

Attachment I

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF PETROLEUM STORAGE SYSTEMS
PETROLEUM CLEANUP PROGRAM**

**LIMITED CONTAMINATION ASSESSMENT REPORT (LCAR)
PREPARATION GUIDANCE
June 9, 2000**

A Limited Contamination Assessment Report (LCAR) is required for participation in the Petroleum Cleanup Participation Program (PCPP) and Preapproved Advanced Cleanup (PAC) Program as stated in Sections 376.3071(13) and 376.30713, Florida Statutes (F.S.). The purpose of the LCAR is to support the proposed course of action and to estimate the cost of the proposed course of action. A LCAR does not necessarily have to be of a scope comparable to a Site Assessment Report (SAR), as required by Chapter 62-770, F.A.C., but it must be signed and sealed by a registered Professional Engineer or Professional Geologist as specified in Rule 62-770.490, F.A.C., and must be adequate to determine the best course of action to achieve site closure and to develop a reasonably accurate estimate of the amount required to implement the selected course of action. The more information that is provided in the LCAR, the better the cost estimate will be, and the more accurate the cost share amount will be. Existing assessment information should be used to its maximum extent if that information is current. Due to the time constraints associated with review of the PAC application and LCAR, it will not be possible for the Florida Department of Environmental Protection (FDEP) to request and obtain supplemental assessment data. Therefore, a consequence of an inadequate LCAR may be that the PAC application will be considered incomplete. For the PCPP, a LCAR is not required until the FDEP notifies the responsible party that funding is available to initiate cleanup activities at the site. If the LCAR submitted for the PCPP is found to be inadequate, the FDEP may request that additional assessment activities be performed. If needed to support the proposed course of action and to estimate the cost of the proposed course of action, the LCAR at a minimum must include:

- (1) If a closure assessment or initial remedial action/source removal has been performed at the source property and a Closure Assessment Report or Initial Remedial Action/Source Removal Report has been prepared, a copy of the report(s) must be provided in the Appendix of the LCAR. If these reports have been signed and sealed by a registered Florida Professional Engineer or Professional Geologist and the sampling and analyses were performed under a FDEP approved Quality Assurance Plan, they may be sufficient to satisfy the LCAR requirement (especially if No Further Action is warranted), assuming groundwater analytical data were collected no later than nine months from the LCAR submittal date and all information necessary to achieve the goal of the LCAR is present. If the groundwater data contained in the Closure or Initial

Remedial Action/Source Removal Report were collected later than nine months from the LCAR submittal date, a round of sampling and analyses for the appropriate parameters from a sufficient number of monitoring wells to determine the highest contaminant concentrations and verify the perimeter of the plume should be performed prior to submittal of the LCAR.

- (2) A short site history which describes all current and past petroleum storage systems and the type of products stored in them, as well as the type and amount of products that were discharged at the source property, must be provided. A site map illustrating the locations of all current and past tanks and other potential sources of contamination at the source property and their associated integral piping and dispensers must be provided.
- (3) Results of a well survey conducted to locate all private water supply wells (potable, irrigation, industrial, etc.) within a ¼ mile radius and public water supply wells within a ½ mile radius of the contaminated area. It is strongly recommended that all available records be checked (especially those at the local Department of Health office) and that a walk-through reconnaissance of the area be conducted to complement those records. The use and construction details of wells identified during the well survey should be reported (if reasonably available), and a vicinity map illustrating the locations of the wells in relation to the source property must be provided.
- (4) Results of a soil assessment conducted in and around each potential source area to determine if there is any contaminated soil present in the unsaturated zone. If contaminated soil is detected, additional soil borings should be installed as needed to estimate the horizontal and vertical extent of soil contamination in the unsaturated zone. Also, if positive corrected hydrocarbon measurements are obtained, at least three soil samples must be collected from areas where the high, medium, and low (but above background) OVA readings were detected and the samples analyzed for BTEX and MTBE using EPA Methods 8021 or 8260, PAHs using EPA Methods 8100, 8270 or 8310, and TRPHs using FL-PRO. If used oil was stored in the contaminated area, then the soil samples must be analyzed for the complete Used Oil Analytical Group parameters (see Table C of Chapter 62-770, F.A.C.). If positive corrected hydrocarbon measurements are not obtained, then at least one soil sample per source area should be collected and the samples analyzed for BTEX and MTBE using EPA Methods 8021 or 8260, PAHs using EPA Methods 8100, 8270 or 8310, and TRPHs using FL-PRO. A site map illustrating the locations of the soil borings and tables summarizing the OVA and laboratory analytical data must be provided.
- (5) Results of groundwater sampling and analyses from at least one properly constructed monitoring well installed in each source area. The samples must be collected less than nine months prior to LCAR submittal and must be analyzed for BTEX and MTBE using EPA Methods 602 or 8021, PAHs using EPA Method 8310, and TRPHs using FL-PRO. If used oil was stored in an area, then the

monitoring well installed in that area must be sampled and analyzed for the complete Used Oil Analytical Group parameters (see Table C of Chapter 62-770, F.A.C.). If groundwater contamination is detected, the direction of groundwater flow must be determined and additional monitoring wells installed to estimate the horizontal extent of the groundwater contamination within the source property boundaries. If contaminant concentrations greater than the Natural Attenuation Default Concentrations listed in Table V of Chapter 62-777, F.A.C., are detected in water-table monitoring well(s), the vertical extent of contamination must be determined by installing one or more vertical extent monitoring wells adjacent to the most contaminated well(s). A site map illustrating the locations of the monitoring wells and a table summarizing the well construction details must be provided. Well construction and lithologic logs must also be provided.

Although the horizontal extent of the groundwater contamination need only be defined to the source property boundary, if significant levels of groundwater contamination are present at the monitoring well(s) located at the source property boundary and access to the adjacent property is obtainable, it would be beneficial to install wells on the adjacent property to determine the horizontal extent of groundwater contamination more precisely so that a more accurate cost estimate can be calculated. If such definition is not performed, then modeling to estimate the edge of the groundwater contamination plume must be performed.

If a vertical extent well is installed and contaminant concentrations greater than the Natural Attenuation Default Concentrations listed in Table V of Chapter 62-777, F.A.C., are detected in that well, then it should be resampled and analyzed for the appropriate parameters to confirm the previous results. If the previous results are confirmed, a well with a deeper isolated screen interval should be installed to determine the vertical extent of groundwater contamination. Depending on the lithology and vertical hydraulic gradient, additional intermediate depth wells may be necessary to determine the extent of the groundwater contamination in the intermediate depth zone.

A table summarizing the laboratory analytical results and the chain of custody forms must be provided.

If free product is detected, piezometers should be installed to estimate the horizontal extent of the free product within the source property boundaries.

- (6) The soil and groundwater samples collected must be analyzed by an FDEP approved laboratory and all required quality assurance samples must be collected/prepared and analyzed.
- (7) A complete set of water-level measurements obtained concurrent with every groundwater sampling event to verify the direction of groundwater flow and to determine if the screen interval of the monitoring wells intersected the water table during the sampling event. These data must be provided in tabular form

(including top-of-casing elevations, depths to water, and corresponding water-level elevations) and in graphic form showing the groundwater flow direction.

- (8) If a Contamination Assessment Report (CAR) or Site Assessment Report (SAR) has already been prepared and has either been approved or is pending review by the FDEP or a local program, that report may satisfy the LCAR requirements, as long as the groundwater data were collected no more than nine months prior to the LCAR submittal and all information necessary to achieve the goal of the LCAR is present. If the CAR or SAR groundwater data were collected more than nine months prior to the LCAR submittal, a round of sampling and analyses for the appropriate parameters from a sufficient number of monitoring wells to determine the highest contaminant concentrations and verify the previous plume delineation should be performed prior to submittal of the LCAR.

If a soil assessment was conducted and only OVA measurements were obtained, additional soil borings should be performed to confirm the results of the previous assessment. At least three soil samples must be collected from areas where the high, medium, and low (but above background) OVA readings were detected and the samples analyzed for BTEX and MTBE using EPA Methods 8021 or 8260, PAHs using EPA Methods 8100, 8270 or 8310, and TRPHs using FL-PRO. If used oil was stored in the contaminated area, then the soil samples must be analyzed for the complete Used Oil Analytical Group parameters (see Table C of Chapter 62-770, F.A.C.). If positive corrected hydrocarbon measurements are not obtained, then at least one soil sample per source area should be collected and the samples analyzed for BTEX and MTBE using EPA Methods 8021 or 8260, PAHs using EPA Methods 8100, 8270 or 8310, and TRPHs using FL-PRO. A site map illustrating the locations of the soil borings and tables summarizing the OVA and laboratory analytical data must be provided.

- (9) If a Remedial Action Plan (RAP) has been approved by the FDEP or a local program and a remediation system is either currently operating or was shut down in response to the requirements of Chapter 95-2, Laws of Florida, then a copy of the approved CAR, a copy of the As-Built Plans, and a copy of the most recent Annual Report can be submitted in lieu of the LCAR. The Annual Report must include representative analytical data from monitoring wells obtained within nine months of the submittal date. If groundwater data were collected more than nine months prior to the submittal date, a round of sampling and analyses for the appropriate parameters from a sufficient number of monitoring wells to determine the highest contaminant concentrations and verify the previous plume delineation should be performed prior to submittal. Also, an explanation of the justification for continued system operation must be provided if that is the recommended course of action.

Chapter 62-770, F.A.C., has provisions for a site to be “grandfathered” in that the site could be subject to the cleanup procedures and requirements of the version of

Chapter 62-770, F.A.C., that existed prior to September 23, 1997 rather than the current version. These requirements are described in Rule 62-770.160(4), F.A.C. One substantial aspect of this provision is that a “grandfathered” site would not be subject to requirements for collection of soil samples for laboratory analyses or for achieving the soil cleanup target levels of Chapter 62-777, F.A.C., to qualify for No Further Action and the issuance by the Department of a Site Rehabilitation Completion Order. In order to qualify for this “grandfathered” status a Remedial Action Plan Approval Order or a Monitoring Only Plan Approval Order must have been issued prior to September 23, 1997 and the remedial action and/or monitoring must have continued until the present time. Any site that does not meet this requirement is subject to the current rule requirements and procedures. This means that sites for which a Remedial Action Plan or Monitoring Only Plan was previously approved by the Department and did not continue remedial action or monitoring in accordance with the Department Order must update the site assessment and remedial action strategy to include current rule considerations, including collection of soil samples for laboratory analyses and achieving the cleanup target levels for soil by the conclusion of remedial action.

- (10) A section that describes the course of action that is proposed to achieve site rehabilitation. A detailed description of the course of action must be provided. In addition to the course of action, an estimated cost to achieve site rehabilitation must be provided. A detailed breakdown of the costs must be provided which clearly demonstrates how the total cost was reached.