



BROADBENT

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March 23, 2012

Project No. 12-01-134

Truckee Meadows Water Reclamation Facility
8500 Clean Water Way
Reno, NV 89502

Attention: Mr. Paul Shapiro

Subject: Proposal for Fugitive Modeling and Generating an Emission Inventory for the Truckee Meadows Water Reclamation Facility (TMWRF)

Dear Mr. Shapiro:

Broadbent & Associates, Inc. (Broadbent) is pleased to submit this proposal to the Truckee Meadows Water Reclamation Facility (Client) to quantify air emissions from the treatment plant in Reno, Nevada. The enclosed scope of work and budget are based on meetings and telecons between Broadbent staff and representatives from TMWRF regarding air quality permitting requirements being considered by the Air Quality Management Division of the Health District of Washoe County (AQMD). A breakdown of regulatory authority, source requirements, and recommendations specifically for TMWRF are attached to this proposal for reference. Broadbent has previously performed representative stack emissions testing of the flare and boilers operated at TMWRF.

In order to generate an accurate emission inventory, a quantification of fugitive emissions from open basins and processing equipment through emissions modeling is being proposed. Broadbent proposes to generate a fugitive emissions model utilizing the Bay Area Sewage Toxic Emissions (BASTE) software program. This type of modeling is imperative for an accurate emission inventory evaluation.

An Emission Inventory analysis will be based on results obtained from stack emissions testing for the combustion equipment and BASTE model output values for fugitive plant emissions. The results of the BASTE model will provide fugitive emission rates in lbs/hr for Volatile Organic Compounds (VOCs), Ammonia, and Hydrogen Sulfide. These three pollutants are the primary sources of fugitive emissions from water treatment plants and are of prime concern from an air quality standpoint. The actual facility emissions will be quantified by using the BASTE model's short term emission rates and the actual operating parameters for the calendar year. These operating parameters will need to be provided to Broadbent by the Client. Broadbent will also calculate the Potential to Emit for the facility utilizing short-term emission rates, maximum throughput, and maximum operating hours for the permitted equipment.

SCOPE OF WORK

Tasks associated with this proposal include:

- 1) Kick-off meeting to discuss project and facility equipment specifications and waste water analytical results necessary from Client in order to build the BASTE model;
- 2) Generation of a BASTE fugitive emissions model based on the physical characteristics of the wastewater treatment process at the plant;
- 3) Input of flow and wastewater concentration data into the model in order to obtain fugitive emission estimates as well as run and troubleshoot the model;
- 4) 90% completion meeting with TMWRF staff to discuss preliminary results of the model;
- 5) Completion of an Emission Inventory analysis based on results of stack emissions testing and the BASTE model fugitive emissions estimates; and
- 6) Generation of a written report detailing the models findings and specifically highlighting areas within the plant that are the most significant emitters.

The Emission Inventory can then be used to determine whether the facility can be permitted as currently configured or whether additional emission control will be necessary. Since the level of effort necessary to complete the permitting process could vary significantly based on the results of the Emission Inventory, Broadbent will prepare a separate proposal for permitting once the BASTE derived fugitive emissions can be added to the facility wide inventory and we have a better idea what, if any, additional controls are necessary in order to obtain an updated Permit to Operate from AQMD.

ASSUMPTIONS

Truckee Meadows Facility will 1) provide drawings or design specifications for the wastewater treatment operation as needed in order to build the BASTE model for the facility, and; 2) provide Broadbent with the necessary facility operation parameters for wastewater, solids, and scum processes in order to populate the BASTE model and generate emission totals. This data will need to include incoming wastewater analytical results for VOCs, sulfides, and ammonia (this analytical is normally already collected by facilities in order to comply with discharge permit requirements) as well as pH, temperature, and flow data for wastewater being treated by the plant.

The BASTE model results will be the property of TMWRF. Broadbent owns a copy of the BASTE software and can use that software to build the model that will predict emissions from the facility. If TMWRF would like to utilize the modeling software for future in-house use they will need to purchase a copy of the program (<\$1,000) directly from the company that wrote the software. Broadbent could then transfer input files directly to TMWRF for their use if requested at no additional charge.

PROJECT SCHEDULE

- Work can proceed upon notice from the Client.
- Submit a full BASTE analysis and Emission Inventory Assessment within 30 days of obtaining all necessary facility operating parameters from TMWRF

PROJECT COSTS

The level of effort anticipated for the project Scope of Work described above has been broken down in the following table:

Task number	Description	Hours	Staff level and Hourly Rate	Cost Total
1	Kick off meeting and Data Procurement	3	Associate Geologist \$145/hr	\$435
		4	Senior Scientist \$125/hr	\$500
2	Build BASTE Model	4	Associate Geologist \$145/hr	\$580
		8	Senior Scientist \$125/hr	\$1,000
		30	Sr. Staff Scientist \$100/hr	\$3,000
3	Populate and Run Model	2	Associate Geologist \$145/hr	\$290
		10	Senior Scientist \$125/hr	\$1,250
4	90% meeting	3	Associate Geologist \$145/hr	\$435
		3	Senior Scientist \$125/hr	\$375
5	Complete Emission Inventory	3	Associate Geologist \$145/hr	\$435
		4	Senior Scientist \$125/hr	\$500
6	Generate Final Fugitive/Facility Wide Emission Report	3	Associate Geologist \$145/hr	\$435
		6	Senior Scientist \$125/hr	\$750
		10	Project Scientist \$110/hr	\$1,100
			Total Projected Cost	\$11,085

Broadbent proposes to conduct the work described herein for the lump sum total of \$11,085.

At this point in the project the time and effort necessary to generate an acceptable application for updating the permit is unknown because it is not yet clear what if any additional emission controls would be required. Based on our experience with similar

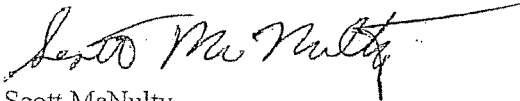
projects, Broadbent estimates that the process should not require more than 200 man hours or \$25,000 in additional consulting fees. This figure should provide funds for analysis of viable control technologies, Best Available Control Technology (BACT) assessments as necessary, permit application preparation, and negotiations with the AQMD that should result in the issuance of an updated and accurate Permit to Operate.

Work will commence upon our receipt of this accepted proposal. If you have any questions please feel free to contact Scott McNulty at Broadbent at (702) 563-0600. The payment terms of this agreement are outlined in the attached Broadbent & Associates, Inc. Schedule of Fees and Payments (2012) and incorporated herein by reference. The general conditions of this agreement are described in the attached General Conditions - Broadbent & Associates, Inc. (Broadbent) and incorporated herein by reference. Broadbent's services discussed herein relate to emissions testing and should not be considered process engineering. All process engineering requirements are the sole responsibility of the client.

CLOSURE

Discovery of hazardous materials which may impact the Property constitutes a changed condition mandating a renegotiation of the scope of work described herein, or termination of services. Broadbent will do its best to alert the Client of matters which, in the opinion of Broadbent, require immediate attention to protect public health and safety. Broadbent will make every effort to advise the Client of matters which should be reported to proper governmental agencies. However, the Client is solely responsible for reporting such matters, and Broadbent shall not be held liable in the event the proper agency is not notified. In addition, for projects performed in Nevada, Broadbent is required under Nevada Administrative Code to report the discovery of any hazardous substance which presents an imminent and substantial hazard to human health, public safety, or the environment. Our services will be performed in accordance with generally accepted practice at the time work commences. Results and recommendations will be based on review of available documentation and written or verbal correspondence with appropriate regulatory agencies, laboratory results, observations of field personnel, and the points investigated. No warranty expressed or implied is made.

Sincerely,
BROADBENT & ASSOCIATES, INC.



Scott McNulty
Associate Geologist, P.G., C.HG., EM 1651