

**FLORIDA DEPARTMENT OF HEALTH  
ONSITE NITROGEN REDUCTION STRATEGIES STUDY**

**PROGRESS REPORT NO. 12  
(December, 2011)**

<b>Task</b>	<b>Task Status</b>	<b>Activity this Period</b>	<b>Technical, Schedule, or Budget Problems Encountered</b>	<b>Recommended Methods to Resolve Problems</b>
<b>Task A – Technology Evaluation for Field Testing: Review, Prioritization, and Development</b>				
Task A.1, Draft Literature Review Report	Task Complete	Draft literature review report completed on May 19, 2009.	None	N/A
Task A.2, Final Literature Review Report	Task Complete	Final literature review report completed on June 30, 2009. Revised Final report submitted on September 4, 2009.	None	N/A
Task A.3, Draft Classification of Technologies Report	Task Complete	Draft Classification, Ranking and Prioritization report completed on May 19, 2009.	None	N/A
Task A.4, Draft Technology Ranking Criteria Report	Task Complete	Draft Classification, Ranking and Prioritization report completed on May 19, 2009.	None	N/A
Task A.5, Draft Priority List for Testing Report	Task Complete	Draft Prioritization report completed on June 30, 2009.	None	N/A
Task A.6, Technology Classification, Ranking and Prioritization Workshop	Task Complete	Workshop presentation materials were developed. Workshop was conducted on May 28, 2009.	None	N/A
Task A.7, Final Classification of Technologies Report	Task Complete	Final Classification, Ranking and Prioritization report completed on September 24, 2009	None	N/A

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Task A.8, Final Technology Ranking Criteria Report	Task Complete	Final Classification, Ranking and Prioritization report completed on September 24, 2009	None	N/A
Task A.9, Final Priority List for Testing Report	Task Complete	Final Classification, Ranking and Prioritization report completed on September 24, 2009	None	N/A
Task A.10, Draft Innovative Systems Applications Reports	Not started	No activity	N/A	N/A
Task A.11, Final Innovative Systems Applications Reports	Not started	No activity	N/A	N/A

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Task A.12, Identification of Test Facility Sites	Task Complete	<p><i>USF Lysimeter Station</i> – A general assessment of lysimeter station rehabilitation needs has been determined and is summarized in a memorandum completed on June 18, 2009.</p> <p><i>UF Gulf Coast Research and Education Center</i> – Preliminary agreement from GCREC to participate on December 22, 2008. A summary of the site conditions and recommendations was sent to Elke and distributed May 19, 2009. On May 28, 2009 the RRAC voted to use the GCREC facility site as the only test facility site. Draft agreement submitted to GCREC on June 8, 2009, and returned to FDOH July 31, 2009 with revisions. Comments from review by FDOH received November 11, 2009. Draft letter of authorization for GCREC sent February 2, 2010 to FDOH. MOU signed June 1, 2010.</p>	Lysimeter station rehabilitation costs alone were likely to be in excess of \$60,000, which exceed the total construction budget for the Task A test facility.	We are recommending consolidating our activities to one test facility. We recommended to conduct all test facility activities at GCREC site.
Task A.13, Draft QAPP PNRS II	Task Complete	Draft QAPP for PNRS II report completed on June 18, 2009.	None	N/A
Task A.14, Recommendation for Process Forward Meeting	Task Complete	Recommendation for Process Forward meeting held on October 13, 2009. Task completed upon execution of contract amendment in February 2010.	None	N/A

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Task A.15, Final QAPP PNRS II	Task Complete	Final QAPP for PNRS II report completed on November 24, 2009. Revised and amended for additives rule report completed on February 4, 2010. Amended report for sodium sesquicarbonate media completed on June 4, 2010.	None	N/A
Task A.16 Materials Testing for FDOH Additives Rule	Task Complete	<p>Florida additive rule for septic system products, evaluation of limestone and oyster shell, report completed on June 30, 2010.</p> <p>Florida additive rule for septic system products, evaluation of effluent of biofilters containing clinoptilolite, elemental sulfur, and lignocellulosic material report completed on April 15, 2011 and revised June 12, 2011.</p> <p>Additional WET testing on the effluent from bioreactor In-situ 1 (UNSAT-IS1) completed on July 29, 2011.</p> <p>Compliance approval received September 8, 2011 for all products submitted.</p>	None	N/A
Task A.17, PNRS Specification Reports	Task Complete	Specification report I completed on May 7, 2010. A revised final report was completed on May 24, 2010. Specification report II completed on November 22, 2011. A revised final report was completed on December 14, 2011.	None	N/A

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Task A.18, Test Facility Design 50%	Task Complete	50% revised Design Drawings completed on September 4, 2009.	None	N/A
Task A.19, Test Facility Design 100%	Task Complete	100% Design Drawings completed on December 31, 2009.	None	N/A
Task A.20 PNRS II Test Facility Construction Support & Administration	Task Complete	Construction was started February 15, 2010. 50% construction completed April 2, 2010. 100% construction completed April 30, 2010.	None	N/A
Task A.21 PNRS II Test Facility Construction 50%	Task Complete	Construction was started February 15, 2010, 50% construction progress report completed on April 2, 2010.	None	N/A
Task A.22 PNRS II Test Facility Construction 100%	Task Complete	100% construction progress report completed on April 30, 2010.	None	N/A
Task A.23 PNRS II Test Facility Construction Substantial Completion	Task Complete	Construction punch list completed on April 27, 2010.	None	N/A
Task A.24 PNRS II Test Facility Accept Construction	Task Complete	As-built documents completed on May 28, 2010.	None	N/A
Task A.25 Monitoring & Sample Event Reports	Task Complete	Sample Event Report (SER) No. 1 completed on July 16, 2010. SER No. 2 completed on September 28, 2010. SER No. 3 completed on December 16, 2010. SER No. 4 completed on February 2, 2011. SER No. 5 completed on May 12, 2011. SER No. 6 completed on June 9, 2011. SER No. 7 completed on October 20, 2011.	None	N/A

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Task A.26 Data Summary Reports	Task Complete	Data Summary Report (DSR) No. 1 completed on September 2, 2010. DSR No. 2 completed on October 5, 2010. DSR No. 3 completed on January 20, 2011. DSR No. 4 completed on March 4, 2011. DSR No. 5 completed on May 12, 2011. DSR No. 6 completed on July 5, 2011. DSR No. 7 completed on November 22, 2011.	None	N/A
Task A.27 Draft PNRS II Report	Underway	Started work on draft PNRS II report.	N/A	N/A
Task A.28 Final PNRS II Report	Not started	No activity	N/A	N/A
Task A.31 Change-order Allowance	Underway	FDOH authorized \$20,000 for the PNRS II modifications completed December 16, 2010. FDOH authorized \$19,000 to perform a simulation of bioreactor filtration treatment of onsite wastewater April 4, 2011. The Biotool Task 1a and 1b reports completed on December 8, 2011. Remaining change-order budget = \$ 1000.	None	N/A

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<b>Task B – Field Testing of Technologies and Cost Documentation</b>				
Task B.1, Identification of Home Sites	Task Complete	Several home sites in Manasota Key, Wakulla County, Seminole County, Lee County, Hillsborough County and Marion County have been visited to perform preliminary evaluation of sites with homeowners interested in the project. Two Wakulla County homeowner agreements completed on October 5, 2010. One Hillsborough County homeowner agreement completed on March 4, 2011. One Seminole County homeowner agreement completed on April 25, 2011. Two Seminole County, one Marion County, one Wakulla County and one Lee County homeowner agreement completed on July 6, 2011. One Marion County homeowner agreement completed on October 20, 2011.	None	N/A
Task B.2, Vendor Agreement Reports	Underway	Started work on vendor agreements. One vendor agreement completed on April 13, 2011.	None	N/A
Task B.3, Draft QAPP for Field Testing	Task Complete	Draft QAPP for field testing report completed on July 16, 2010.	None	N/A
Task B.4, Recommendation for Process Forward Meeting	Task Complete	Conference call meeting was held on October 11, 2010. Meeting minutes were submitted on November 1, 2010.	None	N/A
Task B.5, Final QAPP Field Testing	Task Complete	Final QAPP for field testing report completed on November 1, 2010.	None	N/A

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Task B.6 Field Systems Installation Report (per system)	Underway	B-HS1, located in Wakulla County, Nitrex™ system installation completed on June 10, 2011. Installation report completed on July 6, 2011.	None	N/A
Task B.7 Field Systems Monitoring Report (per event)	Underway	B-HS1 first sample event conducted on October 26, 2011.	N/A	N/A
Task B.11, LCCA Template Report (draft)	Not started	No activity	N/A	N/A
Task B.12 LCCA Template Report (final)	Not started	No activity	N/A	N/A
Task B.16 Change-order Allowance	Underway	FDOH authorized \$3,718.05 for RRAC meeting attendance on March 24, 2011. FDOH authorized \$4,702 for the third sample for Task A.16 additives testing completed on April 15, 2011. FDOH authorized \$2,131 for an additional WET test on UNSAT-IS1 effluent for Task A.16 additives testing completed on July 29, 2011. Remaining change-order budget = \$39,448.95.	N/A	N/A
<b>Task C – Evaluation of Nitrogen Reduction Provided by Soils and Shallow Groundwater</b>				
Task C.1, Draft Literature Review on Nitrogen Reduction in Soils & Shallow GW Report	Task Complete	Draft Literature Review on nitrogen reduction in soils and shallow groundwater report completed on June 30, 2009.	None	N/A



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Task C.2, Final Literature Review on Nitrogen Reduction in Soils & Shallow GW Report	Task Complete	Final Literature Review on nitrogen reduction in soils and shallow groundwater report completed on November 24, 2009.	None	N/A
Task C.3, Draft QAPP Evaluation of Nitrogen Reduction Provided by Soils & Shallow GW	Task Complete	Draft QAPP on nitrogen reduction in soils and shallow groundwater report completed on October 30, 2009.	None	N/A
Task C.4, Recommendation for Process Forward Meeting	Task Complete	Conference call meeting was held on November 23, 2009. Meeting minutes submitted on November 25, 2009 served as half of the deliverable. Task complete upon completion of contract amendment executed February 2010.	None	N/A
Task C.5, Final QAPP Evaluation of Nitrogen Reduction Provided by Soils & Shallow GW	Task Complete	Final QAPP on nitrogen reduction in soils and shallow groundwater report was submitted on December 4, 2009. Determined to be 80% complete on December 23, 2009. Revisions completed February 5, 2010.	None	N/A
Task C.6, S&GW Test Facility Design 50%	Task Complete	Test Facility Design 50% drawings completed on June 30, 2009.	None	N/A
Task C.7, S&GW Test Facility Design 100%	Task Complete	100% Design Drawings completed on December 31, 2009	None	N/A
Task C.8, S&GW Test Facility Design Final	Task Complete	Final S&GW Test Facility Design completed on March 4, 2010.	None	N/A

<b>Task</b>	<b>Task Status</b>	<b>Activity this Period</b>	<b>Technical, Schedule, or Budget Problems Encountered</b>	<b>Recommended Methods to Resolve Problems</b>
Task C.9, S&GW Test Facility Construction Support & Administration	Task Complete	Construction was started November 8, 2011. 50% construction completed November 16, 2011. 100% construction completed November 21, 2011.	N/A	N/A
Task C.10, S&GW Test Facility Construction 50%	Task Complete	Construction was started November 8, 2011, 50% construction progress report completed on December 20, 2011.	N/A	N/A
Task C.11, S&GW Test Facility Construction 100%	Task Complete	100% construction progress report completed on December 20, 2011.	N/A	N/A
Task C.12, S&GW Test Facility Construction Substantial Completion	Task Complete	Construction punch list completed on December 20, 2011.	N/A	N/A
Task C.13, S&GW Test Facility Accept Construction	Underway	Started work on as-built documents.	N/A	N/A
Task C.14, Soils & Hydrogeologic & Monitoring Plan for S&GW Test Facility	Underway	Started work on soils, hydrogeologic and monitoring plan for S&GW test facility.	N/A	N/A
Task C.15, Tracer Testing at GCREC	Underway	A tracer test at the GCREC mound site was started April 6, 2011. Tracer Test Memo No. 1 completed on July 6, 2011. A second tracer test for the S&GW test facility was started November 9, 2011.	N/A	N/A
Task C.16 S&GW Sample Event Report	Not started	No activity	N/A	N/A

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Task C.17 S&GW Data Summary Report	Not started	No activity	N/A	N/A
Task C.19 Field Site Selection	Underway	Several home sites in Wakulla County, Lee County, Seminole County and Marion County have been visited to perform preliminary evaluation of sites with homeowners interested in the project. One Wakulla County homeowner agreement completed on October 5, 2010. One Seminole County homeowner agreement completed on April 25, 2011. Two Seminole County, one Marion County, and one Hillsborough County homeowner agreement completed on July 6, 2011.	None	N/A
Task C.20 Instrumentation of GCREC Mound System	Task Complete	Instrumentation of GCREC Mound system 100% progress report completed on December 16, 2010.	None	N/A
Task C.21 GCREC Mound Sample Event Report	Task Complete	GCREC Mound Sample Event Report (SER) No. 1 completed on March 7, 2011. SER No. 2 completed on May 12, 2011. SER No. 3 completed on July 6, 2011. SER No. 4 completed on November 22, 2011	N/A	N/A
Task C.22 GCREC Mound Data Summary Report	Underway	GCREC Mound data summary report (DSR) No. 1 completed on May 12, 2011. DSR No. 2 completed on July 6, 2011. DSR No. 3 completed on October 20, 2011. Started work on DSR No. 4.	N/A	N/A

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Task C.23 Instrumentation of Remaining Field Sites	Underway	Instrumentation at C-HS1 located in Wakulla County completed in May 2011. Instrumentation report completed on July 6, 2011. Instrumentation at C-HS2 located in Seminole County completed in July 2011. Instrumentation report completed August 17, 2011.	Karst geology encountered at C-HS1 site has caused difficulty in installing monitoring points and determining groundwater flow direction.	N/A
Task C.24 Field Sites Sample Event Reports	Underway	C-HS1 Sample Event Report (SER) No. 1 completed on July 6, 2011. C-HS2 SER No. 1 completed on August 17, 2011. C-HS2 sample event 2 conducted on November 30, 2011.	C-HS1 site proved extremely difficult to monitor and interpret.	Evaluate actions after monitoring data analysis
Task C.25 Field Sites Data Summary Report	Underway	C-HS1 Data Summary Report (DSR) No. 1 completed on July 6, 2011. C-HS2 DSR No. 1 completed on October 20, 2011.	C-HS1 site proved extremely difficult to monitor and interpret. Recommended abandoning GW monitoring effort at site.	Abandoned C-HS1 site for soil and groundwater monitoring.
Task C.30 Change-order Allowance	Not started	No activity	N/A	N/A
<b>Task D – Nitrogen Fate and Transport Modeling</b>				
Task D.1, Draft Literature Review on Nitrogen Fate & Transport Model Report	Task Complete	Draft Literature Review on nitrogen fate and transport model report completed on June 30, 2009.	None	N/A

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Task D.2, Final Literature Review on Nitrogen Fate & Transport Model Report	Task Complete	Final Literature Review on nitrogen fate and transport model report completed on December 4, 2009. Determined to be 80% complete on December 23, 2009. Revised report complete on February 5, 2010.	None	N/A
Task D.3, Selection of Existing Data Set for Calibration Report	Task Complete	Selection of Existing Data Set for Calibration report completed on June 30, 2009.	None	N/A
Task D.4, Draft QAPP N Fate and Transport Modeling	Task Complete	Draft QAPP report completed on April 2, 2010.	None	N/A
Task D.5, Recommendation for Process Forward	Task Complete	Conference call meeting was held on July 13, 2010. Meeting minutes submitted on August 14, 2010.	None	N/A
Task D.6, Final QAPP N Fate and Transport Modeling	Task Complete	Final QAPP report completed on September 22, 2009.	None	N/A
Task D.7 Simple Soil Model Development	Underway	Started work on simple soil model development.	N/A	N/A
Task D.14 Complex Soil Model Development	Underway	Started work on complex soil model development.	None	N/A
Task D.29 Change-order Allowance	Not started	No activity	N/A	N/A
<b>Task E – Project Management, Coordination and Meetings</b>				
Task E.1, Project Kick-off Meeting	Task Complete	The project kick-off meeting was held February 27, 2009. Meeting minutes were completed on March 19, 2009.	None	N/A

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Task E.2, PM-Project Progress Report	Progress Report 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 - Complete	The December 2011 quarterly progress report (this report) was completed January 12, 2012.	None	N/A
Task E.3, RRAC or TRAP Presentation	Underway	RRAC meeting was attended and a presentation given on July 1, 2009; March 23, 2010; June 10, 2010; March 24, 2011; September 8, 2011; and January 4, 2012. TRAP meeting was attended and a presentation given August 27, 2009. RRAC meeting presentation and tour of GCREC PNRS II facility was given December 10, 2010.	None	N/A
Task E.4 RRAC or TRAP Meeting Attendance	Underway	RRAC meeting was attended: <ul style="list-style-type: none"> <li>• December 16, 2009</li> <li>• November 5, 2010</li> <li>• April 20, 2011</li> <li>• November 15, 2011</li> </ul>	None	N/A
Task E.4, PAC Meeting	Not started	No activity	N/A	N/A