

MONTHLY PROGRESS REPORT FOR CONTRACT NO. 500-00-036

PROJECT 2.1 – ENHANCED LANDFILL GAS PRODUCTION USING BIOREACTORS

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

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**What we planned to accomplish this period:**

In April, the focus of activity was to finalize the draft conceptual design and develop the construction and test plans for the bioreactor at the Mid-Valley site. The CE Team anticipated that a draft of the *Conceptual Design Report* would be completed in April and submitted to both the Commission and the Technical Advisory Committee for review. The report, and the related design tasks being undertaken by the County on its landfill liner extension project, were to be integrated to ensure that information developed would be appropriate for subsequent design activity. In order to ensure that this integration is effective, it was planned that there would be continued collaboration with San Bernardino County's engineer, Brian A. Stirrat and Associates (BAS). It was also anticipated that San Bernardino County would begin the process of obtaining the necessary permits, which relate to the matching fund activity for this project. This would include documentation required by the California Environmental Quality Act (CEQA)

Other activity planned for April included scheduling the next meeting of the Technical Advisory Committee (TAC) for Project 2.1. It was anticipated that this meeting would be scheduled after the *Draft Conceptual Design Report* is finalized and sent out for review. The CE team anticipated that this meeting would occur in May.

Additionally, discussions were planned to continue on the draft *Memorandum of Understanding (MOU)* between Commonwealth Energy and the City of Riverside.

**What we actually accomplished this period:**

Task 2.1.1 Characterize Waste to be Placed in Bioreactor:

- As the *Waste Characterization Report* was previously submitted and approved by the Commission, minimal tasks were undertaken in April. Data from this effort was reviewed and used to facilitate the completion of the Project 1.1, Task 1.1.10 *Prioritization Report* and other Project 2.1 activities.

Task 2.1.3.a Conceptual Design for First Bioreactor

- In April, activities focused on completing the *Conceptual Design Report*, as well as ongoing coordination with the host, San Bernardino County. As anticipated, consultations continued with BAS, the County's design engineer, as part of the effort to design and implement detailed plans for developing the bioreactor at Mid-Valley. The Draft *Conceptual Design Report* was completed and submitted for review on April 22.
- The CE Team continued work on the first phase of the approach provided to Commission staff previously, implementing environmental permitting and design activities that link the PIER bioreactor project and the County's ongoing program. When the later phases of this plan are implemented, it will include linking approximately \$4 million in matching funds for construction and approximately \$4 million in matching funds for operations with the PIER program.

Task 2.1.3.b Construction and Test Plans for First Bioreactor

- Using information presented in the *Conceptual Design Report*, the team continued to work on elements of the construction and test plans that link the bioreactor project with the ongoing design project of extending the liner, a portion of which will serve as the test area for the bioreactor. This effort includes permitting (being undertaken under separate effort funded by the County), engineering and construction elements, and in general, involves the integration of PIER bioreactor project elements into the ongoing work of the Unit 3 expansion. Additionally, the effort continued in a manner consistent with the County's approach of having this work go through a public bidding process from which a contractor would be selected to implement the liner extension project at Mid-Valley. It is anticipated that this same contractor would be used to install the bioreactor elements to this project. Construction plans for this activity, which would be included in construction documents that could be given to the contractor were being prepared.
- Conference calls involving BAS, the County's design engineer and CH<sub>2</sub>M continued. Extensive coordination is required so that elements of the proposed bioreactor project are fully compatible with the County's ongoing project to extend the liner within Mid-Valley Unit 3, particularly given the County's need to have the liner extended in the second half of 2004 so that waste can be placed in this area in 2005. The primary focus of these calls, continues to be the exchange of

information needed to complete the ongoing conceptual design activities linking work at Mid-Valley with the PIER program's bioreactor project – specifically in light of technical, environmental, schedule and funding considerations.

**How we are doing compared to our plan:**

Work is proceeding as anticipated although it is important that efforts on the bioreactor in the next two months proceed as expeditiously as possible so as to not jeopardize the County's schedule for extending the Mid-Valley liner. The CE Team continues to closely coordinate the work of the PIER program with that of the County's design engineer BAS, to ensure that the work is completed in a timely and efficient manner, and in accordance with PIER Program guidelines and timeframes. With the submission of the *Conceptual Design Report*, efforts on the construction test plans have been initiated. It is important that work continue on the bioreactor elements of the total project so they can be implemented in accordance with the County's overall schedule for the extension of the liner within unit 3.

**Significant problems or changes:**

The County is proceeding with the construction of the Unit 3 liner extension project so that construction of the liner extension will occur starting this summer. This will enable the waste to be placed in the bioreactor starting late this year. This could be very advantageous to the Commonwealth PIER Program as the County is planning on placing approximately 600,000 tons of waste in the area to become the bioreactor during the first year of its operation. At the same time, the County cannot delay the liner extension project. Therefore, it is important that PIER program meet this schedule. The key challenge in this regard is reallocating the budget as recommended in late 2003 so that Project efforts could focus on one commercial scale bioreactor instead of two research scale bioreactors as initially proposed. Changing the focus of the project to a larger commercial scale type facility is consistent with the comments made by RPAC members at the program kickoff meeting and at the Program Review meeting in September of 2003. If one commercial scale bioreactor is constructed, instead of the two research scale bioreactors, it is anticipated that the total project budget would be reduced.

**What we expect to accomplish during the next period:**

May's focus of activity will be on finalizing the design of the bioreactor project including preparation of the construction and test plans. Efforts will be initiated to prepare detailed costs estimates, for the individual elements of the bioreactor, based on the conceptual design report previously submitted. This information will be used in preparing and refining the construction and test plans and in discussions with San Bernardino County as related to finalizing the *MOU*. Engineering documents and other information that describe the

construction plans will be prepared so they can be used to work with the contractor to finalize the construction activity to be undertaken in constructing the bioreactor elements of the proposed project at Mid Valley.

It is also anticipated that discussions will continue with Mid-Valley as related to finalizing the *MOU* between Commonwealth and San Bernardino County. The primary focus of the *MOU* discussions will be to clarify each entities responsibilities in light of the construction plans being developed and in establishing an mutually acceptable arrangement whereby gas can be used by Commonwealth for generation activities anticipated on the Program. In addition, Commonwealth is seeking to use the *MOU* to develop much larger projects at Mid-Valley. The tasks being undertaken by the County on its landfill liner extension project will be integrated to ensure that information developed will be appropriate for subsequent bioreactor project activity. In order to ensure that this integration is effective, there will be continued collaboration with San Bernardino County’s engineer. It is also anticipated that San Bernardino County will continue the process of obtaining the necessary permits, which relate to the matching fund activity for this project. This will include documentation required by the California Environmental Quality Act (CEQA)

Other activity planned for May include scheduling the next meeting of the Technical Advisory Committee (TAC) for Project 2.1. It is anticipated that comments on the *Draft Conceptual Design Report* will be received and the report will be finalized.

**Status of Milestones and Deliverables:**

Table 1 on the following page summarizes the status of Project 2.1 task deliverables as of the end of the current reporting period.

**Table 1: Summary of Project Status and Deliverables – Project 2.1**

Task No.	Description	Start Date		Due Date		Status (%)
		Planned	Actual	Planned	Actual	
2.1.1a	Characterize MSW and Source-Separated Organic Waste to be Placed in Both Bioreactors	01/10/02	1/24/03	05/31/02 08/21/03	DR: 08/20/03	100%
2.1.1b	Characterize Food or Animal Wastes to be Placed as Amendment in the Second Bioreactor	03/25/02	1/24/03	On Hold		8%
2.1.2	Identify Amendment Source Locations for the Second	05/26/02		On Hold		

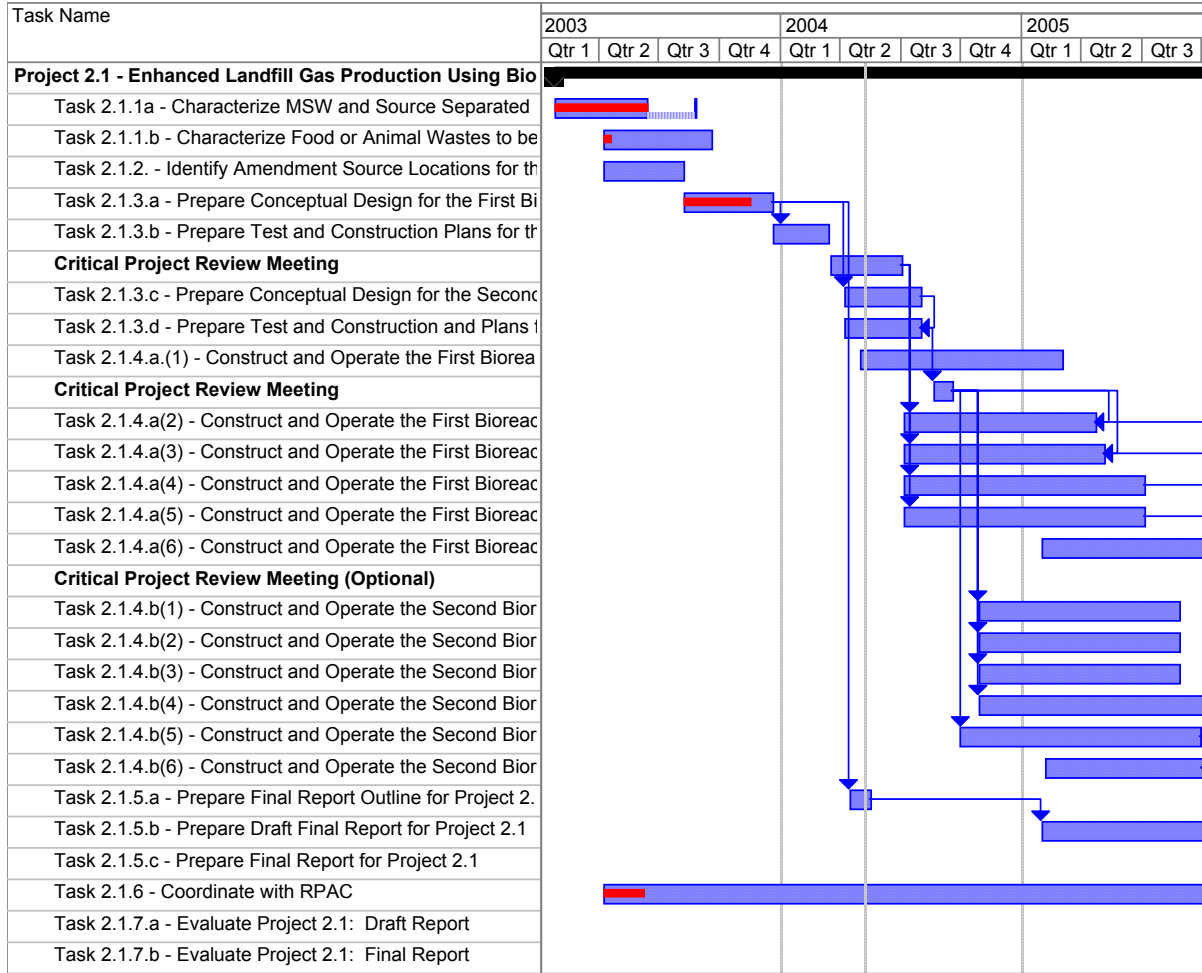
Commonwealth Energy PIER Renewables Affordability Mini-Grid Program Status Report

	Bioreactor					
2.1.3a	Prepare Conceptual Design for the First Bioreactor	09/28/02		12/18/03	4/22/04	95%
2.1.3.b	Prepare Construction and Test Plans for First Bioreactor					50%
2.1.6	Coordinate with RPAC/TAC	01/10/02		04/26/06		

Explanation of any Difference(s) in Schedule:

Task 2.1.1a – Landfill Feedstock Characterization Report – Information needed to complete this report took longer to collect than anticipated as the primary data to be used was not available in an electronic format. This delay will not affect the overall schedule for the project as that is being affected by the issuance of R&D exemption mentioned above and other developments that could affect the overall development of the bioreactor.

**Overall Schedule for Project 2.1:**



**Overview of Fiscal Status:**

Table 2 below summarizes the fiscal status of Project 2.1 by task/deliverable as of the end of the current reporting period.

**Table 2: Fiscal Status By Task – Project 2.1**

<b>Task Number</b>	<b>Budget</b>	<b>Invoiced To-Date<sup>1</sup></b>	<b>Fiscal Status *</b>
2.1.1 a	\$52,117	\$52,117	OT
2.1.1 b	\$53,064	\$0	OT
2.1.2	\$40,476	\$0	OT
2.1.3 a	\$103,578	\$0	OT
2.1.6	\$45,024	\$0	OT

\*Fiscal Status – Please indicate if you are “On Track” (OT), OverBudget (OB), or UnderBudget (UB)

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<sup>1</sup> Invoiced To-Date indicates the total amount invoiced prior to 10% retention being withheld