PEACE RIVER/MANASOTA REGIONAL WATER SUPPLY AUTHORITY
Serving the Citizens of Charlotte, DeSoto, Manatee & Sarasota Counties since 1982

HON. ADAM S. CUMMINGS, CHARLOTTE COUNTY | HON. JERRY G. HILL, DESOTO COUNTY | HON. PATRICIA M. GLASS, MANATEE COUNTY | HON. SHANNON STAUB, SARASOTA COUNTY

PATRICK J. LEHMAN, P.E., EXECUTIVE DIRECTOR

MEMORANDUM

August 8, 2005

TO:

Robert Brown	Manatee County
Terry Briggs	Charlotte County
Jody Kirkman	DeSoto County
John Ryan	Sarasota County

FROM: Sam Stone

RE: Horse Creek Stewardship Program Status Report

The attached status report (provided to the Authority Board Directors on (8/3/05) is provided to you since some of you may not receive copies of the Board Folder.

Please note that I have recently sent copies of the *Horse Creek 2003 Annual Report* to you on a CD through the mail. If you did not receive your copy let me know. I am also expecting a draft copy of the Historical Report soon.

xc: Pat Lehman
Sunny Diver
Ralph Montgomery
Ross Franklin

Project Status Report

PROJECT: Horse Creek Stewardship Program

DATE: August 3, 2005

DEVELOPED BY: Samuel Stone, Environmental Affairs Coordinator

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

Technical Advisory Group (TAG).
The TAG is to review the progress and findings of the program and provide technical input to the Authority. The TAG met on 3/24/05 and provided comments to Mosaic and the Authority on the draft *Horse Creek Stewardship Program 2003 Annual Report*. A scheduled field trip up the Horse Creek basin was canceled due to high creek flows.

Monthly Water Quality Monitoring.
This sampling effort by Mosaic has continued monthly without any interruption of collected data. Mosaic has transmitted data to the Authority covering the period April 2003 - May 2005. June samples were collected by Mosaic on June 22, 2005.

Macroinvertebrate and Fish Sampling.
The second year of sample collection (2004) has been completed. The first set of 2005 was collected on April 21, 2005 and the second set scheduled for July 2005 was deferred to August due to high creek flows.

Clay Settling Ponds Realtime Monitoring.
Monitoring of these ponds continues with no reported events.

Water Quality Continuous Recorder.
This monitoring effort is on going. A summary of this data to be supplied by Mosaic monthly along with the routine water quality data has been requested by the Authority.

Reports.
The draft QA/QC Report was received by the Authority on December 18, 2003. Review comments by the Authority and EarthBalance were transmitted to Mosaic on June 25, 2004. Upon receiving a revised version the document will then be sent to the TAG for their evaluation, possibly in December 2005.

A draft Historical Report outline was transmitted to the Authority in late February 2004. Review comments by the Authority and EarthBalance were transmitted to Mosaic on March 29, 2004. The draft Historical Report is expected to be completed for the Authority and TAG's review in August 2005.

The *Horse Creek Stewardship Program 2003 Annual Report* has been completed and copies of the report will be distributed to interested parties shortly.

Recent Impact Assessments.

No recent assessments have been required.

Project Historical Briefing

PROJECT: Horse Creek Stewardship Program

DATE: August 3, 2005

DEVELOPED BY: Samuel Stone, Environmental Affairs Coordinator

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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. Terry Briggs (Charlotte County), Jody Kirkman (DeSoto County), Robert Brown (Manatee County) and John Ryan (Sarasota County). Members of the TAG continue to receive copies of the Board Package Project Status Reports monthly. Most recently (3/24/05) the TAG met and discussed the draft *Horse Creek Stewardship Program 2003 Annual Report.*

Monthly Water Quality Monitoring.
Mosaic will collect surface water samples from Horse Creek at four fixed stations once per month. These samples will be analyzed for 21 different chemical parameters and the results reported to the Authority monthly.

This sampling effort by Mosaic was started in April 2003 and has continued monthly without any interruption of collected data. In December 2003 EarthBalance visited the monitoring sites with Mosaic and collected duplicate samples at the 4 surface water sites. Every other month EarthBalance is scheduled to visit the sites to collect samples at random to spot check water quality or collect duplicate samples with Mosaic at the designated 4 sample stations.

Macroinvertebrate and Fish Sampling.
This sampling effort is required three times per year in the Spring, Summer and Fall. The sample locations are the same 4 fixed stations used for water quality monitoring. Required samples were collected in April, July and November of 2003 completing the first year of sample collection. The 2004 set of samples were collected in April 2004, November of 2004 and February 2005.

Clay Settling Ponds Realtime 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 materials into Horse Creek.

This equipment was fully operational as of December 12, 2003. On April 20, 2004 additional equipment modifications where implemented and resulted in no more false alarms.

At the Authority's request Mosaic agreed to model and provide a report on the possible affects of a dam failure at these ponds and the resulting flow rate scenarios down Horse Creek. The report concluded that under a worse case scenario a dam breach would have a travel time of 2 - 2.5 days before the water from the ponds would reach the Peace River Facility. This information was also transmitted to the TAG.

Horse Creek Flow Data.
Flow and stage data is collected and monitored at the 4 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 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. Monthly this data is down loaded in the field, then placed into a data base. This monitoring effort is on going and creating a very large data base. This data will be supplied as part of the Annual Report and summarized monthly along with routine water quality data

Reports.
The QA/QC project report will describe 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 will be an accumulation of existing historical data on Horse Creek. This data will then be 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 Report will provide all the data collected as part of the HCSP and will compare 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. The *Horse Creek Stewardship Program 2003 Annual Report* has progressed to completion as follows:

- Draft outline was received from Mosaic on May 25, 2004.
- Authority transmitted comments to Mosaic July 6, 2004.
- Mosaic provided the first draft Annual Report to the Authority on October 7, 2004.

- Authority provided review comments on October 22, 2004.
- A second draft Annual Report was received February 7, 2005.
- Copies were transmitted to the TAG on February 16, 2005.
- TAG met on 3/24/05 and provided suggestions to the Authority and Mosaic.
- The final report was completed July 14, 2005.

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 exceedence. 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 exceedence or trend then the impact assessment is followed by corrective actions evaluation and implementation.

Below is a summary table showing the frequency of exceeded trigger levels.

Year	**Station Number**	**Chemical Parameter**	**Frequency of Exceeded Trigger Levels (months)**
2003	2	Dissolved Oxygen	9/9
	4	Iron	8/9
2004	1	Dissolved Oxygen	2/12
	2	Dissolved Oxygen	10/12
	2	Chlorophyll a	3/12
	2	Radium 226 + 228	1/12
	2	Fatty Acid	1/12
	3	Dissolved Oxygen	3/12
	3	Chlorophyll a	1/12
	4	Iron	5/12
	4	Dissolved Oxygen	2/12
	4	Sulfate	1/12

Year	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (Months)
2005	2	Dissolved Oxygen	4/5
	2	Fatty Acids	2/5
	3	Fatty Acids	1/5
	4	Iron	3/5

All impact assessments have shown that the trigger levels were exceeded due to other causes not related to mining activities. The most recent significant event was in November 2004 where Station 2 exceeded the trigger level for total fatty acids. An impact assessment dated 2/28/05 was submitted and found that mining activities did not cause the higher levels of fatty acids. As a consequence of all these preliminary impact assessment results, monitoring for these parameters and trend analysis of the data over time will continue.

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PATRICK J. LEHMAN, P.E., EXECUTIVE DIRECTOR

MEMORANDUM

September 7, 2005

TO: Robert Brown — Manatee County
Terry Briggs — Charlotte County
Jody Kirkman — DeSoto County
John Ryan — Sarasota County

FROM: Sam Stone

RE: Horse Creek Stewardship Program Status Report

The attached status report (provided to the Authority Board Directors on (9/7/05) is provided to you since some of you may not receive copies of the Board Folder.

Please note that we have received the draft *Horse Creek Historical Report* and once we have completed our review copies will be forwarded to you for review.

xc: Pat Lehman
Sunny Diver
Ralph Montgomery
Ross Franklin

Project Status Report

PROJECT: Horse Creek Stewardship Program

DATE: September 7, 2005

DEVELOPED BY: Samuel Stone, Environmental Affairs Coordinator

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

Technical Advisory Group (TAG).
The TAG is to review the progress and findings of the program and provide technical input to the Authority. The TAG met on 3/24/05 and provided comments to Mosaic and the Authority on the draft *Horse Creek Stewardship Program 2003 Annual Report*. In the near future the TAG will be reviewing the draft *Horse Creek Stewardship Program Historical Report.*

Monthly Water Quality Monitoring.
This sampling effort by Mosaic has continued monthly without any interruption of collected data. Mosaic has transmitted data to the Authority covering the period April 2003 - June 2005. July samples were collected by Mosaic on July 27, 2005.

Macroinvertebrate and Fish Sampling.
The second year of sample collection (2004) has been completed. The first set of 2005 was collected on April 21, 2005 and the second set scheduled for July 2005 has been deferred until high creek flows return to normal.

Clay Settling Ponds Realtime Monitoring.
Monitoring of these ponds continues with no reported events.

Water Quality Continuous Recorder.
This monitoring effort is on going. A summary of this data is being supplied by Mosaic monthly along with the routine water quality data. .

Reports.
The draft QA/QC Report was received by the Authority on December 18, 2003. Review comments by the Authority and EarthBalance were transmitted to Mosaic on June 25, 2004. Upon receiving a revised version the document will then be sent to the TAG for their evaluation, possibly in December 2005.

A draft Historical Report outline was transmitted to the Authority in late February 2004. Review comments by the Authority and EarthBalance were transmitted to Mosaic on March 29, 2004. The draft *Horse Creek Stewardship Program Historical Report* was delivered to the Authority for review on August 16, 2005. It is expected to be forwarded to the TAG for their review in near future.

The draft *Horse Creek Stewardship Program 2004 Annual Report* is expected to be received by the Authority in the Fall of 2005.

Recent Impact Assessments.

No recent assessments have been required.

Project Historical Briefing

PROJECT: Horse Creek Stewardship Program

DATE: September 7, 2005

DEVELOPED BY: Samuel Stone, Environmental Affairs Coordinator

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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.

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Horse Creek Flow Data.
Flow and stage data is collected and monitored at the 4 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 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. Monthly this data is down loaded in the field, then placed into a data base. This monitoring effort is on going and creating a very large data base. This data will be supplied as part of the Annual Report and summarized monthly along with routine water quality data

Reports.
The QA/QC project report will describe 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 will be an accumulation of existing historical data on Horse Creek. This data will then be 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 Report will provide all the data collected as part of the HCSP and will compare 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. The *Horse Creek Stewardship Program 2003 Annual Report* has progressed to completion as follows:

- Draft outline was received from Mosaic on May 25, 2004.
- Authority transmitted comments to Mosaic July 6, 2004.
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- TAG met on 3/24/05 and provided suggestions to the Authority and Mosaic.
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Impact Assessments.

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2004	1	Dissolved Oxygen	2/12
	2	Dissolved Oxygen	10/12
	2	Chlorophyll a	3/12
	2	Radium 226 + 228	1/12
	2	Fatty Acid	1/12
	3	Dissolved Oxygen	3/12
	3	Chlorophyll a	1/12
	4	Iron	5/12
	4	Dissolved Oxygen	2/12
	4	Sulfate	1/12

Year	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (Months)
2005	2	Dissolved Oxygen	5/6
	2	Fatty Acids	2/6
	3	Dissolved Oxygen	1/6
	3	Fatty Acids	1/6
	4	Iron	4/6
	4	Dissolved Oxygen	1/6

All impact assessments have shown that the trigger levels were exceeded due to other causes not related to mining activities. The most recent significant event was in November 2004 where Station 2 exceeded the trigger level for total fatty acids. An impact assessment dated 2/28/05 was submitted and found that mining activities did not cause the higher levels of fatty acids. As a consequence of all these preliminary impact assessment results, monitoring for these parameters and trend analysis of the data over time will continue.

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PATRICK J. LEHMAN, P.E., EXECUTIVE DIRECTOR

MEMORANDUM

October 5, 2005

TO: Robert Brown — Manatee County
Terry Briggs — Charlotte County
Jody Kirkman — DeSoto County
John Ryan — Sarasota County

FROM: Sam Stone

RE: Horse Creek Stewardship Program Status Report

The attached status report (provided to the Authority Board Directors on October 5, 2005) is provided to you since some of you may not receive copies of the Board Folder.

We have nearly finished our internal review of the draft *Horse Creek Historical Report.* The report is a good report and reflects a great deal of effort and hard work. During our review we have determined that a few revisions would significantly improve the report. As such we have decided to send the report back to Mosaic, requesting that they incorporate our suggestions prior to sending the report to you for your review.

xc: Pat Lehman
Sunny Diver
Ralph Montgomery
Ross Franklin

Project Status Report

PROJECT: Horse Creek Stewardship Program

DATE: October 5, 2005

DEVELOPED BY: Samuel Stone, Environmental Affairs Coordinator

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Monthly Water Quality Monitoring.
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Macroinvertebrate and Fish Sampling.
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Clay Settling Ponds Realtime Monitoring.
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Water Quality Continuous Recorder.
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Reports.
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The draft *Horse Creek Stewardship Program 2004 Annual Report* is expected to be received by the Authority in the Fall of 2005.

Recent Impact Assessments.

No recent assessments have been required.

Project Historical Briefing

PROJECT: Horse Creek Stewardship Program

DATE: October 5, 2005

DEVELOPED BY: Samuel Stone, Environmental Affairs Coordinator

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	2	Chlorophyll a	3/12
	2	Radium 226 + 228	1/12
	2	Fatty Acid	1/12
	3	Dissolved Oxygen	3/12
	3	Chlorophyll a	1/12
	4	Iron	5/12
	4	Dissolved Oxygen	2/12
	4	Sulfate	1/12

Year	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (Months)
2005	2	Dissolved Oxygen	6/7
	2	Fatty Acids	2/7
	3	Dissolved Oxygen	2/7
	3	Fatty Acids	1/7
	3	pH	1/7
	4	Iron	5/7
	4	Dissolved Oxygen	2/7

All impact assessments have shown that the trigger levels were exceeded due to other causes not related to mining activities. The most recent significant event was in November 2004 where Station 2 exceeded the trigger level for total fatty acids. An impact assessment dated 2/28/05 was submitted and found that mining activities did not cause the higher levels of fatty acids. As a consequence of all these preliminary impact assessment results, monitoring for these parameters and trend analysis of the data over time will continue.