Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **March 2, 2011**

Prepared by: **Samuel Stone, Environmental Affairs Coordinator**

The following information is a brief summary of recent activities occurring with the Horse Creek Stewardship Program (HCSP).

Technical Advisory Group (TAG).
The TAG is scheduled to meet March 1, 2011 to review and discuss the draft *Horse Creek Stewardship Program 2009 Annual Report*.

Monthly Water Quality Monitoring.
This sampling effort by Mosaic has continued without any interruption of collected data. Mosaic has transmitted data to the Authority covering the period April 2003 – Nov 2010. December 2010 monthly data is expected shortly. Mosaic continues to voluntarily sample and report data from Brushy Creek.

Macroinvertebrate and Fish Sampling.
These biological samples were collected on schedule during 2010. Samples are scheduled to be collected again in March / April 2011.

Clay Settling Ponds Real Time Monitoring.
Mosaic has completed modifications to the telemetry equipment and confirmed that data is being transmitted to the Peace River Facility as of June 29, 2010. Mosaic volunteered to add a newly constructed clay settling pond located in the Horse Creek watershed to the monitoring system for a total of three ponds.

Reports.
The draft *Horse Creek Stewardship Program 2009 Annual Report* is now under review by the TAG, Authority staff and Earth Balance, the Authority's consultant for this project.

Recent Impact Assessments.
February 2010 data showed an exceedance of the trigger level for chlorophyll at Station 1 and an impact assessment was requested. The results of that assessment found that mining activities did not cause the high levels of chlorophyll at Station 1.

Project Historical Briefing

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The Settlement Agreement between the Peace River Manasota Regional Water Supply Authority (Authority) and Mosaic Fertilizer Company (Mosaic) became effective on March 5, 2003. Contained within the agreement is the required implementation of the Horse Creek Stewardship Program (HCSP) by Mosaic and included program oversight by the Authority.

The HCSP consists of multiple tasks occurring on different schedules. Below is a list of the major tasks, a brief description of the tasks and historical progress on those tasks.

Technical Advisory Group (TAG).
The TAG as required by the HCSP consists of one representative from each member government. The TAG is to review the progress and findings of the program and provide technical input to the Authority. Members of the TAG consist of the following people. William Byle (Charlotte County), Jason Green (DeSoto County), Robert Brown (Manatee County) and John Ryan (Sarasota County). The TAG last met on August 4, 2010 to review the draft *Horse Creek Stewardship Program 2008 Annual Report*.

Monthly Water Quality Monitoring.
Mosaic collects surface water samples from Horse Creek at four fixed stations once per month. These samples are analyzed for various chemical parameters and the results reported to the Authority monthly. Mosaic volunteered to begin collecting samples on Brushy Creek in September 2009.

This sampling effort by Mosaic was started in April 2003 and has continued monthly without any interruption of collected data. EarthBalance visits the monitoring sites to collect duplicate samples and to collect samples at random to spot check water quality

Macroinvertebrate and Fish Sampling.
This biological sampling effort is required three times per year in Spring (March - April), Summer (July - September) and Fall (October - December). The biological sample locations are the same four fixed stations used for water quality monitoring.

Clay Settling Ponds Real Time Monitoring.
This component requires that the Authority have the ability to monitor in real time the fluid levels of various clay settling ponds. This system could act as an early warning device for the Peace River Facility staff should an embankment fail, releasing clay material into Horse Creek. In the summer of 2010 Mosaic added real time monitoring to an additional (third) clay settling pond.

Horse Creek Flow Data.
Flow and stage data is collected and monitored at the four fixed water quality sample stations. Stations 1 & 4 have existing USGS stations with data available on the USGS web site. Stations 2 & 3 required the installation of stage level gages and monitoring / reporting by Mosaic.

Water Quality Continuous Recorder.
The continuous water quality monitoring equipment became operational in July 2003 and is located at the fixed water quality station number 1, closest to mining operations. Monthly this data is down loaded in the field, and placed into a data base. This monitoring effort is on going. This data is supplied as part of the Annual Report and summarized monthly along with other routine water quality data

Reports.
The QA/QC project report describes the field methods, lab methods, standards and procedures used by Mosaic when implementing the monitoring program. The QA/QC plan will ensure that the HCSP methods used are the standard methods accepted by scientific and regulatory communities, as well as ensure that the results are reliable, reproducible and consistent with other programs.

The Historical Report is an accumulation of existing historical data on Horse Creek. This data was analyzed to determine historical back ground conditions of Horse Creek, determine if any trends are evident and be the basis for comparing with current data collected as part of the HCSP.

The Annual Reports provide all the data collected as part of the HCSP and compares these results with the historical data. The intent is to determine if current water quality is different from the past and if a trend can be determined. Below is Summary Table I showing the progress of the various reports required by the stewardship program.

Impact Assessments.
As required by the HCSP, if a water quality parameter exceeds a specified trigger value or a significant trend in the data is found, then Mosaic will initiate an impact assessment for the cause of the exceedance. The assessment can consist of further monitoring, and evaluations within the basin and may result in scientific assistance from Mosaic (if not at fault) or corrective mining actions (if at fault). If the assessment finds Mosaic at fault for the trigger exceedance or trend then the impact assessment is followed by corrective actions evaluation and implementation. Below is Summary Table II showing the frequency of exceeded trigger levels for the stewardship program.

All previous impact assessments have shown that the trigger levels were exceeded due to other causes not related to mining activities. The most recent event was in February 2010 where station 1 was found to have high chlorophyll levels. The impact assessment for this event has been received. The results of that assessment found that the parameter‘s concentration was not correlated to mining discharge volume or concentration.

Summary Table I
Project Reports

Report Title	Receive First Draft Report	Receive Final Draft Report	TAG Review	Receive Final Report
2003 Annual Report	10/08/04	2/7/05	3/24/05	7/14/05
Historical Report	8/16/05	12/5/05	2/23/06	4/28/06
2004 Annual Report	3/10/06	8/30/06	11/14/06	1/12/07
2005 Annual Report	3/9/07	6/20/07	7/27/07	9/18/07
2006 Annual Report	4/8/08	4/8/08	6/16/08	9/12/08
QA/QC Plan	2011			
2007 Annual Report	2/03/09	2/03/09	3/12/09	11/23/09
2008 Annual Report	6/4/10	N/A	8/4/10	9/29/10
2009 Annual Report	1/13/11	N/A	3/1/11	

Summary Table II
Exceeded Trigger Levels

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 – Nov 2010	1	Dissolved Oxygen	3/92
(92 months)	1	Color	1/92
	1	pH	1/92
	1	Alkalinity	4/92
	1	Fatty Acid	1/92
	1	Chlorophyll	1/92
	2	Dissolved Oxygen	76/92
	2	pH	2/92
	2	Chlorophyll	15/92
	2	Total Nitrogen	1/92
	2	Radium 226 + 228	1/92
	2	Iron	2/92
	2	Total Ammonia	1/92
	2	Fatty Acid	9/92
	3	Dissolved Oxygen	33/92
	3	Total Nitrogen	2/92
	3	Color	2/92
	3	Total Dissolved Solids	10/92
	3	Dissolved Calcium	5/92
	3	Chlorophyll	1/92
	3	Fatty Acid	1/92
	3	pH	1/92
	3	Total Ammonia	1/92
	3	Sulfate	9/92
	4	pH	1/92
	4	Iron	37/92
	4	Dissolved Oxygen	13/92
	4	Sulfate	13/92
	4	Total Dissolved Solids	15/92
	4	Conductivity	1/92
	4	Dissolved Calcium	8/92
	4	Total Alkalinity	2/92
	4	Total Ammonia	1/92
	4	Fluoride	5/92
	4	Fatty Acid	1/92