective on November 15, 1995, with two permit extension requests granted by LDEQ extending the permit date to May 8, 1997.

The Closure Plan was implemented on December 12, 1995. The closure permit was allowed to expire by mutual agreement of the facility and LDEQ, as stated in an LDEQ letter dated April 28, 1997, due to the unreliable nature of soils metal data and to allow investigation of risk-based closure alternatives. Results of the closure activities and confirmatory analytical results were summarized in an October 11, 1996 report prepared by ViroGroup (ViroGroup, 1996) and submitted for LDEQ review. A letter from the LDEQ was received by the facility on October 29, 1996 approving the facility's request to disregard previously collected data for metals concentrations in soil. An additional letter received from LDEQ in June 3, 1997 acknowledged the facility's intent to develop a revised risk-based workplan to be included with the new facility permit, as of 1998. As described in the introduction to this workplan, two workplans have been submitted to LDEQ describing results and proposed sampling activities at the Old Burn Area. LDEQ's comments have generally been limited to requests to incorporate the most recent requirements of RECAP. This revised workplan has been prepared to reflect the sampling requirements and standards promulgated as part of RECAP 2003.

The facility includes more than 600 acres of hilly, wooded property located approximately three miles north of the city of Colfax, Louisiana. The facility is surrounded by mostly forested property used as timberland, with one residence located outside of the facility's southwest corner (Figure 2). Groundwater use in the vicinity of the facility was assessed as part of a well survey obtained from the Louisiana Department of Transportation and Development (DOTD) conducted in 1998. Results of the well survey are included as Appendix A. Twelve wells were located by the DOTD well survey as being within a one-mile radius of the Old Burn Area. All of these well are located outside of the facility boundary. Three domestic use wells were identified along Highway 471 southwest of the facility entrance, ranging from 0.7 to 0.9 miles west of the facility. All wells are screened in the Catahoula Aquifer. One public supply well was identified approximately 0.6 miles west of the facility along Highway 471, and is also completed in the Catahoula Aquifer. A second public supply well is located approximately 0.8 miles north of the

facility along Highway 471, and is completed in the Montgomery Aquifer. Four test holes and three monitoring wells were also identified in the well survey. Groundwater is not used as a resource within the facility property. The facility receives its water supply from the West Grant Water District. The 1998 well survey presented in Appendix A will be updated following implementation of this workplan, as part of the Site Investigation Report (described in Section 8).

The Old Burn Area is a rectangular-shaped area located on the north-facing slope of a hill, approximately 600 feet long in the north-south direction and approximately 200 feet wide in the east-west direction (Figure 1). The Old Burn Area is approximately 250 feet from the western facility property line. Ten former concrete burn pads were located along a gravel road running along the length of the site, each approximately ten feet square in size. Figure 3 shows the location of the ten former concrete burn pads located within the Old Burn Area. Four storage magazines were also located along the main facility road between the Old Burn Area and the main entrance to the facility. The four former storage magazines (used to store explosives prior to thermal treatment) were located approximately 1000 feet northeast of the Old Burn Area (Figure 4). These storage magazines were constructed of metal exteriors and wood interiors and were used for the storage of explosive materials prior to their thermal treatment at the Old Burn Area.

Elevations across the Old Burn Area range from 176 above mean sea level (MSL) in the southwest corner of the area to 142 feet above MSL in the northeast corner of the area. Most of the topographical relief across the Old Burn Area is a continuous grade from the southwest to the northeast, with the northeast corner being a relatively flat area with less than two feet of relief. Three natural drainage features cross the Old Burn Area. They generally drain from south to north, leading to an intermittent creek along the northwest corner of the site. This creek flows northwest to Summerfield Branch, which flows northwest to Bayou Grappe and the Red River.

4. HYDROGEOLOGIC CONDITIONS

This section outlines the general geologic and hydrogeologic conditions at the facility based on previous studies. The hydrogeologic characteristics of the facility and the Old Burn Area were derived from the regional geology and site-specific drilling logs from soil borings.

4.1. REGIONAL GEOLOGY

The facility is located within a belt of consolidated Ordovician sediments stretching southwest to northeast from the Mississippi River to the Sabine River across central Louisiana. The principal stratigraphic unit that underlies the facility is the Catahoula Formation, which consist of gray to white sandstones, loose quartz sand, tuffaceous sandstone, volcanic ash, and brown sandy clays (petrified wood found locally). This formation is exposed at the surface as a generally hilly terrain, with up to 120 feet of vertical relief across the Colfax property. Unconsolidated Quaternary sediments deposited by the Red River cut across these Ordovician formations from northwest to southeast approximately one-half mile to the southwest of the facility.

4.2. LOCAL GEOLOGY AND HYDROGEOLOGY

To characterize the stratigraphy at the Old Burn Area, three soil borings were advanced into the shallow subsurface between April 8 and10, 1996. These borings were completed along the eastern boundary of the Old Burn Area to a depth of 65 to 80 feet below grade (Figure 3). Three general geologic units were encountered in these borings. In the southernmost and topographically highest soil boring, SB-1, the pale orange Catahoula Sandstone was encountered from ground surface to a depth of approximately 10 feet bgs. The underlying 50 feet of stratigraphy in SB-1 and the uppermost 30 to 40 feet in borings WB-1 and WB-2, respectively, consist of consolidated and laterally discontinuous fluvial deposits of clays, silts, and sands. Underlying the fluvial deposits in SB-1 and WB-2 is a consolidated, pale yellow sand layer, which extends to total depth. WB-1 contains a 3-foot layer of this consolidated sand underlain to its total depth by fluvial deposits similar to the deposits found higher in the geologic column.

Groundwater is present beneath the Old Burn Area and was encountered in the consolidated sands and silty sands in two of the three soil borings installed in 1996. Groundwater was first encountered at approximately 60 feet below grade in WB-1, and rose to 54 feet below grade within 30 minutes. This indicates that groundwater at the facility occurs under confined conditions (i.e., groundwater is under hydrostatic pressure with an upward vertical hydraulic gradient). Groundwater was similarly encountered in WB-2 at 70 feet below grade. Groundwater was not encountered in SB-1 in the total depth of exploration (80 feet below grade). Since monitoring wells were not installed during the closure activities in 1996, a groundwater hydraulic gradient was not determined. However, the groundwater flow direction in the immediate vicinity of the Old Burn area is anticipated to follow the general surface topography (north-northeast).

5. PREVIOUS SITE INVESTIGATIONS RESULTS

This section summarizes information collected during previous site investigations that has been used to develop this revised workplan. The rationale used for determining the constituents of concern (COCs) and a brief summary of soil and groundwater analytical results is presented below.

5.1. CONSTITUENTS OF CONCERN

The purpose of this section is to summarize how the COCs were selected. The results of previous characterization and monitoring investigations performed prior to development of the Closure Plan were used to identify the COCs for the Closure Plan. Descriptions of these reports as summarized in the Closure Plan (ViroGroup, 1995) are provided below for reference.

Final Source Characterization Plan The initial list of COCs was addressed in the Final Source Characterization Plan for the R&D Thermal Treatment System (ENSR, 1990). A list of target analytes was developed through a review of facility waste streams received and regulatory agency concerns. Regulatory agency concerns included the associated long-term health effects of those compounds produced as combustion by-products. The parameters targeted for analyses were:

- Particulates,
- Trace metals (Al, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Se, Zn),
- Polycyclic aromatic hydrocarbons (PAHs),
- Phenol,
- Extractable explosive compounds, and
- Volatile organic compounds (VOCs).

Final Technical Support Document for the R&D Thermal Treatment System The Final Technical Support Document for the R&D Thermal Treatment System (ENSR, 1991) notes that phenol, PAHs, Ni, Se, Sb, Cd, ethylbenzene, and total xylene were not detected at or above their respective practical quantitation limits (PQLs).

January 1991 ETE Soil Sampling In January 1991, ETE, Inc. collected soil samples around the perimeters of each existing burn unit and analyzed for extractable explosives, VOCs, and metals. Results showed detectable levels of RDX (Hexhydro-1,3,5-trinitro-1,3,5-triazine) and HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine), and above-background concentrations of eight metals. Review of these results indicated that these parameters should be considered as COCs.

Environmental Assessment Report The Environmental Assessment Report (January 1994), Section I, Appendix 1-A contains ash TCLP analytical data (November 1993). This data indicated the presence of metals and VOCs. No semi-volatile organic compounds (SVOCs) were detected.

Human Health and Ecological Risk Assessment The Human Health and Ecological Risk Assessment, Volume II, of the Environmental Assessment Report (ERM, 1993) contained a target list of metals to be evaluated. This list was selected by the EPA in December 1993. The target list included Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn. Metal compounds were considered to be the primary COCs.

Soil Monitoring Plan The Soil Monitoring Plan (ViroGroup 1993) previously implemented at the facility lists VOCs, extractable explosives, and eight RCRA heavy metals as COCs. These chemicals were selected based upon the aforementioned studies and discussions.

Closure Plan The Closure Plan added Cu, Ni, V, and Zn to the COCs listed in the Soil Monitoring Plan. Based upon the results presented in the "Final Technical Support Document for the R&D (Laidlaw) Thermal Treatment System" (ENSR, 1991) and the constituents in the waste streams handled at the facility, soil samples were analyzed for VOCs, extractable explosives (ten parameters), and total metals (15 parameters).

5.2. CLOSURE PLAN SAMPLING

As required by LAC 33:V.3511 and the RCRA Subpart X/HSWA Facility Permit issued to the facility, a Closure Plan for the Old Burn Area was submitted (on behalf of the facility by ViroGroup, Inc.) to the LDEQ in August 1993. LDEQ issued the facility a Closure Permit based upon an amended Closure Plan submitted in September 1995, and effective until April 1996 (later extended to May 1997).

Closure activities were initiated by the facility on December 12, 1995. The ten concrete burn pads were removed and six inches of underlying soils were excavated in a 20-foot square area centered on each former burn pad location in March 1996. The four storage magazines were also demolished at this time. An initial soil sampling event was conducted on March 27, 1996 to assess whether closure standards for soil had been met. Data from this sampling event are presented in Table 1. When it was determined that several locations did not meet the closure standards, an additional six inches of soil was removed between April 17 and 22, 1996 at former burn pad locations G, H, J, K, and in the vicinity of perimeter points 55 and 56. Figure 6 (discussed in detail later in Section 7 of the workplan) shows the locations of the excavation activities. A second soil sampling event was conducted on April 23, 1996 at locations where additional soil had been removed. Analytical results from the second sampling event are presented in Table 2.

After the second soil sampling event, questions were raised concerning the validity of the metals data set. Select locations were re-sampled in May 1996 for independent laboratory analysis. When compared to the results from two other analytical laboratories, soil metal results from the original analytical laboratory

did not appear acceptable. Facility personnel met with LDEQ representatives in July 1996 to discuss the results of closure activities up to that time, including the validity of the metal analytical results. The facility formally requested that LDEQ allow revisions to the Soil Monitoring Plan, including a request to disregard all previously submitted soil metal analytical results. All requested revisions to the Soil Monitoring Plan were approved by LDEQ on October 29, 1996. The facility postponed further remedial activities until reliable soil metals data could be obtained from the Old Burn Area.

5.2.1. Surface Soil Results

Based upon the LDEQ-permitted Closure Plan for the Old Burn Area, two surface soil sampling events were performed during closure activities in 1996. A total of 51 soil samples (including one field duplicate) were collected at the Old Burn Area on March 27, 1996 during the initial soil sampling event. Chemical constituent analyses performed were based upon those parameters listed in the Closure Plan and included 48 volatile, 15 total metal, and 11 extractable explosive parameters. Three extractable explosive parameters were detected during this event: HMX at 22 locations, RDX at 18 locations, and 1,3,5-trinitrobenzene at one location (Table 1). The maximum detections for the three explosive COCs were as follows. Each of these maximum detections were from the initial sampling at burn pad "H."

- HMX = 4.22 mg/kg
- RDX = 1.84 mg/kg
- 1,3,5-Trinitrobenzene = 0.166 mg/kg

No VOCs were detected at any of the sampling locations during this event. As approved by the LDEQ in their October 29, 1996 letter, metal results from soil samples collected during this event were disregarded.

Based on the results of the first sampling event, additional excavation was performed from former burn pad locations G, H, J, K, and from perimeter points 55 and 56. After the additional excavation, a total of 31 soil new samples were collected at the Old Burn Area on April 23, 1996. Of these samples, 26 were analyzed for explosives. HMX (10 locations) and RDX (8 locations) were the only extractable explosive parameters detected during this event (Table 2). The maximum detections for the two explosive COCs were as follows:

- HMX = 150 mg/kg at burn pad "J"
- RDX = 0.54 mg/kg at burn pad "H"

VOCs were not analyzed during this event as they had not been detected during the initial soil sampling event. As approved by the LDEQ in its October 29, 1996 letter, soils metals results from this event were also disregarded.

The soil screening levels calculated for the three detected explosives are presented in Table 3. Details regarding the screening standard calculation are presented in the following section. Each of the maximum explosive compound detections is one to two orders of magnitude lower than the applicable screening standard, indicating that soils do not present an unacceptable risk via a human exposure pathway. RDX has the lowest soil screening standards, due to its classification as a possible carcinogen. The remaining detected explosives are not classified as human carcinogens.

Both HMX and RDX concentrations exceed the calculated soil to groundwater screening standard ($Soil_{SSGW}$) at some locations. For RDX, the calculated $Soil_{SSGW}$ is less than the PQL. Under LDEQ RECAP 2003 guidance, when the $Soil_{SSGW}$ is less than the PQL, the PQL is used as the $Soil_{SSGW}$ screening standard for data evaluation purposes.

Based on the results from the two sampling events, the nature and extent of surface soil contamination has been partially defined with respect to explosive COCs. Additional sampling is required to complete this delineation. The determination of the nature and extent of potential metals contamination in surface soils will require further soil sampling and analysis for metals. Soil samples for metals will also be submitted for SPLP analysis, and evaluated as described in Section 8.

5.2.2. Preliminary Soil Screening Levels

Preliminary RBCA Tier 2 Screening Levels were calculated in this Workplan for HMX, RDX, and 1,3,5-trinitrobenzene. These screening levels are presented in Table 3. RBCA screening guidance considers two predominant types of land use: residential and industrial/commercial (LDEQ, 1996). The Old Burn Area and the four storage magazines are situated within the industrial facility boundary. Future reasonably anticipated land use for this portion of the facility is continued industrial land use (LES, 1997).

The soil screening calculations were performed based on the following exposure scenarios:

- Source Zone Point of Exposure,
- Commercial /Industrial Receptor,
- Surface Soil/Ingestion and dermal exposure routes - Direct contact,
- Surface soil Inhalation exposure route – Re-suspension of particulates and volatilization to outdoor air, and
- Groundwater ingestion exposure route – Leaching to groundwater from surface soils.

A "RBCA Spreadsheet System" developed by Groundwater Services, Inc. (GSI, 1995) was used for calculating preliminary industrial Screening Levels. The RBCA Spreadsheet System consists of a series of linked worksheets and is consistent with ASTM E-1739, and current RECAP soil screening level calculation guidance. Input parameters used in the soil screening level calculation are presented in Table 4. Calculation algorithms and default parameters have been updated to reflect advances in evaluation

methods (Section 9; HMX, RDX parameter references). Screening standards for COCs that do not have current published RECAP standards will be re-evaluated as part of the Site Investigation Report described in Section 8 of this workplan.

5.2.3. Groundwater Results

Based upon the LDEQ-approved Closure Plan for the Old Burn Area (ViroGroup, 1995), groundwater samples were collected from the open soil borings WB-1 and WB-2 prior to plugging and abandonment (Figure 3). These samples were analyzed for 15 metals, EPA Method 624 volatile parameters, and 11 extractable explosive parameters. The analytical results are included in the ViroGroup report submitted to the LDEQ (ViroGroup, 1996). All groundwater analytical results for the 48 volatile parameters and 11 extractable explosive parameters were reported below their respective PQLs. Six of the 15 metals were detected above their PQLs. The results for the detected metals are summarized below. RECAP 2003 groundwater screening standards (GW_SS) for the metals detected are also provided.

Total Metals	GW_SS (mg/L)	W-1 (mg/l)	W-2 (mg/l)
Chromium	0.1	0.1310	0.352
Zinc	1.1	0.4377	0.1513
Barium	2.0	0.1075	0.0382
Lead	0.015	0.254	0.094
Copper	1.3	0.0399	0.0154
Nickel	0.73	0.0786	0.0173

Three metals were detected at concentrations above the GW_SS. However, because these samples were analyzed for the total metals from an open and undeveloped borehole, comparability to the RECAP GW_SS is inappropriate. Total metals sampled from an open borehole may represent a combination of metals dissolved in groundwater and metals present on suspended soil particulate matter. This is particularly likely when the nitric acid preservative, required for stabilization of the metals in groundwater samples, dissolves metals previously bonded to the surfaces of suspended soil particulate matter. Acid preservation of turbid samples can increase apparent metals concentrations to levels well above those that are truly representative of natural groundwater at the site. Therefore, the results presented above provide an indication of metals that are likely present in groundwater in a topographically downgradient direction of the Old Burn Area. The magnitude of the metals concentrations is considered to be qualitative. The need to obtain additional groundwater data will be determined based on the results of the additional soil sampling described in this workplan.

6. RECAP OVERVIEW, SITE RANKING, AND CONCEPTUAL SITE MODEL

This section summarizes the LDEQ RECAP document and its approach to risk-based site assessment, evaluation, and management. In addition, this section also includes a discussion on how a RECAP site ranking will be developed for the facility and provides a preliminary conceptual site model of potential exposure pathways that will be evaluated as part of the site investigation.

6.1. LOUISIANA RECAP SUMMARY

The LDEQ developed the Risk Evaluation/Corrective Action Program to address risks to human health and the environment posed by the release of chemical constituents to the environment. As previously stated, the most recent edition of the RECAP guidance document is dated October 20, 2003. The RECAP program identifies constituent levels in different media that do not pose unacceptable risks to human health or the environment. RECAP uses a tiered approach consisting of a Screening Option and three Management Options. The Screening Option is the most broad-based and least site-specific of the options. For this reason, it is the recommended option for initial investigations of sites with little or no suspected contamination. At sites where COC concentrations fall below RECAP Screening Standards or background levels, no further action or study is warranted under LDEQ guidelines. COCs with concentrations greater than Screening Standards or background levels do not necessarily trigger corrective action or any other response action. However, exceedance of a Screening Standard or background level for any COC suggests that further evaluation of the potential risks posed by that constituent under RECAP Management Option 1, 2, or 3 is appropriate.

Management Option 1 (MO-1) provides LDEQ-derived RECAP Standards (RS) for soil and groundwater COCs that exceed one or more applicable initial Screening Standards. The MO-1 RS represent constituent concentrations in soil and groundwater that are protective of human health and the environment. The comparison of the MO-1 RS with COCs detected in soil and groundwater provides predictable, consistent guidance regarding the potential for further evaluation and/or corrective action that may be warranted at a particular site. The MO-1 RS were developed for non-industrial and industrial exposure scenarios using conservative assumptions with regard to the protection of human health and the environment, and for the prevention of cross-media transfer. The MO-1 RS comply with Applicable or Relevant and Appropriate Requirements (ARARs) and consider the protection of resource aesthetics. ARARs, as defined by RECAP, can be action-specific, location-specific, or constituent-specific. The MO-1 RS for soil and groundwater are presented in RECAP (October 2003) Tables 2 and 3, respectively, for constituents typically encountered during investigations of environmental at Areas of Investigation (AOIs) or Areas of Concern (AOCs).

In general, MO-1 functions as a tier 1 evaluation to determine whether or not further evaluation at a particular AOI or AOC is warranted. To evaluate an AOC under MO-1, the COC concentrations are

compared to the limiting RS. If the COC concentrations in soil and/or groundwater are less than or equal to the respective MO-1 RS, then typically, "No Further Action At This Time (NFA-ATT)" is required. If COC concentrations in soil and/or groundwater exceed the MO-1 limiting RS, a more site-specific evaluation may be warranted under MO-2 or MO-3. If the COC concentrations in soil or groundwater exceed the MO-1 limiting RS and the Submitter does not wish to manage the AOC under MO-2 or MO-3, then corrective action can be implemented and the MO-1 limiting RS are used as the remediation standards.

MO-2 provides for the development of soil and groundwater RS using site-specific data with specified analytical models to evaluate constituent fate and transport at the AOI. The results of this site-specific evaluation are used in conjunction with appropriate exposure assumptions and toxicity criteria to identify site-specific MO-2 RS. Some sites must be managed under MO-2, if the AOI or AOC size is greater that 0.5 acres. This is due to the fact that source area size assumptions under MO-1 may not be applicable to AOIs with larger source areas.

By definition, MO-1 does not incorporate any site-specific parameters into calculation of the limiting RS. Some default MO-1 parameters may be overly conservative relative to evaluation of Old Burn Area conditions. For example, the default MO-1 fraction of organic carbon content value (which plays a large role on fate and transport calculations) may not be representative of site-specific conditions. Also, there are no biodegradation or retardation factors or dispersion coefficients incorporated into the MO-1 calculations. Incorporation of these site-specific parameters into a potential MO-2 evaluation could result in higher allowable COC concentrations at a point of compliance (POC), and lower concentrations at points of exposure (POE) in the vicinity of the Old Burn Area AOI.

Data collected as a result of implementation of this workplan will be used to determine the appropriate Screening Option or Management Option evaluation approach for the Old Burn Area. Currently, it is anticipated that the only potentially impacted media at the site is surface soils.

6.2. RECAP SITE RANKING

A site ranking is a qualitative evaluation of a site based on known or readily available information to identify the urgency of response actions, including interim remedial actions and/or the need for further information gathering. A site ranking is required to rank each AOI based upon the urgency of the response action required for the protection of human health and the environment. After implementation of this workplan, a RECAP submittal for the Old Burn Area will contain a site ranking section that includes a recommendation regarding the appropriate ranking for the AOI and a discussion on the site-specific factors and the criteria used to select the ranking.

The ranking system is based on the system that is contained in "*Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*" (ASTM E 1739-95). A site-ranking example

(modified from ASTM E 1739-95) is included in RECAP Appendix A. Each AOI shall be given a site classification ranking of 1, 2, 3, or 4 using the following criteria:

Ranking	Criteria
1	Immediate threat to human health, safety, or sensitive environmental receptors;
2	Short-term (0-2 years) threat to human health, safety, or sensitive environmental receptors;
3	Long-term (> 2 years) threat to human health, safety, or sensitive environmental receptors; or
4	No demonstrable long-term threat to human health, safety, or sensitive environmental receptors.

A thorough justification of the site ranking shall be included in the RECAP Site Investigation Report submittal and shall include consideration of all current and future receptors and exposure pathways. Based on the data currently available for the Old Burn Area, it is anticipated that the site ranking will indicate that there is no demonstrable long-term threat to human health, safety, or sensitive environmental receptors.

6.3. PRELIMINARY CONCEPTUAL SITE MODEL

The development of a conceptual site model is an important component of the RECAP evaluation process. The conceptual site model consists of several factors, including groundwater classification, exposure/source media, and transport/exposure pathways. Each of these factors are presented graphically in the preliminary conceptual site model illustrated in Figure 5. The preliminary conceptual site model is discussed in the following sections along with the site-specific conditions used in selecting applicable exposure pathways for the site.

An exposure pathway is the course a chemical takes from a source to a potential receptor. Exposure pathways include the following elements:

- A source,
- A mechanism of release, retention, or transport of a chemical in a given medium (e.g., soil, water, and air),
- A point of contact with the affected medium (an exposure point), and
- An exposure route at the point of contact (inhalation, ingestion, and dermal exposure routes).

If any of these elements are missing, the exposure pathway is considered incomplete (i.e., it does not present a means of exposure). As outlined in the RECAP 2003 guidance, the exposure scenarios evaluated for surface soils are as follows:

- Direct Contact - Ingestion, Dermal, and Inhalation
- Volatilization to Outdoor Air
- Volatilization to Indoor Air
- Leachate Concentrations Protective of Groundwater

The data collection results will be used in the RECAP evaluation for addressing these exposure scenarios. It is proposed that the potential migration of and/or leaching from surface soils during surface water runoff events be addressed through the collection of soil samples within the Old Burn Area and sediment samples from the Old Burn Area's drainage features.

As outlined in the RECAP 2003 guidance, groundwater exposure scenarios include:

- Ingestion
- Volatilization to Outdoor Air
- Volatilization to Indoor Air

After review of the surface soil analytical data, the existence of potential surface soil COCs source zone(s) that could affect groundwater quality will be assessed using RECAP soil screening levels. If such conditions are found, Clean Harbors would propose to LDEQ that groundwater be sampled in the area of the potential COC source zone(s) to determine if groundwater is impacted. A revision to this workplan detailing all work related to groundwater sampling activities would be submitted to LDEQ at that time.

6.3.1. Groundwater Classification

Groundwater has not been characterized or classified, as no groundwater monitoring wells have been installed at the facility. Without data, it is assumed that groundwater will be evaluated as Class 1. It is currently anticipated that groundwater at the facility is not impacted by site activities. The depth to groundwater measured in open boreholes during previous investigation work is greater than 50 feet and the COCs at the site are not highly mobile. As discussed above, additional groundwater data may be collected, pending the results of the site investigation described in this revised workplan. Groundwater monitoring well installation and sampling would only be warranted if soil analytical results exceed appropriate RECAP soil screening standards applicable to protection of groundwater based on the statistical analysis and SPLP analysis presented in Sections 7 and 8.

6.3.2. Exposure and Source Media

The potential sources and exposure media for this site are soil, groundwater, and surface water. These media are defined based on an understanding of potential release mechanisms and exposure pathways, and are based on the data collected at the facility to date. Analytical results from soil samples indicate that COCs in soil may be present at concentrations that exceed RECAP soil to groundwater standards or background levels for metals. Results from proposed SPLP analyses for metals and explosives in soil samples (and comparison to background levels for metals) will be used to determine if any COCs present a risk to groundwater.

6.3.3. Current and Future Environmental Transport Pathways

Possible current and future environmental transport pathways are illustrated in the preliminary conceptual site model presented in Figure 5. The potential current and future transport pathways are as follows:

- Soil to groundwater. Partitioning of soil COCs to groundwater, and potential transport of these constituents in groundwater to a surface water body. The potential for the leaching of constituents from soil to groundwater at concentrations greater than those protective of groundwater is possible.
- Soil through direct contact.
- Soil constituents dissolved in stormwater runoff.
- Soil constituents sorbed to airborne dust emissions.
- Groundwater. Potential for movement of contaminants via groundwater. Movement of impacted groundwater could result in a possible discharge of constituents to a "hypothetical" surface water body located downgradient of the facility.

6.3.4. Current and Future Exposure Points and Exposure Pathways

The current POEs at this site are shallow soils. The potential future POE for this site is a water-supply well or surface water body that may have the potential to draw from or come into contact with contaminated groundwater.

The *potential* exposure pathways include:

- Dermal contact or accidental ingestion of shallow surface soils.
- Inhalation of fugitive dust/airborne emissions.
- Dermal contact or ingestion of surface water, if impacted groundwater discharges to a surface water body.
- Dermal contact or ingestion of groundwater, either on-site or off-site.
- Biota through discharge of impacted groundwater to surface water.

7. SITE INVESTIGATION APPROACH

The proposed risk evaluation approach for the Old Burn Area AOI and former explosive storage area magazine is summarized in this section. This includes the investigation scope, rationale for the selection of COCs for the AOI, the statistical protocols to be used in determining the extent of potential contamination, and the proposed data collection location and methodologies.

7.1. SITE INVESTIGATION SCOPE

Site investigation requirements are presented in Appendix B of the RECAP guidance document. The site investigation is defined as an in-depth investigation for the purposes of defining site characteristics, determining the nature and extent (horizontal and vertical) of contamination, predicting the fate and transport of contaminants, identifying potential exposure pathways and receptors, and determining the need for corrective action. In accordance with RECAP, an evaluation of risks to human health and/or ecological receptors will be performed once the data collected as part of this revised workplan is obtained.

This section outlines the proposed RECAP site investigation scope. A statistically-based sampling methodology, based on the 95 percent upper confidence limit of the arithmetic mean (95% UCL-AM) of the appropriate sample population, will be used within the AOI for comparison to applicable RECAP standards. In addition, metals sample results will be compared to background metals results for samples collected annually at the New Burn Area. Annual soil monitoring is performed at the New Burn Area to detect and document statistically significant increases in metals, VOCs, and extractable explosives in accordance with the facility permit. The results are presented in the *"Annual Soil Monitoring Reports"* submitted to LDEQ.

The following scope of work tasks have been identified as part of a tiered AOI investigation effort:

- Identification of the source of the release,
- Characterization of all media suspected of being impacted,
- Identification of the constituents present and their respective concentrations,
- Identification of the horizontal and vertical extent of the impact,
- Identification and characterization of migration pathways and receiving media,
- Characterization of current or potential off-site impacts, and
- Collection of data for fate and transport modeling input (if any).

7.2. SOURCE CHARACTERIZATION

The area of investigation is the Old Burn Area. This section identifies potential source areas at the AOI and the potentially impacted media. The objective of the field investigation is to identify any potential

sources of contaminant releases to soil and other media at the former burn pads and immediately surrounding area. The investigation will also confirm whether a release of contaminants has previously occurred at Storage Magazine #4, the only former storage magazine location where explosive COCs were detected during previous investigations.

7.2.1. Release Source Identification

The Old Burn Area is a rectangular-shaped area located on the north-facing slope of a hill, approximately 600 feet long in the north-south direction and approximately 200 feet wide in the east-west direction (Figure 3). The Old Burn Area is approximately 250 feet from the western facility property line. Previously, ten concrete burn pads were located along a gravel road running along the length of the site, each approximately ten feet square in size. The thermal destruction of explosive and reactive wastes was performed in open concrete burners in the center of each of the burn pads. Combustion by-products (gas, vapors, and ash) were released to the atmosphere during waste treatment. The burn pads are the likely source of any potential releases within the Old Burn Area AOI. They were removed along with associated soil in March and April of 1996.

Four storage magazines were also located along the main facility road between the Old Burn Area and the main entrance to the facility (Figure 4). These storage magazines were constructed of metal exteriors and wood interiors and were used for the storage of explosive materials prior to their thermal treatment at the Old Burn Area. These locations are being evaluated under this workplan, but no release of contaminants at these locations has been observed or indicated, with the exception of low level HMX and RDX detections (less than 1 mg/kg) at Storage Magazine #4 (sample point S70 in Table 1). The storage magazines were removed in March of 1996.

7.2.2. Impacted Media Characterization

The media potentially impacted by releases at the Old Burn Area AOI are surface soils. For this workplan, surface soils will be defined in accordance with RECAP 2003 as soils present from ground surface to the depth of impact or ground surface to a total depth of no more than 15 feet bgs. Soils present from the ground surface to a depth of 15 feet are considered to be potentially accessible and thus, a potential exposure. It should be noted that sandstone outcroppings of the Catahoula Formation have been observed in shallow excavations at the site, and that unconsolidated soils may not be present below relatively shallow depths across the site.

At this time, all other media are not believed to have been impacted by any releases from the Old Burn Area AOI. This includes groundwater, surface water, sediment, and biota. The results of the planned investigation will be used to assess whether the impacted surface soil has in turn impacted any other media. If the potential for such an impact to other media is determined under RECAP guidelines, additional assessment and site investigation may be required to address RECAP requirements.

7.3. CONSTITUENTS OF CONCERN IDENTIFICATION

Three classes of contaminants were previously identified as COCs for the Old Burn Area: volatile organic compounds, extractable explosives, and metals. Based on the results from previous investigations, some target compound classes have been proposed for elimination as COCs, based on low or undetected concentrations and limited detection frequencies. The rationale for the proposed selection of COCs from each chemical class is outlined below.

Volatile Organic Compounds (VOCs)

The list of waste codes treated at the Old Burn Area is attached as Appendix B to this Workplan. Methyl ethyl ketone (MEK) is the only VOC found on this waste code list. MEK is a very low toxicity VOC that is highly degradable in the environment. MEK, and other VOCS, have not been detected in previous sampling. Based upon the list provided in Appendix B, and the previous soil sampling results at the Old Burn Area, VOCs have been eliminated from the list of COCs.

Extractable Explosive Compounds

The list of waste codes (Appendix B) treated at the Old Burn Area includes some explosive compounds. Previous soil sampling results for the Old Burn Area are detailed in Section 5 of this report. Based upon the list provided in Appendix B and the previous results of soil sampling in the Old Burn Area, extractable explosive compounds HMX and RDX are identified as COCs for the Old Burn Area. In addition, 1,3,5-trinitrobenzene is identified as a COC, though it was only detected at one location (soils at burn pad H which were subsequently removed). Analysis for explosive compounds will be performed by an LDEQ-certified analytical testing laboratory using EPA Method 8330 (nitroaromatic and nitramine explosives).

Metals

The list of waste codes treated at the Old Burn Area are attached as Appendix B. Previous soil sampling results from the Old Burn Area have been considered invalid by the facility and LDEQ. Based upon the list provided in Appendix B and the lack of valid metals data for the Old Burn Area, metals analysis will be performed for the eight Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) with the addition of copper and nickel. All metals analysis will be performed by an LDEQ-certified analytical testing laboratory by EPA Method 6010B (EPA Method 7471 mercury).

7.4. DEFINITION OF THE AREA OF INVESTIGATION (AOI)

Investigation of surface soil shall focus on defining AOIs within the Old Burn Area. An AOI is defined as a contiguous zone of impact media that is defined vertically and horizontally by the presence of a COC concentration that exceeds the appropriate Screening Standard.

7.4.1. Identification of the Impact Extent

The following sections contain a description of the rationale to be used in soil sampling of the Old Burn Area, and the preliminary soil screening levels to be applied to the soil analytical results. The areas to be sampled are those relating to previous activities at the Old Burn Area AOI. Included are the Old Burn Area, former burn pad locations, and drainage features crossing and exiting the Old Burn Area. One of the four former storage magazine locations (Storage Magazine #4) will also be sampled, based upon previous investigation activities and analytical results.

A statistically-based sampling and analysis plan will be employed to evaluate the impact of previous activities at the Old Burn Area. The EPA's "*Methods for Evaluating the Attainment of Cleanup Standards, Volume 1: Soils and Solid Media*" (U.S. EPA, 1989c) was used for guidance in developing this plan. In accordance with this document, the Old Burn Area has been divided into four distinct sampling areas such that the sampling areas are as homogeneous as possible with respect to prior waste management activities. The four divisions provide a level of stratification to the random sampling approach, thus guaranteeing that the full extent of the Old Burn Area (exclusive of the former burn pads) is investigated. RECAP also states that at an AOI, where the COC is unevenly distributed, it may be appropriate to divide the AOI into multiple exposure areas and evaluate each area separately. The appropriateness of whether to evaluate each exposure area separately or to combine areas together will be reviewed upon assessment of the RECAP workplan analytical results.

Comparisons to RECAP Screening Standards (SS) will be used to determine if the AOI warrants further evaluation under a Management Option (MO). If the maximum source concentration detectable at the AOI is less than or equal to the SS, then the AOI shall not require further evaluation or action under the applicable MO. The SS can also be used to screen out areas of facility, media, or COCs that do not warrant further evaluation under a MO.

For metals concentrations, the soil sample results from the proposed investigation will also be compared to background levels that have been determined in association with operation of the New Burn Area. As stated previously, a statistically significant data set for background metal concentrations in soils has been compiled as a result of annual soil sampling activities conducted at the facility beginning in 2001. The nature and extent of potential metals contamination in soils at the Old Burn Area is currently undefined. Therefore, comparison of background metals data to the data collected during implementation of this workplan will be an important step to determine if metals are present at levels exceeding background levels at the Old Burn Area.

The sampling areas proposed for the permitted area of the Old Burn Area include:

- four sections of the area within the Old Burn Area boundaries excluding the ten former burn pad locations and drainage features (Figure 6),
- each former burn pad location (Figure 6),
- the drainage features crossing and exiting the Old Burn Area (Figure 7).

The designation of four sampling sections (Figure 6) in the Old Burn Area is based on separating the area of concern such that sampling will occur on either side of the pads and at locations both uphill and downhill from the pads. Random sample locations for each area will be generated independently. Statistical analysis of data from the four sections may be performed as a composite of all data, or independently, depending on the distribution of COCs. The four storage magazine locations will be treated as a unique sampling area and the overall approach to assessing potential impacts to this area will differ from the other areas, as described in the following sections.

With the exception of the four storage magazine locations, sample locations within each area or area section will be selected using a stratified random sampling approach. Random sample selection provides unbiased estimations of the population being analyzed, provided that contrary trends or patterns do not exist within the population (Gilbert, 1987). The assumption that such trends do not exist within each population is justified by dividing the site into distinct sampling areas based upon site features and use.

The vertical extent of contamination within each sampling area will be determined by sampling at two different depths below ground surface at each sampling location (Table 5). The depths at which samples are collected may be considered layers within the sampling areas. Based on the results of the samples collected, each layer may be evaluated as an independent population (AOI) and analyzed as such. Alternatively, the data may be evaluated as a composite data set representing the population of shallow surface soils at the Old Burn Area. A statistical analysis will be performed on the data from each layer, and/or from the full data set, to determine the potential horizontal and vertical extent of COC impacts within a sampling area.

The statistical evaluation that will be performed to determine the nature of impact to each sampling area will follow the guidelines outlined in Section 2.8 of RECAP. The distribution of data will be determined and appropriate transformations of the data will be performed, if necessary, to adhere to the underlying assumptions of the statistical analysis being utilized.

7.4.2. Sampling Approach

A brief description of the sampling areas and the manner in which sample locations will be determined within each is provided in the following sections.

Old Burn Area The area within the permitted Old Burn Area boundaries surrounding the former burn pad locations and the drainage features (Old Burn Area) will be analyzed independently from the former burn pads and drainage features. This will be done due to differences in the manner in which the permitted Old Burn Area was potentially impacted when compared to the former burn pads and drainage features. Due to site-specific features (former burn pad locations, prevailing wind directions, and flow within drainage features), the Old Burn Area has been divided into four sampling areas from which random sample locations will be determined. This approach should result in sampling of relatively homogeneous regions of the Old Burn Area with respect to the degree in which a region was potentially impacted, without the risk of completely missing some sample area. The four sampling areas are defined as sections in Figure 6.

Six sample locations will be randomly located within each section. Two samples will be collected at each location: one to investigate near surface soils from a depth of 0 to 1 foot bgs, and one from 2 to 3 feet bgs to determine if any vertical migration of COCs has occurred at locations away from the burn pads. To provide adequate sample coverage throughout sections and to ensure that the data is not spatially biased, the sample locations will be identified using randomly selected points within a grid system imposed over each section. Each section has been divided into a four block-by-six block grid (Figure 6), giving an approximate 20 by 40 foot size for each individual grid block. Six of the 24 grid blocks within a section will be randomly selected for sampling.

If a selected grid block contains portions of a former burn pad location or drainage feature in at least 25 percent of the area within the grid block, the grid block will be discarded, and a new grid block will be randomly selected from the remaining grid blocks. This selection process ensures that the sample collected is representative of the Old Burn Area and not of the former burn pads or drainage features. Each grid block selected will be subdivided into a two cell-by-three cell grid pattern with grid cells of equal size. One of the six subdivided grid cells will be randomly selected, and the sample location will be identified as the center of that grid cell. In the event that the sample location falls within a former burn pad location or a drainage feature, another grid cell will be randomly selected. All random selection will be performed using a random number generator.

A total of 24 soil sample locations (six sample locations within each of the four sections) and 48 samples will be collected in the area surrounding the ten former burn pad locations. The previously sampled perimeter points will not be re-sampled as these points are biased in location and could not be properly used in the statistically-based analysis described herein.

The samples will be analyzed for metals and explosives following the analytical methods presented in Section 7.4.4. Two additional samples will be analyzed for SPLP metals and SPLP explosives from areas where metals and explosives were detected. Data from these samples will help to define leaching potential of COCs for evaluation of the protection of groundwater.

Former Burn Pad Locations Each former burn pad location will be evaluated as an independent sampling area. If sample results indicate that heterogeneity exists between former burn pad locations, resulting from

previous use during thermal treatment activities, or due to excavation at some locations, then burn pads may require evaluation as independent AOIs. Because the potential for impact due to previous activities at the site is greatest at the former burn pad locations, the sample location density will be greater than in the adjacent areas described above.

Two sample locations will be identified within each of the 20 by 20 foot former burn pad locations. Two samples will be collected at each location. One sample will be collected from the near surface soils from a depth of 0 to 1 foot bgs. Results from this sample will allow for comparison to the previous sampling results, and will serve to verify the effectiveness of previous soil removal efforts. A second sample will be collected from a depth of 2 to 3 feet bgs to determine if any vertical migration of COCs has occurred at locations directly beneath the former burn pads. The samples from 0-1 ft and 2-3 ft will be analyzed for metals and explosives as in the Old Burn Area random samples.

Due to the relatively small size of the former burn pad locations, simple random sampling will be employed to select sample locations. Four sets of random local coordinates will be generated for each former burn pad location using a random number generator. A total of 20 soil sample locations (two sample locations within ten former burn pad locations) will be identified, and 40 samples will be collected.

Three additional samples will be collected from the 0 to 1 foot sample depth for analysis of SPLP metals and SPLP explosives. One SLP sample will be collected from each of the three burnpads that had the highest explosive compound concentrations in the previous sampling events (i.e., burn pads D, H, and J). Data from these samples will help to define leaching potential of COCs for evaluation of the protection of groundwater.

Drainage Features The three main drainage features at the Old Burn Area have been divided into seven segments, each 200 feet in length (Figure 7). Each of these segments can be subdivided into ten 20-foot intervals. One interval in each segment will be chosen randomly for sediment sample collection. Sediment samples will be collected from the center of each drainage feature at a depth of 1 to 6 inches. Care will be taken to avoid inclusion of surface debris (plants and leaves) in the sediment samples. The samples will be analyzed for metals and explosives.

Storage Magazines Storage magazine soil samples will be collected at the former location of Storage Magazine #4. This corresponds to sample point S70 in Table 1, and is the only storage magazine location where explosives were detected in the previous sampling event. Based on past results, two Storage Magazine #4 locations will be sampled for extractable explosive analysis. Sample locations (two selected at random) and depths will be the same as described for the former burn pads. Sample depths will be 0 to 1 foot and 2 to 3 feet. Samples will be submitted for analysis of explosives only. There are no metals contained in the chemical structure of the un-burned explosives.

7.4.3. Sampling Methodology

All soil sampling and field investigation activities will be competed in accordance with the LDEQ-approved workplan, the most recent version of U.S. EPA SW-846 entitled *"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,"* the site investigation requirements described in Appendix B of RECAP (LDEQ, October 20, 2003), the LDEQ and Louisiana Department of Transportation and Development (LDOTD) guidance documents entitled *"Construction of Geotechnical Boreholes"* and *"Groundwater Monitoring Systems Handbook,"* and the LDOTD *"Water Well Rules, Regulations, and Standards,"* as applicable. In addition, all laboratory analyses will be performed by an LDEQ-accredited analytical testing laboratory. A site-specific health and safety plan that meets RECAP requirements will also be developed prior to the start of any field activities.

All samples will be collected using Geoprobe sampling techniques. Because samples are non-volatile, all samples can be collected using split-spoon sampling methods. One-foot sample intervals from the split spoon will be obtained in brass sample tubes or similar sample containers. The soil samples will then be submitted to the analytical laboratory following appropriate chain-of-custody procedures. Approximately 8 ounces of material will be required for each the metals and explosives analysis (two brass tubes submitted for each sample). The soil samples will be sent via overnight courier under proper chain-of-custody documentation for analysis to an LDEQ-certified analytical laboratory. Soil sampling activities will be documented on soil boring logs and/or a bound logbook.

7.4.4. Analytical Testing

Each sample will be analyzed as specified in Table 5. The metals parameters will be analyzed using EPA Method 6010 (7471 for mercury), and the extractable explosive parameters will be analyzed using EPA Method 8330. The Synthetic Precipitation Leaching Procedure (SPLP—as described in RECAP Appendix H) will be performed on five samples (two from the Old Burn Area and three from the former burn pad locations) to quantify soluble explosives and metals concentrations. One equipment rinsate blank and one field duplicate sample will be collected for every twenty samples in accordance with RECAP.

7.4.5. Geotechnical Samples

In accordance with RECAP requirements, soil samples from selected boring locations at representative site locations will also be collected for analysis of physical and chemical properties to assist in the characterization of environmental fate and transport parameters. These data can be used to support determination of potential contaminant migration, dilution attenuation, or in support of potential corrective action evaluation. Soil samples will be collected from the unsaturated zone at three borings and analyzed for vertical intrinsic permeability/hydraulic conductivity by ASTM Method D5084 (or equivalent method), total organic carbon content by ASTM Method D2974 (or equivalent method), Unified Soil Classification System

by ASTM D2487, Atterberg limits by ASTM Method D4318, particle size analysis by ASTM D422, and dry and wet bulk density, moisture content, and total porosity by appropriate ASTM methods. Additional physical and chemical properties testing may be performed as circumstances dictate.

8. PROJECT SCHEDULE AND SITE INVESTIGATION REPORT

It is anticipated that the site investigation fieldwork can be completed within four weeks after initiation of field activities. Within eight weeks of receipt of all analytical results from all potential phases of soil sampling activities, a Site Investigation Report will be prepared for submission to LDEQ. The Site Investigation Report will be prepared in accordance with requirements described in Appendix B of the RECAP 2003 guidance document.

As part of the site investigation evaluation Clean Harbors will compare the soil investigation results to calculated screening standards for explosive COCs, and to RECAP soil screening standards and site background concentrations for metals. The sample results will be used to determine if any explosives or metals are present in soil and whether they have been mobilized to depths greater than the near-surface (0 to 1 foot bgs). In addition to a comparison to RECAP screening standards and background concentrations (for metals), the soil to groundwater pathway will also be evaluated based on results obtained from analysis by the SPLP. Samples collected for explosives analysis by SPLP (EPA SW846 Method 1312) will be evaluated to determine if there is any potential for COCs to leach to groundwater.

SPLP results will be compared to the appropriate groundwater standard based on the classification of the groundwater to be protected. If groundwater is determined to meet the definition of Groundwater Classification 1, the groundwater screening standard (GW1) is multiplied by a factor of 20 times and compared to the leach test results. If the leach test results are less than or equal to the product of GW1 x 20, then the soil AOI is considered to be protective of groundwater and this pathway is eliminated from further consideration. If the leach test results are greater than the product of GW1 x 20, then the soil may not be protective of groundwater and further evaluation of the soil to groundwater pathway may be required under MO-2 or MO-3.

Based on the data collected at the site to date, the groundwater protection pathway is the only pathway with the potential to exceed screening standards for explosives. If screening standards from the proposed soil investigation are exceeded, Clean Harbors will continue the soil evaluation under the appropriate RECAP Management Option approach. Evaluation of the soils data under the tiered Management Option approach will begin with a statistical analysis for each of the COCs.

USEPA and RECAP recommends that the 95% UCL-AM should be used for comparison to relevant standards. The 95% UCL-AM is defined as a value that, when calculated repeatedly for random subsets of site data, will equal or exceed the upper limit of uncertainty for the population mean concentration 95 percent of the time. In contrast, comparison of the mean (i.e., average) value for a data set to the associated soil or groundwater protection standard may not provide a high degree of confidence that the standard is not exceeded, due to the limited sampling population or high variability among sample results. For data sets with 20 or more detected sample results, the 95% UCL provides consistent estimates of the 95% upper confidence limit on the mean of the underlying population (USEPA, 1992). Based on the results of the screening evaluation, and subsequent statistical evaluation (if necessary), Clean Harbors will determine if

the data support a request for NFA at the site, or if additional data evaluation under MO-1 or MO-2 is required.

The schedule for completion of the Site Investigation Report will be tied to receipt of all final Site Investigation analytical data. The report will include all tables, figures, statistical evaluations, electronic analytical data, soil boring logs, and RECAP required forms (or equivalent presentation) to satisfy the requirements set out in RECAP 2003 Appendix B. Additionally, the report will provide estimates of any area of impact and any volume of soil to be mitigated and recommendations for further assessment or corrective action based on RECAP findings. This report will include a risk-based assessment of the Old Burn Area and a determination of appropriate closure criteria for LDEQ consideration.

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TABLES

TABLE 1
EXTRACTABLE EXPLOSIVE ANALYTICAL SUMMARY
PREVIOUS CLOSURE ACTIVITIES - INITIAL SAMPLING EVENT (March 27, 1996)
OLD BURN AREA - CLEAN HARBORS COLFAX, LLC., COLFAX, LOUISIANA

Location / PARAMETERS	S51	S52	S53	S54	S55	S56	S57	S58	S59	S60
HMX	< 0.185	< 0.186	< 0.189	< 0.189	< 0.197	**0.678**	< 0.195	< 0.192	< 0.197	< 0.199
RDX	< 0.179	< 0.180	< 0.183	< 0.183	< 0.190	< 0.183	< 0.188	< 0.186	< 0.191	< 0.193
1,3,5-Trinitrobenzene	< 0.090	< 0.090	< 0.092	< 0.092	< 0.096	< 0.092	< 0.095	< 0.094	< 0.096	< 0.097
1,3-Dinitrobenzene	< 0.087	< 0.087	< 0.089	< 0.089	< 0.092	< 0.089	< 0.091	< 0.090	< 0.092	< 0.093
Tetryl	< 0.102	< 0.103	< 0.104	< 0.104	< 0.108	< 0.104	< 0.107	< 0.106	< 0.109	< 0.110
Nitrobenzene	< 0.093	< 0.093	< 0.095	< 0.095	< 0.098	< 0.095	< 0.098	< 0.096	< 0.099	< 0.100
2,4,6-Trinitrotoluene	< 0.090	< 0.091	< 0.093	< 0.092	< 0.096	< 0.093	< 0.095	< 0.094	< 0.096	< 0.098
4-Amino-2,6-Dinitrotoluene	< 0.086	< 0.087	< 0.089	< 0.088	< 0.092	< 0.089	< 0.091	< 0.090	< 0.092	< 0.093
2,Amino-4,6-Dinitrotoluene	< 0.084	< 0.084	< 0.086	< 0.086	< 0.089	< 0.086	< 0.088	< 0.087	< 0.089	< 0.090
2,4-Dinitrotoluene	< 0.082	< 0.082	< 0.084	< 0.084	< 0.087	< 0.084	< 0.086	< 0.085	< 0.087	< 0.088
2,6-Dinitrotoluene	< 0.166	< 0.167	< 0.170	< 0.170	< 0.177	< 0.170	< 0.175	< 0.173	< 0.177	< 0.179

Location / PARAMETERS	S61	S62	S63	S63B (S63 Dup.)	S64	S65	S66	S67	S68	S69
HMX	**0.203**	**2.47**	**1.54**	**0.753**	< 0.185	< 0.210	**0.310**	< 0.181	< 0.181	< 0.183
RDX	< 0.194	**0.418**	< 0.188	< 0.183	< 0.179	< 0.203	**0.465**	< 0.175	< 0.175	< 0.177
1,3,5-Trinitrobenzene	< 0.097	< 0.089	< 0.094	< 0.092	< 0.090	< 0.102	< 0.096	< 0.088	< 0.088	< 0.089
1,3-Dinitrobenzene	< 0.094	< 0.085	< 0.091	< 0.089	< 0.087	< 0.098	< 0.093	< 0.085	< 0.085	< 0.086
Tetryl	< 0.110	< 0.100	< 0.107	< 0.104	< 0.102	< 0.116	< 0.109	< 0.100	< 0.100	< 0.101
Nitrobenzene	< 0.100	< 0.091	< 0.097	< 0.095	< 0.093	< 0.105	< 0.099	< 0.091	< 0.091	< 0.092
2,4,6-Trinitrotoluene	< 0.098	< 0.089	< 0.095	< 0.092	< 0.091	< 0.103	< 0.097	< 0.089	< 0.088	< 0.089
4-Amino-2,6-Dinitrotoluene	< 0.093	< 0.085	< 0.091	< 0.088	< 0.086	< 0.098	< 0.092	< 0.085	< 0.084	< 0.085
2,Amino-4,6-Dinitrotoluene	< 0.091	< 0.083	< 0.088	< 0.086	< 0.084	< 0.095	< 0.090	< 0.082	< 0.082	< 0.083
2,4-Dinitrotoluene	< 0.089	< 0.081	< 0.086	< 0.084	< 0.082	< 0.093	< 0.087	< 0.080	< 0.080	< 0.081
2,6-Dinitrotoluene	< 0.180	< 0.164	< 0.175	< 0.068	< 0.166	< 0.189	< 0.250	< 0.163	< 0.162	< 0.165

Notes:
All data given in milligrams per kilogram (mg/kg).
Locations 67 through 70 are Storage Magazines 1 through 4 respectively.
Locations S"A" through S"K" are former Burn Pads A through K.
Analytical detections shown in **BOLD**.

TABLE 1
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OLD BURN AREA - CLEAN HARBORS COLFAX, LLC., COLFAX, LOUISIANA

Location / PARAMETERS	S70	SA2	SA3	SA4	SB1	SB2	SB3	SC1	SC2	SC4
HMX	**0.598**	< 0.183	< 0.182	**3.96**	< 0.185	**8.34**	**0.852**	< 0.183	< 0.186	< 0.185
RDX	**0.292**	< 0.177	< 0.177	**0.187**	< 0.179	**0.912**	**0.223**	< 0.177	**0.199**	< 0.179
1,3,5-Trinitrobenzene	< 0.090	< 0.089	< 0.089	< 0.089	< 0.090	< 0.090	< 0.089	< 0.089	< 0.091	< 0.090
1,3-Dinitrobenzene	< 0.087	< 0.086	< 0.086	< 0.085	< 0.087	< 0.087	< 0.086	< 0.086	< 0.087	< 0.087
Tetryl	< 0.102	< 0.101	< 0.101	< 0.100	< 0.102	< 0.103	< 0.101	< 0.101	< 0.103	< 0.102
Nitrobenzene	< 0.093	< 0.092	< 0.091	< 0.091	< 0.093	< 0.093	< 0.092	< 0.092	< 0.093	< 0.093
2,4,6-Trinitrotoluene	< 0.090	< 0.090	< 0.089	< 0.089	< 0.090	< 0.091	< 0.090	< 0.090	< 0.091	< 0.091
4-Amino-2,6-Dinitrotoluene	< 0.086	< 0.086	< 0.085	< 0.085	< 0.086	< 0.087	< 0.086	< 0.086	< 0.087	< 0.086
2,Amino-4,6-Dinitrotoluene	< 0.084	< 0.083	< 0.083	< 0.083	< 0.084	< 0.084	< 0.083	< 0.083	< 0.085	< 0.084
2,4-Dinitrotoluene	< 0.082	< 0.081	< 0.081	< 0.081	< 0.082	< 0.082	< 0.081	< 0.081	< 0.083	< 0.082
2,6-Dinitrotoluene	< 0.166	< 0.165	< 0.164	< 0.164	< 0.166	< 0.167	< 0.17	< 0.165	< 0.168	< 0.166

Location / PARAMETERS	SD1	SD2	SD4	SE2	SE3	SE4	SF2	SF3	SF4	SG2
HMX	**0.703**	**7.24**	**1.73**	< 0.187	**0.305**	< 0.188	< 0.182	< 0.183	**0.489**	< 0.186
RDX	**0.305**	**0.830**	**0.205**	< 0.181	**0.796**	< 0.182	< 0.177	< 0.177	< 0.177	< 0.180
1,3,5-Trinitrobenzene	< 0.092	< 0.092	< 0.091	< 0.091	< 0.090	< 0.091	< 0.089	< 0.089	< 0.089	< 0.090
1,3-Dinitrobenzene	< 0.089	< 0.088	< 0.088	< 0.088	< 0.087	< 0.088	< 0.086	< 0.086	< 0.086	< 0.087
Tetryl	< 0.104	< 0.104	< 0.104	< 0.103	< 0.102	< 0.104	< 0.101	< 0.101	< 0.101	< 0.102
Nitrobenzene	< 0.095	< 0.095	< 0.094	< 0.094	< 0.093	< 0.094	< 0.091	< 0.092	< 0.091	< 0.093
2,4,6-Trinitrotoluene	< 0.092	< 0.092	< 0.092	< 0.092	< 0.091	< 0.092	< 0.089	< 0.089	< 0.089	< 0.091
4-Amino-2,6-Dinitrotoluene	< 0.088	< 0.088	< 0.088	< 0.087	< 0.087	< 0.088	< 0.085	< 0.085	< 0.085	< 0.087
2,Amino-4,6-Dinitrotoluene	< 0.086	< 0.086	< 0.085	< 0.085	< 0.084	< 0.085	< 0.083	< 0.083	< 0.083	< 0.084
2,4-Dinitrotoluene	< 0.084	< 0.084	< 0.083	< 0.083	< 0.082	< 0.083	< 0.081	< 0.081	< 0.081	< 0.082
2,6-Dinitrotoluene	< 0.170	< 0.170	< 0.169	< 0.168	< 0.167	< 0.169	< 0.164	< 0.164	< 0.164	< 0.067

Notes:

All data given in milligrams per kilogram (mg/kg).

Locations 67 through 70 are Storage Magazines 1 through 4 respectively.

Locations S"A" through S"K" are former Burn Pads A through K.

Analytical detections shown in **BOLD**.

TABLE 1
EXTRACTABLE EXPLOSIVE ANALYTICAL SUMMARY
PREVIOUS CLOSURE ACTIVITIES - INITIAL SAMPLING EVENT (March 27, 1996)
OLD BURN AREA - CLEAN HARBORS COLFAX, LLC., COLFAX, LOUISIANA

Location / PARAMETERS	SG3	SG4	SH1	SH2	SH4	SJ1	SJ3	SJ4	SK2*
HMX	**0.510**	**1.15**	**4.220**	**2.47**	< 0.182	**0.591**	< 0.185	**1.09**	< 0.192
RDX	**0.212**	**0.855**	**6.19**	**1.84**	**0.347**	< 0.182	< 0.179	**0.570**	< 0.186
1,3,5-Trinitrobenzene	< 0.092	< 0.090	< 0.089	**0.166**	< 0.089	< 0.092	< 0.090	< 0.091	< 0.093
1,3-Dinitrobenzene	< 0.088	< 0.087	< 0.086	< 0.086	< 0.085	< 0.088	< 0.087	< 0.088	< 0.090
Tetryl	< 0.104	< 0.102	< 0.101	< 0.102	< 0.101	< 0.104	< 0.102	< 0.104	< 0.106
Nitrobenzene	< 0.094	< 0.093	< 0.092	< 0.092	< 0.091	< 0.094	< 0.093	< 0.094	< 0.096
2,4,6-Trinitrotoluene	< 0.092	< 0.091	< 0.090	< 0.090	< 0.089	< 0.092	< 0.091	< 0.092	< 0.094
4-Amino-2,6-Dinitrotoluene	< 0.088	< 0.087	< 0.086	< 0.086	< 0.085	< 0.088	< 0.087	< 0.088	< 0.090
2,Amino-4,6-Dinitrotoluene	< 0.086	< 0.084	< 0.083	< 0.084	< 0.083	< 0.085	< 0.084	< 0.085	< 0.087
2,4-Dinitrotoluene	< 0.084	< 0.082	< 0.081	< 0.082	< 0.081	< 0.083	< 0.082	< 0.083	< 0.085
2,6-Dinitrotoluene	< 0.170	< 0.167	< 0.066	< 0.066	< 0.066	< 0.068	< 0.067	< 0.068	< 0.069

Notes:

All data given in milligrams per kilogram (mg/kg).

Locations 67 through 70 are Storage Magazines 1 through 4 respectively.

Locations S"A" through S"K" are former Burn Pads A through K.

Analytical detections shown in **BOLD**.

* - Two additional Pad K sample analytical results missing from ViroGroup 1996 report.

TABLE 2
EXTRACTABLE EXPLOSIVE ANALYTICAL SUMMARY
PREVIOUS CLOSURE ACTIVITIES - SECOND SAMPLING EVENT (April 23, 1996)
OLD BURN AREA - CLEAN HARBORS COLFAX, LLC., COLFAX, LOUISIANA

Location / PARAMETERS	S561	S562	S563	S564	S565	SG1	SG2	SG3	SG4	SG5
HMX	< 0.189	< 0.189	< 0.189	< 0.189	< 0.189	< 0.185	< 0.183	**0.633**	< 0.181	< 0.181
RDX	< 0.183	< 0.183	< 0.183	< 0.183	< 0.18	< 0.179	< 0.177	**0.186**	< 0.175	< 0.175
1,3,5-Trinitrobenzene	< 0.092	< 0.092	< 0.092	< 0.092	< 0.092	< 0.090	< 0.089	< 0.089	< 0.088	< 0.088
1,3-Dinitrobenzene	< 0.089	< 0.089	< 0.088	< 0.089	< 0.089	< 0.087	< 0.086	< 0.086	< 0.085	< 0.085
Tetryl	< 0.104	< 0.104	< 0.104	< 0.104	< 0.140	< 0.102	< 0.101	< 0.101	< 0.100	< 0.100
Nitrobenzene	< 0.095	< 0.095	< 0.095	< 0.095	< 0.095	< 0.093	< 0.092	< 0.092	< 0.090	< 0.091
2,4,6-Trinitrotoluene	< 0.093	< 0.092	< 0.092	< 0.092	< 0.092	< 0.091	< 0.090	< 0.090	< 0.088	< 0.089
4-Amino-2,6-Dinitrotoluene	< 0.088	< 0.088	< 0.088	< 0.088	< 0.088	< 0.087	< 0.086	< 0.086	< 0.084	< 0.085
2,Amino-4,6-Dinitrotoluene	< 0.086	< 0.086	< 0.086	< 0.086	< 0.086	< 0.084	< 0.083	< 0.083	< 0.082	< 0.082
2,4-Dinitrotoluene	< 0.084	< 0.084	< 0.084	< 0.084	< 0.084	< 0.082	< 0.081	< 0.081	< 0.080	< 0.080
2,6-Dinitrotoluene	< 0.170	< 0.170	< 0.170	< 0.170	< 0.170	< 0.167	< 0.165	< 0.165	< 0.162	< 0.163

Location / PARAMETERS	SH1	SH2	SH3	SH4	SH5	SH5A (SH5 Dup.)	SJ1	SJ2	SJ3	SJ4
HMX	**0.392**	< 0.179	< 0.180	< 0.183	**1.04**	**1.24**	**0.712**	**150**	< 0.180	**0.376**
RDX	**0.427**	< 0.174	< 0.174	< 0.177	**0.494**	**0.540**	< 0.177	**1.84**	< 0.174	**0.713**
1,3,5-Trinitrobenzene	< 0.088	< 0.087	< 0.088	< 0.089	< 0.089	< 0.088	< 0.089	< 0.088	< 0.088	< 0.090
1,3-Dinitrobenzene	< 0.085	< 0.084	< 0.085	< 0.086	< 0.085	< 0.085	< 0.086	< 0.085	< 0.084	< 0.086
Tetryl	< 0.100	< 0.099	< 0.099	< 0.101	< 0.100	< 0.100	< 0.101	< 0.100	< 0.099	< 0.102
Nitrobenzene	< 0.090	< 0.090	< 0.090	< 0.092	< 0.091	< 0.091	< 0.092	< 0.091	< 0.090	< 0.092
2,4,6-Trinitrotoluene	< 0.088	< 0.088	< 0.088	< 0.089	< 0.089	< 0.089	< 0.090	< 0.089	< 0.088	< 0.090
4-Amino-2,6-Dinitrotoluene	< 0.084	< 0.084	< 0.084	< 0.085	< 0.085	< 0.085	< 0.086	< 0.085	< 0.084	< 0.086
2,Amino-4,6-Dinitrotoluene	< 0.082	< 0.081	< 0.082	< 0.083	< 0.083	< 0.083	< 0.083	< 0.083	< 0.082	< 0.084
2,4-Dinitrotoluene	< 0.080	< 0.080	< 0.080	< 0.081	< 0.081	< 0.081	< 0.081	< 0.081	< 0.080	< 0.082
2,6-Dinitrotoluene	< 0.162	< 0.161	< 0.162	< 0.164	< 0.164	< 0.164	< 0.165	< 0.164	< 0.162	< 0.166

Location / PARAMETERS	SJ5	SK1	SK2	SK3	SK4	SK5
HMX	< 0.182	**0.244**	**0.604**	< 0.19	**0.303**	< 0.188
RDX	< 0.176	**0.211**	< 0.18	< 0.180	**0.249**	< 0.182
1,3,5-Trinitrobenzene	< 0.088	< 0.091	< 0.092	< 0.091	< 0.091	< 0.091
1,3-Dinitrobenzene	< 0.085	< 0.088	< 0.089	< 0.087	< 0.088	< 0.088
Tetryl	< 0.100	< 0.103	< 0.104	< 0.103	< 0.103	< 0.103
Nitrobenzene	< 0.091	< 0.094	< 0.095	< 0.093	< 0.094	< 0.094
2,4,6-Trinitrotoluene	< 0.089	< 0.091	< 0.092	< 0.091	< 0.091	< 0.091
4-Amino-2,6-Dinitrotoluene	< 0.085	< 0.087	< 0.088	< 0.087	< 0.087	< 0.087
2,Amino-4,6-Dinitrotoluene	< 0.082	< 0.085	< 0.086	< 0.084	< 0.085	< 0.085
2,4-Dinitrotoluene	< 0.080	< 0.083	< 0.084	< 0.082	< 0.083	< 0.083
2,6-Dinitrotoluene	< 0.163	< 0.168	< 0.170	< 0.167	< 0.168	< 0.168

Notes:
All data given in milligrams per kilogram (mg/kg).
Locations S"A" through S"K" are former Burn Pads A through K.
Analytical detections shown in BOLD.

TABLE 3
SOIL SCREENING STANDARD SUMMARY
OLD BURN AREA, CLEAN HARBORS COLFAX, LLC,
COLFAX, LOUISIANA

PARAMETERS	ANAYTICAL METHOD	PRACTICAL QUANTITATION LIMIT (mg/kg)	SOIL SCREENING LEVEL (mg/kg) (Soils, 0-15ft., Soil_SSi = industrial exposure)	SOIL TO GW SCREENING LEVEL (mg/kg) (Soils, 0-15 ft., Soil_SSi industrial exposure)	GW SCREENING LEVEL (mg/L)
Extractable Explosives*					
HMX	SW 846 8330	0.25	10217	0.9	0.18
RDX	SW 846 8330	0.25	19	0.011	6.6 x 10-4
1,3,5-Trinitrobenzene	SW 846 8330	0.25	6130	2.15	0.11
Metals					
Arsenic	SW 846 6010	5.0	12	100	0.01
Barium	SW 846 6010	0.50	14,000	2000	2
Cadmium	SW 846 6010	0.50	100	20	0.005
Chromium (III)	SW 846 6010	1.0	310,000	100	0.1
Chromium (VI)	SW 846 6010	1.0	610	100	0.1
Copper	SW 846 6010	1.0	8,200	1500	1.3
Lead	SW 846 6010	2.0	1,400	100	0.15
Mercury	SW 846 7471	0.040	61	4	0.002
Nickel	SW 846 6010	1.0	4,100	1500	0.073
Selenium	SW 846 6010	5.0	1000	20	0.05
Silver	SW 846 6010	0.50	1000	100	0.018

Note: * See Table 4 for RECAP 2003 Screening Level Calculation Parameters for these compounds.

TABLE 4
INPUT PARAMETER, RECAP SCREENING OPTION CALCULATIONS
OLD BURN AREA, CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

PARAMETER	RDX	HMX	1,3,5-TRINITRO BENZENE
Molecular Weight (g/mole)	222.26 (1)	296.20 (2)	213.11 (7)
Air Diffusion Coefficient (cm2/sec)	7.2E-02 (3)	7.2E-02 (3)	7.2E-02 (3)
Water Diffusion Coefficient (cm2/sec)	9.4E-06 (3)	9.4E-06 (3)	9.4E-06 (3)
Log Koc (l/kg)	1.8 (4)	1.8 (5)	1.88 (7)
Henry's Law Constant (atm-m3/mol)	1.2E-05 (4)	1.2E-05 (5)	2.3E-06 (7)
Vapor Pressure (mm Hg)	1.0E-09 (4)	1.0E-09 (5)	1.0 (7)
Solubility (mg/l)	40 (3)	40 (3)	3500 (7)
Oral Slope Factor	1.1E-01 (1)	N/A (2)	N/A (6)
Oral Reference Dose	3.0E-03 (1)	5.0E-02 (2)	5.0E-05 (6)
Relative Absorption Factor (Oral)	1.0 (3)	1.0 (3)	1.0 (3)
Relative Absorption Factor (Dermal)	0.05 (3)	0.05 (3)	0.05 (3)

N/A - Not Applicable
1 - U.S. EPA, 1997, IRIS, RDX
2 - U.S. EPA, 1997, IRIS, HMX
3 - Assumed to be equal to Naphthalene
4 - ATSDR, 1995a, Toxicological Profile for RDX
5 - Assumed to be equal to RDX
6 - U.S. EPA, 1997, IRIS, Trinitrobenzene
7 - ATSDR, 1995b, Toxicological Profile for Di- & Trinitrobenzene

TABLE 5
SOIL SAMPLING METHODOLOGY AND PARAMETERS
OLD BURN AREA, CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

AREA	REF. FIGURE	SOIL SAMPLING METHOD			PARAMETERS
		MAXIMUM DEPTH *	SAMPLE TYPE	# SAMPLES / LOCATION	
Old Burn Area (exclusive of Former Burn Pad Locations)	#5	3 ft.	1 ft. composite samples	6 sample locations per each of 4 sections,	Eight total RCRA metals + copper and nickel
			0 to 1 ft. bgs 2 to 3 ft. bgs 2 SPLP samples	2 samples per location, total of 48 samples Statistically determined (See Section 7.4.2) Collect 2 SPLP samples at two of the deeper locations See grid pattern, Fig. #6	Extractable explosives target list (Method 8330) Two representative geotechnical and 2 SPLP samples (SPLP for all metals and explosives)**
Former Burn Pad Locations	#5	6 ft.	1 ft. composite samples 0 to 1 ft. bgs 2 to 3 ft. bgs 5 to 6 ft. bgs 3 SPLP samples	2 samples locations per each of 10 former pads, 2 samples per location, total of 40 samples Statistically determined (See Section 7.4.2) Collect 3 SPLP samples See grid pattern, Fig. #6	Eight total RCRA metals + copper and nickel Extractable explosives target list (Method 8330) One representative geotechnical and 3 SPLP samples (SPLP for all metals and explosives)**
Drainage Features	#6	6 Inches	Use available sediment Grab	Three drainage features, divided into seven 200-ft. long segments (Fig #7) Each segment divided into ten 20-ft. long intervals Select one interval from each segment using random number generator (7 samples total)	Eight total RCRA metals + copper and nickel Extractable explosives target list (Method 8330)
Storage Magazines	#4	3 ft	Continuous Sampling 1 ft. each sample Grab	Use previous footprint of Storage Magazine #4 2 sample locations 2 samples per location, total of 4 samples Magazine #4 only	Extractable explosives target list (Method 8330)

Notes:

* - Maximum soil sample collection depth will be to 6 feet or until consolidated material is encountered (Catahoula Formation, sandstone).

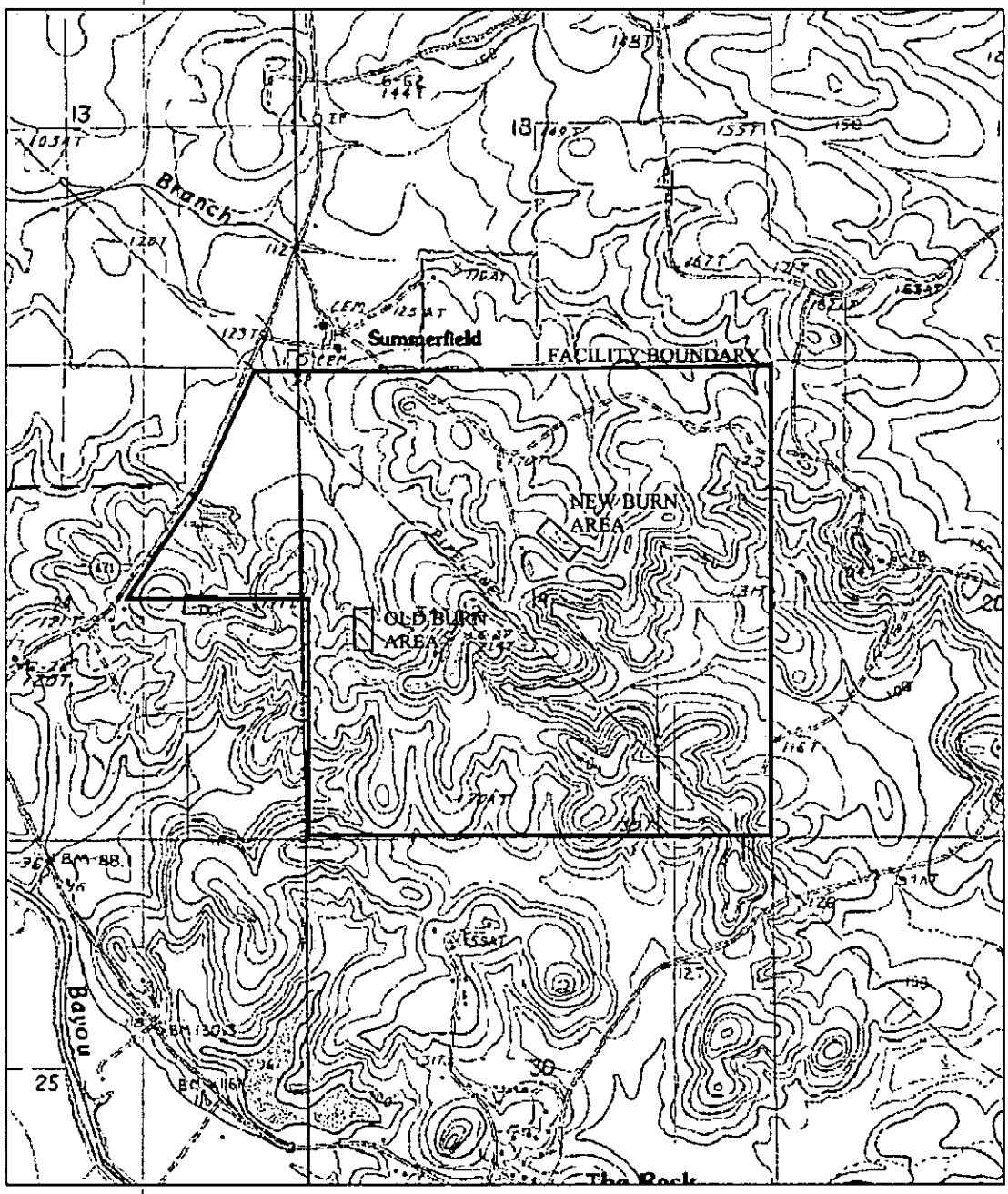
** - Geotechnical soil characteristics to be analyzed, but may not be limited to: soil type, dry bulk density, soil organic carbon, total porosity, volumetric water content, hydraulic conductivity, grain size, and soil pH.

- Samples will be sequentially analyzed in the laboratory, scheduled so that all extraction and holding times are met.

- The selected total metal parameters are as follows: arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, and silver.

SPLP - Synthetic Precipitation Leaching Procedure.

FIGURES



N

0 2000

FEET

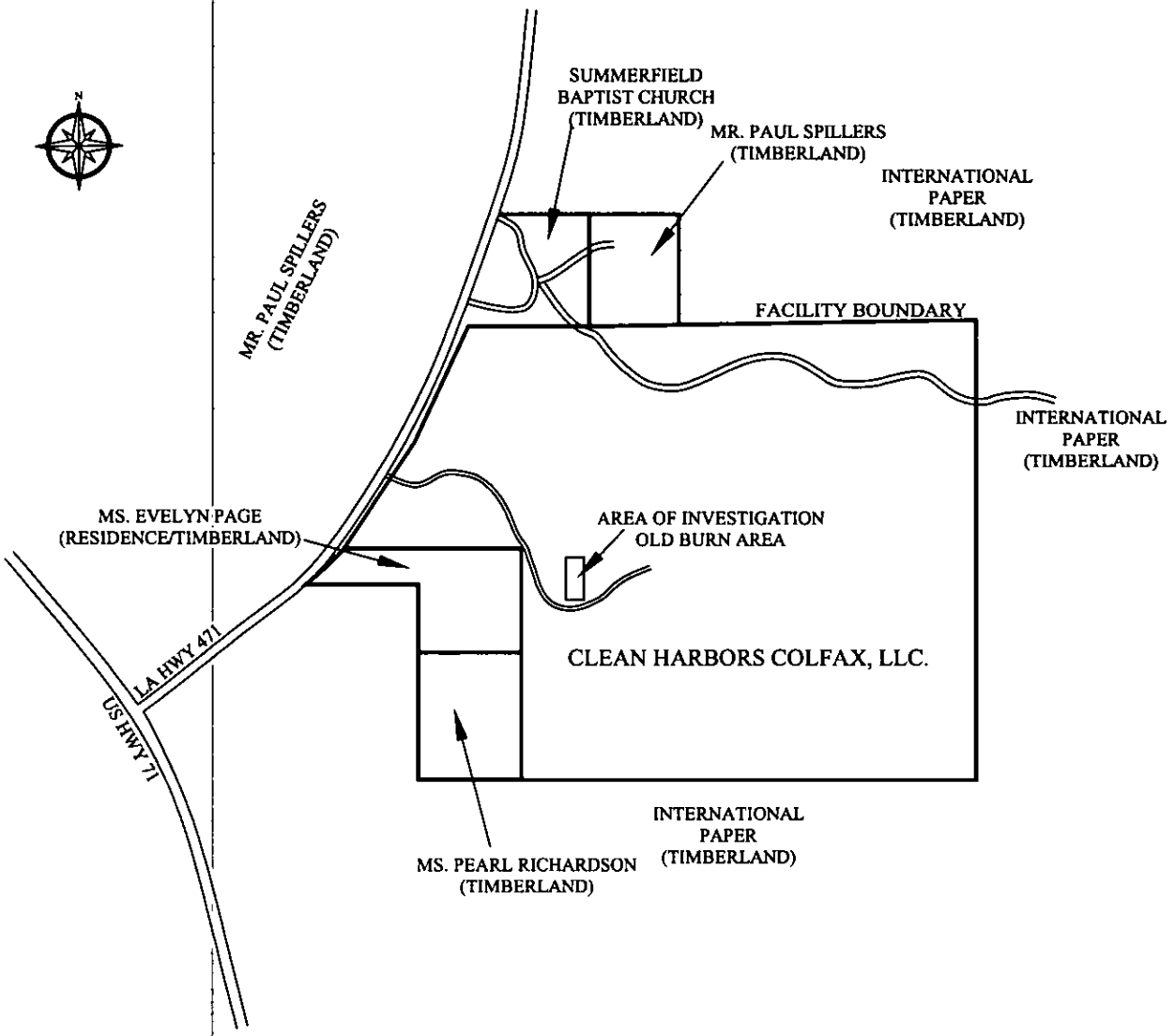
ADAPTED FROM U.S.G.S. 7.5' SERIES QUADRANGLE
COLFAX, LOUISIANA TOPOZONE WEB SITE

CAMERON-COLE

FIGURE 1

SITE LOCATION MAP
CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

SCALE:	DATE:	DWG NO.
1" = 2000'	12/3/04	3809-02



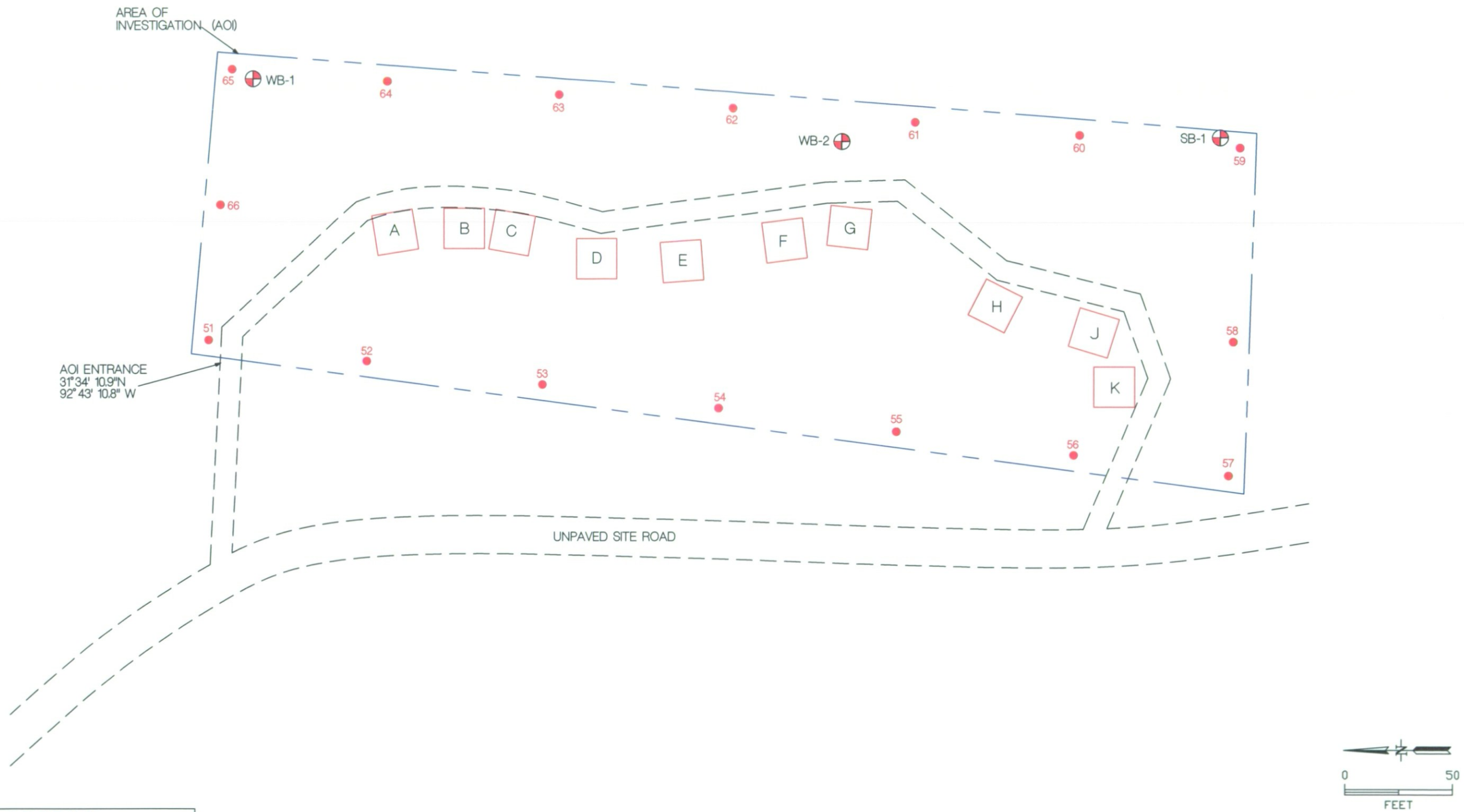
0 2000
FEET

CAMERON-COLE

FIGURE 2

SITE AND SURROUNDING PROPERTIES MAP
CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

SCALE:	DATE:	DWG NO.
1" = 2000'	12/14/04	3609-07



LEGEND

- OLD BURN AREA BOUNDARY
- A — FORMER BURN PAD
- PREVIOUS PERIMETER SAMPLING POINT
- PREVIOUS SOIL BORING

Modified from Land Survey, Stephen B. Gremillion
Registered Louisiana Surveyor

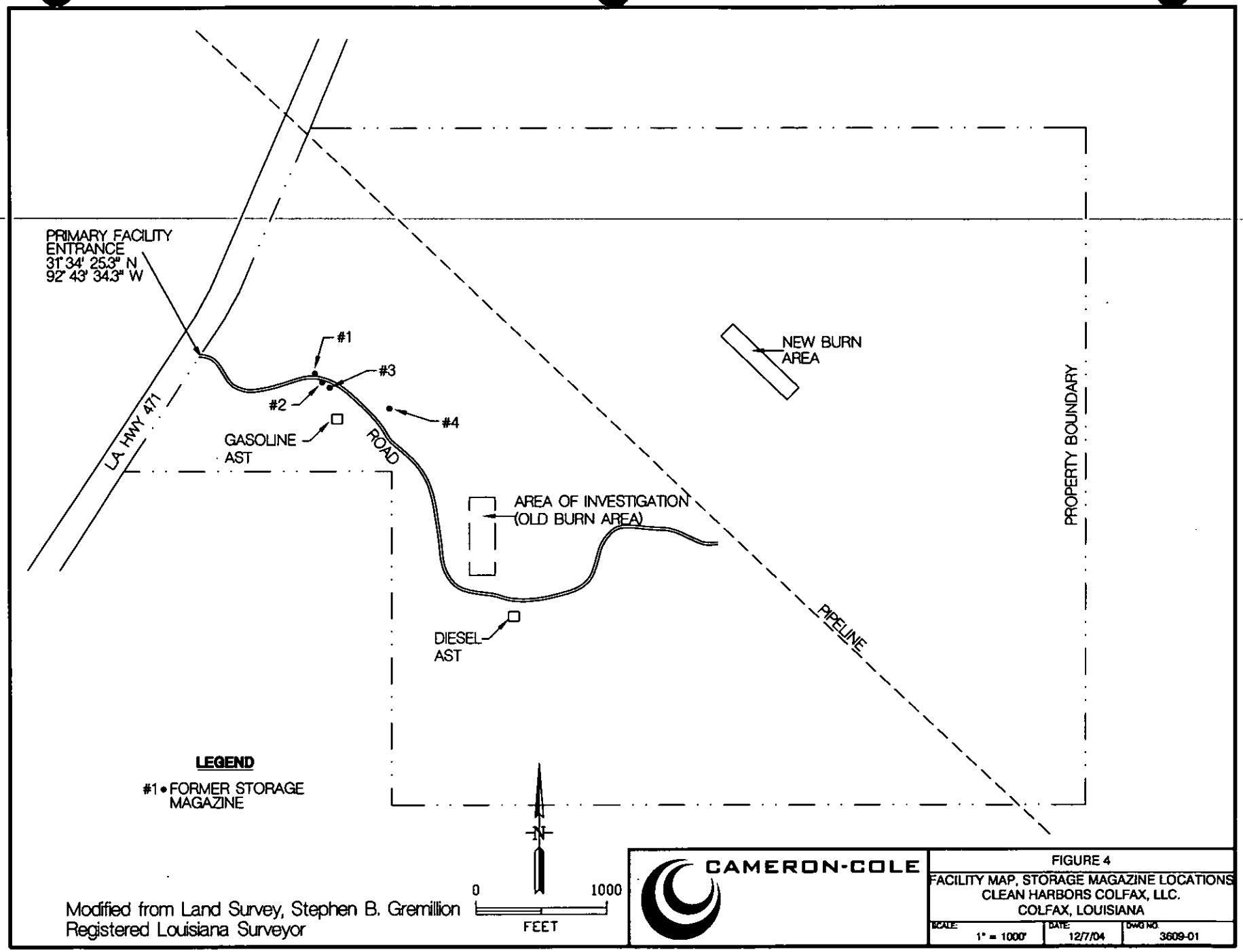
	BY	DATE
DRAWN	WRB	1/12/04
CHECKED		
APPROVED		
APPROVED		
APPROVED		

CAMERON-COLE

FIGURE 3
SITE LAYOUT-OLD BURN AREA
CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

SCALE: 1" = 50'

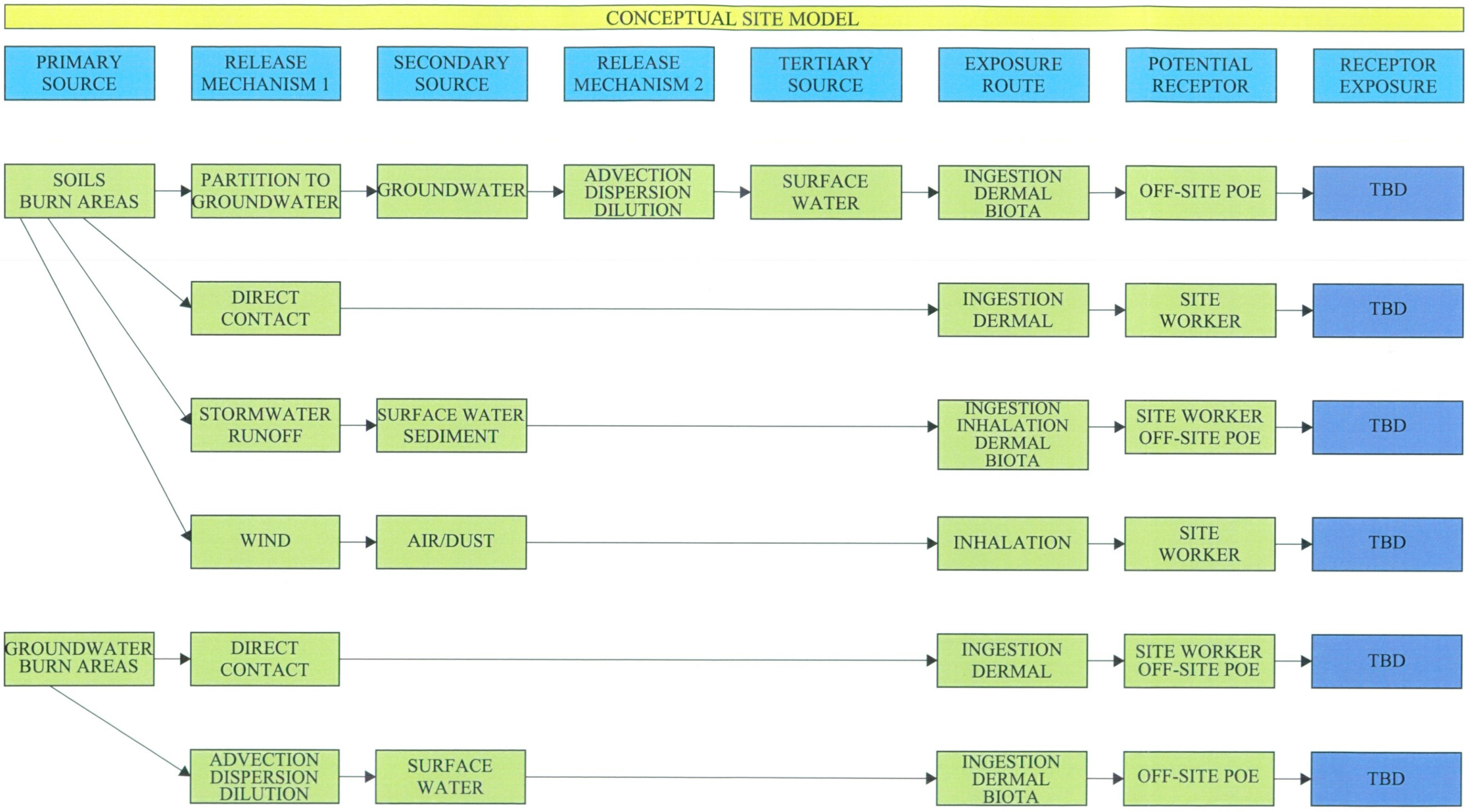
DWG. NO.: 3609-05



Modified from Land Survey, Stephen B. Gremillion
Registered Louisiana Surveyor

FIGURE 4
FACILITY MAP, STORAGE MAGAZINE LOCATIONS
CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

SCALE:	DATE:	DWG NO.
1" = 1000'	12/7/04	3609-01



NOTE: DRAWING DEVELOPED FROM FIGURE 8 OF LDEQ RECAP GUIDANCE DOCUMENT DATED OCTOBER 20, 2003.

TBD = TO BE DETERMINED.

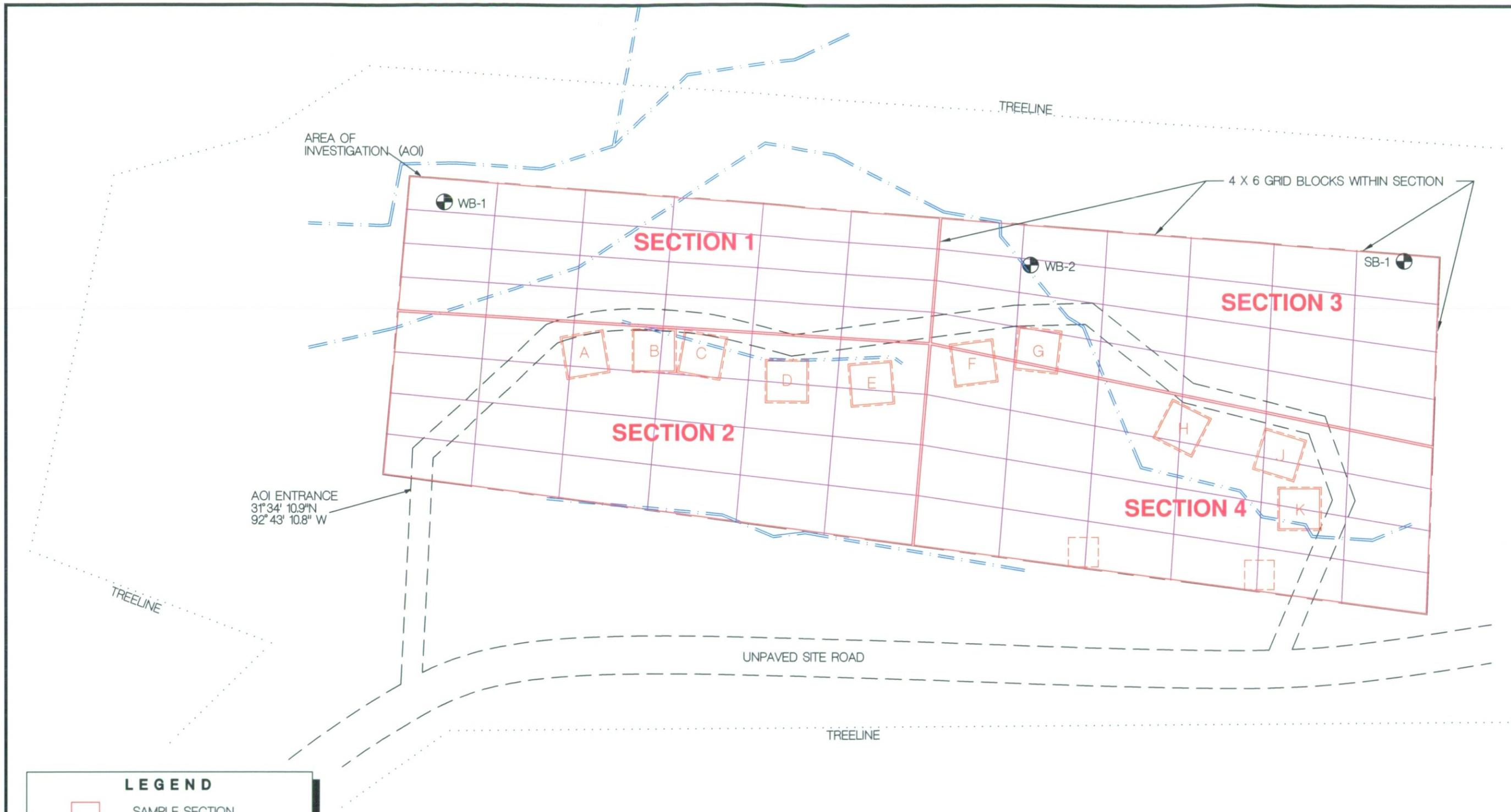
	BY	DATE
DRAWN	WRB	12/14/04
CHECKED		
APPROVED		
APPROVED		
APPROVED		

CAMERON-COLE
5777 CENTRAL AVENUE, SUITE 100
BOULDER, COLORADO 80301
303-938-5500 303-938-7709

FIGURE 5
PRELIMINARY CONCEPTUAL SITE MODEL
OLD BURN AREA - CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

SCALE: NTS

DWG. NO.: 3609-06



LEGEND

- SAMPLE SECTION
- GRID BLOCK
- DRAINAGE FEATURES
- OLD BURN AREA BOUNDARY
- OVEREXCAVATED AREA
- A FORMER BURN PAD
- PREVIOUS SOIL BORING

0 50
FEET

Modified from Land Survey, Stephen B. Gremillion
Registered Louisiana Surveyor

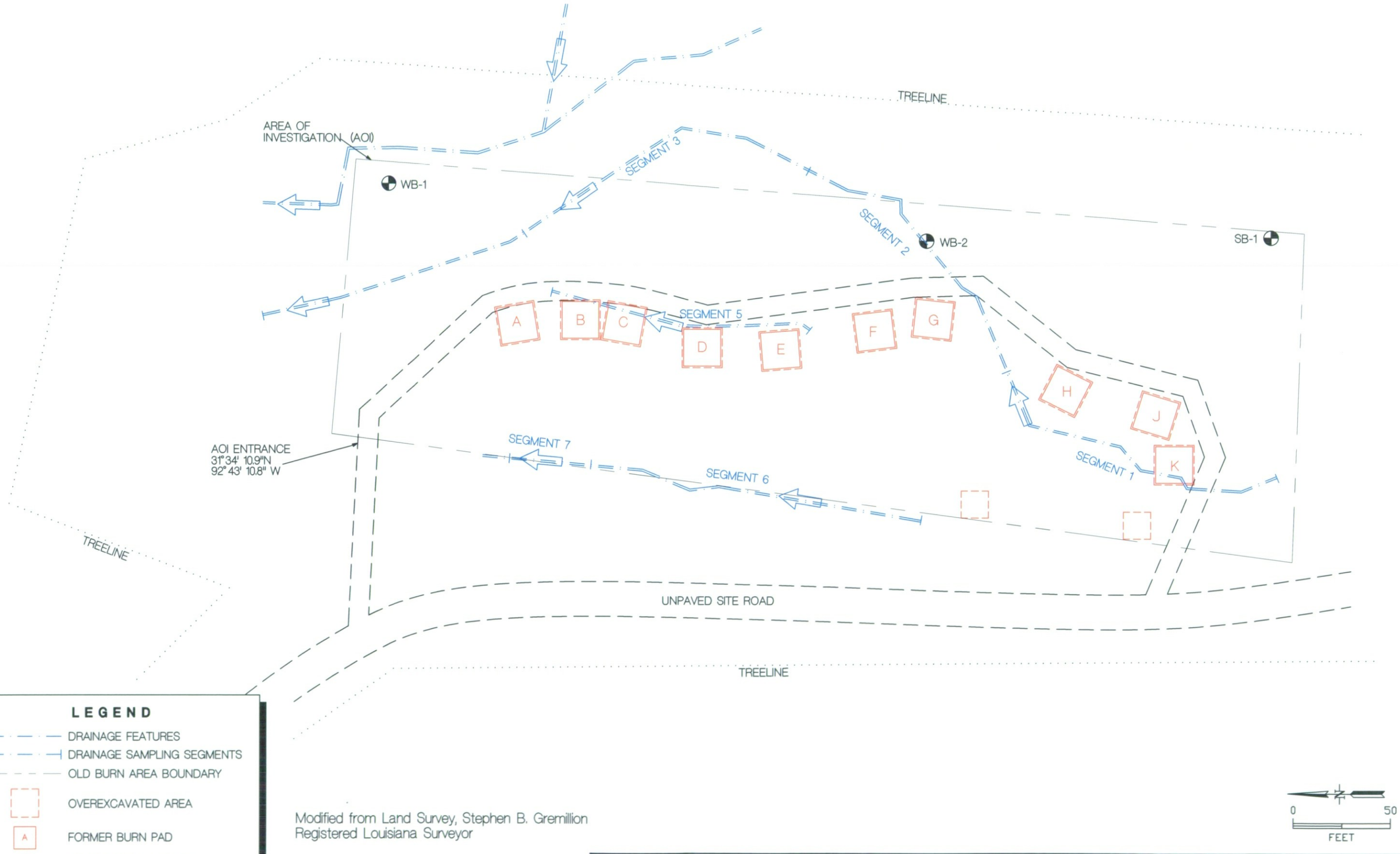
	BY	DATE
DRAWN	WRB	12/9/04
CHECKED		
APPROVED		
APPROVED		
APPROVED		

CAMERON-COLE

FIGURE 6
PROPOSED SOIL SAMPLING LOCATIONS
OLD BURN AREA-CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

SCALE: 1" = 50'

DWG. NO.: 3609-03



Modified from Land Survey, Stephen B. Gremillion
Registered Louisiana Surveyor

	BY	DATE
DRAWN	WRB	12/9/04
CHECKED		
APPROVED		
APPROVED		
APPROVED		

CAMERON-COLE

FIGURE 7
PROPOSED DRAINAGE SOIL SAMPLING LOCATIONS
OLD BURN AREA - CLEAN HARBORS COLFAX, LLC.
COLFAX, LOUISIANA

SCALE: 1" = 50'

DWG. NO.: 3609-04

APPENDIX A
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT WELL SURVEY

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245

M. J. "MIKE" FOSTER, JR.
GOVERNOR

Water Resources Section
(504) 379-1434

FRANK M. DENTON
SECRETARY

July 29, 1998

Mr. Michael J. Wisniowiecki
Laidlaw Environmental Services, Inc.
515 West Greens Road, Suite 600
Houston TX 77067

Re: Computerized
Water Well Plot
Your Request of: July 24, 1998

Dear Mr. Wisniowiecki:

As per your request, we are herewith enclosing the following for your information:

1. A computer plot showing the location of registered water wells for the subject area.

2. Computer printout listing registered water wells and pertinent information about the wells.

3. An explanation of the codes used on the printout.

Please be advised that this plot does not include every possible water well which may have been drilled within the referenced coordinates. The plot depicts only those wells which have been registered with this Department, including those scheduled by the U.S. Geological Survey, and does not include those which are presently being processed. It should also be noted that when a group of wells have identical latitude and longitude, only the first registered well (sequential number 1) is depicted on the plot.

This information is made available through our cooperative water resources program with the U.S. Geological Survey.

If we may be of any further assistance, please do not hesitate to contact me or Ms. Buffy Brinkley of this office, at (504) 379-1434.

Very truly yours,

Z. Bolourchi

Zahir "Bo" Bolourchi, P.E.
Chief, Water Resources Section

ZB:rmd
Enclosures: (3)
c:\#wp\plot.lst

EXPLANATION OF TERMS FOR THE LOUISIANA DEPT. OF TRANSPORTATION AND DEVELOPMENT'S COMPUTERIZED LISTING OF REGISTERED WATER WELLS AND HOLES

IDENTIFICATION NUMBER	-	This is a unique I.D. number that includes the latitude (first six numbers), longitude (second six numbers), and a sequential number (last two digits). The sequential number identifies a specific well when other nearby wells have the same latitude and longitude.
REVISED COORDINATES	-	Latitude and Longitude of a well (shown only if different than the I.D. number).
OWNER'S NAME	-	Name of an individual, company or agency who was or is either the legal owner of the property or the lessee at the time the well was inventoried or registered.
WELL NUMBER	-	Well number, by parish, assigned either by the U.S. Geological Survey or LA. DOTD.
OWNER'S NUMBER	-	Well name or number assigned by the owner to identify each well on his/her property.
GEOLOGIC UNIT	-	Aquifer in which the well is screened.
WELL DEPTH	-	Depth of the well, in feet, measured from bottom of the screen (or bottom of the tail pipe, back pressure valve, etc.) to the ground surface.
WELL USE/SUBUSE	-	Main use of the well (see attached sheet). The use of the well is subject to change and may not be up-to-date, especially for older wells.
CASING/SCREEN DIAMETER	-	Nominal diameter of casing/screen, in inches.
SCREEN INTERVAL	-	Depth, in feet, measured from ground surface to the top and bottom of the screen.
DATE COMPLETED	-	The month and year the well was completed.
AVAILABLE INFORMATION	-	Indicates available information as follows: E - Geophysical Log D - Drillers Log M - Mechanical Analysis Q - Quality of Water B - Bacteriological Analysis P - Pumping Test W - Water Level Available information may be obtained from DOTD, USGS, driller, engineer, and/or other sources.

ZB:DL:mql
1/19/93
1.014

DOTD'S USE AND SUB-USE COMPUTER CODES FOR WATER WELLS AND HOLES

	WELL USE	SUB-USE	
A	Any Use	- A	Abandoned
		- D	Destroyed
		E X	Excavated Out
		- I	Inactive/Standby
		P A	Plugged
B	Borehole/Pilot Hole	- -	
C	Cathodic	- -	
D	Dewatering	- -	
E	Power Generation	- -	
H	Domestic	- -	
I	Irrigation	- -	
		- Q	Aquaculture
		- S	Stock
L	Heat Pump	H H	Hole
		H S	Supply Well
M	Monitor	- -	
N	Industrial	2 0	Food and kindred products
		2 2	Textile mill products
		2 4	Lumber & wood products
		2 6	Paper & allied products
		2 8	Chemicals & allied products
		2 9	Petroleum refining and related industries
		3 3	Primary metal industries
		9 9	Other
O	Observation	- O	Multiple Purpose
		- Q	Water Quality
		- W	Water Level
P	Public Supply	- C	Commercial
		- M	Therapeutic
		- P	Municipal
		- R	Rural
		- T	Institution/Government
		- Z	Other
R	Recovery	- -	
S	Rig Supply	- -	
T	Test Hole	- -	
W	Piezometer	- -	
Z	Other	- F	Fire Protection
		- R	Reworked
		- U	Unknown
		- Z	Other

ZB:mql
03/11/94
1.013

WELL4011 LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DATE: 07/28/98 WATER WELL PLOT PLOT NUMBER 1

PLOT OF REGISTERED WELLS, GRANT PARISH (7 1/2 QUAD SCALE)
REFERENCE LATITUDE= 313230 REFERENCE LONGITUDE= 924500
SCALE= 2.6400 (INCH/MILE)
CONSTANT= 68.8900 (MILE/DEGREE LATITUDE)

*****PLOT BY THE FOLLOWING INFORMATION*****

PARISHES 043
WELL USES ALL
WITHIN A 1.0000 MILE RADIUS OF LATITUDE 313411 LONGITUDE 924311

* WELLS LIE WITHIN AN AREA BOUNDED BY..
MAX LATITUDE= 313504 MAX LONGITUDE= 924413
MIN LATITUDE= 313318 MIN LONGITUDE= 924209

****PLOTTED WELLS*****

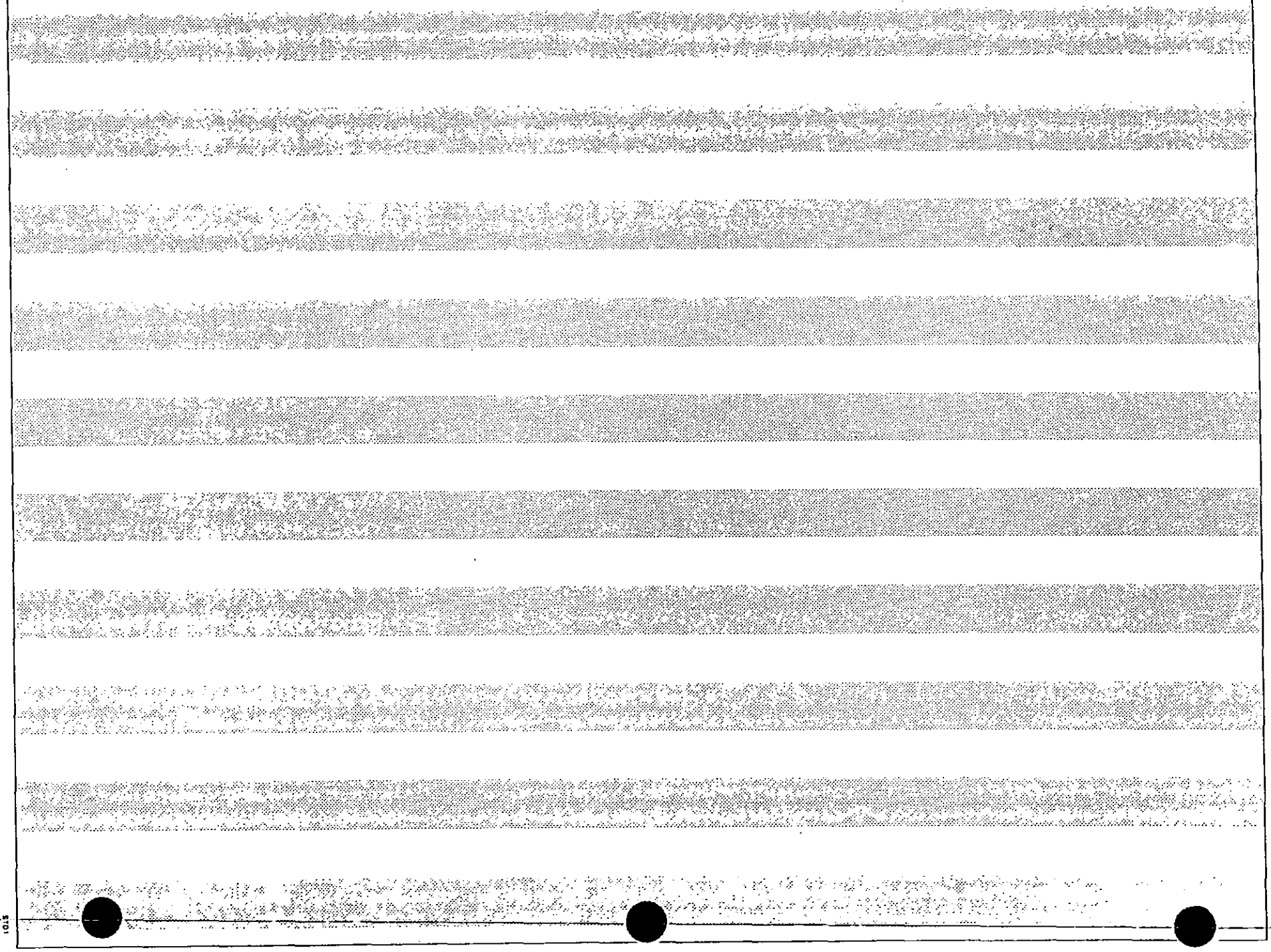
ST	PARISH	WELL-NO	IDENTIFICATION	OWNER'S NAME	DEPTH	USE	DATE	OWNER'S NUM	AQUIFER	AVL-INFO	X	Y
22	043	63	313404 924403 1	ETHRIDGE, E A	35	H--	0739		122CTHL	W	2.45	4.75
22	043	233	313407 924401 1	WAMPLER, ALLEN	90	H--	1958		122CTHL	Q	2.54	4.90
22	043	259	313408 924355 1	LA PUBLIC WORKS	127	TPA	1969	TEST#1	122CTHL	DM	2.80	4.95
22	043	260	313407 924354 1	WAMPLER, ALLEN	70	H--	1958		122CTHL	Q	2.84	4.90
22	043	297	313412 924345 1	U S GEOL SURVEY	93	TPA	0971		112OONWM	D	3.23	5.15
22	043	364	313407 924355 1	WEST GRANT WTR	95	T-A	1973		122CTHL	E W	2.80	4.90
22	043	365	313407 924355 2	WEST GRANT WTR	68	T-A	1973		122CTHL	W	2.80	4.90
22	043	392	313452 924317 1	WEST GRANT WTR	45	P-R	1073	NO 2	112MGMR	D Q W	4.43	7.17
22	043	393	313412 924346 1	WEST GRANT WTR	75	P-R	1073	NO 3	122CTHL	Q W	3.19	5.15
22	043	5127Z	313403 924357 1	R & D	134	M--	0693	PGI-MW-1	122CTHL	D W	2.71	4.70
22	043	5128Z	313403 924357 2	R & D	40	M--	0793	PGI-MW-2	122CTHL	D W	2.71	4.70
22	043	5129Z	313403 924357 3	R & D	53	M--	0793	PGI-MW-3	122CTHL	D W	2.71	4.70

*****NUMBER OF WELLS PLOTTED= 12 *****

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

BATON ROUGE

DSNAME=/TEMP.HPLOT.JUL2898.@142035.WELLPLT3/



7/28/1998 LOUISIANA DOTD - WATER WELL REGISTRATION SYSTEM PAGE 1

WELLRQ1A - REGISTERED WATER WELLS IN GRANT -- SORTED BY WELL NUMBER

REQUESTED BY: LAIDLAW ENVIRONMENTAL SERVICES, INC.

WITHIN A 1.0000 MILE RADIUS OF LATITUDE 313411 LONGITUDE 924311

PARISH CODE	WELL NUMBER	OWNER'S NAME / OWNER'S NO.	LATITUDE / LONGITUDE	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER / MATERIAL	SCREEN DIAMETER / INTERVAL	DRILL DATE	AVAIL INFO
043	- 63	ETHRIDGE, E A	313404 / 924403	CATAHOULA AQUIFER / UNKNOWN	024	07N	04W	DOMESTIC	35 / --	6		0739	W
043	- 233	WAMPLER, ALLEN	313407 / 924401	CATAHOULA AQUIFER / REX WTR	024	07N	04W	DOMESTIC	90 / --	2 / METAL		1958	Q
043	- 259	LA PUBLIC WORKS TEST#1	313408 / 924355	CATAHOULA AQUIFER / THOMAS, DOYLE	024	07N	04W	TEST HOLE	127 / PA			1969	DM
043	- 260	WAMPLER, ALLEN	313407 / 924354	CATAHOULA AQUIFER / REX WTR	024	07N	04W	DOMESTIC	70 / --	2 / METAL		1958	Q
043	- 297	U S GEOL SURVEY	313412 / 924345	NO WELL MADE, LOG DEPTH SHOWN / U.S.G.S.	024	07N	04W	TEST HOLE	93 / PA			0971	D
043	- 364	WEST GRANT WTR	313407 / 924355	CATAHOULA AQUIFER / STAMM-SCHEELE	024	07N	04W	TEST HOLE	95 / -A	10 / STEEL	10 / 85-95	1973	E W
043	- 365	WEST GRANT WTR	313407 / 924355	CATAHOULA AQUIFER / STAMM-SCHEELE	024	07N	04W	TEST HOLE	68 / -A	10 / STEEL	10 / 58-68	1973	W
043	- 392	WEST GRANT WTR NO 2	313452 / 924317	MONTGOMERY AQUIFER / STAMM-SCHEELE	013	07N	04W	PUBLIC SUPPLY	45 / -R	6	6 / 35-45	1073	D Q W
043	- 393	WEST GRANT WTR NO 3	313412 / 924346	CATAHOULA AQUIFER / STAMM-SCHEELE	024	07N	04W	PUBLIC SUPPLY	75 / -R	6	6 / 65-75	1073	Q W
043	-5127Z	R & D PGI-MW-1	313403 / 924357	CATAHOULA AQUIFER / GROUNDWATER/	024	07N	04W	MONITOR	134 / --	4 / PLASTIC	4 / 114-134	0693	D W
043	-5128Z	R & D PGI-MW-2	313403 / 924357	CATAHOULA AQUIFER / GROUNDWATER/	024	07N	04W	MONITOR	40 / --	4 / PLASTIC	4 / 15-40	0793	D W
043	-5129Z	R & D PGI-MW-3	313403 / 924357	CATAHOULA AQUIFER / GROUNDWATER/	024	07N	04W	MONITOR	53 / --	4 / PLASTIC	4 / 18-53	0793	D W

NUMBER OF WELLS SELECTED IN PARISH = 12

APPENDIX B
WASTES TREATED IN OLD BURN UNITS

ENVIRONMENTAL SERVICES INC.

APPENDIX B
WASTES TREATED IN OLD BURN UNITS *
OLD BURN AREA, SAFETY-KLEEN
COLFAX, LOUISIANA

CODE	HAZARDOUS CONSTITUENT
D001	N. A.
D002	N. A.
D003	N. A.
D005	Barium
D006	Cadmium
D007	Chromium
D008	Lead
D011	Silver
D030	2,4-Dinitrotoluene
D035	Methyl ethyl ketone
P009	Ammonium picrate
P105	Sodium azide
K044	N. A.
K046	Lead
U001	Acetaldehyde
U105	2,4-Dinitrotoluene
U108	1,4-Dioxane
U117	Ethane, 1,1-oxybis
U133	Hydrazine
U160	Methyl ethyl ketone peroxide
U163	Guanididne, N-methyl-N'-nitro-N-nitroso
U234	1,3,5-Trinitrobezene

Note: * -Based on review of manifests.

APPENDIX N

FINANCIAL ASSURANCE

LOUISIANA CERTIFICATE OF INSURANCE
FOR CLOSURE OR POST-CLOSURE CARE

Name and Address of Insurer (herein called the "Insurer"):	Steadfast Insurance Company 1400 American Lane Schaumburg, Illinois 60196
Name and Address of Insured (herein called the "Insured"):	Clean Harbors, Inc. 1501 Washington Street Braintree, Massachusetts 02184
Facilities Covered:	EPA Identification No. LAD 981-055-791 Clean Harbors Colfax, LLC 3763 Highway 471 Colfax, LA 71417 Closure Cost: $478,094 EPA Identification No. LAD 000-778-514 Clean Harbors Plaquemine, LLC 32655 Gracie Lane Plaquemine, LA 70764 Closure Costs: $203,572 Post Closure Costs: $30,538 EPA Identification No. LAD 010-395-127 Clean Harbors Baton Rouge, LLC 13351 Scenic Highway Baton Rouge, LA 70807 Closure Costs: $3,212,283 Post Closure Costs: $9,751,568 EPA Identification No. LAD 079-464-095 Crowley Disposal, LLC P.O. Box 283, 2029 Bayou Plaquemine Road Rayne, LA 70527 Closure Costs: $3,116,226
Face Amount:	$16,792,281

Policy Number: PLC 5254310-01

Effective Date: September 6, 2003

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for closure and post closure for the facilities identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of LAC 33:V.3707.E, 3711.E, 4403.D, and 4407.D as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the administrative authority, the Insurer agrees to furnish to the administrative authority a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in LAC 33:V:3719.E as such regulations were constituted on the date shown immediately below and the Insurer is authorized to do business in the State of Louisiana.

Arthur Lyev, Senior Underwriter

Authorized Representative of: Steadfast Insurance Company
Administrative Officer
1400 American Lane
Schaumburg, IL 60196-1056

Signature of witness or notary:

Date: 12.06.2004

CERTIFICATE HOLDER

APPENDIX R

MISCELLANEOUS DATA AND FORMS

MCDC Demographic Profile 3, 2000 Census
COLFAX , LA ,71417

Usage Notes

Subject	Number	Percent	SF3 Table
1. Population Basics			
Universe: Total Population			
Total Persons (Sample Est)	**5,176**		P1
Unweighted Sample Count of Persons	**1,250**		P2
Total Persons (100% Count)	**5,189**		P3
Pct Persons Sampled	**24.1**		P4
Urban Population	0	0.0	P5
In Urbanized Areas	0	0.0	
In Urban Clusters	0	0.0	
Rural Population	5,176	100.0	
Persons on Farms	155	3.0	
Persons Per Sq Mile	**34.5**		
2. Age			
Universe: Total Population			
Under 5	354	6.8	P8
Age 5 to 9	371	7.2	
10 to 14	448	8.7	
15 to 17	277	5.4	
18 to 19	159	3.1	

Subject	Number	Percent	SF3 Table
16. Employment Status			
Universe: Persons over 16			
Over 16 Yrs of Age	**3,880**	**75.0**	P43
Civilian Labor Force	1,892	48.8	
Unemployed Persons	138	7.3	
Civ. Labor Force, Female	935	49.4	
Unemployed Females	87	9.3	
Over 16 Not in Labor Force	1,988	51.2	
Married Couples who Both Work	**422**	**47.8**	P48
Married Couples, One Worker	**244**	**27.7**	
17. Work Force by Industry			
Universe: Employed Civilian Labor Force			
Employed Persons in CLF	**1,754**	**92.7**	P49
Employed in Manufacturing	202	11.5	
Employed in Retail Trade	224	12.8	
Employed in Education	180	10.3	
Employed In Health Care & Social Assistance	243	13.9	
Employed in Other Industries	905	51.6	
Unemployed Persons in CLF	**138**	**7.3**	

20 to 24	268	5.2	
25 to 34	591	11.4	
35 to 44	740	14.3	
45 to 54	685	13.2	
55 to 59	249	4.8	
60 to 64	267	5.2	
65 to 74	411	7.9	
75 to 84	260	5.0	
Over 85	96	1.9	
Under 18	1,473	28.5	
Over 18	3,726	72.0	
18 to 64	2,959	57.2	
Over 21	3,496	67.5	
Over 62	891	17.2	
Over 65	767	14.8	
3. Race and Hispanic			
Universe: Total Population			
White alone	3,204	61.9	P6
Black alone	1,884	36.4	
Amer Indian Alaska Native alone	6	0.1	
Asian alone	36	0.7	
Hawaiian and Other Pac Islander alone	0	0.0	
Other race alone	0	0.0	
Two or More Races	46	0.9	
Hispanic	25	0.5	P7
White Alone Not Hispanic	3,184	61.5	

18. Work Force by Occupation			
Universe: Employed Persons in CLF			
Management, professional & related occupations	408	23.3	P50
Service occupations	357	20.4	
Sales and Office occupations	445	25.4	
Farming, Fishing & Forestry occupations	19	1.1	
Construction, extractions & maintenance occupations	239	13.6	
Production, Transportation + material moving occupations	286	16.3	
19. Household Income in 1999			
Universe: Households			
Total Households	**1,956**		P52
Less than $10,000	431	22.0	
$10,000 to $14,999	243	12.4	
$15,000 to $24,999	327	16.7	
$25,000 to $34,999	294	15.0	
$35,000 to $49,999	280	14.3	
$50,000 to $74,999	231	11.8	
$75,000 to $99,999	78	4.0	
$100,000 to $149,999	59	3.0	
$150,000 to $199,999	8	0.4	
$200,000 or more	5	0.3	
Median HH Income	**$24,290**		P53
Average Household Income	**$32,280**		P54
HHs W Income < $200,000	**1,951**	**99.7**	

White Alone Not Hispanic	[illegible]	[illegible]	
Minority Pop	1,992	38.5	

4. Relationship of Persons in Households

Universe: Persons in Households

Persons in Households	**5,029**	**97.2**	P9
Householder	1,956	38.9	
Spouse	871	17.3	
Child of Householder	1,594	31.7	
Other Relative	400	8.0	
NonRelative	116	2.3	

5. Households by Type

Universe: Households

Total Households	**1,956**		P10
Families	1,373	70.2	
Married Couples	882	45.1	
Married Couples w Own Children < 18	368	18.8	
Single Parent Families	278	14.2	
Single Mothers	218	11.1	
Other Families	213	10.9	
Non-Family HHs	583	29.8	
Persons Living Alone	532	27.2	

6. Marital Status

Universe: Persons Over 15

Over 15 Yrs of Age	**4,003**	**77.3**	P18
Never Married	1,041	26.0	
Now Married Not Separated	1,838	45.9	

Avg HH Income of HHs < $200k	31,486		
Avg HH Income of HHs $200k or more	**342,440**		

20. Income Percentages by Source

Universe: Households

Aggregate Income in 1999	$63,140,500		
Pct Wage or Salary Income	66.3		P68
Pct Soc Security Income	8.2		P71
Pct SSI Income	2.0		P72
Pct Public Assistance Income	0.2		P73
Pct Retirement Income	9.4		P74

21. Other Income Measures

Universe: Families or Persons

Median Family Income	**$29,923**		P77
Average Family Income	**$37,077**		P78
Per Capita Income	**$12,475**		P82
Males 16+ with Earnings in 1999	**1,083**		
Avg Earnings of Males with Earnings	$28,866		P84 P86
Females 16+ with Earnings in 1999	**991**		P84
Avg Earnings of Females with Earnings	$15,192		P84 P86

22. Poverty

Universe: Persons for whom poverty status is determined

Persons for whom poverty status determined	**5,010**	**96.8**	P87
Poor Persons	1,560	31.1	

Separated	140	3.5	
Widowed	413	10.3	
Divorced	571	14.3	
7. Language Spoken at Home			
Universe: Persons Over 5			
Over 5 Yrs of Age	**4,822**	**93.2**	P19
Speak English Only	4,654	96.5	
Speak Eng less than very well	409	8.5	
Do Not Speak English	6	0.1	
8. Foreign Born Persons			
Universe: Foreign Born Persons			
Foreign Born, exc native	**38**	**0.7**	P21
Naturalized US Citizen	17	0.3	
Not a Citizen	21	0.4	
Foreign Born Entered US in 1990 or Later	18	0.3	P22
Born in Europe	5	13.2	PCT19
Born in Asia	27	71.1	
Born in Latin America	0	0.0	
Born in Mexico	0	0.0	
Born somewhere else	6	15.8	
9. Residence in 1995			
Universe: Persons Over 5			
Lived in Same House 5 Yrs Ago	3,120	64.7	P24
Lived in Same County 5 Yrs Ago	4,135	85.8	
Lived in Same State 5 Yrs Ago	4,602	95.4	
10. Place of Work			

Persons below 50% of poverty level	622	12.4	P88
Persons below 185% of poverty level	2,506	50.0	
Persons Between 100 & 200% of poverty level	1,149	22.9	
Mean Poverty Ratio	1.901		
Poor Persons in Families	**1,287**	**29.6**	P89
Families Below Poverty	**336**	**24.5**	P92
Non Family Households Below Poverty	**231**	**39.6**	
23. Miscellaneous Population			
Universe: Total Population			
Female	2,748	53.1	P8
Group Quarters Population	147	2.8	P9
Institutionalized Population	134	2.6	
Grandparents Caring for Own Grandchildren	98	1.9	PCT8
24. Housing Unit Basics			
Universe: Total Housing Units			
Total Housing Units	**2,365**		H1
Unweighted Sample HU Count	**594**		H2
Total Housing Units (100% Count)	**2,311**		H3
Est Occupied Housing Units (100% Count)	**1,928**		
Est Vacant Housing Units (100% Count)	**385**		
Pct of Occupied HUs in Sample	**25.0**		
Pct of Vacant HUs in Sample	**29.1**		

Universe: Workers over 16			
Workers 16 and Over	**1,745**		P26
Work in County of Residence	717	41.1	
Workers Living in a Place	424	24.3	P27
Work in Place of Residence	175	41.3	

11. Commuting

Universe: Workers over 16			
Drive Alone to Work	1,213	69.5	P30
Carpool	371	21.3	
Public Transportation or Taxi to Work	14	0.8	
Cycle or Walk to Work	63	3.6	
Work at Home	83	4.8	
Mean Travel Time to Work	46.5		P32 P33

12. School Enrollment

Universe: Persons Over 3			
Over 3 Yrs of Age	**4,987**	**96.3**	P36
Enrolled in grades K-12	1,088	21.8	
Enrolled in Private Schools K-12	42	3.9	
Enrolled in College	97	1.9	

13. Educational Attainment

Universe: Persons Over 25			
Over 25 Yrs of Age	**3,299**	**63.7**	P37
Less Than 9th Grade	368	11.2	
9th thru 12th grade, No Diploma	658	19.9	
High School Grad or GED	1,349	40.9	
Did Not Attend College	2,375	72.0	

Urban Housing Units	0	0.0	H5
Rural Housing Units	2,365	100.0	
Occupied Housing Units	1,947	82.3	H6
Owner occupied units	1,579	81.1	H7
Renter occupied units	368	18.9	
Vacant Housing Units	418	17.7	

25. Selected Housing Characteristics

Universe: Occupied housing units			
With 1.5+ persons per room	19	1.0	H20
Lacking comple plumbing facilities	22	1.1	H22
Lacking telephone service	203	10.4	H43
No vehicles available	277	14.2	H44
Average Household Size	2.58		H18
Moved in last 5 Yrs	784	40.3	H38
Median Year Moved In	1991		H39

26. Units in Structure

Universe: Housing Units			
Single Family Units	1,666	70.4	H30
2 to 4 Units	72	3.0	
5 to 19 Units	39	1.6	
In Buildings with 20+ Units	6	0.3	
Mobile Homes	554	23.4	
Boat, RV, Van, etc.	28	1.2	

27. Age of Structure

Universe: Housing Units			
Units < 5 Yrs Old	223	9.4	H34

Some College, no degree	557	16.9	
Bachelors	232	7.0	
Masters	104	3.2	
Prof School Degree or PhD	31	0.9	
Graduate or Professional Degree	135	4.1	

14. Veteran and Armed Forces Status

Universe: Persons Over 18

Over 18 Yrs of Age	**3,726**	**72.0**	P39
Currently in Armed Forces	0	0.0	
Civilian Population > 18	3,726	100.0	
Veteran	509	13.7	

15. Disability

Universe: Civilian Non-Institutionalized Persons

Civilian Non-Inst Pop Over 5	**4,688**		P42
Persons With 1 or more disabilities	1,190	25.4	
Civilian Non-Inst. Pop Over 65	**682**		
Persons Over 65 With a Disability	448	65.7	
Civilian Non-Inst. Pop 16-64	**3,064**		
Persons 16-64 with a Work Disability	393	12.8	P41

Units > 50 Yrs Old	399	16.9	
Units Built Before 1940	237	10.0	
Average Age of Units	31.5		

28. Gross Rents

Universe: Specified Renter Occupied Units

Units Paying Cash Rent	**291**	**79.1**	H62
Cash Rent < $300	117	40.2	
Rent $300 to $599	170	58.4	
Rent $600 to $999	2	0.7	
Rent $1000 or more	2	0.7	
Median Gross Rent	$327		H63
Average Gross Rent	$330		H64
No Cash Rent	77	20.9	

29. Housing Values

Universe: Specified Owner Occupied Housing Units

House Value < $50,000	481	50.3	H74
Value $50,000 to $99,999	328	34.3	
Value $100,000 to $149,999	124	13.0	
Value $150,000 to $199,999	0	0.0	
Value $200,000 to $299,999	13	1.4	
Value $300,000 to $499,999	5	0.5	
Value $500,000 to $999,999	6	0.6	
Value $1 million or more	0	0.0	
Median House Value	$49,800		H76
Average House Value	$63,681		H78 H14

Related Applications | Extract Data via Dexter | SF32000x Readme File | Complete metadata(pdf) | SF3 Definitions(pdf)

Report by the Office of Social and Economic Data Analysis , Univ. of Missouri Outreach & Extension
Under a contract with the Missouri Census Data Center
SOURCE: U.S. Bureau of the Census, Summary File 3, 2000 Decennial Census

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Address questions and comments to blodgettJ@umsystem.edu

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APPENDIX T

RESPONSES TO "IT" QUESTIONS

Responses to "IT" Decision Questions

Have the potential and real adverse environmental effects of the proposed facility been avoided to maximum extent possible?

The Clean Harbors Colfax, LLC has been safely operated since it was originally permitted in 1993. At the time the facility became permitted for RCRA storage and treatment the Department required that the "IT Decision Questions" regarding siting of new facilities be answered. Based on the original responses given at the time the original RCRA permit was being considered and the subsequent operations of the facility, including environmental monitoring that has been performed on the site, the facility has demonstrated there have been no adverse environmental effects observed at the site.

A. *What are the potential environmental impacts of the permittee's proposed facility?*

The facility only provides RCRA (hazardous waste) storage and thermal treatment for reactive and explosive wastes at the facility. Thermal treatment of reactive wastes presents the following potential adverse effects:

- **Physical injury associated with an unplanned or uncontrolled fire or explosion;**
- **Direct inhalation of combustion byproducts;**
- **Deposition of particulate matter created during the combustion process on adjacent land areas; and**
- **Storm water run-off.**

1. *What waste will be handled?*

The facility will only manage RCRA reactive and explosive wastes. Some of these wastes may also carry other characteristic waste codes as a result of the formulation of the material to be processed.

The following wastes may be managed at the facility: D001; D002, D003; D004; D005; D006; D007; D008; D010; D011; D030; K044; K045; K046; P009; P048; P065; P081; P105, P112; U069; U088; U098; U105; U108; U115; U117; U133; U160; and U234

Reactive wastes that are classified due to the potential to generate cyanide or sulfide are not accepted by the facility.

a. *Classes of chemicals*

As indicated above the facility will only manage reactive and explosive chemicals. These wastes are normally but not limited to nitrated compounds.

b. *Quantities (hazardous and non-hazardous)*

The maximum permitted quantity of the hazardous waste that can be present at the site at any time is 55,950 pounds of net explosive weight. This quantity was determined in accordance with the Bureau of Alcohol, Tobacco, and Firearms (ATF) regulations governing the storage of explosives.

c. *Physical and chemical characteristics*

The wastes, reactive and explosive, to be stored and treated are all received from off-site generators and may be in either solid or liquid form. Therefore, the waste is stored in ATF-approved magazines until it is to be processed. In the event liquid waste is received, it will be stored in a magazine provided with adequate secondary containment.

d. *Hazardous waste classification (listed, characteristic, etc.)*

The following wastes may be managed at the facility: D001; D002, D003; D004; D005; D006; D007; D008; D010; D011; D030; K044; K045; K046; P009; P048; P065; P081; P105, P112; U069; U088; U098; U105; U108; U115; U117; U133; U160; and U234.

2. *How will they be handled?*

The waste managed at the facility will come from off-site generators and will be transported to the facility by over the road trucks. All waste activities are conducted either in storage or process areas provided with adequate secondary containment and supervision.

a. *Treatment*

The treatment units located at the facility consist of concrete or steel burning units located on a large curbed cement floor. The burners are located well within the perimeter of the concrete area to insure that potential residuals from the burning process are all contained. In addition, the facility routinely monitors the site for residuals and environmental soil samples are collected as prescribed in the current permit to determine if any deposition of residuals has occurred outside the treatment area. To date all analyses indicate that no contamination has occurred.

b. *Storage*

The waste is stored in ATF-approved and licensed storage magazines. All magazines closely follow ATF requirements for minimum separation distances that explosives can be stored in relation to one another.

c. *Disposal*

No disposal operations are conducted at the facility. All treatment residuals are evaluated and, where appropriate, they are recycled or disposed off-site.

3. *Sources of waste*

a. *On-site generation (type and percentage of total handled)*

The facility will only generate treatment residues as a result of the burning process. Some of the residues (metal) will be acceptable for recycling. This amount typically represents approximately 260,000 pounds per year. Other residues such as ash or non-recoverable metal and debris will be evaluated and shipped off as non-hazardous or hazardous waste to an approved and permitted facility. Nonhazardous waste represents approximately 140 cubic yards per year and hazardous represents 20 cubic yards per year.

b. *Off-site generation (type and percentage of total handled)*

As indicated above, the facility does not generate any reactive or explosive wastes, only treatment residuals from treating off-site generated wastes. The quantity of off-site generated wastes received at the facility is approximately 1,200,000 pounds per year of waste, which represents 420,000 pounds of net explosive weight, a small percentage of the total tonnage managed at the facility due to the weights of the containers constructed to hold the explosives. An example would be oil field shape charges where the explosive is contained in a metal container.

4. *Where will waste be shipped if not handled at the site?*

Due to the extensive review and approval process, and specialty manufacturers who generate the waste there are no instances where waste will not be accepted and treated once it arrives at the facility as long as it meets the profile description generated during the approval process. If it does not match the approved profile the waste will be shipped back to the generator.

5. *What wastes will remain on the site permanently?*

Once Clean Harbors has decided that there is no longer a need for the facility and all storage and treatment operations have been completed, the facility will notify the Department of its intention to close. All wastes will be treated and all treatment residuals will be shipped offsite for either recycling or disposal. Once all wastes and treatment residuals have been removed, the RCRA units will be decontaminated according to the approved closure plan and the decontamination residuals will be properly disposed off-site.

B. *By which of the following potential pathways could releases of hazardous materials from the proposed facility endanger local residents or other living organisms?*

As indicated above, the facility has conducted numerous environmental monitoring events, and all data indicate that the facility is not having an adverse effect on the environment or local residents.

1. *Air*

During the term of the existing RCRA permit, the facility conducted routine air monitoring events as specified by the permit, and the results indicated no impact on the monitoring sites, which represent the location of the maximum exposed individual. Because the theoretical emissions are so small, the facility also operates under the authority of a LADEQ small source air permit.

2. *Water*

The facility currently has an NPDES Storm Water General Permit that covers the discharge of the storm water run-off for the treatment area. This permit has been in place for the duration of the RCRA treatment operations. Historically, chemical analyses indicate that the quality of the discharge is well within permit limitations; therefore, there is no threat to living organisms in the receiving stream.

3. *Soil*

As required by the conditions of the current RCRA permit, the facility has routinely monitored the soils in the area adjacent to the thermal treatment unit. All monitoring locations that are specified by the RCRA permit were mutually agreed upon by the Department and Clean Harbors prior to initiating treatment operations. As indicated above, the results from the soil samplings do not indicate any impact to the surrounding environment.

4. *Food*

The area in and around the vicinity of the facility is mainly woodlands. The treatment and storage areas represent 43 acres located centrally in a tract of 622.80 acres. The natural buffer of site controlled woodlands and the distance of over 3/4 mile to the closest residence minimizes the potential to any agricultural impact on food supplies.

C. *What is the likelihood or risk potential of such releases?*

The facility has been designed with many environmental safeguards such as the following:

- prior to receipt of a waste it is intensively scrutinized before the waste is allowed to be shipped to the facility for storage or treatment;
- all waste handling areas are provided with secondary containment; and
- all operations are implemented by trained employees who are adequately supervised.

Therefore, the potential has been minimized to the maximum extent possible and an emergency situation is unlikely.

D. *What are the real adverse environmental impacts of the permittee's proposed facility?*

As indicated above, the facility has and continues to monitor the facility on a routine basis for environmental impact of its operations as required by its current RCRA permit. There have been no impacts observed to date from the current facility operations.

1. *Short term effects*

There have been no short term effects nor are there any anticipated.

a. *Land area taken out of system*

The land taken out of the system is approximately 2 acres that serve as the burn area. Once all treatment operations are discontinued at the site, the area will be decontaminated to ensure there is no long term environmental impact.

2. *Long term effects*

Based on the information provided above, there are no long range impacts anticipated at the facility.

II. *Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?*

A. *How was it determined that the facility was needed?*

Thermal treatment in open burner assemblies presents the only safe and effective mechanism for deactivating many reactive hazardous wastes. Traditional incineration technologies utilize closed combustion chambers, and the potential for explosions under such conditions precludes the use of such methodologies for this purpose. As a result, this type of operation is believed to be the most effective, efficient, and safe.

1. *Local or regional survey:*

R&D Fabricating and Manufacturing, Inc., the predecessor entity to Clean Harbors Colfax, LLC, successfully demonstrated on multiple occasions that an emergency situation would develop unless it was authorized to conduct thermal

treatment on reactive wastes that were accumulating at various generating sites throughout the region. The LDEQ agreed and issued emergency permits to R&D to ensure that these wastes were properly managed. The need to manage these wastes in this manner (thermal treatment) remains unchanged.

2. *On-site and off-site needs:*

   Clean Harbors Colfax, LLC treats off-site generated reactive wastes.

3. *Regional solid waste management benefit:*

   Clean Harbors Colfax, LLC treats only hazardous reactive wastes.

4. *Generic survey of solid waste needs (compatibility with master plan):*

   Clean Harbors Colfax, LLC treats only hazardous reactive wastes.

B. *What will be the positive economic effects on the local community?*

1. *How many permanent jobs will be created?*

   Clean Harbors Colfax, LLC currently employs eight (8) personnel on a permanent basis.

2. *What is the expected annual payroll?*

   Current annual payroll is approximately $600,000.

3. *What is the expected economic multiplier for item 82?*

   One additional local job created for each initial employee.

4. *What is the expected tax base and who receives benefits?*

   Property and sales taxes are paid to Grant Parish and local communities.

C. *What will be the potential negative economic effects on the local community?*

1. *What are the possible effects on property values?*

   No negative impacts on the value of adjacent properties have been identified, primarily because there is no disposal of waste at the facility. A 180-acre tract of land was purchased prior to 2000 across the road from the facility for approximately $1,700/acre. This amount is up from an approximated value of $600 to $800/acre in the early 1990's.

2. *Will public costs rise for:*

a. *Police protection:*

None identified - only involvement is associated with contingency planning.

b. *Fire protection:*

None identified - only involvement is associated with contingency planning.

c. *Medical facilities:*

None identified - only involvement is associated with contingency planning.

d. *Schools:*

None identified.

e. *Roads (also see below):*

None identified - waste is delivered to the facility by truck, and the number of deliveries each day is small.

3. *Does the prospective site have the potential for precluding economic development of the area by business or industries because of risk associated with establishing such operations adjacent to the proposed facility?*

No negative impacts on the value or potential commercial or industrial use of adjacent properties has been identified.

D. *Was transportation a factor in choosing the propose site?*

The excellent road network in the vicinity was a significant factor in selecting the site.

1. *What mode(s) of transportation will be used for the site?*

a. *Truck*

Yes

b. *Rail*

No

c. *Barge*

No

d. *Other*

None

2. *What geographical area will it serve?*

Clean Harbors Colfax. LLC receives waste from local, regional, and out of state generators.

3. *By how much will local traffic volume increase?*

The facility has historically received less than 125 shipments/year.

a. *Can local roads handle the traffic volume expected?*

The roads leading to the facility from Interstate 49 are major thoroughfares that normally deal with truck traffic. There is a one-half mile section of state Route 471 leading to the facility that should not be impacted by this volume of traffic.

b. *Can local roads handle the weight of the trucks?*

The roads leading to the facility from Interstate 49 are major thoroughfares that normally deal with truck traffic. There is a one-half mile section of state Route 471 leading to the facility that should not be impacted by the low average weight of shipments.

E. *What are the long term expectations of the proposed site?*

1. *Longevity of the facility?*

The overall life of the facility is projected to be greater than 25 years.

2. *Who owns the facility?*

Clean Harbors Colfax, LLC

3. *Are the owners backed by others?*

Clean Harbors Colfax, LLC is a wholly owned subsidiary of Clean Harbors Disposal, LLC which is a subsidiary of Clean Harbors Environmental Services headquartered in Braintree, Massachusetts.

4. *When is closure expected?*

The anticipated closure date is scheduled for July 1, 2024. Depending on market conditions and status of the regulations, this date may be revised.

5. *Who is responsible for the site after closure?*

The closure plan ensures that no hazardous wastes remain following closure (clean closure will be achieved). Therefore, no post closure care or monitoring will be required, and no restrictions on future use are anticipated.

6. *What assurances will there be that the site will be closed in accordance with the plan?*

In accordance with the existing operating permit and in anticipation of the renewal of that permit, the facility will be closed in accordance with the approved closure plan. The facility provides adequate financial assurance to ensure that the funds are available to close the facility in accordance with the approved Closure Plan.

7. *What financial assurances will be established to demonstrate the ability to handle problems after closure?*

The closure plan ensures that no hazardous wastes remain following closure (clean closure will be achieved). Therefore, no post closure care or monitoring will be required, and no restrictions on future use are anticipated.

8. *Who certifies the site is properly closed?*

In accordance with the approved closure plan, closure will be certified by an independent Louisiana registered Professional Engineer.

9. *How are people protected from unwittingly buying land after closure?*

The facility will be clean closed, so there will be no restrictions on future use of the property. No waste will remain on-site.

a. *Is the closed facility recorded in the deed?*

In accordance with the approved closure plan, the facility will achieve clean closure; therefore, no notations or restrictions on the deed will apply.

b. *What future uses are possible?*

No restrictions on future use are anticipated.

III. *Are there alternative projects which would offer more protection to the environment that the*

proposed facility without / unduly curtailing non-environmental benefits?

No.

A. *Why was this technology chosen (e.g., incineration over landfilling)?*

This technology has been demonstrated through numerous government studies to be the most effective and efficient way of managing the types of wastes handled at the facility. Incineration units are not designed to handle this type of material. Landfilling is not possible without treatment due to Land Disposal Restrictions (LDR).

1. *Are other technologies available?*

Traditional incineration technologies are not an option for deactivating the reactive wastes managed by Clean Harbors Colfax, LLC because of the potential for unplanned explosions under the confined conditions within an enclosed incinerator chamber. The only safe alternative is controlled open combustion such as the thermal treatment units used by Clean Harbors Colfax, LLC.

2. *Describe the engineering design and operating techniques used to compensate for any site deficiencies.*

One of the primary reasons for selecting the site was the ideal setting for the operation. There are no inherent site deficiencies to hinder safe and environmentally sound operations.

B. *Is the proposed technology an improvement over that presently available?*

The Louisiana Hazardous Waste Regulations specify deactivation as the treatment standard for reactive waste prior to land disposal. The characteristics of the reactive wastes managed by Clean Harbors Colfax, LLC are those capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement, those capable of detonation or explosive decomposition or reaction at standard temperature and pressure, those capable of reacting violently with water, or those which are classified as forbidden, Class A, or Class B explosives as defined in LAC 33:V.101. Controlled open combustion in thermal treatment units such as those used by Clean Harbors Colfax, LLC is the only safe method of treatment for these wastes; therefore, there are no alternatives for deactivating reactive wastes which would offer more protection to the environment than the technology employed by Clean Harbors Colfax, LLC.

C. *Describe the reliability of technology chosen*

1. *Past experiences:*

Clean Harbors Colfax, LLC was established to treat (deactivate) the wastes described in Part B of Question II so that the residues could be safely land disposed or recycled. Traditional incineration technologies are not an option for deactivating the reactive wastes managed by Clean Harbors Colfax, LLC because of the potential for unplanned explosions under the confined conditions within an enclosed incinerator chamber. The only safe alternative is controlled open combustion in thermal treatment units such as those used by Clean Harbors Colfax, LLC. The facility has operated safely and in compliance with its permit without a major incident since 1993.

2. *Environmental impacts:*

A risk assessment was completed in 1991 prior to constructing and operating the facility. No adverse environmental impacts associated with the operation of the facility were identified. Through a subsequent environmental assessment conducted in 1993, the facility confirmed that no unacceptable adverse environmental impacts could be identified. Further, air monitoring and soil sampling by the facility in accordance with the conditions of the hazardous waste permit have not identified any real adverse environmental effects of the facility (it is noteworthy that the facility is no longer required to conduct air monitoring).

D. *Describe the sequence of technology used from arrival of waste to the end process at the facility (flow chart).*

1. *Inspection of waste*
2. *Unloading*
3. *Storage*
4. *Treatment*
5. *Separation of residuals requiring further handling*
6. *Off site disposal of treated residuals (recycle or disposal)*

See Attached Flow Chart.

E. *Will the facility replace an outmoded/worse polluting one?*

The only safe methodology for deactivating the reactive wastes managed by Clean Harbors Colfax, LLC is controlled open combustion in units such as the thermal treatment assemblies used by the facility; therefore, there are no alternatives for deactivating reactive wastes which would offer more protection to the environment than the technology employed by Clean Harbors Colfax, LLC.

F. *What consumer products are generating the waste to be disposed? Are there alternative products that would entail less hazardous waste generation?*

Most of the waste received by Clean Harbors Colfax, LLC is generated by defense industry contractors and Department of Defense facilities. The primary consumer product that is treated at the facility is automobile air bag inflators, small arms ammunition manufactures and fireworks manufacturers. Alternative-technology is replacing sodium azide propellants with compressed inert gas heated with smaller quantities of non-sodium azide propellant.

IV. *Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?*

Storage and treatment of reactives and explosives has been conducted at this location since 1984 when R&D Fabricating and Manufacturing, Inc. first began operations. The reason that this site was selected over other candidate sites is the configuration of the land tract, which provided for establishing remote internal treatment and storage areas situated well away from the facility entrance and administrative offices.

A. *Why was this site chosen?*

See explanation directly above.

1. *Specific advantages of the site:*

The layout of the land tract was especially conducive to orient the actual treatment area centrally on the site and establish as large a buffer zone as possible.

2. *Were other sites considered or rejected?*

The R&D operations were established and ongoing for several years. The development of the original RCRA Part B Permit and siting requirements were complied with easily. Based on the location, past history of the site in regard to compliance with both state and federal regulations, and accessibility but yet rural site environmental conditions there was no need to seek additional sites as candidates.

3. *Is the location of the site irrevocable; i.e., would denial of the permit based on the site preclude the project?*

The facility is currently fully permitted as a storage and treatment facility which has a history of compliance with regulatory requirements, and no environmental impacts have been indicated. In the event that the permit is denied, the capital investment already invested in the property and improvements, approximately $8,000,000, would be lost and obtaining additional funds for no apparent environmental benefit at a new location would be very difficult to justify.

B. *Is the chosen site in or near environmentally sensitive areas?*

The treatment and storage facility is not located in or near environmentally sensitive areas.

1. *Wetlands*

The treatment and storage areas were located so as to maintain a maximum distance from wetland areas not to impact wetland areas in general vicinity.

2. *Estuaries*

There are no estuaries on or near the site.

3. *Critical habitat*

There are no known endangered species or critical habitats in the vicinity of the facility. As a matter of fact, the large buffer zone created by the facility in relation to the actual storage and treatment area is environmentally beneficial in that it creates additional habitat.

4. *Historic or culturally significant areas*

There are no culturally significant areas located in the vicinity of the facility.

a. *Indian mounds*

There are no Indian mounds located on or near the facility property.

b. *Antebellum houses*

There are no Antebellum homes located on or near the facility property.

c. *Tourist attractions or facilities (e.g., bed and breakfast inns)*

There are no tourist attractions or facilities located on or near the facility property.

d. *Campgrounds and Parks*

There are no campgrounds or parks located on or near the facility property.

C. *What is the zoning and existing land-use for the prospective site and nearby areas?*

Currently, there are no zoning requirements implemented in Grant Parish. Primary land use within two miles of the facility is rural; the closest farmland is approximately two miles from the facility boundary. The estimated population within a two-mile radius of the site is 150 people.

1. *Is the site located near existing heavy industrial, chemical process or refinery operations?*

   The facility is not located near existing heavy industrial, chemical process or refinery operations.

2. *Is there a precedent for chemical contamination near the site or is the soil and water pristine?*

   Currently there is an existing solid waste management unit located on the property. It is located in the area of the old burn units that were operated prior to the existing permitted facility, prior to 1993. The environmental safeguards now in place at the current treatment units were not available to the old burn units. The facility is in the process of investigating the old burn area, and once all necessary environmental data is collected, a mutually agreed to remediation solution will be implemented.

3. *Is the area particularly noted for its esthetic beauty?*

   The facility as well as the surrounding land use is located in a very rural wooded area. Every precaution has been taken to preserve the ecological diversity in the area. Timber companies own and tree farm much of the land adjacent to the facility, so the area, except for the Clean Harbors site is subject to be clear cut as timber matures to pulp wood or saw timber.

D. *Is the site flood prone?*

The storage and treatment facility is not located within a flood prone zone as indicated in the Part B Permit application.

1. *Is the site in a flood plain?*

   According to the Federal Emergency Management Agency (FEMA), the facility is located above the current 24-hour 100-year flood plain.

   a. *How current are the maps used to make flood plain determinations?*

      FEMA, the agency charged with designation of flood plains and flood-prone areas, has issued maps that indicate that the facility is in no jeopardy of being inundated by 100-year floods.

b. *What is the elevation of the site?*

The portion of the existing facility that is used to store and treat wastes is approximately 175 feet msl.

c. *Is diking required or desired to provide flood protection?*

The facility is above the 100-year flood plain; therefore no diking is required.

(1) *What is the design height of the dike?*

This requirement is not applicable.

(2) *How is the dike protected from erosion?*

This requirement is not applicable.

(3) *What frequency and design storm was used?*

A 24-hour 25-year storm was used to determine the flood potential at the site.

(4) *Is access to the site over or through dikes?*

This requirement is not applicable.

2. *It the site hurricane vulnerable?*

Hurricane paths have infrequently crossed Grant Parish since 1900; however, wind speeds were below hurricane strength.

a. *Is the site in an area subject to storm surge?*

Due to the inland location of the facility and Grant Parish, there is no potential for the area to be subject to storm surges.

b. *What are the design storm specifications?*

As mentioned above, hurricanes that have traversed Grant Parish in the past have winds less than hurricane force and the design specifications for the treatment area have been set for a 24-hour 25-year storm.

c. *Should damage from wave action be considered?*

No. This requirement is not applicable.

d. *For what levels of wind speed is the facility designed?*

The storage and treatment units consist of ATF approved magazines and concrete units which would be unaffected by the expected with severe wind loading. There were no specific criteria used in constructing the buildings outside of normal building code requirements.

E. *Is groundwater protected?*

As indicated earlier, the regulated units that process and treat wastes are secondarily contained, and all liquids are managed in accordance with Part B Permit required conditions. The facility does not believe that groundwater will be negatively impacted by its operations.

1. *Are aquifers or recharge area underlying the site used for drinking water?*

In light of the information indicated above, there are aquifers located below the site that are used for drinking water; although protected by natural barriers as well as man made barriers.

2. *What is the relationship of the site to the water table?*

The water table aquifer is located at approximately 152 feet msl or approximately 35 feet below. the elevation of the treatment and storage units.

3. *What wells exist in the area?*

There are eleven water wells located within two miles of the facility. Information is included in the Part B Permit application on the specifics on each well.

4. *What is the flow rate and direction of the groundwater?*

The flow direction of the aquifer is south-southeast at a flow rate of approximately 10 feet per year.

5. *What is the groundwater quality in the underlying aquifers?*

The ground water quality is considered to be typical for the region. More detailed information on water quality can be found in Section H of this document.

6. *It there a hydraulic connection between the aquifers?*

There is limited interconnection between the lower and upper aquifers through interbedded sands and clays.

F. *Does the prospective site pose potential health risks as defined by proximity to:*

1. *Prime agricultural area (crop and pasture land)*

   The facility is approximately two miles from the nearest farmland; therefore, there is no potential risk associated from operations at the site.

2. *Residential area*

   The closest resident to the site is approximately 3,500 feet from the storage and treatment area.

3. *Schools or day care centers*

   There are no schools and day care centers located in the vicinity of the site.

4. *Hospitals or prisons*

   There are no hospitals or prisons located in the vicinity of the facility property.

5. *Public buildings or entertainment facilities*

   There are no public buildings or entertainment centers located in the vicinity of the facility property.

6. *Food storage area*

   There are no food storage areas located in the vicinity of the facility property.

7. *Existing community health problems that may be aggravated by operation of additional hazardous waste disposal capacity.*

   There have been no documented community health related problems in the area. The facility is located in attainment area for air pollutants.

G. *Is air quality protected?*

The facility has routinely collected air monitoring data over the life of the existing permit, and no impacts were indicated as result of these monitoring

events. The site currently operates under the authority of an LADEQ small source air quality permit.

1. *Is the site within an ozone or non-attainment area?*

   The facility is located in an attainment area for air pollutants including ozone.

2. *What contaminants are likely to be generated by the site?*

   Based on the existing waste burn rates and materials expected to be treated, the facility air permit (1120-00010-01) calculates the following emissions:

PM-10	2.40 tons per year
N0x	38.90 tons per year
VOC	0.16 tons per year
CO	6.80 tons per year
Other (HCl)	4.60 tons per year

3. *What protection is afforded from each contaminant generated by the site?*

   Based on the low emission rates from the facility, the LADEQ does not require any engineering controls but do place administrative controls on the operation by restricting the throughput for the burn units.

4. *What is the potential for unregulated emissions?*

   There is no potential for unregulated emissions from the burn units as long as the facility complies with the regulatory restrictions for the types and amount of waste burned at the site.

5. *What plans are implemented to provide for odor control?*

   The wastes that the facility processes do not have or create offensive odors, and there is no need to implement odor controls. The facility has operated since 1984, and as far as the facility is aware, no odor problems have ever been alleged.

6. *Who will be affected by emissions?*

   Due to the low emission rates generated by the burn units, there will not be any receptors down wind of the facility who will affected by the emissions.

   a. *What is the direction of the prevailing winds?*

The prevailing winds are primarily out of a westerly direction.

b. *Describe the expected frequency of "bad air" conditions?*

Because the area is located in an attainment area and atmospheric inversions are not anticipated, "bad air" days are not applicable for the facility.

7. *Describe the control of vapors at various stages of the process.*

The only potential for the facility to release vapors to the atmosphere is from the burn units. Based on the low emission rates from the facility, the LADEQ does not require any engineering controls but do place administrative controls on the operation by restricting the throughput for the burn units. There is no potential for unregulated emissions from the burn units as long as the facility complies with the regulatory restrictions for the types and amount of waste burned at the site.

H. *Have physical site characteristics been studied; what has been done in terms of a geo-technical investigation?*

The site has been studied thoroughly during the initial RCRA Part B Permit application and detailed in the 1994 Environmental Assessment Report.

1. *Site geology*

Regional Geology
The site is approximately 3.5 miles north of Colfax. According to the Geologic Map of Louisiana (1984), the site is underlain by Quaternary Pleistocene Age soils (>10,000 years B.P.). The presence of faults in these soils does not indicate that there has been seismic activity within Holocene time.

There are no known major faults defined in Grant Parish according to the publication entitled, Earthquakes in Louisiana, by Donald Stevenson and Richard McCulloh (Louisiana Geological Survey Public Information Series No. 7). The Geologic Map of Louisiana (1984) depicts the outcropping geologic formations in Grant Parish and does not indicate the presence of faults of any age in Grant Parish within 5 miles of the site.

The publication, Geology of Grant and LaSalle Parishes (Louisiana Geological Survey (LGS) Geological Bulletin No. 10, 1938) indicates one probable fault in T.7 N., R.1.E at the base of the Jackson Group (Upper Eocene) at 500 to 1,000 feet below mean sea level. This fault is not apparent in the overlying Catahoula Formation (Miocene) and therefore must be older than the Miocene age strata. Marginal folding and associated faulting is described as occurring from post-Miocene to late

Pleistocene time. The Geological Map of Grant Parish in LGS Bulletin No. 10 does indicate the presence of faults in the Pleistocene outcrop underlying the site.

Fault structures may be visibly identified as straight or gently curving lineaments (linear features) from aerial photographs. An aerial photography company (Gulf Coast Aerial Mapping) was asked to search for historical and recent photographs of the site and within a 5-mile radius of the site. None were available. Recent aerial photographs were printed from the Louisiana Department of Natural Resources web site. Two different scales were printed for the 5-mile radius and 3,000-foot radius. Examination of this photograph for lineaments indicative of fault scarps within 5 miles or a 3,000-foot radius of the site did not indicate evidence of fault structures. A series of adjoining photographs were taken to the Louisiana State University Geology Department and viewed under a stereoscope. Stereoscopic vision creates a three-dimensional effect to see length, width and depth. Fault lineaments or scarps with relief would be discernible. No fault structure was evident within 5 miles or a 3,000-foot radius of the site.

Faults are typically indicated by linear or gently curving fault-lines with offset from the upthrown side to the downthrown side so topographic relief is apparent. The site slopes in numerous directions toward the lower areas in what appears to be sinuous erosional features. No distinct offset relief in a linear or gently curving pattern is evident.

Site Geology

Two distinct water bearing zones separated by fractured clay layers are present beneath the site. The water bearing zones are described as the upper aquifer and lower aquifer. The upper zone sand formation is not continuous across the site and appears to be a sand channel that trends northwest to southeast. The lower zone sand appears to be continuous across the site.

2. *Hydrology*

The operations area is adjacent to the highest topographic point of the area, approximately 200 feet mean sea level, with three primary drainage features discharging stormwater from the storage and treatment units. Discharge from the thermal treatment area flows into the retention pond and the retention pond drains north toward an intermittent stream that flows northwest. Additional tributaries converge into Summerfield Branch approximately 0.6 miles west of Highway 471.

The second drainage feature directs storm water flow from the western corner of the facility. This channel drains into Summerfield Branch west of Highway 471. The preparation building and four storage magazines

Storm water from the southeastern portion of the facility flows to an intermittent stream that flows into a wetland area near the property boundary. Some facility roads and five storage magazines drain into this natural channel.

The nearest named surface water body is Summerfield Branch, which is approximately 0.5 miles to the northwest from the site boundary. Summerfield Branch flows approximately 2 miles northwest into Bayou Grappe. Bayou Grappe meanders from northwest to southeast and eventually merges with the Red River.

3. *Topography*

The operations area is adjacent to the highest topographic point of the area, approximately 200 feet mean sea level. The topography slopes downward along three primary drainage features to approximately 150 feet mean sea level.

4. *Soil properties*

Surface soils are nonuniform and generally consist of several inches of gray sandy loam topsoil overlying reddish brown, red or gray sands, clayey sands, sandy clays or clays. Sand pockets and iron oxide staining are scattered throughout the soils. As depth increases, the soils become more consolidated.

According to a geotechnical investigation, the upper sandy soils possess only moderate shrink/swell potential that may occur as a result of seasonal moisture variations. The deeper clays have very high plasticity indices; however, swell potential is minimized since the site is in an area of fairly high annual rainfall, which maintains an equilibrium soil moisture.

Soil samples of clays from 3-108 feet below ground surface were tested for permeability. Permeability ranged from 8.6×10^{-7} to 4.0×10^{-5} centimeters/second.

The storage, preparation and treatment areas have secondary containment to prevent disposal of hazardous substances vial runoff or infiltration. Modeling was performed to simulate a worst-case scenario of a release of hazardous substances to soil and groundwater for two possible events using the EPA-approved Vertical and Horizontal Leaching Model (VHS) . One is an instantaneous breach of a burner pad allowing for the direct release to the unsaturated zone and then by percolation to the saturated (groundwater zone). The second is the complete leaching of hazardous substances from the surface soil

surrounding the concrete containment pads. Neither of the scenarios predicted adverse effects on ground water from these theoretical releases.

5. *Aquifer location*

Regional Groundwater

The water well search was conducted within a 3-mile radius of the center of the site to include the boundaries within the required 2-mile radius. Thirty-seven wells were identified. Of these fourteen (14) are currently used for potable water as public supply, stock or domestic use. The following table summarizes the aquifer and well depth below ground surface (bgs) sorted by aquifer:

DOTD Well No.	Aquifer	Depth (ft, bgs)
G-62	Red River Valley Alluvial (112RRVA)	25
Na-158	Red River Valley Alluvial (112RRVA)	108
G-87	Red River Valley Alluvial (112RRVA)	36
G-63	Catahoula (122CTHL)	35
G-75	Catahoula (122CTHL)	136
G-77	Catahoula (122CTHL)	148
G-98	Catahoula (122CTHL)	225
G-233	Catahoula (122CTHL)	90
G-234	Catahoula (122CTHL)	260
G-247	Catahoula (122CTHL)	100
G-260	Catahoula (122CTHL)	70
G-393	Catahoula (122CTHL)	75
G-321	Montgomery (112MGMR)	47
G-392	Montgomery (112MGMR)	45

As shown, the Catahoula Aquifer is predominantly used in this area followed by the Red River Alluvial Aquifer and Montgomery Aquifer.

Catahoula Aquifer

Well depths in the Catahoula Aquifer within the study area range from 35 to 260 feet bgs. Information on this aquifer was obtained from *Catahoula Aquifer Summary, Baseline Monitoring Project, FY2001, Appendix 5 of the Triennial Summary Report for the Environmental Evaluation Division of the Louisiana Department of Environmental Quality.*

The Catahoula Formation consists primarily of sands with some silty to sandy clays and overlies the regional confining clays of the Vicksburg and Jackson groups. Within the Catahoula, fine to coarse sands are

discontinuous and interbedded with silt and clay.

Recharge takes place primarily as a result of the direct infiltration of rainfall in interstream, upland outcrop areas, movement of water through overlying terrace deposits, and leakage from other aquifers. Saltwater ridges under the Red River and Little River valleys in central Louisiana divide the Catahoula aquifer. The hydraulic conductivity of the Catahoula varies between 20-260 feet/day.

The maximum depths of occurrence of freshwater in the Catahoula range from 250 feet above sea level to 2,200 feet below sea level. The range of thickness of the fresh water interval in the Catahoula is 50 to 450 feet.

The following table highlights some of the more common water characteristics that are considered when studying ground water quality with the minimum, maximum, and average values that were found during the current sampling of the Catahoula aquifer for pH, TDS, hardness, chloride, iron, and nitrite-nitrate:

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
pH (SU)	7.08	8.66	7.75
TDS (ppm)	217	570	317
Hardness	<5	96.5	18.2
Chloride	3.7	37.5	16.5
Iron (ppb)	36.7	762	318.67
Nitrite-Nitrate	<0.05	<0.05	<0.05

The closest sampled well as part of the study is G-5196Z, which is approximately 15 miles southeast and 125 feet bgs. In summary, the data show that the ground water produced from this aquifer is soft and is of good quality when considering short or long-term health risk guidelines.

Red River Alluvial Aquifer

Well depths in the Red River Alluvial Aquifer within the study area range from 25 to 108 feet bgs. Information about this aquifer was obtained from *Red River Alluvial Aquifer Summary, Baseline Monitoring Project, FY2001, Appendix 3 of the Triennial Summary Report for the Environmental Evaluation Division of the Louisiana Department of Environmental Quality.*

Red River alluvium consists of fining upward sequences of gravel, sand, silt, and clay. The aquifer is poorly to moderately well sorted, with fine-grained to medium-grained sand near the top, grading to coarse sand and

gravel in the lower portions. It is confined by layers of silt and clay of varying thickness and extent.

The Red River Alluvial aquifer is hydraulically connected with the Red River and its major streams. Recharge is accomplished by direct infiltration of rainfall in the river valley, lateral and upward movement of water from adjacent and underlying aquifers, and overbank stream flooding. The amount of recharge from rainfall depends on the thickness and permeability of the silt and clay layers overlying it. Water levels fluctuate seasonally in response to precipitation trends and river stages. Water levels are generally within 30 to 40 feet of the land surface and movement is downgradient and toward rivers and streams. Natural discharge occurs by seepage of water into the Red River and its streams, but some water moves into the aquifer when stream stages are above aquifer water levels. The hydraulic conductivity varies between 10-530 feet/day.

The maximum depths of occurrence of freshwater in the Red River Alluvial range from 20 feet above sea level, to 160 feet below sea level. The range of thickness of the fresh water interval in the Red River Alluvial is 50 to 200 feet.

The following table highlights some of the more common water characteristics that are considered when studying ground water quality with the minimum, maximum, and average values that were found during the current sampling of the Red River Alluvial aquifer for pH, TDS, hardness, chloride, iron, and nitrite-nitrate:

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
pH (SU)	7.08	8.35	7.64
TDS (ppm)	396.0	1506.0	817.6
Hardness (ppm)	<5	653.0	353.7
Chloride (ppm)	6.1	664.0	163.4
Iron (ppb)	<20	10661.00	3396.20
Nitrite-Nitrate, as N (ppm)	<0.05	<0.05	<0.05

The closest sampled well as part of the study is Na-47, which is approximately 15 miles west and 80 feet bgs. In summary, the data show that the ground water produced from this aquifer is very hard, but is of good quality when considering short-term or long-term health risk guidelines. The data also show that this aquifer is of poor quality when considering taste, odor, or appearance guidelines.

Montgomery Aquifer
No regional information could be found about this aquifer.

Since the water wells are typically in production, no water level information is available for these aquifers to determine the direction of groundwater flow. Production wells will influence local flow direction within the capture zone of each well.

Recharge potential is low to none at the site. In addition, the downward slope from the site drains surface water and reduces recharge potential.

Site Groundwater

Twelve (12) soil borings up to 160 feet bgs, two (2) monitor wells and five (5) piezometers have been installed to delineate the subsurface soils and groundwater conditions.

Two distinct water bearing zones separated by fractured clay layers are present beneath the site. The water bearing zones are the upper aquifer and lower aquifer. The upper zone sand formation is not continuous across the site and appears to be a sand channel that trends northwest to southeast. The lower zone sand appears to be continuous across the site.

Monitor wells/piezometers P1-W1, P2-W1, P3-W1, MW1-W1 and MW2-W1 were collected on July 19-23, 1993. The samples were analyzed for volatile organics, semi-volatile organics and priority pollutant metals. No volatile organics were detected. Of the semi-volatile organics, Diethylphthalate was detected at 6 µg/l in P1-W1 and P2-W1 and Phenol was detected in all of the wells from 22 to 140µg/l. The groundwater screening standard (GWss) from the LDEQ RECAP document (October 2003) for Diethylphthalate is 2.92 mg/l (2,920 µg/l) so the detected concentrations are below the GWss. The GWss Phenol is 0.1825 mg/l (182.5 µg/l) so the detected concentrations are below the GWss. Naturally occurring metals were detected as follows:

Metals (mg/l)	Range	GWss
Aluminum	0.2 to 32.4	NA
Barium	0.012 to 0.32	2
Chromium	0.02 to 0.06	0.1
Copper	0.01 to 0.03	1.3
Zinc	0.07 to 0.29	1.095

A GWss for aluminum was not provided in RECAP. As shown, these metals are below the GWss for all constituents and represent background or indigenous concentrations.

6. *Subsidence problems*

Subsidence potential is minimal due to the low shrink/swell potential of the sandy and clayey soils. The site is underlain by consolidated Pleistocene weathered soils that are resistant to further erosion or consolidation. There is no groundwater removal or other man-made factors that would cause subsidence.

7. *Climatic Conditions*

The average annual precipitation for Alexandria from 1971 to 2000 is 61.44 inches. Over this period, normal monthly precipitation ranged from 4.00 inches in September to 6.39 inches in December. Mean temperature ranged from 56.6 to 77.1 degrees Fahrenheit with an average temperature of 66.9 degrees Fahrenheit. The Wind Rose Plot from Alexandria International Airpark from 1980 to 1994 indicates that the average wind speed was 3.64 knots and the prevalent wind direction is from the south. The meteorological data for 2002 from the Baton Rouge station indicates that the prevailing wind direction is 90 degrees and the mean speed is 6 miles per hour. The maximum 2-minute wind was 60 miles per hour.

V. *Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?*

A. *Is this facility part of a master plan to provide waste management? Whose plan?*

Clean Harbors Colfax, LLC provides a safe and environmentally sound option for treating reactive hazardous waste. Prior to the issuance of the hazardous waste final permit to the facility, LADEQ recognized that an emergency would develop unless the reactive wastes could be managed by thermal treatment. Accordingly, LADEQ issued emergency permits authorizing the operation of the facility. The Clean Harbors Colfax, LLC, therefore, provides a significant. contribution to the overall waste management plan for the State of Louisiana.

1. *How does it fit into the plan?*

There are no other management options available for the treatment of wastes received by Clean Harbors Colfax, LLC. There is no safe way to overcome the technological limitations associated with incinerating these wastes. Thermal treatment is the only technology available to safely deactivate the reactive wastes managed by Clean Harbors Colfax, LLC.

2. *What geographical area is served by the plan?*

Clean Harbors Colfax, LLC receives waste from local, regional, and out of state generators.

B. *Does the facility fit into an integrated waste management system?*

1. *On-site*

Clean Harbors Colfax, LLC is solely a reactive hazardous waste treatment facility.

2. *Regional*

Clean Harbors Disposal Services, LLC has other facilities in Louisiana and in other states, which treat and dispose other types of hazardous and solid waste. Clean Harbors Colfax, LLC is the only commercial facility capable of handling these types of reactive wastes.

C. *Can waste be disposed of in another fashion (way)?*

1. *Technology limitations:*

Traditional incineration technologies are not an option for deactivating the reactive wastes managed by Clean Harbors Colfax, LLC because of the potential for unplanned explosions under the confined conditions within an enclosed incinerator chamber. The only safe methodology for deactivating the reactive wastes managed by Clean Harbors Colfax, LLC is controlled open combustion in units such as the thermal treatment units used by the facility; therefore, there are no alternatives for deactivating reactive wastes which would offer more protection to the environment than the technology employed by Clean Harbors Colfax, LLC.

2. *Cost factors:*

None, see C.1 of Question V.

3. *Other reasons:*

None

D. *What quality assurance control will be utilized to protect the environment?*

1. *Plans for lab work:*

Incoming wastes are not sampled due to the reactive nature of the waste. Clean Harbors Colfax, LLC gathers sufficient information on incoming waste streams to allow proper storage and treatment without compromising worker safety. Chemical and physical analyses of each type of waste are generally provided by the generator. These analyses or analyses obtained from other reputable sources, such as the Department of Defense, will be referenced in the incoming waste records for each type of waste accepted at the facility.

2. *How are out-of-spec waste handled?*

Out-of-spec wastes are rejected in accordance with the procedure in D.3.

3. *What happens to rejected wastes?*

Rejected shipments of hazardous waste will be properly routed back to the original generator, and the required documentation will be made in the Facility Operating Record (i.e., on the respective manifest copies). In some cases, rejected wastes may be shipped to an alternate facility, if appropriate and if approved by the generator that shipped the waste to the facility.

4. *Treatment stabilization:*

None

5. *Segregation of non-compatible wastes:*

Incompatible wastes will be identified as part of the check-in procedure. Incompatible wastes are stored in separate storage units to eliminate accidental reaction that could cause an unplanned event. The truck staging/parking area has been sectioned with secondary containment structures to handle incompatible wastes in the event of a leak.

6. *Handling of containerized wastes:*

The design of the storage magazines ensures that standing liquids do not develop within the magazines and that wastes do not come into contact with ponded precipitation. The covered staging area at the entrance to Magazine numbers 8, 9, and 10 is constructed for unloading liquid reactive wastes. The preparation building is covered to prevent rainfall from entering the area. Waste is received only in approved DOT containers.

E. *Innovative techniques used to control release of waste or waste constituents into the environment.*

1. *Surface Impoundment*

None

2. *Land Application Treatment*

None

3. *Landfill (burial)*

None

4. *Incinerator*

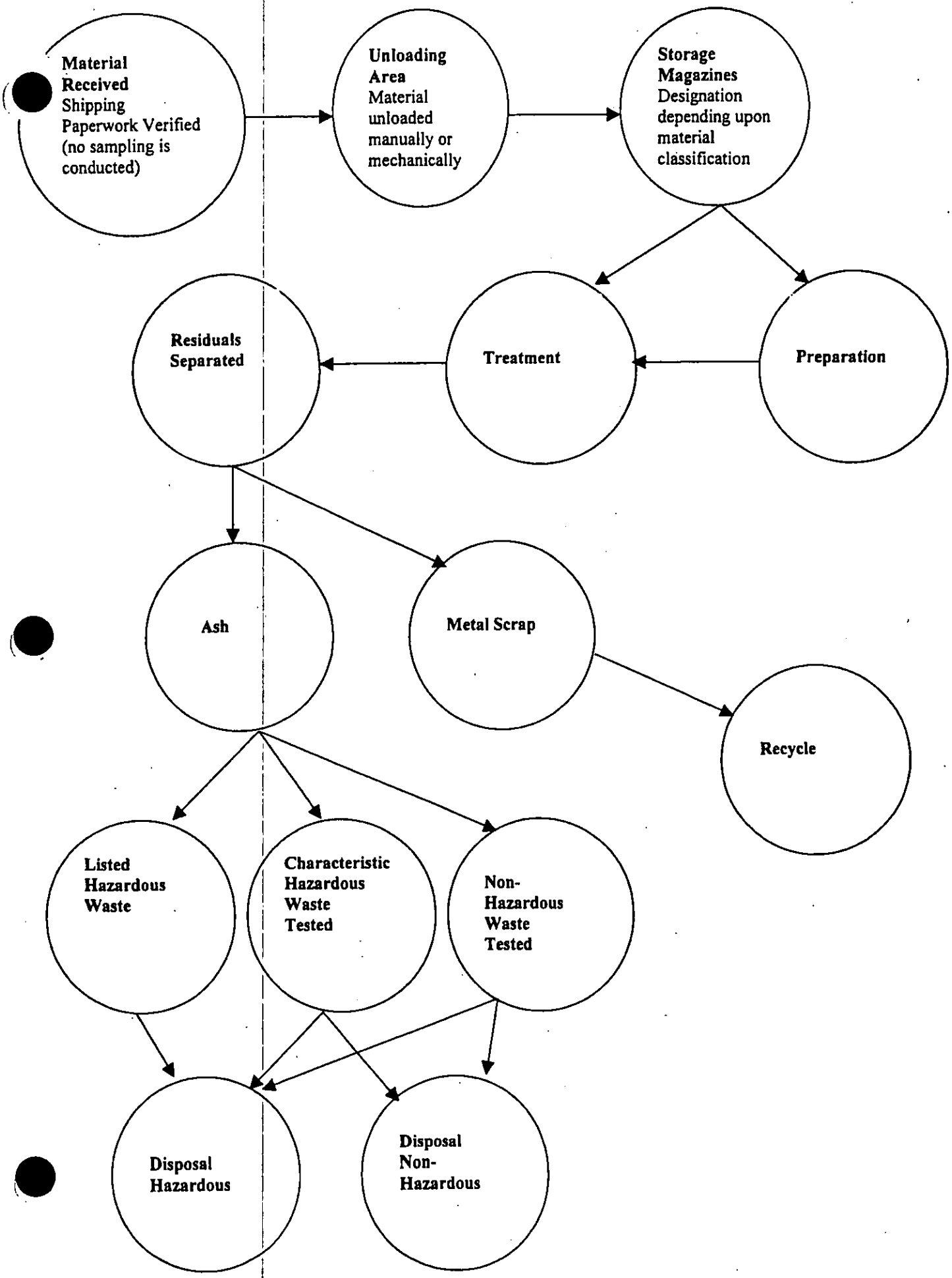
The facility does not have an incinerator, but for the purposes of this section, the thermal treatment units (open burners) will be described. There is a large concrete unit with twenty (20) metal burn trays on concrete platforms. Each burn tray is equipped with a portable cover. The treatment area is located a sufficient distance from the storage areas based on ATF requirements to limit the potential for an incident at one location to spread to the other. Buffer zones of at least 660 feet separate the treatment units and site boundaries. The construction of the burner assemblies provides the necessary safeguards to minimize the entrance of rainwater and preclude surface run-on. Minimizing the entrance of rainwater, precluding run-on into the treatment process, and controlling run-off from the treatment area will insure that waste constituents are not transported to the ground water or subsurface environment. Furthermore, under the controlled burning methods used at the facility and based on the findings of a 1991 study of the thermal treatment system, there is minimal potential for migration of treated residues as thorough treatment of the waste materials will minimize the potential for impacting the air and groundwater. Additionally, air emissions are limited administratively by throughput capacity based on the air permit issued by LADEQ.

5. *Container storage:*

Wastes are stored in properly designated storage magazines that are well ventilated to minimize the build-up of extreme heat and pressures. These covered, totally enclosed magazines do not allow the entrance of precipitation and meet the requirements for storage structures as established by the ATF. The storage and treatment areas are located a sufficient distance apart based on ATF requirements to limit the potential for an incident at one location to spread to the other. Buffer zones of at least 660 feet separate storage units and site boundaries.

6. *Tanks*

None


Material Received Shipping Paperwork Verified (no sampling is conducted)
Unloading Area Material unloaded manually or mechanically
Storage Magazines Designation depending upon material classification
Preparation
Treatment
Residuals Separated
Ash
Metal Scrap
Recycle
Listed Hazardous Waste
Characteristic Hazardous Waste Tested
Non-Hazardous Waste Tested
Disposal Hazardous
Disposal Non-Hazardous

APPENDIX Z

SOIL MONITORING PLAN

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Exhibit I Wind Rose

Figure I Soil Sampling Locations

Appendix A USATHAMA Method for Analyzing Ten Explosives by High Performance Liquid Chromatography

Appendix B Site Health and Safety Plan

1.0 Introduction

On March 31, 1993 the Environmental Protection Agency (EPA) issued a RCRA Subpart X and HSWA Permit to R & D Fabricating and Manufacturing, Inc. for the operation of thermal treatment units. The treatment permit was issued subsequent to issuance of a storage permit by the Louisiana Department of Environmental Quality (LDEQ) regulating on-site storage of reactive waste. The full RCRA permit was developed under a joint permitting agreement between the EPA and the LDEQ. Ownership of the facility was subsequently transferred several times, and ultimately the facility became known as Clean Harbors Colfax, LLC in 2002 and currently continues to operate as Clean Harbors Colfax, LLC.

Attachment 15 of the original permit contains a Soil Monitoring Plan which addresses how Clean Harbors will monitor surface soil in the vicinity of the burner units. Since the permit was drafted, the location of the burn units has been changed slightly to take advantage of better topographic conditions and to better centralize the burn units within the property boundary. In addition, Permit Condition IV.C.7.a requires that the current monitoring plan be modified to incorporate additional information found in Permit Conditions IV.T.2.f-j and IV.T.3.f-j.

This revised monitoring plan addresses the additional information requirements and updates the existing plan to reflect actual conditions. The data generated from implementation of this plan can be used to supplement the ongoing environmental assessment over the initial operating period of the facility. This plan is intended to monitor the proposed burn area and will not address the existing burn area which will be evaluated during closure.

2.0 Sampling Protocol

The sampling protocol has been developed to address possible contamination down-wind from the proposed open burning areas as a result of particulate fallout. Analytical parameters include metals and organic compounds which may be present in the waste. The ongoing environmental assessment will address this situation through air quality modeling, thus providing an early indication of any potential problems. This sampling protocol is based upon waste constituent data, information already obtained through the trial burn process, and Agency concerns over deposition of heavy metals.

2.1 Constituents of Concern

The Final Technical Support Document for the R & D Thermal Treatment System (ENSR, 1991) contains a thorough description of the trial burn and soil sampling results associated with operation of the existing thermal treatment units. Soil samples, including background samples, were collected around the perimeter of the existing burners and were analyzed for extractable explosives as well as Appendix VIII organics and metals. Results showed low levels of HMX and RDX. Also, above background concentrations of eight (8) metals were detected and these metals are considered to be the constituents of greatest concern.

Based upon these results and the constituents in the waste streams handled at the facility, soil samples will be analyzed for the following constituents utilizing the listed method or other approved method:

Constituent	Analytical Method
Volatile Organic Compounds	SW-846, Method 5035, 8260B
Extractable Explosives (10)	USATHAMA (See App. A)
Total Metals:	
Arsenic	SW-846, Method 6010
Barium	SW-846, Method 6010
Cadmium	SW-846, Method 6010
Chromium	SW-846, Method 6010
Lead	SW-846, Method 6010
Mercury	SW-846, Method 6010
Selenium	SW-846, Method 6010
Silver	SW-846, Method 6010

2.2 Sample Locations and Collection Frequency

The optimum locations for the sampling areas were determined from surface wind direction data compiled at England Air Force Base in Alexandria, Louisiana, a location approximately 15 miles southeast of the Clean Harbors facility. Exhibit I

contains a wind rose generated from the wind data that was collected from 1980 through 1994. The predominate wind directions are from the north during the winter months and south during the summer. The southerly winds predominate, and, therefore, emphasis was placed on sample locations the north of the burner pad.

Figure I shows a total of 12 sample locations which will be used in the soil monitoring plan. Locations 1, 2, and 3 are background samples located in the extreme western portion of the property at 100-foot intervals. The minimal frequency of occurrence of winds from the east-northeast and the distance from the burn area makes this an ideal location for background samples. Locations 4, 5, and 6 are located south of the burn area and are approximately 1,000 feet apart. Six sample locations (#'s 7-12) have been placed north of the pad in a grid pattern approximately 600 feet apart. These locations will provide good coverage for monitoring of soil in the directions of prevailing winds with regard to the burn area.

Prior to operation of the proposed units, the facility collected surface samples from all the even numbered sample locations noted on Figure 1. These samples were analyzed for the constituents noted in Section 2.1, and the data were utilized in the development of a background data set for each constituent.

After one (1) year of operation of the new burner units, soil samples were collected from all locations and analyzed for the constituents outlined in Section 2.1. Background data from Samples 1, 2, and 3 were combined with the previous data in order to create a complete background data set for each constituent. Data will be analyzed as discussed in Section 4.1 in order to determine if there is a statistically significant difference between background and burn area concentrations of contaminants. If analytical results indicate a significant difference exists, the Louisiana Department of Environmental Quality (LDEQ) and the Environmental Protection Agency (EPA) will be notified. A plan to address these results will be developed at that time. If no significant increase is noted, the sampling frequency will be extended to two (2) years.

Surface soil samples will be collected directly from the surface sediments using decontaminated stainless steel spoons or a gloved hand to place the sample into the sample container. Sampling personnel shall wear a separate pair of disposable latex gloves for each sample collected. Sample containers will be prepared by the receiving laboratory and will be used as received from them.

3.0 Data Collection Quality Assurance

For all measurement parameters which have analytical QA objectives listed in the most current EPA or USATHAMA Method, those objectives will be used. Where alternative methods may be used by the contract laboratory, those methods and the QA objectives must meet or exceed standards contained in the EPA or USATHAMA method specified in Section 2.1. Systematic checks utilized by the laboratory will ensure data reliability.

The following information defines quality assurance activities in regard to the following"

- Strategy – Data Usage and Accuracy
- Sampling and Field Measurements
- Sample Analysis

3.1 Quality Assurance Strategy

The data collected from soil sampling and analyses will be used to determine if the thermal treatment units are impacting surface soil within the facility property boundary. If it is determined that surface soil is being impacted, measures can be taken to alleviate or minimize this impact.

The background and burn area analytical results will be analyzed statistically as discussed in Section 4.1. Analytical results for metals will be reported in parts per million (ppm) and for organics in parts per billion (ppb). These levels of detection will allow evaluation of data to determine if a significant difference exists between the background and burn area.

3.1.1 Data Precision and Accuracy

The terms used in this section which characterize data measurement reliability are defined below:

Accuracy – the degrees of agreement of a measurement (or an average of measurements of the same thing) X with an accepted reference or true value, 100 (X-T)/T, and sometimes expressed as the ratio X/T. Accuracy is a measure of the bias in a system.

Precision - a measure of mutual agreement among individual measurements of the same property, usually under prescribed similar conditions. Precision is best expressed in terms of the standard deviation. Various measures of precision exist depending upon the "prescribed similar conditions."

Completeness – a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under current normal conditions.

Representativeness – expresses the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition.

Comparability – expresses the confidence with which one data set can be compared to another.

The precision, or degree of agreement between measurements, is determined by the standard deviation of a single measurement from the mean of the data set. Duplicates of the same sample will be analyzed by the laboratory as a routine precision check. In addition, one duplicate sample per sampling event, selected at random, will be analyzed as a check on sampling and analytical technique.

The accuracy of a sample measurement as reported as percent spike recovery which represents the percentage recovery of a known quantity of a compound which is added to the original sample and subsequently analyzed. The methods used in sample analyses will contain quality control audit standards, including sample spiking, to be implemented to ensure data reliability.

3.1.2 Quality Assurance Reports

The contract laboratory will prepare quality assurance documentation for all samples analyzed for each sampling event and will make this documentation available to the facility upon request. The level of detail will be sufficient to document all quality assurance activities specified by the method and shall include but not be limited to the following:

- Periodic assessment of measurement data accuracy, precision, and completeness;
- Results of performance audits;
- Results of systems audits; and
- Significant quality assurance problems and resolutions.

A summary of this documentation will be supplied to the facility and maintained in the data record. Summary information shall include, but not be limited to, percent spike recoveries and the analytical results for duplicate samples.

3.2 Sampling and Field Measurements

Sections 2.0 and 4.0 discuss sample locations, frequency, and statistical analysis to be conducted, including rationale for sample locations. The constituents of concern, analytical methods and measures to prevent cross contamination are also addressed. Additional procedures regarding handling of samples are discussed below.

All sample bottle preparation, sample preservation, and maximum holding times shall conform to the procedures described in the analytical method. Sample containers will be prepared by the contract laboratory and will be used as received. The contract laboratory will be responsible for disposing of all samples in accordance with local, state, and federal regulations.

Sample custody will be documented and maintained for all phases of sampling operations conducted at the facility. The following sections discuss both field and laboratory procedures which will be conducted to ensure the integrity of the sampling effort.

3.2.1 Sample Identification

All samples will be tagged with an identification label which shall be attached directly to the container. At a minimum, the following information will be placed on the label with a waterproof pen:

- Name of Sampling Organization
- Sample Identification Number
- Date
- Time
- Sample Type (i.e., grab, composite)
- Sampling Personnel
- Matrix (May be described by the sample ID#)
- Special Instructions or Precautions

As each sample is collected, a record will be made in the field notebook which further identifies the sample. All samples will be placed in containers and taken to a central staging area where they will be checked and recorded on a chain-of-custody form as described in the following section.

3.2.2 Chain-of-Custody Procedures

Chain-of-custody procedures provide documentation of the handling of each sample from the time it is collected until it is destroyed. To maintain a record of sample collection, transfer between personnel, shipment, and receipt and handling by the laboratory, a "Chain-of-Custody Record" will

be included with each sample shipment. This document will record pertinent information about each sample included in that shipment. Each time the samples are transferred to another custodian, signatures of the person relinquishing the sample and receiving the sample, as well as the time and date, will document the transfer.

Chain-of-custody records will have each sample identified with the station number, date, and time of collection, matrix, number of containers per station, and analytical constituents. Field forms will include copies so that one copy may be retained while the original and at least one copy are shipped with the samples. The facility will retain a copy of the chain-of-custody, and it will be maintained in the operating record for future reference. If samples are split to different laboratories, a copy will go to each laboratory. If additional sheets are required, the person relinquishing the samples is responsible for completing additional copies or making reproductions.

The chain-of-custody record will be placed in a protective cover and placed inside the shipping container. All samples will be shipped by the most expedient method to the specified laboratory. Samples will be packed so that no breakage occurs, and the shipping container will be sealed with evidence tape so that any sign of tampering will be easily visible.

3.3 Sample Analysis

Chain-of-custody, sample preparation, holding times, and analytical procedures have been addressed previously. Additional information regarding sample analysis is provided below.

3.3.1 Instrument Calibration

Each analytical instrument will be calibrated in a manner consistent with EPA calibration protocols and/or the contract laboratory's standard practice. Calibration documentation will be maintained by the laboratory.

3.3.2 Data Reduction, Validation, and Reporting

Data transfer and reduction are essential functions in summarizing information to support conclusions. It is essential that these processes are performed accurately and, in the case of data reduction, accepted statistical techniques are used.

At a minimum, example calculations must be included with the summarized data to facilitate review. The entry of input data and calculations should be checked and the signature or initials of the data

technician and reviewer(s) should accompany all data transfers with and without reduction.

Data input and output sheets will be used by the contract laboratory in order to keep track of data. These forms will record all information pertinent to the analytical procedure such as standard curves, QC data, and final results.

For routine analyses, sample response data information will be used to calculate the following as applicable:

1. Quadratic regression line for standards;
2. Coefficient of variation for replicates;
3. Spiked recoveries;
4. Reference sample concentrations; and
5. Sample concentrations.

QC criteria for acceptance will be derived from EPA or the contract laboratory's QC program. The QC criteria will be stored in a data management file for easy retrieval.

If the samples in a sample lot do not pass all the QC checks then the results reported in all samples processed in the same sample set must be considered as suspect and the analyses may need to be repeated. The laboratory QA Officer will be notified, and the necessary corrective action will be implemented.

The completed batch forms will be stored in files arranged for easy retrieval. Strip charts, copies of parameter notebooks, and QC charts will be stored for each constituent in a project notebook.

The contract laboratory manager will validate a portion of the all preliminary data by field group. Example tasks which may be included in the validation review are listed in the following checklist:

1. Were holding times met for each sample?
2. Were samples analyzed using the methods specified in the QA plan?
3. Was blank run for each batch and properly subtracted from each sample?
4. Were the required number of standards and spiked samples analyzed with each batch?
5. Was the correlation coefficient of the calibration curve >0.995?
6. Were spike recoveries within the acceptance criteria stated in the QC Plan?

7. Randomly select one value/batch and trace back through the calculations to the raw data. Do the numbers agree?

3.3.3 Internal Quality Control Checks

The contracted laboratory utilized by Clean Harbors Colfax, LLC for conducting analyses under this protocol will be accredited by LDEQ for the parameters being measured. In addition, the laboratory will adhere to a strict internal quality control program to assure data quality. Internal quality assurance procedures are designed to assure the consistency and continuity of data. Internal quality assurance procedures include the following:

- Instrument performance checks
- Instrument calibration
- Documentation on the trace-ability of instrument standards, samples and data
- Documentation on analytical and quality control methodology
- Documentation on sample preservation and transportation

Standard analytical quality control will include but not me limited to the following:

- Duplicate Samples
  At selected stations on a random time frame, duplicate grab samples are collected. This provides a check of sampling technique and precision.

- Split Samples
  A representative sub-sample from the collected sample is removed, and both are analyzed fro the constituents of interest. The samples may be re-analyzed or analyzed by two different laboratories for a check of the analytical procedures.

- Spiked Samples
  Known amounts of a particular constituent are added to an actual sample or to blanks in concentrations at which the accuracy of the test method is satisfactory. This method provides a proficiency check for the accuracy of the analytical procedures.

If a method allows, one to six compounds with characteristics similar to those being analyzed will be added to every sample prior to extraction. The percent recovery of these compounds is indicative of the efficiency of the analysis at recovering the sample compounds. A sample recovery within the range specified by EPA will be deemed sufficient.

Standards will also be run daily to ensure that numerical data reflects the current sensitivity of the instrument. Prior to any GC/MS analyses, the instrument will be tuned to meet particular specifications.

3.4 System Audits

Two types of audit procedures will be used by the contract laboratory to assess and document performance of project staff—system audits and performance audits. These are performed at frequent intervals under the direction of the Laboratory QA Supervisor. These audits perform the bases for corrective action requirements and constitute a permanent record of the conformance of measurement systems to QA requirements.

System audits are inspections of training status, records, QC data, calibrations, and conformance to Standard Operating Procedures without the analysis of check samples. System audits will be performed periodically on laboratory and office operations.

The system audit protocol is summarized as follows:

1. Laboratory Operations—The Laboratory QA Supervisor will check the following:
   A. Parameter and/or laboratory notebooks;
   B. Instrument logbooks;
   C. Sample log-in, dispensing, and labeling for analysis;
   D. Updating of QC charts of the spikes; and
   E. Final approval of data from each sample lot.

   In addition, the Laboratory QA Supervisor will monitor all experiments to assure complete adherence to approved analytical methods.

2. Final Reports—The Laboratory QA Supervisor will review all final reports and deliverables.

Performance test sample programs administered by various government agencies are also used as a basis for the Laboratory QA Supervisor's performance audit.

4.0 Data Management

Clean Harbors Colfax, LLC will implement these data management procedures in order to document and track analytical data. These procedures address the data record, the data presentation format, and project file requirements.

4.1 Data Record and Presentation

A data record will be maintained at the facility which contains chain-of-custody records, analytical results received from the third party laboratory, a statistical evaluation of the data, and a summary presentation of the data in tabular form. This information will be maintained as a distinct unit for each sampling event.

Data received from the laboratory will be required to contain the following information:

- A unique sample identification code which includes the sample location;
- Sampling personnel and date of collection;
- The constituent being analyzed and unit of measure; and
- Analytical results with the minimum detection limit.

The sample identification code used for soil samples will identify the matrix, specific location, month and the year as shown in the following example for location 9:

S09-0693

S = soil
09 = location 9
06 = June
93 = 1993

Duplicate samples or additional samples at the same location during each sampling event will have an additional designation as shown:

S09-0693A, S09-0693B, etc.

This unique sample identification code will be used to identify a particular sample on all presentations of the data.

All laboratory data will be summarized in tabular form for each sampling event. For each constituent, the sample identification code and concentration at each location will be noted. Any concentrations recorded as less than the detectable limit will have the lower detectable limit numerical value shown (i.e., < 0.1 mg/kg). The lower detectable limit will be established with the laboratory prior to

analyzing the first set of samples and will be in accordance with the method used, subject to possible interferences.

For each constituent, the background data set and the burn area data set generated after one year of operation was analyzed to determine the arithmetic mean and variance for each. The means for each data set were compared using the Cochran's Approximation to the Behrens-Fisher Students' t-test as outlined in 40 CFR Part 264, Appendix IV. A one-tail test using a standard t-table at a 0.025 level of significance will be used to compute the critical t value. Values recorded as less than the lower detectable limit numerical value will have that value applied in the statistical analysis.

A data summary showing the t-statistics for each constituent will be prepared in tabular form and maintained in the data record. If a constituent concentration is recorded as less than detectable for all sample locations, it will not be included in the statistical analysis summary table.

In the event that the burn area data set mean exceeds the background mean, additional methods of presenting the data may be used to further assess the data sets. These methods may include graphs showing constituent concentrations at a particular sample location over time or isopleth plots.

4.2 Data Files Maintenance

The analytical laboratory contracted by Clean Harbors will maintain data generated from soil analyses in a manner consistent with the particular laboratory's standard practice. Hard copies of the analytical data will be provided to the facility to be placed in the data record. As stated previously, the data record will also contain chain-of-custody forms, a tabular presentation of the raw data, a statistical evaluation and tabular presentation of the statistical analysis.

In addition to hard copies contained in the data record, the tabular presentations will be maintained on computer disks. These disks will be maintained at the facility with the data record. Also, the data tables and any summaries related to analytical results will be placed in the facility operating record.

5.0 Health and Safety Plan

Clean Harbors Colfax, LLC maintains a health and safety plan that covers all contractors working at the site. This plan is comprehensive and provides for the protection of all persons at the facility. Persons conducting soil sampling will not be in close proximity to the burn area and will be minimally exposed to storage areas. There will be no direct exposure to waste and exposure to soil will be minimized through Level D protection and the use of disposable latex gloves.

6.0 Project Management

6.1 Key Personnel

The facility's General Manager, Jim Gallion, will have direct responsibility over implementation of the soil monitoring plan. He will be responsible for securing third party contractors, ensuring that provisions of the health and safety plan are followed, and maintaining data files and records. Mr. Gallion has vast experience in the waste management industry including employment as a health and safety officer at Louisiana hazardous waste treatment facility as well as experience handling explosive and reactive waste.

Kenneth Michels, facility Operations Manager, will share responsibility with the General Manager to ensure that soil monitoring is implemented at the facility in accordance with this plan. Mr. Michels has been the Operations Manager at the facility for a number of years and is thoroughly familiar with the operation. He has significant experience in handling explosive and reactive wastes, environmental affairs, and waste management, in general.

The facility will employ a third party contractor or other competent personnel for all sampling and analytical work. As stated previously, all analytical laboratory work will be conducted by a LDEQ accredited laboratory.