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May 28, 2008 Proposal P83-97328

Napa-Vallejo Waste Management Authority
1195 3rd Street, Room 101
Napa, CA 94559

Attention: Mr. Trent Cave, R.E.H.S.

Subject: Proposal to Provide Operations and Maintenance Support Services for the American Canyon Sanitary Landfill

Dear Mr. Cave:

Golder Associates Inc. (Golder) is pleased to submit this proposal to provide operations and maintenance support for the Napa-Vallejo Waste Management Authority's (Authority) American Canyon Sanitary Landfill (ACSL) located at the end of Eucalyptus Road in Napa, CA. These proposed services include:

- Operation and maintenance of the landfill gas collection system and the flare,
- Quarterly surface monitoring activities, and
- Annual Compliance Source Test.

This proposal includes our scope of work, schedule, and budget. This scope of work has been prepared based upon our familiarity with the site and our landfill operations and maintenance (O&M) expertise.

The scope of work is described in greater detail in the following paragraphs. O&M activities will address work to be conducted on a fixed schedule (routine) basis including preplanned events such as the source test. Non-routine activities are not included in this proposed project.

Routine O&M

Wellfield O&M - Using a GEM500 or equivalent unit, Golder will monitor and adjust all of the Authority's landfill gas (LFG) migration extraction wells a minimum of once each month as required by the conditions specified in the Title V Federal Operating Permit #A9183 issued by the Bay Area Air Quality Management District (Title V Permit). Wells that require more frequent tuning will be monitored and adjusted on an as-needed basis in concert with the Fortistar Methane Group (Fortistar) energy plant operator. If these more frequent visits cannot be combined with another routinely scheduled visit or performed by Fortistar, they will be considered non-routine.

Adjustments to the flow rates will be implemented in an attempt to maintain compliance with the Title V Permit conditions, while meeting or exceeding the Authority's and Fortistar's gas quality goals. All data collected will be downloaded to a data management system or transmitted in electronic format to the Compliance Specialist.

Golder will also perform minor maintenance (e.g., labor to replace damaged/worn flex hoses, monitoring ports, and flow control valves) on LFG collection components during wellfield monitoring activities. Materials/supplies used for minor maintenance will be obtained from on-site spare parts inventories maintained by the Authority. Golder is available to assist the Authority in recommending, establishing, and maintaining this stockpile of spare parts. Repairs above and beyond the availability of spare parts or the ability of the field technician to perform the work at the time of discovery will be performed under the non-routine project.

Compliance Testing for LFGTE Wellfield - Concurrent with monthly O&M services of the Authority's wellfield, Golder will also monitor, but not adjust, the energy plant wellfield. Copies of this data will be given to the LFGTE developer the day of the testing with notification of extraction wells that are out of compliance with Title V Permit conditions.

In addition, Golder will also perform the required follow up testing to determine if system adjustments and/or repairs have been implemented within the stipulated timeframes. Golder will immediately inform the Authority regarding the compliance status of the energy plant wellfield. This information will be provided via email and monthly reporting.

Quarterly Surface Emissions Monitoring - Each Quarter, Golder will conduct Surface Emissions Monitoring pursuant to the Title V Permit conditions. Golder will immediately inform the Authority regarding the compliance status of the surface emissions monitoring. In addition, Golder will perform the required follow up testing to determine if system adjustments and/or repairs have been implemented within the stipulated timeframes. This information will also be contained in the weekly email and monthly reporting efforts proposed in subsequent sections.

Flare Station O&M - Concurrent with wellfield and gas collection system O&M activities, Golder proposes to check the flare station to determine if operation is in compliance with permit conditions on a weekly basis. If the flare station requires more frequent monitoring, it will be tested and adjusted on an as-needed basis. If these more frequent visits cannot be combined with another routinely scheduled visit, they will be considered non-routine.

Migration Probe Monitoring - Again using a GEM500, Golder proposes to monitor gas migration probes monthly. This information will be reported as part of the monthly report.

Reporting - Golder field staff will prepare weekly field reports that will provide explanations of system performance (i.e., need for repair/maintenance, explanation of shortfalls, non-routine site visits, etc.). The field report will be transmitted to the compliance specialist for preparation of the weekly email to the Authority (prepared under the routine compliance project). The weekly field report will be maintained in the project file and made available to the Authority on request.

Compliance Source Test

The annual source test will demonstrate the performance of the landfill gas flare (source A-2) as specified by the Title V Permit. A source test protocol is to be prepared and submitted to the BAAQMD, Source Test Section and Permit Services Division fourteen (14) days prior to the test date. A report presenting the results of the tests will be prepared and presented to the Authority for review within 45 days of the completion of the test. The final report is due to

the BAAQMD 60 days after testing has occurred. The following source test parameters must be tested:

- Determine landfill gas flow rate (dry basis);
- The landfill gas shall be analyzed for Carbon Dioxide (CO_2), Nitrogen (N_2), Oxygen (O_2), Total Hydrocarbon (THC), Methane (CH_4), non-methane organic compounds (NMOC). All concentrations shall be reported on a dry basis;
- Stack gas flow rate from the flare using EPA Method 19 or equivalent (dry basis);
- Concentrations (dry basis) of THC, CH_4, NMOC, Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO_2), and O_2 in the flare stack gas;
- NMOC, THC, and methane destruction efficiency achieved by the flare;
- The average combustion temperature in the flare during the test period.

Triplicate gas phase analysis of the exhaust stream will be performed. Testing for the concentrations of benzene, vinyl chloride, and formaldehyde do not need to be repeated until calendar year 2012.

A landfill gas characterization must be conducted concurrently with the flare source test. The landfill gas sample shall be drawn from the main landfill gas header into a Tedlar bag. The collected sample will be shipped to a laboratory for determination of the concentration of each constituent identified in the facility's Title V Permit (condition 12418 Part 14).

The following source test methods (each compliant with the requirements of the BAAQMD) will be utilized to determine the emissions from the flare:

- Three (3) thirty-minute test runs for NO_x (BAAQMD Method ST-13A), CO (BAAQMD Method ST-6), NMOC (BAAQMD Method ST-7), CO_2 (ASTM D-1945/3588), SO_2 (BAAQMD Method ST-19A or B), and O_2 (BAAQMD Method ST-14) at the flare exhaust;
- Environmental Protection Agency (EPA) Method 19: volumetric flow rate at the flare exhaust;
- Landfill gas fuel analysis: ASTM D-1945/3588 for BTU/cubic foot of gas, higher heating value (HHV), C_1 through C_6 hydrocarbons, inclusive, O_2, carbon dioxide (CO_2), and nitrogen (N_2), and hydrogen sulfide (H_2S);
- Triplicate integrated samples for the inlet concentration of NMOC by EPA Method 25C.

The landfill gas sample collected from the main header near the inlet to the flare will be analyzed by EPA Method TO-15 for each of the listed organic compounds and ASTM Method 5504 for total reduced sulfur compounds.

Golder will provide a BAAQMD and California Air Resources Board approved contractor to perform the source testing activities. The source testing activities will include preparation of the source test protocol, equipment calibration, sample recovery, and data reduction. Golder will be responsible for reviewing the source test protocol, assuring compliance with the sampling protocols, performing quality assurance checks of the collected data, and preparing the draft and final reports. A source test date will be requested in December 2008. The facility is due to be tested no later than January 15, 2009. However, Golder recommends that

the tests be conducted at least two weeks prior to this date so that unexpected delays do not create a compliance problem.

Budget

Routine O&M services, as described above, will be performed on a **lump sum basis of $3,610 per month**. The **quarterly monitoring** will be performed on a **lump sum basis of $984 per quarter**. Therefore the total annual budget for routine service is **$47,255.** For the **annual flare source test**, we propose a **lump sum budget** of **$7,625**. The **combined total annual budget** for routine O&M and annual flare source test services is therefore **$54,875**.

As needed, Golder will provide the Authority a not-to-exceed estimate for the specific major corrective repair or maintenance work identified during routine maintenance. This work will be performed under the non-routine project.

Golder will not exceed the total price of the routine O&M activities or the annual flare source test without your written consent. This work will proceed only upon authorization from the Authority based on mutually agreeable terms and conditions.

Table 1
Estimated Routine O&M Costs

Task	Frequency	Rate	Cost
Routine Operations and Maintenance Activities	Monthly	$3,610	$43,320
Quarterly Surface Emission Monitoring	Quarterly	$984	$3,935
Annual Compliance Source test			$7,625
Total O&M and Source Test			$54,880

Schedule

The period of performance is from July 1, 2008 through June 30, 2009.

Golder will begin work on July 1, 2008 assuming authorization has been received based on mutually agreeable terms and conditions from the Authority.

We look forward to continuing to work with you!

Golder Associates Inc.

Richard S. Merrill
Senior Consultant

William L. Fowler, P.G., C.E.G.
Associate/Program Manager