250-RICR-140-05-6

TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

CHAPTER 140 – WASTE AND MATERIALS MANAGEMENT

SUBCHAPTER 05 – SOLID WASTE

PART 6 – Solid Waste Regulation No. 6 Petroleum Contaminated Soil Processing Facility

6.1 Petroleum Contaminated Soil Processing Facility

A. General Information: All general requirements set forth in § 1.5 of this Subchapter must be submitted.

B. Applicability: §§ 6.1, 6.2, 6.3, and 6.4 through 6.9 of this Part regulate the design, construction, and operation of facilities that process virgin petroleum contaminated soil that has been generated from aboveground or underground petroleum leaks or spills.

C. Radius Plan: A radius plan, including all the information listed below, shall be submitted. A radius plan must be drawn to a minimum scale of one inch to two hundred feet (1" = 200 feet) adjusted to fit on standard 24 x 36 inch sheets and including all areas within a one quarter (1/4) mile radius out from all property lines on the site. The required information includes:

1. Zoning of the area as required in § 1.5(E)(5) of this Subchapter.

2. Legal boundaries of the site certified by a Registered Land Surveyor in the State of Rhode Island.

3. All roads.

4. All buildings and dwellings.

5. All water supplies (wells, etc.).

6. All surface water courses.

7. North arrow.

8. Locus Plan.

D. Site Plan: A site plan, including all of the information listed below for all areas within the site, shall be submitted. The site plan must be drawn to a minimum

scale of one inch to one hundred feet (1" = 100 feet), adjusted to fit on standard 24 x 36 inch sheet(s). The required information includes:

1. Legal boundaries of site certified by a Registered Land Surveyor in the State of Rhode Island.

2. Proposed fences and gates.

3. Roads.

4. On-site traffic patterns.

5. Employee and visitor parking areas and truck parking areas.

6. Weighing facilities.

7. Buildings and equipment.

8. Load inspection area.

9. Unprocessed soil storage area(s).

10. Temporary storage area(s) for bulky, unprocessible, or prohibited waste.

11. Ash storage area.

12. Residue disposal area.

13. Processed soil storage area(s).

14. Power and pipe lines and other utilities (e.g. water, sewer, gas, electric, telephone, etc.) including:

    a. Any aboveground or underground active or abandoned utility lines.

    b. Any aboveground or underground storage tanks.

15. Fuel storage area(s).

16. Wells, including groundwater supply and groundwater observation wells.

17. Surface water courses.

18. Proposed leachate collection and treatment facilities.

19. Site drainage facilities.

20. Fire protection equipment.

21. Landscaping.

22. Buffer zones.

23. North arrow.

E. Construction and Engineering Plans and Specifications: A complete set of construction and engineering plans and specifications relating to all buildings, structures, equipment, and key features of the facility must be submitted to the Department.

F. Operating Plan

1. An operating plan shall be submitted including information on all numbered sections below. The minimum requirement for information to be provided is outlined in each section.

2. The applicant must demonstrate an ability to comply with the General Operating Standards (§ 1.7 of this Subchapter), as well as the petroleum contaminated soil processing facility operating and design standards in §§ 6.2 and 6.3 of this Part respectively. The following information shall be included in the operating plan:

a. Operating Rates and Design Capacities

(1) Expected contaminated soil processing rate (tons/hour and/or tons/day), including ranges and average rate.

(2) Rated contaminated soil processing capacity of the facility (tons/hour and/or tons/day).

b. Population and Service Area

Expected source(s) of soil, by type of spill or application.

c. Operating Hours

(1) The days and hours that the facility will be open to receive contaminated soil, and when soil will be processed.

(2) Discussion of any seasonal variations in the operating hours, including planned facility shutdown periods (if any).

d. Provisions for Limited Access (see also § 1.7(C) of this Subchapter)

(1) Description and name of access road(s) into the facility and egress road(s) from the facility.

(2) Security equipment and location, including physical description of any fencing around the facility and physical description of barriers or gates at access/egress points.

(3) Any natural land features or other conditions which prevent access to the facility.

(4) Security personnel locations, activities, and work schedules (if any).

e. Waste Analysis Plan

The goal of the waste analysis plan is to ensure that the facility does not accept any hazardous waste; or any non-hazardous waste for which it is not licensed, or which may pose a threat to human health or the environment. Details of information to be included in the waste analysis plan are provided in § 6.4 of this Part.

f. Transportation Practices

(1) A description of transportation practices to be used by transporters of incoming and outgoing soil (see § 6.2(E) of this Part for further details).

(2) Discussion of on-site traffic control measures and traffic flow patterns.

g. Manifested Loads and Rejected Loads

(1) A description of the procedure to be used for accepting manifested material, if any.

(2) Explanation of how rejected loads (including waste classified as hazardous by the Rules and Regulations for Hazardous Waste Management, Subchapter 10 Part 1 of this Chapter]) will be handled.

h. Weighing Facilities

(1) Physical description of weighing facilities.

(2) Details of information to be recorded on incoming vehicles carrying solid waste, outgoing empty vehicles and outgoing vehicles carrying non-processible wastes, rejected loads, processed soil, etc.

(3) Description of any equipment used to record and store weighing information.

i. Operating Logs

A description of the operating log(s) which will be maintained at the facility, including samples of forms. A running inventory shall be maintained of the wastes which are accepted, processed, and sent off-site. The date of acceptance, date of processing, and source of material should also be identified.

j. Storage of Unprocessed and Processed Soil

A description of the storage method to be used for the incoming waste and outgoing material. The incoming waste storage must minimize precipitation run-on and run-off and must segregate different shipments pending analysis. The storage capacity of the facility must be provided (see §§ 6.3(B) and (C) of this Part for further details).

k. Process Equipment

A description of the process equipment must include any air pollution control equipment. Operating parameters and process capacity must also be included. Process control and instrumentation shall be delineated.

l. Loading and Unloading

A description of the loading and unloading operations at the facility, including a description of how dust will be minimized.

m. Facility Housekeeping Procedures

(1) Identification of the areas at the facility susceptible to:

(AA) Dust problems.

(BB) Litter problems.

(CC) Odor problems.

(DD) Vector problems.

(2) A detailed description of the proposed design and/or operational procedures to control and prevent these problems.

n. Air Pollution

A description of how compliance with § 1.4(C) of this Subchapter will be achieved.

o. Water Pollution

(1) A description of water and wastewater treatment and disposal (if any).

(2) A description of procedures showing how compliance with § 1.4(B) of this Subchapter will be achieved.

p. Residue Storage and Disposal

(1) A description of how any residues collected in the air pollution control equipment will be managed. This material should be periodically tested to determine if it is hazardous waste.

(2) Identification of the residue's ultimate use or disposal destination.

q. Non-processible and Bulky Waste

A description of how any non-processed (prohibited or screened) waste is handled, managed, and disposed.

r. Processed Soil

(1) Identification of the intended uses of the processed soil (see § 6.2(F) of this Part for further details).

(2) Identification of the allowable limits of analytical parameters in the processed soil, and discussion of sampling procedures.

(3) Discussion of management of any soil is rejected because it fails tests in § 6.1(F)(2)(r)((2)) of this Part, or for any other reasons.

s. Inspection

(1) Discussion of facility items to be inspected on a regular basis.

(2) An inspection schedule to be followed by plant personnel to monitor the equipment, and provide for remedial action, if needed.

(3) Sample of inspection form or documentation of inspection.

t. Routine Overhaul and Maintenance

(1) A list of facility items to be repaired or maintained on an ongoing basis.

(2) The anticipated schedule for repair or maintenance of each item.

(3) Technical literature (if any) on inspection, maintenance, and overhaul procedures.

u. Substitute Disposal and/or Transfer Arrangements

(1) Identification of an alternate solid waste management facility to process or dispose of contaminated soil and other solid waste on site, in the event of equipment failure or facility shutdown.

(2) Discussion of outage time intervals that would trigger actions in § 6.1(F)(2)(u)((1)) of this Part.

(3) Documentation of the agreement with the substitute facility.

v. Personnel and Duties

(1) Staffing

(AA) An organizational/manning chart for the facility.

(BB) Job descriptions, i.e., duties and responsibilities for each facility position. Include any requisite skills, experience, etc., where appropriate.

(CC) In the event of a multiple-shift operation, the staffing provided for each shift.

(2) Personnel Training

A description of the procedures to be used for training personnel to operate the facility in accordance with regulations and in a safe manner. An outline of the training curriculum and sample training documentation must be provided.

w. Personnel Protection and Safety

(1) Discussion of design, operation, and maintenance safety provisions, per § 1.7(M)(1) of this Subchapter.

(2) Personnel safety equipment and clothing used for normal work activities.

(3) Protective equipment and clothing for emergency situations.

x. Fire Control and Prevention Provisions

(1) Discussion of facility design or operating provisions, relative to fire prevention.

(2) A description of the specific fire protection equipment on site, water supply for firefighting and other firefighting media, along with a justification of its adequacy.

(3) Documented agreement with nearby fire department to provide emergency service whenever called.

y. Contingency Plan

An outline of specific steps to be taken in the event of any foreseeable emergency or accident.

z. Communication Equipment

Description of the type(s) of communication devices available in the facility. A telephone is a requirement.

aa. Records

A list of all documents that will be stored as records of facility operation, the storage location, and the time period the information will be retained.

bb. Aesthetics

Discussion of any landscaping, buffering, setbacks, or other measures to reduce potential negative visual impacts off-site.

G. Closure Plan. This plan will include the following, at minimum:

1. Planned or estimated year or time period of proposed closure.

2. Measures taken to remove all remaining contaminated soil and any other solid waste from the facility. At least two off-site disposal facilities should be identified.

3. A description of the decommissioning and cleaning of the facility before it is taken out of service. All surfaces which were in contact with contaminated soil must be cleaned with a steam jenny and the resulting wash waters must be handled appropriately. Some criteria, either visual or analytical or both, must be proposed for verifying when decontamination is

satisfactory. Any contractors or off-site facilities to be used should be identified.

4. Methods to restrict access and prevent additional waste disposal at the facility.

5. Physical description and location of any fences or gates placed at the facility.

6. Legal boundaries of the closed area.

7. Methods of protecting ground and surface water and controlling air emissions in the vicinity of the facility.

8. Intended future use of the facility following closure (immediate and long-term use). The ultimate fate of all equipment used in the licensed operation should be discussed.

9. With respect to the closure cost estimate (§ 1.5(J)(2)(a) of this Subchapter), the scenario chosen for the estimate shall be derived from the most expensive reasonably foreseeable situation; e.g., third party labor costs and off-site disposal of all stock-piled soil. It should not be assumed that the facility will be able to process the remaining soil, or that facility personnel will be able to carry out the closure plan. All costs, e.g., administrative, labor, equipment, analytical, etc. must be included. The source of any price quotations should be identified.

10. With respect to the financial assurance (§ 1.5(J)(2)(b) of this Subchapter), the applicant must post financial assurance for the full amount of the closure cost estimate as a pre-condition for the issuance of a solid waste management facility license.

6.2 Petroleum Contaminated Soil Processing Facility - Operating Standards

A. Field Sampling to Provide Analytical Data for Evaluation of Candidate Soil

The contaminated soil must be sampled and tested to adequately characterize it and to minimize the potential of accepting hazardous materials or materials that the soil processor is not permitted to accept. Details of field sampling and test strategies are provided in § 6.5 of this Part.

B. Laboratory Tests of Field Site Samples

Samples of contaminated soil from field sites must be tested in a certified laboratory as part of the soil verification procedures. Details of parameters to be analyzed in the tests are provided in § 6.6 of this Part.

C. Fingerprint Analysis and Testing

Inspection, sampling, and testing of soil arriving at the facility shall be performed. Details of the inspection and the parameters to be analyzed in the tests are provided in § 6.7 of this Part.

D. Sampling of Incoming Loads at Processing Facility for Fingerprint Analysis

Appropriate sampling of soil arriving at the facility shall be performed in order to adequately fingerprint the soil and minimize the potential of accepting hazardous waste. Details of fingerprint sampling are provided in § 6.8 of this Part.

E. Transportation Practices

1. Measures shall be employed to minimize precipitation run-on, prevent loss of soil or contaminants from the truck, and prevent a spill of material, while in transit. This applies to incoming soils and outgoing rejected contaminated soil or processed soil. Recommended measures include:

    a. A secured cover placed over the soil.

    b. A gate sealing method to prevent leakage of any run-off of soil contaminant.

    c. A chain wrapped around the gate, as an additional securing feature to prevent the weight of the load from forcing open the gate.

2. Additional measures may be required by other states, when interstate transfers are involved, and if the affected state(s) regulates this soil as a hazardous waste. It shall be the responsibility of the soil processor to inform the transporter, in advance, of the need to comply with these practices. Failure of the transporter to follow these instructions shall be grounds for load rejection by the processor.

F. Acceptable Uses of Processed Soil

1. Any material processed by RIDEM licensed solid waste management facilities, or by out-of-state facilities and to be re-used within Rhode Island, may be used for any of the following applications:

    a. Aggregate in asphalt production.

    b. Road base material (provided covered by asphalt). Approval must be obtained from RIDEM Office of Water Resources for each site or application where this road base material is proposed to be used.

    c. Landfill cover material in any licensed RI landfill.

G. Limits of Parameters in the Processed Soil

1. Any soil to be used as aggregate for asphalt production within Rhode Island shall meet the specifications of the appropriate party, e.g., RIDOT specifications, when used on public state highways. Periodic testing of the aggregate and/or asphalt shall be performed at the processing facility to demonstrate that the material meets specifications.

2. Any soil to be used as a landfill cover or road base material shall have TPH of 300 ppm or less and shall meet any other specifications required by the given landfill operator/owner or by the buyer of the road base material. The landfill must amend its RIDEM operating plan to show it will be accepting this material for landfill cover.

H. Sampling of Processed Soil at Processor's Facility

Appropriate sampling and testing of the processed soil shall be performed to determine the extent of residual petroleum contaminant in the soil or due to other requirements (if any) of the accepting party. Details of the sampling and test strategy are provided in § 6.9 of this Part.

6.3 Petroleum Contaminated Soil Processing Facility - Design Standards

A. Process Equipment

1. Process equipment shall be designed to include the best available air pollution control equipment to ensure the most complete destruction of vaporized hydrocarbons.

2. This may include after-burner equipment or other equally efficient methods.

B. Design of Storage Chamber for Incoming Contaminated Soil

1. An enclosed structure(s) and a permanent roof to keep out adverse weather elements shall be provided.

2. Soil shall rest on a permanent, impervious floor, sloped to channel any run-off petroleum products and water to a collection point or area.

3. Berming of the structure (including any opening in the building for vehicle access) shall be provided to prevent inflow of rainwater (run-on) and to prevent run-off of petroleum contaminant/water from the storage piles onto soil outside the enclosure.

4. Adequate venting, such as through use of roof vents, shall be provided to prevent build-up of petroleum vapors.

5. Natural lighting, rather than electric lighting or other types of artificial lighting, shall be provided.

6. Electric power sources or any other sources of heat or sparks shall be avoided. Electrical devices, if any, shall meet the appropriate fire codes governing prevention of sparks.

7. Soil storage, prior to completion of the fingerprinting process, includes the following options:

   a. Storage in the enclosed structure(s) with provisions to allow for, at minimum, all loads from a given generator site to be segregated from loads from other sites until fingerprint sampling and testing has been completed and the loads have been accepted for processing.

   b. Storage in trucks at the facility until the soil has been fingerprinted and has been accepted for processing. The trucks shall be covered until the soil is unloaded.

8. Sufficient storage capacity shall be provided for soils to be stored per § 6.3(B)(7)(a) of this Part, as well as for soils that have been accepted and are awaiting transfer to the kiln for processing.

C. Design of Holding Area for Processed Soil at Process Facility Site

1. Processed soil that has a total petroleum hydrocarbon (TPH) concentration of less than 300 ppm may be stored at the process facility site without any containing enclosure or holding pad.

2. Processed soil that has a total petroleum hydrocarbon (TPH) concentration of 300 ppm or greater must be stored on an impervious holding pad, and adequately bermed to prevent run-off from the pile from escaping to the surrounding soil.

3. Adequate erosion and sedimentation control to minimize effect of any run-off from the stored processed piles should be included.

6.4 Details of Waste Analysis Plan (Per § 6.1(F)(2)(a) of this Part)

A. The waste analysis plan must specify exactly what kind of materials the facility proposes to accept for processing. The soil shall be contaminated with only virgin petroleum products and associated spill clean-up debris. Language like "such as" or "etc" used in describing the incoming waste streams is unacceptable. In addition to the types of accepted material, numerical limits must be proposed for all significant contaminated soil parameters including, at a minimum, flashpoint, total petroleum hydrocarbons (per any equipment processing limitations), non-halogenated volatile organic compounds, halogenated volatile organic

compounds, EP toxic metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), polychlorinated biphenyls (PCB), cyanide, and Ph. The acceptable physical state of the contaminated soil must also be specified. The waste analysis section of the operating plan must also provide a comprehensive waste verification procedure. This refers to efforts by the waste processing facility personnel to ensure that the soil received is contaminated by only virgin petroleum products and associated spill clean-up debris and that the possibility of accepting hazardous waste is minimized. Verification also allows the processor to assess if the processing equipment employed for soil clean-up will be adequate to handle the waste, given the levels of contaminant and any required limits of contamination in the cleaned product. Steps in the verification procedure include at least:

1. Pre-screening of the waste through initial discussion between generator and waste processor.

2. On-site visit by waste processor personnel to inspect the waste pile.

3. Field sampling and subsequent lab testing (see §§ 6.2(A), 6.2(B), 6.5, and 6.6 of this Part for further details).

4. Documentation information supplied by the generator in the contaminated materials profile sheet and reviewed and accepted by the processor.

5. Fingerprinting (inspection, sampling, and testing) of incoming waste, as it arrives at the processing facility (see §§ 6.2(C), 6.2(D), 6.7, and 6.8 of this Part for further details).

6. Other administrative forms, to be completed by the generator, transporter, and processor, to minimize the potential of accepting any waste other than that which was originally tested.

B. Other key elements of the waste analysis plan shall include sampling techniques and protocol, identification of sampling personnel, identification of laboratories that perform sample analyses, and the quality assurance/quality control measures to ensure data integrity.

6.5 Field Sampling to Provide Analytical Data for Evaluation of Candidate Soil (Per § 6.2(A) of this Part)

A. The following represents a minimal sampling and testing strategy. Additional sampling may be required at a given site, on a case-by-case basis, to adequately characterize the contaminated soil and to minimize the potential of accepting hazardous materials or materials that the soil processor is not permitted to accept.

1. Scenario 1: For projects where contaminated soil has been excavated and stockpiled and where the piles are "homogeneous" or "heterogeneous" defined as follows:

   a. Homogeneous Pile or Site - A contaminated soil pile or site, where it is known or suspected that only one type of spill material (contaminant) has occurred either in a single spill or leak or multiple spills or leaks. Also, the pile or site has an appearance of being approximately evenly contaminated (approximately same concentration of contaminant throughout) based on visual observation and/or using portable contaminant monitoring devices.

   b. Heterogeneous Pile or Site - A contaminated pile or site, where it is known or suspected that one or more spills of one type of spill material (contaminant) has occurred in a defined area or sector of the pile or site, while one or more spills of a second type of spill material has occurred in a different, defined area or sector of the pile or site. Or

   c. A contaminated pile or site, where there are visual differences in the appearance of spill material in different, defined areas or sectors of the pile or site and/or where contaminant monitoring devices provide significantly different readings in different, defined areas or sectors of the pile or site such that:

      (1) There is a potential that different spill materials (contaminants) exist in separate, defined areas of the pile or site or

      (2) It is likely that the concentration of contaminant of a single type varies significantly in separate, defined areas of the pile or site.

   d. Case 1 - Homogeneous Pile or Site:

      (1) Divide the overall pile (on paper) into grid segments of 20 cubic yards each, when looked at a three dimensional view. In each grid segment, collect one grab sample at a depth of at least two feet. Collect it from the area of the grid segment that appears to have the highest concentration of contaminant, per visual observation. Alternately, if the concentration of contaminant throughout the grid segment is uniform, i.e., no discernible difference per visual observation, then collect it from the mid-point of the grid segment.

      (2) If the contaminated pile is arranged such that the above grid segment plan and sampling approach cannot be applied, then an alternate method can be used, provided approval is

obtained from the Solid Waste Section of the RIDEM Office of Land Revitalization and Sustainable Materials Management.

(3) In the laboratory, half of each of the five grab samples from five adjacent grids will be composited into one sample for test purposes and to represent that cumulative 100 cubic yards of soil. (Therefore, there will be one composite sample and one set of lab tests for each 100 cubic yard of soil, or portion thereof). If any of the composite sample's test indicate a problem (hazardous waste characteristics, material not acceptable per the applicant's permit, etc.) then the soil processor shall have several options:

(AA) Reject the entire pile at the site or

(BB) Reject the entire 100 cubic yard of soil associated with each composite that has the problem or

(CC) Re-test each individual grab sample within the 100 cubic yard sector(s) that has the problem, to determine if the problem can be isolated to a give grid segment (and thus being able to accept other grid segments within that 100 cubic yard sector).

e. Case 2 - Heterogeneous Pile or Site

(1) The procedures to be used are the same as in Case 1 for homogeneous piles or sites, except for the following:

(AA) Layout the grid network in a manner that maximizes the number of adjacent grids that are known or suspected to be homogeneous with one another.

(BB) In the laboratory, compositing, for test purposes, will be performed on grab samples from adjacent grids that are known or suspected to be homogeneous with one another. Therefore, each composite will consist of a minimum of one grab sample (from a grid that is known or suspected to be heterogeneous relative to adjacent grids) to a maximum of five grab samples (all known or suspected to be homogeneous with one another). Thus, there will be one composite sample and one set of lab tests for a maximum of each 100 cubic yards of soil.

2. Scenario 2: For projects where excavation and stockpiling is not possible due to space restrictions or environmental considerations:

a. After the boundaries of the contaminated area have been established, divide the overall area (on paper) into grid segments of 20 yd^3 each. Excavate in the middle of the grid to the apparent limits of contamination. While excavating, take grid samples at two foot vertical intervals and composite these vertical samples into one sample.

b. In the laboratory, half of each of the five composite samples from five adjacent grids will, in turn, be composited into one sample for test purposes, and to be representative of that cumulative 100 yd^3 of soil. (Therefore, there will be one composite sample and one set of lab tests for each 100 yd^3 of soil, or portion thereof). In the event that any composite sample's tests indicate a problem (hazardous waste characteristics, material that is not acceptable per the applicant's permit, etc.) then the soil processor shall have several options:

(1) Reject the entire amount of contaminated material at the site or

(2) Reject the entire 100 yd^3 sector of soil associated with each composite that has the problem or

(3) Re-test each individual composite sample from each grid segment within the sector(s) that has the problem to determine if the problem can be isolated to a given grid segment (and thus being able to accept other grid segments within that 100 yd^3 sector(s)).

6.6 Laboratory Tests of Field Site Samples (Per § 6.2(B) of this Part)

A. All sites, regardless of spill material, will be required to have lab testing performed for flashpoint, total petroleum hydrocarbons (TPH), and volatile organic compounds (VOCs - including separate tests for halogenated and non-halogenated VOC).

B. A full scan, to include at minimum, the tests required in § 6.6(A) of this Part as well as tests for EPTOX metals, PCB, cyanide, and pH will be required for any of the following scenarios:

1. When the waste pile has been moved from its original site of spill to an off-site location, regardless of time elapsed since the spill occurrence or since the time of transfer. (Logic - additional contaminated soil, containing other types of contaminants, or contaminant alone could be combined with this waste pile, off-site.)

2. When the soil processor's representative cannot verify from on-site visual inspection and from the statements or documentation of the generator, that the contaminated pile contains only soil and contaminant and clean-up debris from the excavated hole where the specific spill occurred. (Logic - additional contaminated soil, containing other types of contaminants from other locations at the generator's site or brought in from other sites, could be combined with this waste pile.)

3. On sites with large volumes of contaminated soil, the soil processor's license application shall propose a volume, 'X' cubic yards or greater, that will require a full scan. (Logic - potential for larger quantities of hazardous waste in larger piles, which could result in significant environmental releases during incineration. Therefore, need extra caution (screen for hazardous waste using a full scan)). The application should also provide some supporting statements and justification for selection of this limit on volume of material.

C. As an option, the applicant may choose up front to perform the full scan as defined in § 6.6(B) of this Part, rather than proceeding through decision steps in §§ 6.6(B)(1) through (3) of this Part in the above listed scenarios.

D. If the applicant does not select the option § 6.6(C) of this Part above and where § 6.6(B) of this Part has been determined not to apply, then a sub-set of the full scan tests shall be performed, when necessary, based on knowledge of the contaminant (e.g., EP toxic lead for a spill of leaded gas) and the following steps shall be taken to decide what lab tests will be performed on field samples of contaminated soil:

1. Determination of the constituents or elements in the virgin petroleum product at the time of the spill, based on a recent fuel spec provided by the generator, or laboratory testing of sample(s) of the virgin product, or some other acceptable means to verify what is in the product. The information provided shall include the concentration (mg/l or ppm) or range of concentrations of each constituent or element.

2. Each constituent or element that is at a concentration that is considered hazardous, according to the Rules and Regulations for Hazardous Waste Management (Subchapter 10 Part 1 of this Chapter), when it becomes a waste product (when it is spilled into the soil), shall be tested for, in the soil sample. Alternately, if the information provided includes only a range of concentrations of each constituent or element, then the highest concentration in this range shall be considered to be actual concentration in the spill virgin product. Examples include:

    a. Selected EP toxic metals:

Lead in leaded gasoline and aviation fuels and cadmium in certain hydraulic oils.

b. Carcinogenic properties:

Benzene (known carcinogen) in gasoline (restrict benzene to maximum of 1000 ppm in soil per RIDEM regulations).

c. An exception is PCB-contaminated soil. If the virgin petroleum product contains PCB levels greater than 50 ppm (per recent fuel spec or by lab testing of the fuel), then the resulting contaminated soil, regardless of the measured concentration of PCB in the soil is hazardous waste (TSCA regulations) and cannot be accepted for processing. Otherwise, if the PCB concentration in the soil is greater than 1 ppm, then the soil shall also be excluded from acceptance.

E. If the applicant has any doubt whatsoever that the soil may be contaminated by products other than virgin petroleum products or may contain any constituent such that the pile would be considered to be hazardous waste, then additional testing such as a repeat of previous tests on other portions of the pile or other types of tests, based on a suspected contaminant, should be performed.

6.7 Fingerprint Analysis and Testing (Per § 6.2(C) of this Part)

A. Fingerprinting is performed for numerous reasons, including:

1. As a safeguard against outside undesirable or uncontrollable factors, specifically to allow for an assessment of the material being received versus material originally tested at the generator site, for conformity.

2. To allow the processor to assess soil arriving at the facility to ensure it is processible, given any limitations of the equipment employed for soil cleaning, processing procedure limitations, and any required limits of contamination in the cleaned material.

3. As a personnel safety measure, relative to assessing material flammability, since the material will be handled, stored, and processed.

4. As an environmental regulatory measure, i.e., an additional safeguard to prevent the acceptance of hazardous waste and to prevent material from being processed, that is not within the processor's permit of material acceptable for processing.

5. As a check on the analysis and testing originally done on soil samples at the generator site.

6. As a tool to discourage outside undesirable actions (prior to arrival at the facility) and to encourage proper procedures in the waste acceptance multi-step process.

B. Therefore, the minimum fingerprinting requirements shall include:

1. Visual inspection of each incoming truck load of soil, by the processor's employee/representative as it arrives at the processing facility.

2. Appropriate sampling and testing of the unprocessed soil (sampling and testing strategies are presented in §§ 6.2(D) and 6.8 of this Part). The actual tests will include, at minimum, soil flashpoint and a PCB test (whenever the field sampling at the generator site included PCB testing and also at the option of the processor). Other additional tests relative to other parameters may be desirable for a more complete fingerprint, on a case-by-case basis, per the suspected contaminant in the soil at the generator site, as well as other factors. The processor should indicate the normal testing protocol for these various cases. Also, RIDEM may require additional tests, based on the conditions of the processor's permit.

3. Wherever the term "full scan lab tests" is mentioned in § 6.8 of this Part (which discusses fingerprint sampling and testing strategies) this shall include at minimum, flashpoint, total petroleum hydrocarbons (TPH), volatile organic compounds (VOC) including separate tests for halogenated and non-halogenated VOC, EPTOX metals, (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) PCB, cyanide and pH (see §§ 6.8(A)(4)(b), 6.8(A)(4)(c), 6.8(A)(5)(b) and 6.8(A)(5)(c) of this Part, where full scan lab tests apply).

4. The processor shall notify all parties involved in the steps leading up to arrival of soil at the processor's facility, including the generator, excavator, and transporter that fingerprinting procedures will be employed (with associated potential for rejection of soil).

6.8 Sampling of Incoming Loads at Processing Facility, for Fingerprinting Analysis (Per § 6.2(D) of this Part)

A. The following is a guideline that represents a minimum sampling and testing strategy. Additional sampling and testing may be desirable at a given facility, on a case-by-case basis, to adequately fingerprint the soil and to minimize potential of accepting hazardous waste. (Parameters to be analyzed in the tests are discussed in §§ 6.2(C) and 6.7 of this Part.)

1. Each truck load of waste arriving at the facility shall be sampled. This applies to all loads from a given field site (generator site) originating from a small or large excavated pile or unexcavated area and even if the material appears to be homogeneous at the site.

2. Sampling may be performed while the load is on the truck or after the load has been deposited in the receiving area (in the latter case, the load shall be segregated from other truck loads from the given field site, at least until sampling is completed).

3. At least five grab samples shall be collected from each truck load, from a depth of at least one foot, at zones within the pile designated as north, south, east, west, and center. In each zone the sample should be collected from the point with highest visually observed contamination concentration level. These samples shall be composited into one sample.

4. If the processor's facility design and operating procedures are such that all truck loads from a given site are combined into one overall pile, after sampling for fingerprint analysis, then the following applies:

    a. Composite samples from approximately five truck loads will, in turn be composited into one overall sample, representing approximately 100 cubic yards of soil and for test purposes (therefore, there will be one overall composite sample and one set of fingerprint tests for each 100 cubic yards of soil, or portion thereof).

    b. Fingerprint tests should be performed on a portion of each overall composite sample, with the results compared to the lab test results on generator site samples. If there is significant comparison differences for any of the composite samples, then the fingerprint tests should be repeated on the remaining portion of each composite sample, where results differed. A "significant comparison difference" shall mean, considerably lower flashpoints or considerably higher PCB levels in the fingerprint samples (per discretion of processor) and definitely any samples indicating flashpoints less than 100ºF or PCB levels greater than 50 ppm. If any of the repeat fingerprint tests verifies significant comparison difference for any of the composite samples, then the processor has options as follows:

        (1) Reject all truck loads from that generator site or

        (2) Perform a full scan of lab tests on each composite sample with significant comparison differences per above. If any of these full scan lab tests indicate the presence of hazardous waste or the presence of a material the processor is not permitted to accept, then the processor shall reject all truck loads from that site.

    c. For any site requiring 'X' or more truck loads or 'X' cubic yards (or more) of waste to be processed, whichever is smaller, there shall be at least one full scan lab test performed on one of the

composited samples from five truck loads, per above. If test results indicate the presence of hazardous waste or the presence of a material the processor is not permitted to accept, then the processor shall reject all truck loads from that site. (The processor shall propose appropriate criteria for this test to be triggered, i.e., define 'X' in the limits above and discuss reasons for selection of these limits.)

5. If the processor's facility design and operating procedures are such that segregation of portion(s) of a generator's soil is maintained, after sampling for fingerprint analysis and until fingerprint tests on that soil are completed, then the following options apply:

   a. The processor may use the procedures exactly as described in §§ 6.8(A)(4)(a) through (b) of this Part above or

   b. The processor may use a modified version of in §§ 6.8(A)(4)(a) through (b) of this Part as follows:

      (1) Composite samples from approximately five truck loads or from all truck loads in a given segregated holding area, (but from no more than 100 yd^3 of soil), shall be composited into one overall composite sample for test purposes. (Therefore, there will be one overall composite sample and one set of fingerprint tests for a maximum of each 100 yd^3 of soil.)

      (2) Fingerprint tests shall be performed on a portion of each overall composite sample, with the results compared to the lab test results on generator site samples. If there is significant comparison differences for any of the composite samples, then the fingerprint tests shall be repeated on the remaining portion of each composite sample, where results differed. If any of the repeat fingerprint tests verifies significant comparison differences for any of the composite samples, then the processor has options as follows:

         (AA) Reject all truck loads from that generator site or

         (BB) Reject all truck loads from the segregated holding area(s) associated with each of the composite samples that tested significantly different.

         (CC) Perform a full scan of lab tests on each composite sample with significant comparison differences per above. If any of these full scan lab tests indicate the presence of hazardous waste or the presence of a material the processor is not permitted to accept, then the processor has the option of rejecting all truck

loads from that site, or at minimum, rejecting all truck loads from the segregated holding area(s) associated with each composite sample that test positively for hazardous waste characteristics or unacceptable material, per above.

c. For any site requiring 'X' or more truck loads or 'X' cubic yards (or more) of waste to be processed, whichever is smaller, there shall be at least one full scan lab test performed on one of the composited samples from five truck loads, per above. If test results indicate the presence of hazardous waste or presence of a material the processor is not permitted to accept, then the processor shall have the option of rejecting all truck loads from that site, or at minimum, rejecting all truck loads from the segregated holding area(s) associated with that composite sample and performing additional full scan lab tests on the other composite samples. (The processor shall propose appropriate criteria for this test to be triggered, i.e., define 'X' in the limits above and discuss revisions for selection of these limits.)

6.9 Sampling of Processed Soil at Processor's Facility (Per § 6.2(H) of this Part)

A. The following is a guideline that represents a minimum sampling and testing strategy. Additional sampling and testing may be desirable at a given facility, on a case-by-case, or where required by the party that will be accepting the soil for re-use. Details of the actual tests and analyses will be based on any requirements of the accepting party.

1. Each 100 cubic yards of processed soil shall be sampled and tested. From each 100 cubic yards of processed soil in the holding area take five grab samples, each from a depth of at least one foot in the pile. The locations of the sample points shall be from designated zones within each 100 cubic yards grid, i.e., north, south, east, west, and center. The grab sample will, in turn, be composited into one sample for test purposes and a portion of this sample will be tested in the laboratory. If the test results indicate that the soil is sufficiently void of contaminants, then it can be moved out of the holding area and stored in other areas of the process facility.

250-RICR-140-05-6

TITLE 250 - DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

CHAPTER 140 - WASTE AND MATERIALS MANAGEMENT

SUBCHAPTER 05 - SOLID WASTE

PART 6 - SOLID WASTE REGULATION NO. 6 PETROLEUM CONTAMINATED SOIL PROCESSING FACILITY (250-RICR-140-05-6)

Type of Filing: Refile Capabilities

Department of State

01/04/2022	04/22/2020
Regulation Effective Date	Original Signing Date
E-SIGNED by Department of State on 2021-12-21 09:43:35 EST	December 21, 2021
Department of State Initials	Department of State Date