

TASK 1: ROUTINE OPERATIONS

Task 1.1 - Monthly Operations

ONCE EACH MONTH the LFG vertical extraction wells flow rates will be observed and then adjusted, as required, to minimize and control LFG migration, odors, and to meet specific site Permit requirements and conditions. In addition to the parameters below, Contractor will document testing protocols and instrumentation calibration. The following parameters will be recorded and reported monthly in the Operations and Maintenance Report (O&M Report):

- a. Point Identification and Date;
- b. LFG temperature flow;
- c. Wellhead and lateral pipeline static pressure (initial and adjusted pressure in inches of H₂O);
- d. Methane, oxygen, carbon dioxide, and balance gas concentrations (% by volume); and
- e. Comments and recommendations.

TASK 2: ROUTINE MAINTENANCE

Task 2.1 - Monthly Maintenance

ONCE EACH MONTH the operation of the BFS control system blowers, flame arresters, flares (including burner heads), well field, condensate sumps, and leachate pumps, will be observed and adjusted, (as needed) for the following:

- a. Proper operation;
- b. Accessibility;
- c. Malfunctions;
- d. Leaks; and
- e. Vandalism.

The results will be recorded and reported monthly in the O&M Report.

ONCE EACH MONTH active/inactive blower operation will be rotated, recorded, and reported in the monthly O&M Report.

ONCE EACH MONTH electronic chart recording data (i.e. temperature, operation, and flow) will be downloaded, stored, and submitted with the monthly O&M Report.

Task 2.2 - Quarterly Maintenance

ONCE EACH QUARTER all alarm signals (i.e. blower failure, flame failure, low/high temperature, etc.) will be simulated for proper operation and notification (if applicable);

ONCE EACH QUARTER the blowers, and blower motor bearings will be lubricated (if applicable) in accordance with manufacturers' specifications, and the blower motor belts will be checked for proper tension and adjusted, as necessary;

ONCE EACH QUARTER the flame arrester will be observed and checked for proper operation.

Task 2.3 - Semi-Annual Maintenance

ONCE EVERY SIX MONTHS every leachate pump will be pulled from its well casing, cleaned, and inspected. The results will be reported monthly in the O&M Report. Under this task the Contractor will perform the following services:

- a. Pull, clean, and return the pump to service. If the pump is not able to be readily cleaned and returned to service, Contractor will remove the pump and replace it with a pump from the County's stock. The pulled pump will be immersed in a soaking solution, provided by the County to remove the build-up. If there are not enough spare pumps available at the time of the event and additional effort is required to remove build-up, then this will be considered non-routine servicing and will fall under Task 5 Services
- b. Pumps requiring more than basic soaking and cleaning will be cleaned, rebuilt and placed on the shelf for future swap-out. These services will be considered non-routine servicing and will fall under Task 5 Services
- c. Contractor will perform minor maintenance at the time of each pump-pull. Minor maintenance will include adjusting cycle counters, regulators, and tightening loose fittings and hose clamps. Any additional troubleshooting, repair, or replacement of these items will be considered non-routine maintenance and fall under Task 5 Services
- d. Contractor will conduct liquid level soundings in conjunction with the pump-pull

TASK 3: ROUTINE MONITORING

Task 3.1 - Twice Monthly Monitoring

TWICE EACH MONTH the Blower/Flare Station (BFS) will be monitored, and the following data will be collected, recorded, and stored in an electronic format:

- a. Date, time, and monitoring personnel;
- b. Methane Gas (% by volume);

- c. Oxygen (% by volume);
- d. Carbon Dioxide (% by volume);
- e. Balance Gas (% by volume);
- f. LFG flow rate to Flare (scfm);
- g. Flare Exit Gas Temperature (°F);
- h. Extraction Blowers - Inlet/Outlet Pressures (inches-W.C.)
- i. Extraction Blower operating inlet/outlet temperatures (°F);
- j. Flare combustion louver and flow control valve positions;
- k. Supply air pressure to BFS components;
- l. Air compressors run and oil level; and
- m. Pilot ignition system propane storage tank level.

The results will be reported in the monthly O&M Report.

Task 3.2 - Monthly Monitoring

ONCE EACH MONTH the BFS and LFG Header access ports will be monitored and tested for the following:

- a. Point Name and Date
- b. Methane (% by volume)
- c. Carbon Dioxide (% by volume);
- d. Oxygen (% by volume);
- e. Balance Gas (%by volume);
- f. Initial/adjusted Temperature (°F);
- g. Initial/Adjusted Static Pressure (inches H₂O);
- h. Initial/Adjusted Flow Rate (scfm); and
- i. Comments and recommendations.

The results will be recorded and reported in the monthly O&M Report.

ONCE EACH MONTH the cycle counter readers for the leachate extraction well pumps will be read and recorded. The results for each individual counter will be reported in the monthly O&M Report.

ONCE EACH MONTH visual observation of the landfill surface along the extent of the LFG extraction system will be performed. The observations will consist of the following:

- a. Erosion;
- b. Surface cracks that might allow LFG to escape into the atmosphere or allow air intrusion;
- c. Settlement or cracking around well bore seals; and

d. Leachate seeps.

The results will be reported in the monthly O&M Report.

ONCE EACH MONTH LFG Monitoring probe No. 18 will be monitored for the following:

- a. Methane (% by volume)
- b. CO₂ (%by volume);
- c. O₂ (% by volume);
- d. Balance Gas (% by volume); and
- e. Real Pressure (inches of H₂O).

The results will be reported in the monthly O&M Report.

ONCE EACH MONTH the Flare Downtimes will be recorded and reported in the O&M Report. At a minimum the log will consist of the following:

- a. Date and Time flare is off-line;
- b. Date and Time flare is back on-line;
- c. Total hours the flare is off-line;
- d. Cause; and
- e. Corrective Action.

The results will be reported in the monthly O&M Report.

Task 3.3 – Quarterly Monitoring

ONCE EACH QUARTER all landfill components under positive pressure will be monitored and tested for methane leaks (500 ppm). Component leak testing will be performed at the BFS, LFG collection wells, and on all pipes and appurtenances under positive pressure in accordance with the Landfill Methane Rule (LMR). The results of the quarterly monitoring will be reported to NSCAPCD annually.

Task 3.4 – Annual Monitoring

ONCE EACH YEAR Instantaneous and Integrated Surface Emissions Monitoring (SEM) will be performed in accordance with the LMR on the Healdsburg Landfill Surface. The results of the annual SEM will be submitted to both California Air Resources Board (CARB) and the NSCAPCD annually.

Should a change in either frequency of the event occur, or spacing at which the event is performed, then this additional monitoring will be completed under Non-Routine Task 5 Services. Any re-monitoring required will likewise be performed under Non-Routine Task 5 Services.

TASK 4: REPORTING

Task 4.1 – Operations and Maintenance Reporting

ONCE EACH MONTH the CONTRACTOR will assemble all the information from Tasks 1 through Task 3 in an Operations and Maintenance Report (O&M Report). The O&M Report will be submitted electronically (via email) to the IWOM. The O&M Report will also reflect the submittal (not the actual report) of any reports (if applicable) to CARB and/or the NSCAPCD, and/or any other regulatory agency.

Task 4.2 - LFG Production and Flare Operating Hours Report

ONCE EACH YEAR the CONTRACTOR will prepare a written report detailing the total annual landfill gas production, total annual flare operating hours, and any source test results for tests conducted that year, in accordance with Condition E, Part 3, of the Permit to Operate No. 04-18. The annual report will be submitted via email to CARB, the NSCAPCD, and to the County's IWOM by March 1st of the year following the reporting period of January 1st through December 31st.

Task 4.3 – Source Test and Gas Characterization Report

ONCE EVERY THIRD YEAR the CONTRACTOR shall conduct a performance test (source test) in accordance with Condition D, Part 1 of the Permit, to determine the emission rates and operating conditions of the BFS. In addition, a characterization of the landfill gas will be performed concurrently with the source test in accordance with Condition D, Part 2 of the Permit. Results of the Source Test and LFG Characterization will be submitted electronically to the NSCAPCD and to the County's IWOM as part of the Annual Report.

Task 4.4 - AB32 – Landfill Methane Rule Report

ONCE EACH YEAR the CONTRACTOR will prepare and submit the AB32 Landfill Methane Rule Annual Report in accordance with Article 4, Subarticle 6, Section 95470(b)(3), Title 17. At a minimum the annual report will contain the following:

- a. Site Information [§ 95470(b)(3)(A)];
- b. Total LFG Recovery Data [§ 95470(b)(3)(B), (C)];
- c. Control Device I.D. [§ 95470(b)(3)(D), (E), (F)];
- d. Supplemental Fuels [§ 95470(b)(3)(G)];
- e. LFG Shipped Off Site (N/A) [§ 95470(b)(3)(H)];
- f. Topographic Map [§ 95470(b)(3)(I)];
- g. Additional Data [§ 95470(b)(3)(J)]:
 - i. Downtime [§ 95470(a)(1)(A),(B)]
 - ii. LFG Generation Model [§ 95470(a)(1)(C)];

- iii. Surface Emissions Monitoring – Instantaneous and Integrated [§ 95470(a)(1)(D)];
- iv. Component Leak Monitoring [§ 95470(a)(1)(D)];
- v. Well Monitoring Data [§ 95470(a)(1)(E)];
- vi. Waste Monitoring Data (N/A) [§ 95470(a)(1)(F)];
- vii. Results of Source Tests Conducted pursuant to §95464(b)(4)) [§ 95470(a)(1)(H)];
- viii. Boiler/Process Heater Data (N/A) [§ 95470(a)(1)(K)].

The LMR Annual Report will be submitted via email to the CARB, NSCAPCD and to the County's IWOM by March 1st of the year following the reporting period of January 1st through December 31st.

Task 4.5 – Annual Data Evaluation and Trend Report

ONCE EACH YEAR, the CONTRACTOR shall compile all monitoring data collected under Tasks 1 through 3 for the preceding calendar year and perform a comprehensive evaluation of that data. At a minimum the data analysis shall:

- Identify trends or anomalies in wellhead pressure, gas composition, temperature, flow rates, leachate levels, pump cycle counts, flare downtimes, surface emissions results, and any other monitored parameters;
- Highlight any deviations from expected performance (such as increases in oxygen concentration, elevated temperatures, or recurring alarm events) and any exceedances of regulatory limits;
- Include tables, charts or graphs that illustrate significant trends in the data; and
- Discuss potential causes for observed trends or anomalies.

Based on this evaluation, the CONTRACTOR shall prepare a written report that summarizes the findings and provides recommendations for operational adjustments, maintenance activities or system modifications needed to optimize the Gas Collection and Control System (GCCS) and the Leachate Collection and Recovery System (LCRS). If the analysis indicates that additional extraction wells, headers or other components may be required to ensure adequate gas or leachate control, those recommendations shall be included along with updates to the GCCS/LCRS map or design plan as appropriate.

The Annual Data Evaluation and Trend Report shall be submitted electronically to the Division by March 1 following the reporting period of January 1 through December 31. It may be combined with the annual reports required under Tasks 4.2 and 4.4, provided all required elements are clearly presented.

TASK 5: NON-ROUTINE SERVICES – HEALDSBURG LANDFILL

Non-Routine services consist of, but are not limited to, the following tasks:

- a. Call-out by the BFS automated alarm notification system or by County personnel;
- b. Repair of pneumatic leachate extraction pumps and appurtenances beyond what is considered Routine Maintenance in Task 2.3;
- c. Repair of main LFG header brakes/leaks resulting in no or low gas flow to the flare;
- d. Repair or replacement of broken valves, flex hoses, positive pressure air lines and appurtenances;
- e. Repair of above or below grade LFG pipelines and appurtenances, leachate collection pipelines and appurtenances, and positive pressure air lines and appurtenances;
- f. Expansion of LFG extraction well system, headers, LCRS, pneumatic pipelines, and all GCCS/LCRS appurtenances (Non-routing expansion of the GCCS/LCRS is generally a result of the LMR or due to the detection of LFG constituents at perimeter wells.).
- g. The CONTRACTOR will notify the County's IWOM by email of any new rules or regulations promulgated by local, state, or federal regulatory agencies that either could or will affect closed landfills in the state of California.
- h. Implementation of flare operations per the CARB issued ACO.
- i. Additional SEM Monitoring, beyond the required annual inspection.

Non-routine services will be performed at the request of the IWOM or the IWUIC. Non-routine, non-maintenance services may only proceed if the scope of the services is approved in advance by the County. In addition, Contractor's staff will be available to respond to non-routine services and emergencies, upon request, by the IWOM or the IWUIC, 24 hours per day, 7 days per week, including holidays.

3. NON-ROUTINE SERVICES AND EXTRA WORK

The County's IWOM may authorize the CONTRACTOR's crew size to be temporarily expanded for overtime hours worked for non-routine services and extra work. Billing for overtime, additional labor, and/or equipment will be itemized separately from the routine monthly flat amount. Travel and per diem, as appropriate, will be paid for extra members of an expanded crew size. Proposers are encouraged to provide rates for expanded crews and/or overtime work in their proposals.

4. LABOR AND EQUIPMENT

The CONTRACTOR shall provide a crew of sufficient number of trained and licensed (as required) personnel to perform the work detailed in Tasks 1 through Task 5 of Section 2.0 – Specified Services. The crew will consist of equipment operators and laborers as required. CONTRACTOR shall provide a fully equipped Maintenance vehicle outfitted with any and all tools and equipment necessary to perform all operations detailed in Task 1 through Task 5. CONTRACTOR will be responsible for providing all personal protective equipment, tools, equipment, materials and appurtenances, parts, and support vehicles and fuel required to successfully perform their tasks. The CONTRACTOR will be responsible for all sub-contractors and will ensure that all sub-contractors follow the same rules and regulations as are required of the CONTRACTOR. Storage of CONTRACTOR's and sub-contractor's equipment, tools, vehicles, materials and appurtenances, will be the responsibility of the CONTRACTOR. The CONTRACTOR may, on a temporary basis and for the length of time of the project, store light and heavy equipment, tools, vehicles, materials, and appurtenances at any site that the CONTRACTOR is actively working, with the understanding that the COUNTY assumes no responsibility or liability for any equipment, tools, vehicles, materials and appurtenances stored at a site. The CONTRACTOR may store indefinitely materials and appurtenances, such as spare pumps, HDPE fittings and pipe, bentonite, and other day-to-day material at the Healdsburg site. Fuel storage is prohibited at any of the County's 7 sites. Fuel must be provided by mobile transport and removed from the site each day.

There are repair and maintenance projects that commonly require operation of heavy equipment such as excavators, loaders, compactors, articulating dump trucks, and water trucks. Operators of this equipment must be licensed and experienced accordingly in the operation of the equipment, by any crew member using the equipment.

The above requirements for Labor and Equipment pertain to both the successful proposer and to any sub-contractor brought on to any County site to perform any and all work required by this RFP, under the agreement, or any work requested by the County's IWOM.

5. MATERIALS

It will be the responsibility of the CONTRACTOR to procure and provide all materials, such as HDPE pipe and appurtenances, QED Hammerhead leachate extraction pumps and pump appurtenances, wellheads and wellhead appurtenances, building material for new well construction, and any other material that might be required to successfully perform a task required by this RFP, under the agreement, or any task as requested by the County's IWOM.