Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **January 7, 2009**

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 met on June 16, 2008 to review and discuss the draft *Horse Creek Stewardship Program 2006 Annual Report*. More recently the TAG has been involved by email, reviewing the high ammonia impact assessment.

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 – October 2008. November data is expected prior to 12/25/08.

Macroinvertebrate and Fish Sampling.
These biological samples were collected on schedule in 2008.

Clay Settling Ponds Real Time Monitoring.
Monitoring of these ponds continues with no reported releases. The last false alarm received was in March 2008.

Water Quality Continuous Recorder.
A summary of this data is being supplied by Mosaic monthly along with the routine water quality data. Low creek flows result in no collection of data. Over all reliability of this data collection effort has improved.

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The *Horse Creek Stewardship Program 2006 Annual Report* was finalized and transmitted to regulatory agencies and other interested parties in November 2008. The draft QAQC Plan will be delayed due to Mosaic's recent change in labs. This plan is estimated to be completed in early 2009.

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July 2008 data showed an exceedance of the trigger level for ammonia and an impact assessment was requested. The assessment, additional information and supplemental information from Mosaic has found that the higher ammonia was due to a lab change and different lab methods.

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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.

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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), Victor Dotson (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. The TAG is expected to meet again in March 2009 to review the draft *Horse Creek Stewardship Program 2007 Annual Report*.

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Sample Event	Spring (Mar - Apr)	Summer (Jul - Sep)	Fall (Oct - Dec)
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Calendar Year 2004	April 2004	November 2004	February 2005
Calendar Year 2005	April 2005	September 2005	December 2005
Calendar Year 2006	April 2006	July 2006	November 2006
Calendar Year 2007	March 2007	August 2007	November 2007
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Calendar Year 2009			

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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. This equipment was fully operational as of December 12, 2003.

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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 monthly 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 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.

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The Annual Reports 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. Below is a summary table showing the progress of the various reports required by the stewardship program.

Project Reports
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Report Title	Receive First Draft Report	Receive Final Draft Report	TAG Review	Receive Final Report
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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 a summary table 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 July 2008 where stations 2, 3 & 4 were found to have high total ammonia levels. The impact assessment for this event found that the change in labs and lab methods was the cause for the high ammonia.

Exceeded Trigger Levels
Summary Table III

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 – Oct 2008	1	Dissolved Oxygen	3/67
(67 months)	1	Color	1/67
	1	pH	1/67
	1	Alkalinity	3/67
	1	Fatty Acid	1/67
	2	Dissolved Oxygen	54/67
	2	pH	2/67
	2	Chlorophyll	13/67
	2	Total Nitrogen	1/67
	2	Radium 226 + 228	1/67
	2	Iron	1/67
	2	Total Ammonia	1/67
	2	Fatty Acid	7/67
	3	Dissolved Oxygen	24/67
	3	Total Nitrogen	2/67
	3	Color	2/67
	3	Total Dissolved Solids	6/67
	3	Dissolved Calcium	5/67
	3	Chlorophyll	1/67
	3	Fatty Acid	1/67
	3	pH	1/67
	3	Total Ammonia	1/67
	3	Sulfate	6/67
	4	pH	1/67
	4	Iron	29/67
	4	Dissolved Oxygen	8/67
	4	Sulfate	9/67
	4	Total Dissolved Solids	11/67
	4	Conductivity	1/67
	4	Dissolved Calcium	6/67
	4	Total Alkalinity	1/67
	4	Total Ammonia	1/67
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Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **February 4, 2009**

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

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	1	Alkalinity	3/68
	1	Fatty Acid	1/68
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	2	pH	2/68
	2	Chlorophyll	13/68
	2	Total Nitrogen	1/68
	2	Radium 226 + 228	1/68
	2	Iron	1/68
	2	Total Ammonia	1/68
	2	Fatty Acid	7/68
	3	Dissolved Oxygen	24/68
	3	Total Nitrogen	2/68
	3	Color	2/68
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	3	Dissolved Calcium	5/68
	3	Chlorophyll	1/68
	3	Fatty Acid	1/68
	3	pH	1/68
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At the Authority's request Mosaic provided 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.

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 monthly 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 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 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 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. Below is a summary table showing the progress of the various reports required by the stewardship program.

Project Report
Summary Table I

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	2009			
2007 Annual Report	2/03/09	2/03/09	3/12/09	

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 a summary table 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 July 2008 where stations 2, 3 & 4 were found to have high total ammonia levels. The impact assessment for this event found that the change in labs and lab methods was the cause for the high ammonia.

Exceeded Trigger Levels
Summary Table III

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 – Jan 2009	1	Dissolved Oxygen	3/70
(70 months)	1	Color	1/70
	1	pH	1/70
	1	Alkalinity	3/70
	1	Fatty Acid	1/70
	2	Dissolved Oxygen	57/70
	2	pH	2/70
	2	Chlorophyll	14/70
	2	Total Nitrogen	1/70
	2	Radium 226 + 228	1/70
	2	Iron	1/70
	2	Total Ammonia	1/70
	2	Fatty Acid	8/70
	3	Dissolved Oxygen	24/70
	3	Total Nitrogen	2/70
	3	Color	2/70
	3	Total Dissolved Solids	6/70
	3	Dissolved Calcium	5/70
	3	Chlorophyll	1/70
	3	Fatty Acid	1/70
	3	pH	1/70
	3	Total Ammonia	1/70
	3	Sulfate	6/70
	4	pH	1/70
	4	Iron	29/70
	4	Dissolved Oxygen	8/70
	4	Sulfate	9/70
	4	Total Dissolved Solids	11/70
	4	Conductivity	1/70
	4	Dissolved Calcium	6/70
	4	Total Alkalinity	1/70
	4	Total Ammonia	1/70
	4	Fluoride	5/70
	4	Fatty Acid	1/70

Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **May 6, 2009**

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 met on March 12, 2009 to review and discuss the draft *Horse Creek Stewardship Program 2007 Annual 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 – March 2009.

Macroinvertebrate and Fish Sampling.
These biological samples were collected on schedule in 2008. The most recent sample event occurred April 22, 2009

Clay Settling Ponds Real Time Monitoring.
Monitoring of these ponds continues with no reported releases. The last false alarm received was in March 2008.

Water Quality Continuous Recorder.
A summary of this data is being supplied by Mosaic monthly along with the routine water quality data. Low creek flows result in problems collecting data. Over all reliability of this data collection effort has improved.

Reports.
The *Horse Creek Stewardship Program 2006 Annual Report* was finalized and transmitted to regulatory agencies and other interested parties in November 2008. The draft 2007 report is currently being revised by Mosaic as a result of TAG review comments.

Recent Impact Assessments.
July 2008 data showed an exceedance of the trigger level for ammonia and an impact assessment was requested. The assessment, additional information and supplemental information from Mosaic found that the higher ammonia was due to a lab change and different lab methods.

Project Historical Briefing

Project: **Horse Creek Stewardship Program**

Date: **April 1, 2009**

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

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), Victor Dotson (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. The TAG met on March 12, 2009 to review the draft *Horse Creek Stewardship Program 2007 Annual Report*.

Monthly Water Quality Monitoring.
Mosaic collects 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 (Feb, Apr, June, Aug, Oct, & Dec) 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 four sample stations.

Macroinvertebrate and Fish Sampling.
This sampling effort is required three times per year in Spring (March - April), Summer (July - September) and Fall (October - December). The 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. This equipment was fully operational as of December 12, 2003.

At the Authority's request Mosaic provided 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.

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 monthly 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 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 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 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. Below is a summary table showing the progress of the various reports required by the stewardship program.

Project Report
Summary Table I

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	2009			
2007 Annual Report	2/03/09	2/03/09	3/12/09	

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 a summary table 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 July 2008 where stations 2, 3 & 4 were found to have high total ammonia levels. The impact assessment for this event found that the change in labs and lab methods was the cause for the high ammonia.

Exceeded Trigger Levels
Summary Table III

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 – Mar 2009	1	Dissolved Oxygen	3/72
(72 months)	1	Color	1/72
	1	pH	1/72
	1	Alkalinity	3/72
	1	Fatty Acid	1/72
	2	Dissolved Oxygen	59/72
	2	pH	2/72
	2	Chlorophyll	14/72
	2	Total Nitrogen	1/72
	2	Radium 226 + 228	1/72
	2	Iron	1/72
	2	Total Ammonia	1/72
	2	Fatty Acid	8/72
	3	Dissolved Oxygen	24/72
	3	Total Nitrogen	2/72
	3	Color	2/72
	3	Total Dissolved Solids	7/72
	3	Dissolved Calcium	5/72
	3	Chlorophyll	1/72
	3	Fatty Acid	1/72
	3	pH	1/72
	3	Total Ammonia	1/72
	3	Sulfate	7/72
	4	pH	1/72
	4	Iron	29/72
	4	Dissolved Oxygen	8/72
	4	Sulfate	10/72
	4	Total Dissolved Solids	12/72
	4	Conductivity	1/72
	4	Dissolved Calcium	7/72
	4	Total Alkalinity	1/72
	4	Total Ammonia	1/72
	4	Fluoride	5/72
	4	Fatty Acid	1/72

Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **June 3, 2009**

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 met on March 12, 2009 to review and discuss the draft *Horse Creek Stewardship Program 2007 Annual 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 – March 2009.

Macroinvertebrate and Fish Sampling.
These biological samples were collected on schedule in 2008. The most recent sample event occurred April 22, 2009

Clay Settling Ponds Real Time Monitoring.
Monitoring of these ponds continues with no reported releases. The last false alarm received was in March 2008. Currently Mosaic has temporarily disconnected the monitoring system while moving the telemetry equipment to a new base location and adding an additional clay settling pond for a total of three ponds.

Water Quality Continuous Recorder.
A summary of this data is being supplied by Mosaic monthly along with the routine water quality data. Low creek flows result in problems collecting data. Over all reliability of this data collection effort has improved.

Reports.
The draft *Horse Creek Stewardship Program 2007 Annual Report* is currently being revised by Mosaic as a result of TAG review comments.

Recent Impact Assessments.
July 2008 data showed an exceedance of the trigger level for ammonia and an impact assessment was requested. The assessment, additional information and supplemental information from Mosaic found that the higher ammonia was due to a lab change and different lab methods.

Project Historical Briefing

Project: **Horse Creek Stewardship Program**

Date: **June 3, 2009**

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

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), Victor Dotson (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. The TAG last met on March 12, 2009 to review the draft *Horse Creek Stewardship Program 2007 Annual Report*.

Monthly Water Quality Monitoring.
Mosaic collects 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 (Feb, Apr, June, Aug, Oct, & Dec) 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 four sample stations.

Macroinvertebrate and Fish Sampling.
This sampling effort is required three times per year in Spring (March - April), Summer (July - September) and Fall (October - December). The 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. This equipment was fully operational as of December 12, 2003.

At the Authority's request Mosaic provided 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.

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 monthly 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 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 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 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. Below is a summary table showing the progress of the various reports required by the stewardship program.

Project Report
Summary Table I

Report Title	Receive First Draft Report	Receive Final Draft Report	TAG Review	Receive Final Report
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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	2009			
2007 Annual Report	2/03/09	2/03/09	3/12/09	

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 a summary table 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 July 2008 where stations 2, 3 & 4 were found to have high total ammonia levels. The impact assessment for this event found that the change in labs and lab methods was the cause for the high ammonia.

Exceeded Trigger Levels
Summary Table III

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 – Mar 2009	1	Dissolved Oxygen	3/72
(72 months)	1	Color	1/72
	1	pH	1/72
	1	Alkalinity	3/72
	1	Fatty Acid	1/72
	2	Dissolved Oxygen	59/72
	2	pH	2/72
	2	Chlorophyll	14/72
	2	Total Nitrogen	1/72
	2	Radium 226 + 228	1/72
	2	Iron	1/72
	2	Total Ammonia	1/72
	2	Fatty Acid	8/72
	3	Dissolved Oxygen	24/72
	3	Total Nitrogen	2/72
	3	Color	2/72
	3	Total Dissolved Solids	7/72
	3	Dissolved Calcium	5/72
	3	Chlorophyll	1/72
	3	Fatty Acid	1/72
	3	pH	1/72
	3	Total Ammonia	1/72
	3	Sulfate	7/72
	4	pH	1/72
	4	Iron	29/72
	4	Dissolved Oxygen	8/72
	4	Sulfate	10/72
	4	Total Dissolved Solids	12/72
	4	Conductivity	1/72
	4	Dissolved Calcium	7/72
	4	Total Alkalinity	1/72
	4	Total Ammonia	1/72
	4	Fluoride	5/72
	4	Fatty Acid	1/72

Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **July 29, 2009**

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 last met on March 12, 2009 to review and discuss the draft *Horse Creek Stewardship Program 2007 Annual 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 – May 2009.

Macroinvertebrate and Fish Sampling.
These biological samples were collected on schedule in 2008. The next sample event is scheduled for sometime in August 2009.

Clay Settling Ponds Real Time Monitoring.
Monitoring of these ponds continues with no reported releases. The last false alarm received was in June 2009. Currently Mosaic is modifying, updating and moving the telemetry equipment to a new base location which is the primary cause for these false alarms. Finally 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.

Water Quality Continuous Recorder.
A summary of this data is being supplied by Mosaic monthly along with the routine water quality data. Low creek flows result in problems collecting data. Over all reliability of this data collection effort has improved.

Reports.
The draft *Horse Creek Stewardship Program 2007 Annual Report* is currently being revised by Mosaic as a result of TAG review comments. This report is expected to be completed in a few weeks.

Recent Impact Assessments.
May 2009 data showed an exceedance of the trigger level for alkalinity at Station 4 and an impact assessment was requested. The results of that assessment are expected in a few weeks.

Project Historical Briefing

Project: **Horse Creek Stewardship Program**

Date: **July 29, 2009**

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

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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Macroinvertebrate and Fish Sampling.

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

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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 monthly 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 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.

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The Annual Reports 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. Below is a summary table showing the progress of the various reports required by the stewardship program.

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2006 Annual Report	4/8/08	4/8/08	6/16/08	9/12/08
QA/QC Plan	2009			
2007 Annual Report	2/03/09	2/03/09	3/12/09	
2008 Annual Report	2009			
2009 Annual Report				

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 a summary table 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 May 2009 where station 4 was found to have high alkalinity levels. The impact assessment for this event is current underway.

Exceeded Trigger Levels
Summary Table II

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 – May 2009	1	Dissolved Oxygen	3/74
(74 months)	1	Color	1/74
	1	pH	1/74
	1	Alkalinity	3/74
	1	Fatty Acid	1/74
	2	Dissolved Oxygen	60/74
	2	pH	2/74
	2	Chlorophyll	15/74
	2	Total Nitrogen	1/74
	2	Radium 226 + 228	1/74
	2	Iron	1/74
	2	Total Ammonia	1/74
	2	Fatty Acid	9/74
	3	Dissolved Oxygen	24/74
	3	Total Nitrogen	2/74
	3	Color	2/74
	3	Total Dissolved Solids	8/74
	3	Dissolved Calcium	5/74
	3	Chlorophyll	1/74
	3	Fatty Acid	1/74
	3	pH	1/74
	3	Total Ammonia	1/74
	3	Sulfate	8/74
	4	pH	1/74
	4	Iron	29/74
	4	Dissolved Oxygen	8/74
	4	Sulfate	10/74
	4	Total Dissolved Solids	12/74
	4	Conductivity	1/74
	4	Dissolved Calcium	7/74
	4	Total Alkalinity	2/74
	4	Total Ammonia	1/74
	4	Fluoride	5/74
	4	Fatty Acid	1/74

Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **September 2, 2009**

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 last met on March 12, 2009 to review and discuss the draft *Horse Creek Stewardship Program 2007 Annual 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 – July 2009.

Macroinvertebrate and Fish Sampling.
These biological samples were collected on schedule in 2008. The next sample event is scheduled for sometime in September 2009.

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Monitoring of these ponds continues with no reported releases. The last false alarm received was in June 2009. Currently Mosaic is modifying, updating and moving the telemetry equipment to a new base location which is the primary cause for these false alarms. Finally 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.

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A summary of this data is being supplied by Mosaic monthly along with the routine water quality data. Low creek flows result in problems collecting data. Over all reliability of this data collection effort has improved.

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The draft *Horse Creek Stewardship Program 2007 Annual Report* is currently being revised by Mosaic as a result of TAG review comments. This report is expected to be completed in a few weeks.

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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.

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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. This equipment was fully operational as of December 12, 2003.

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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 monthly 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 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 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 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. Below is a summary table showing the progress of the various reports required by the stewardship program.

Project Reports
Summary Table I

Report Title	Receive First Draft Report	Receive Final Draft Report	TAG Review	Receive Final Report
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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 a summary table 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 May 2009 where station 4 was found to have high alkalinity levels. The impact assessment for this event has been received. The results of that assessment found that this parameter historically is elevated at this station when rainfall is low, stream flow is low and waste water discharges from Mosaic's operations are also low. Levels are expected to return to normal once rainfall and stream flows return to normal.

Exceeded Trigger Levels
Summary Table II

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 – July 2009	1	Dissolved Oxygen	3/76
(76 months)	1	Color	1/76
	1	pH	1/76
	1	Alkalinity	3/76
	1	Fatty Acid	1/76
	2	Dissolved Oxygen	61/76
	2	pH	2/76
	2	Chlorophyll	15/76
	2	Total Nitrogen	1/76
	2	Radium 226 + 228	1/76
	2	Iron	2/76
	2	Total Ammonia	1/76
	2	Fatty Acid	9/76
	3	Dissolved Oxygen	26/76
	3	Total Nitrogen	2/76
	3	Color	2/76
	3	Total Dissolved Solids	9/76
	3	Dissolved Calcium	5/76
	3	Chlorophyll	1/76
	3	Fatty Acid	1/76
	3	pH	1/76
	3	Total Ammonia	1/76
	3	Sulfate	9/76
	4	pH	1/76
	4	Iron	30/76
	4	Dissolved Oxygen	9/76
	4	Sulfate	11/76
	4	Total Dissolved Solids	13/76
	4	Conductivity	1/76
	4	Dissolved Calcium	8/76
	4	Total Alkalinity	2/76
	4	Total Ammonia	1/76
	4	Fluoride	5/76
	4	Fatty Acid	1/76

Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **October 7, 2009**

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).

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Project Status Report

Project: **Horse Creek Stewardship Program**

Date: **November 4, 2009**

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

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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 2009 Mosaic added real time monitoring to an additional (third) 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 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 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 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. 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 May 2009 where station 4 was found to have high alkalinity levels. The impact assessment for this event has been received. The results of that assessment found that this parameter historically is elevated at this station when rainfall is low, stream flow is low and waste water discharges from Mosaic's operations are also low. Levels are expected to return to normal once rainfall and stream flows return to normal.

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	2010			
2007 Annual Report	2/03/09	2/03/09	3/12/09	9/25/09
2008 Annual Report	2010			
2009 Annual Report	2010			

Summary Table II
Exceeded Trigger Levels

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 – Oct 2009	1	Dissolved Oxygen	3/79
(79 months)	1	Color	1/79
	1	pH	1/79
	1	Alkalinity	3/79
	1	Fatty Acid	1/79
	2	Dissolved Oxygen	64/79
	2	pH	2/79
	2	Chlorophyll	15/79
	2	Total Nitrogen	1/79
	2	Radium 226 + 228	1/79
	2	Iron	2/79
	2	Total Ammonia	1/79
	2	Fatty Acid	9/79
	3	Dissolved Oxygen	29/79
	3	Total Nitrogen	2/79
	3	Color	2/79
	3	Total Dissolved Solids	9/79
	3	Dissolved Calcium	5/79
	3	Chlorophyll	1/79
	3	Fatty Acid	1/79
	3	pH	1/79
	3	Total Ammonia	1/79
	3	Sulfate	9/79
	4	pH	1/79
	4	Iron	33/79
	4	Dissolved Oxygen	12/79
	4	Sulfate	11/79
	4	Total Dissolved Solids	13/79
	4	Conductivity	1/79
	4	Dissolved Calcium	8/79
	4	Total Alkalinity	2/79
	4	Total Ammonia	1/79
	4	Fluoride	5/79
	4	Fatty Acid	1/79