Prepared for:
Tronox LLC
Henderson, Nevada

Semi-Annual Performance Report for Chromium and Perchlorate, Tronox LLC, Henderson, Nevada July – December 2006

Submitted in Accordance with Chromium Mitigation Program and Perchlorate Performance Report Consent Orders

Prepared by:
ENSR and Tronox LLC
February 26, 2007

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Responsible CEM for this project

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and, to the best of my knowledge, comply with all applicable federal, state and local statutes, regulations and ordinances.

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1.0 INTRODUCTION

In accordance with the Administrative Order on Consent (AOC) for cleanup of chromium-contaminated groundwater at the Henderson facility, finalized September 9, 1986, and the AOC for remediation of perchlorate-impacted groundwater in the Henderson area, finalized October 8, 2001, Tronox LLC (TRX) submits this semi-annual performance report to the Nevada Division of Environmental Protection (NDEP).

This report, covering the period July through December 2006, summarizes performance data for both the chromium mitigation program and the perchlorate recovery system. Specifically, this combined report describes:

- the regional groundwater conditions based on November 2006 groundwater levels;
- the on-site groundwater treatment plant and evaluates the effectiveness of the groundwater interception and treatment system installed to carry out the chromium mitigation program; and
- the perchlorate recovery system - consisting of the on-site Interceptor well field, the off-site Athens Road well field, the off-site Seep well field and the off-site Seep surface-flow capture sump - and evaluates the effectiveness of the groundwater recovery system installed to carry out the perchlorate recovery program.

In addition, the report describes the chromium mitigation activities at the Athens Road groundwater recovery area, provides information on the status of the treatment technologies used for perchlorate removal from the water collected and contains data requirements relevant to the chromium mitigation system Underground Injection Control (UIC) permit modification. Appendix A contains the groundwater elevations and analytical data. Appendix B contains monitor well chromium and perchlorate trend graphs. Appendix C contains the laboratory reports and field sheets (on a CD). Appendix D contains correspondence with NDEP and Appendix E contains the data review memo. This report has been modified in response to requests contained in NDEP letters dated June 13, 2006 and August 29, 2006. Tronox's written responses to these comments are included in Appendix D.

Figure 1, a location map covering the area between the TRX facility and Las Vegas Wash, shows the components of the recovery systems with an index of accompanying large-scale plates and sections. The performance of each component will be discussed separately starting with the on-site Interceptor well field and proceeding to the successively northward components.

2.0 AREA GROUNDWATER CONDITIONS

Plate 1, the Potentiometric Surface: Tronox Site to Las Vegas Wash, is based on fourth quarter groundwater elevation measurements taken in November 2006 and shows a generally north-northeast groundwater flow direction with an average gradient of 0.02 feet per foot. Groundwater elevations are contained in Appendix A.

On the south, beneath the TRX facility, the flow direction is north-northwest whereas north of the facility the direction changes slightly to the north-northeast. This somewhat uniform flow pattern has been modified locally by subsurface alluvial channels cut into the underlying Muddy Creek formation surface, the on-site barrier wall, on- and off-site artificial groundwater highs or “mounds” and by groundwater recovery wells that have formed broad drawdown bands and overlapping drawdown cones at the three groundwater recovery well fields.

2.1 Interceptor Well Field Area

The Interceptor well field area is shown on Figure 1 and Plates 1 and 2. The well field groundwater drawdown bands and cones and the recharge trenches groundwater mound are shown on Plate 1 on the south and north sides of the barrier wall, respectively. Plate 2, the Net Drawdown at the Interceptor Well Field shows the location of the bentonite-slurry groundwater barrier wall installed during August – September 2001 and the recharge trenches installed in September 1987. In the vicinity of wells M-70 and M-71 north of the barrier wall, the groundwater is artificially recharged with Lake Mead water in two gravel-filled trenches to balance the loss of groundwater removed from the alluvium and Muddy Creek formations by the Interceptor well field. The area between the barrier wall and the recharge trenches is referred to as the “dead zone” where groundwater is thought to be trapped and mostly stationary.

Figure 2, the West – East Hydrogeologic Cross Section A-A’ - Interceptor Well Field, shows the water levels in the Interceptor wells and the relationships between the pre-pumping groundwater level, the current groundwater level, and the underlying contact of the alluvium and Muddy Creek formations. Currently, many of the Interceptor wells have pulled the groundwater table to levels below the Muddy Creek formation contact. As shown on Figure 2, this means that only spotty areas of the alluvium at the Interceptor well line are currently saturated. In this situation, dewatering of the alluvium reduces the ability of the drawdown cones to reach saturated alluvium between the individual wells. In several cases, dropping the groundwater level below the Muddy Creek contact reduces the productivity of the well. The goal of the Interceptor well system is not necessarily to dewater the alluvium at each well but to control and influence groundwater in the saturated intervals between the interceptor wells.

Plate 2, the Net Drawdown at the Interceptor Well Field, depicts the overall historic drawdown of the groundwater surface from the time initial pumping began in September 1987 to November 2006. This map shows the broad drawdown bands and local overlapping drawdown cones present along the entire length of the well field. The highest drawdown is found in well I- K which has recorded a net drawdown of 25 feet. Since 1987 groundwater has essentially been “mined” to the point that the previously saturated alluvium is unsaturated in several areas and the water table occurs in the uppermost portion of the fine-grained Muddy Creek formation. This condition is due to both well field pumping and the reduction of water discharge from the TRX facility to achieve zero discharge status. Also shown on Plate 2 are the locations of several of the Consent Order Appendix J wells.

The monthly average discharge rate for each Interceptor well during December 2006 is shown on Table 1. This table compares the December discharge data to the same time period each year back to December

2001. These discharge data illustrate the gradual increase in groundwater capture after the barrier wall was installed in October 2001. The December 2006 total discharge was 64.8 gallons per minute (gpm).

2.2 Athens Road Field Area

The Athens Road well field was completed in March 2002 and groundwater collection in this area began shortly thereafter. Continuous pumping from this well field began in mid-October 2002. Recently in early September 2006, an additional recovery well (ART-9) began full-time pumping. Figure 1 and Plates 1 and 3 show the location of the Athens Road well field. Recent mapping of the November 2006 groundwater elevations is shown on Plate 1, the Potentiometric Surface map. In the well field area the extent of mapping is for the most part confined to the main alluvial channel and shows the channel trending generally north-northeast toward the Wash. North of the well field, in the east-central portion of section 36, large intermittent surface-water infiltration from the City of Henderson Water Reclamation Facility (COH WRF) Rapid Infiltration Basins (RIBs) periodically forms large groundwater mounds in the potentiometric surface.

Figure 3, the West - East Hydrogeologic Cross Section B-B' - Athens Road Well Field, shows hydrologic conditions at the time of groundwater sampling in November 2006 versus April 2002. Groundwater levels are currently as much as 9.0 ft deeper than they were in 2002 before pumping began. This figure also shows the extent of erosion of the Muddy Creek formation by the alluvium. Here, the Main Channel splits into two subchannels separated by a Muddy Creek basement ridge above which the alluvium is unsaturated.

Plate 3, the Net Drawdown Athens Road Well Field, shows that water levels in portions of the well field have dropped up to 9.0 feet (in ART-3) as compared to water levels measured in April 2002. However, this is 2.1 feet higher than in August 2006 and this groundwater rise is only seen in the wells in the western subchannel; the eastern subchannel has changed only slightly. Five monitor wells in the well field are equipped with sensors to record continuous water level readings; three in the west subchannel and two in the east subchannel. In the western subchannel between October 18, 2002 and November 8, 2006 drawdown was 6.3, 6.9 ft and 7.1 ft in monitor wells PC-55, PC-18 and PC-17, respectively. These water levels are 1.8 ft, 1.5 ft and 1.9 ft, respectively, higher than in August 2006. On the east side of the basement ridge, between October 18, 2002 and November 8, 2006, drawdown in well PC-12 was 8.1 feet which is 0.3 feet higher than in August 2006. The water level in the fifth well, ART-5, has dropped below its screen and the well is currently dry. It is thought that some combination of leaking water supply pipes, residential over-watering and rain events upgradient of the western part of the well field is the cause of this anomaly because water levels in December 2006 were already starting to decline. Plate 3 also shows that the two-foot drawdown contour continues to be almost 2200 feet wide, extending about 450 feet past ART-1 on the west and about 750 feet past ART-7 on the east, relatively unchanged from the previous quarter.

Recent recovery well discharge rates are shown on Table 2. This table shows that, as of December 11, 2006, the pumping Athens Road recovery wells were ART-1, 2, 3A, 4, 7A, 8A and 9 and that the December 2006 average discharge rate of the well field was about 253 gpm.

2.3 Seep Well Field Area

The Seep well field and the Seep stream pumping station are shown on Figure 1 and Plates 1 and 4. In July 2002 when pumping began the Seep well field consisted of three recovery wells situated over the deepest part of the alluvial channel. In February 2003 five additional wells (PC117 to PC121) and in December 2004 one additional well (PC133) were completed in the well field. Plate 1, the Potentiometric Surface map, shows that north of the Athens Road well field the gradient of the north-northeast sloping potentiometric surface decreases to about 0.01 feet per foot due to periodic mounding events from the COH WRF, constant water infiltration from the COH Birding Ponds and proximity to Las Vegas Wash.

Figure 4, the West - East Hydrogeologic Cross Section C-C" Seep Well Field, shows that the alluvial channel is much less incised into the underlying Muddy Creek formation and that the configuration of the alluvial channel is a broad shallow feature about 900 feet wide and averaging about 45 feet thick. In May 2001 before pumping began the groundwater level in the area was very shallow and would daylight every winter. This figure shows that in May 2002 the depth to water averaged about 1 foot below ground level in the well field area whereas in November 2006 drawdown due to pumping was up to 14.7 feet below ground level.

The results of mapping of the net drawdown in the Seep well field between May 2001 and November 2006 are seen on Plate 4, the Net Drawdown Seep Well Field map. The area around PC-117 has the most drawdown at 14.7 feet and decreases outward to form an elliptical drawdown cone elongated in an east-west direction. As shown, the two-foot drawdown contour defines a cone about 950 feet east-west and about 450 feet north-south. Just north of PC-99R2/R3, monitor well PC-90 only has 3.9 feet of drawdown. This is an anomalously tight section of the channel and this lack of transmissivity is the reason that adjacent recovery wells PC-99R2 and PC-99R3 had to be connected and operate as one well.

Recent recovery well discharge rates are presented in Table 3. This table shows that the average discharge rate for December 2006 was a total of about 560 gpm whereas about 70 gpm were captured from the seep stream; for a total of about 629 gpm.

3.0 CHROMIUM MITIGATION PROGRAM

The four components of the chromium mitigation program, consisting of the on-site Interceptor well field, groundwater barrier wall and groundwater recharge trenches and the off-site Athens Road well field, are shown on Figure 1. In the second half of 2006, a total of about 2,115 pounds of chromium, amounting to about 11 pounds per day, have been removed from the environment by the mitigation system. For all of 2006 a total of about 4,197 pounds of chromium was captured and removed.

3.1 Chromium Plume Configuration

Plate 5, the Total Chromium in Groundwater map, shows the contoured total chromium groundwater plume from its source on-site northward to the point where the plume reaches non-detect levels south of Las Vegas Wash. The successful interdiction of the Interceptor well field, the groundwater barrier wall, the groundwater recharge trenches and the Athens Road well field is seen by the significant reduction of total chromium concentration downgradient. Based on the data presented in Table 5, between 10.8 and 104.2 percent of the total chromium is hexavalent chromium.

3.1.1 On-Site Interceptor Well Field Area

Figure 5, the Interceptor Well Field Total Chromium Section Graph, shows the concentrations of total chromium across the well field on three occasions over the last year. The figure shows that the chromium concentrations are little changed on either end of the well line whereas changes have occurred in the central part centered in well I-U.

In May 1990, monthly analyses for chromium were initiated in several wells located both up- and downgradient from the recharge trenches. The schedule of sampling frequency was modified to quarterly sampling beginning in the second half of 1997. Appendix A contains total chromium data along with groundwater elevations for these wells. Total chromium concentration trend graphs containing groundwater elevation data were prepared for monitor wells M-11, M-23, M-36, M-48, M-69, M-70, M-71, M-74, M-86, M-87, M-94 and M-100 and are presented in Appendix B. As shown on Plate 2, the M-70-series wells are located between the recharge trenches and the barrier wall whereas the M-80-series wells are located downgradient of the trenches. The graphs for these wells show significant declines in total chromium concentration with time in the downgradient wells (M-86, M-87, M-94 and M-100) following installation of the barrier wall in September 2001. Plate 5 shows that the southern end of the highest total chromium contour (30 mg/L) is now north of the Chemstar property.

Chromium concentration data from the five Consent Order Appendix J wells (M-11, M-23, M-36, M-72, M-86) are also contained in Appendix A and are presented in graphical form in Appendix B. Monitor well M-11, immediately downgradient from the former source area (Units 4 and 5), has continued a downward decline in chromium concentration since 1993. Well M-36, upgradient of the Interceptor well field and barrier wall, began declining in late 2004 and has remained relatively steady in chromium concentration during 2006. This “steady state” condition may indicate that the main portion of the upgradient chromium plume has now reached the area of M-36.

The rapid decline in chromium concentrations in wells M-72 and M-86 is due to the presence of the groundwater barrier wall upgradient of these wells. However, the chromium concentration in M-86 has been increasing in the last several quarters. An inspection of this area on Plates 1 and 5 indicates that the groundwater mounding caused by infiltration of Lake Mead water in the recharge trenches has decreased in the area of well M-86 to the point that has allowed groundwater upgradient in the “dead zone” area, specifically M-71 and M-72, to slowly move downgradient. This results in a decrease in total chromium in wells M-71 and M-72, and a corresponding increase in well M-86.

Well M-23, 1600 feet downgradient from the barrier wall, is also continuing to show declining total chromium concentrations. M-23 dropped below 1 mg/L (0.92 mg/L) in the November sampling which represents the lowest total chromium value noted in this well since sampling was initiated in January 1987.

Total chromium concentrations downgradient of the barrier wall and recharge trenches continue to decline. A comparison of these data shows consistent decline in chromium concentrations in the groundwater downgradient from the Interceptor well field and barrier wall, indicating that the groundwater recovery / barrier system is functioning as an effective barrier to migration of the main portion of the chromium plume.

Tronox continues to study the possibility that groundwater trapped behind the barrier wall is moving around the ends of the wall. Based on the data presented on Plates 1 and 5 and the trend graph of well M-74 (Appendix B) on the east side of the wall shows that groundwater levels in this well have been decreasing over the last two quarters since May 2006, whereas total chromium concentrations have been decreasing over the last twelve quarters. Based on these data it appears unlikely that groundwater is moving around the east side of the barrier wall. In addition the trend graph of well M-69 (Appendix B) on the west side of the wall shows that groundwater levels in this well have been decreasing over the last two quarters since May 2006, and total chromium concentrations have been decreasing over the last twelve quarters with very minor reversals. However, there is an indication, based on perchlorate concentrations, that groundwater may move around the west margin of the barrier wall. Tronox is evaluating options to improve groundwater capture.

3.1.2 Athens Road / Seep Well Fields Area

The groundwater recovery system at Athens Road has a positive effect on the chromium plume concentration north of Sunset Road. In this area, the groundwater plume flows around the sides of a Muddy Creek formation basement ridge. The total chromium plume on the west side of the ridge, which contains lower concentrations than on the east side of the ridge, is captured and stopped by the groundwater recovery wells. The plume on the east side of the ridge is reduced in concentration by the recovery wells in that area as it flows to the north.

As shown in Figure 6, the Athens Road Well Field Total Chromium Section Graph, over the last year chromium concentrations in the western subchannel have been low relative to those in the eastern subchannel. A new recovery well, ART-9, was recently installed in this area to capture a narrow channel of high chromium-impacted groundwater that was moving through the recovery well field. The full effect of this new recovery well on chromium capture will be documented during the first half of 2007.

Along Sunset Road to the east of the main chromium plume is a single point anomaly of 0.15 mg/L total chromium in well PC-124. This anomaly does not appear to be associated with the main plume to the west based on the direction of groundwater flow, but the exact source and extent of the plume cannot be determined because of the lack of well control. Tronox will continue future sampling of the wells on Sunset Road to monitor this point.

Note on Plate 5 that north of the center of section 36 all wells contain less than the detection limit (0.02 mg/L) except well PC-58 which contains 0.05 mg/L total chromium. Since all wells in the Seep well field have contained less that 0.02 mg/L total chromium since data started to be collected in February 2006 no chromium section graph was prepared.

3.2 On-Site Chromium Treatment System

The operation and maintenance of the chromium reduction process was contracted to Veolia Water North America (formerly US Filter Operating Services) on August 1, 2003. Tronox retains responsibility for compliance with the terms of the Consent Order and the subsequent Underground Injection Control (UIC) Permit NEV94218. In December 1998, the UIC Permit for the Tronox chromium mitigation system was modified to allow for injection of clean Lake Mead water to maintain groundwater levels downgradient from the Interceptor well field. Table 4 contains the 2006 process treatment data from the on-site Groundwater Treatment Plant (GWTP). In December 2006 the GWTP received a total of 2.88 million gallons of groundwater from the Interceptor well field containing an average total chromium concentration of 14.2 mg/L. The treated groundwater, containing 0.005 mg/L of hexavalent chromium and 1.078 mg/L of total chromium, was pumped to two 150,000 gallon equalization tanks (BT-40 and BT-45 in series). In the equalization tanks the outflow from the GWTP is combined with water from the GW-11 pond. From the equalization tanks, most of the flow is pumped to the Fluidized Bed Reactors (FBRs) for treatment or destruction of perchlorate, chlorate, and nitrate. The small portion of the flow (1 – 3 gpm) which is not pumped to the FBRs is returned to the GW-11 pond.

As shown in Table 4, the total chromium inflow concentration from the interceptor wells to the GWTP is showing some evidence of decline during 2006; probably due to the main part of the chromium plume entering the influence of the Interceptor well line. The reduction of hexavalent chromium during the year has been very efficient based on the average monthly values. Total chromium outflow concentrations for the year ranged from 0.29 to 1.35 mg/L. These data indicate that the chromium treatment process is working effectively. Calculations based on the data shown in Table 4 indicate that for the second half of 2006 the GWTP removed about 2,006 pounds of chromium from the environment. For all of 2006 about 4,230 pounds of chromium have been captured.

Analyses of the weekly chromium influent from the equalization tanks to the FBRs appear in Table 5. These data, from the second half of 2006, show the influent total chromium concentrations varied from <0.02 to 0.12 mg/L. Based on an average concentration of about 0.05 mg/L total chromium and a average flow rate of 978 gpm the FBRs were receiving about 0.6 pounds of chromium per day from the equalization tanks.

Under an NPDES permit treated water from the FBRs, analyses of which from the second half of 2006 appear in Table 6, discharges to Las Vegas Wash just upgradient of the Pabco Road erosion control structure. This table shows that all total and hexavalent chromium analyses, except one, have been non-detect at <0.02 and <0.0001 mg/L, respectively. At an influent concentration of about 0.6 pounds per day, an additional 109 pounds of chromium went through the FBR system over the second half of 2006; bringing the second half total of chromium captured to 2,115 pounds.

A detailed description of the groundwater chromium system is presented on Figure 7. This block diagram is a life cycle presentation of chromium-impacted groundwater from the four primary groundwater collection areas, through the various treatment stages, and then to ultimate discharge as clean effluent to Las Vegas Wash.

3.3 Potential On-Site Interim Chromium Remediation

Tronox has reviewed the potential of interim chromium remediation activity at specific areas on-site. These areas include the impacted groundwater in the “dead zone” immediately downgradient of the barrier wall, the impacted vadose zone below old ponds P2 and P3, and the impacted vadose zone below units 4 and 5.

The "dead zone" wells, M-70, M-71, and M-72, could be pumped at a rate of 1 to 2 gallons per minute over the span of approximately 9 to 12 months to "mine" water from this area and reduce the total chromium impact. This additional volume of groundwater would by necessity be routed through the chromium treatment system. At the present time, the chromium mitigation system is running at maximum capacity and cannot accept additional groundwater volumes for treatment. Options to increase capacity are being evaluated. The efficiency of the eastern section of the recharge trenches is also being evaluated.

The former P2 / P3 pond areas and the subsurface impact below Units 4 and 5 could potentially be treated with amendments to reduce the hexavalent chromium to the relatively insoluble form (chromium +3). Tronox believes that this is a viable approach to remediation of the vadose zone impact in these areas and intends to investigate this potential remediation tool after the Source Area Investigation portion of the ECA program is completed. That way, if any other chromium-impacted areas are found, all existing impacted areas can be treated together in a more efficient and cost effective manner. Similarly, if other site related chemicals are identified in the area during Source Area Investigation, the potential impact of the chromium treatment option can be considered.

4.0 PERCHLORATE RECOVERY PROGRAM

The four components of the perchlorate recovery system, consisting of the on-site Interceptor well field, the off-site Athens Road well field, the off-site Seep well field and the off-site Seep surface-flow capture sump, are shown on Figure 1. In the fourth quarter of 2006, a total of about 167,504 pounds of perchlorate, equaling about 1,821 pounds per day, have been removed from the environment with the overall system. Of this total, about 87,409 pounds came from the Interceptor well field, about 69,019 pounds came from the Athens Road well field, about 10,815 pounds came from the Seep well field and 261 pounds came from the Seep surface-flow capture sump. For all of 2006 a total of about 667,453 pounds of perchlorate have been captured and destroyed. Figure 8 shows the 2006 monthly perchlorate recovery totals and the relative significance of each of the four components, whereas Table 7 shows the average pounds of perchlorate per day removed by each component. The November recovery was lower than normal because a buildup of biofilm in the FBR discharge pipeline required a reduction in pumping rates from the well fields until the problem was rectified in early December. Note also on Figure 8 that the December 2006 recovery is an estimate that will be recalculated next month.

4.1 Perchlorate Plume Configuration

Plate 6, the Perchlorate in Groundwater map, shows the contoured perchlorate plume from the Tronox plant site to Las Vegas Wash based on data collected in November 2006. The effects of the Interceptor well field, the groundwater barrier wall, the groundwater recharge trenches, the Athens Road well field, the Seep well field and the Seep surface-flow capture sump are evidenced by the significant reduction of perchlorate concentration downgradient of the barrier wall.

4.1.1 Interceptor Well Field Area

The three components of this well field area, the recovery well line, the barrier wall and the groundwater recharge trenches, significantly reduce the amount of perchlorate in the downgradient groundwater. As shown on Plate 6 the barrier wall has cut off the downgradient movement of groundwater containing high perchlorate concentrations. In the vicinity of the downgradient recharge trenches concentrations down to 1 mg/L have been mapped. However, just east of this area of low perchlorate, well M-86 has increased from 213 mg/L in August 2006 to 427 mg/L in November 2006. As discussed previously in section 3.1.1, the groundwater mounding caused by infiltration of Lake Mead water in the recharge trenches has decreased in the area of well M-86 to the point that has allowed groundwater upgradient in the “dead zone” area to slowly move downgradient. Appendix A contains perchlorate data and groundwater elevations for wells in this area. Perchlorate concentration trend graphs containing groundwater elevation data were prepared for monitor wells M-11, M-23, M-36, M-48, M-69, M-70, M-71, M-74, M-86, M-87, M-94 and M-100 and are presented in Appendix B.

On the west end of the barrier wall interceptor well I-B has decreased from 3000 mg/L in May 2006 to 1720 mg/L in November 2006 whereas monitor well M-69, directly downgradient from I-B, has increased slightly to 1010 mg/L from 921 mg/L during the same period. Tronox is continuing to study options to improve capture in this area and to determine if significant perchlorate is bypassing the west end of the barrier wall.

Figure 9, the Interceptor Well Field Perchlorate Section Graph, shows the perchlorate concentrations for the Interceptor wells over the last five quarters. These data are more variable than the total chromium data shown on Figure 5. The most recent data from November 2006 show that the perchlorate concentrations in many of the Interceptor wells are lower than in November 2005 but somewhat elevated from this past

August. It is obvious from this graph and Figure 10, the Interceptor Well Field Perchlorate Trend Graph, that since at least May 2002 there have been two sub-plumes impacting the well field; a major plume east of well I-M and a minor plume west of I-M.

Since high perchlorate concentrations are often associated with high total dissolved solids (TDS) concentrations a section graph was constructed across the well field. A comparison of Figure 9 and Figure 11, the Interceptor Well Field Total Dissolved Solids Trend Graph, shows that a significant broad increase in TDS in the central part of the well field occurred between August and November 2006 without a concomitant increase in perchlorate concentrations. It is also noteworthy that the high perchlorate plume on the west side of the well field is not associated with high TDS. This will be monitored closely in 2007.

The monthly average perchlorate concentration collected at the well field has been generally decreasing, with short-lived minor reversals, from a high of about 1,900 mg/L in 2002 to about 1,186 mg/L in December 2006 (see Figure 12). This figure also shows the monthly average perchlorate removed from the environment which is estimated to be 28,932 pounds in December 2006. Data from monitor well M-100, seven hundred feet north of the recharge trenches, demonstrate that the recharge trenches are effective. As shown in Figure 13, the perchlorate concentration in this well is currently about eighteen times lower (at 55 mg/L) than January 2002 concentrations (at 1000 mg/L) and for the third quarter in a row is below 100 mg/L. The groundwater elevation trend demonstrates that the groundwater mounding effect from the trenches reach at least to this well.

4.1.2 Athens Road Well Field Area

The Athens Road well field was completed in March 2002 and groundwater collection in this area began shortly thereafter. Continuous pumping from this well field began in mid-October 2002. Recently in early September 2006, an additional recovery well (ART-9) began full-time pumping. Figure 1 and Plates 1, 5 and 6 show the location of the Athens Road well field. Table 2 shows that, as of December 11, 2006, the pumping Athens Road wells are ART-1, 2, 3A, 4, 7A, 8A and 9 and that in December 2006 the recovery well discharge rate was about 253 gpm. Appendix A presents groundwater elevations and analytical data from the wells in this area.

The Perchlorate in Groundwater map, Plate 6, shows that in November 2006 perchlorate concentrations north of Athens Road decreased slightly toward the Seep well field. Well MW-K4, in the Athens Road piezometer well line, decreased significantly from 196 mg/L in August to 87 mg/L in November and well ARP-5, decreased from 350 mg/L in May to 264 mg/L in November. With the recent commencement of full-time pumping of ART-9, it is thought that increased perchlorate capture will accelerate. ART-9, currently pumping at about 30 gpm, contains 325 mg/L of perchlorate vs. 131 mg/L in adjacent ART-6. This means that whereas ART-6 would be capturing 20 pounds/day (if operating now at an historic flow rate of 13 gpm), ART-9 is currently capturing 117 pounds/day. This 97 pound/day difference will make a significant impact on future downgradient perchlorate concentrations.

The perchlorate concentrations since October 31, 2001 of the ART-series wells are shown in Figure 14. This graph shows that since January 2003 the perchlorate concentrations have basically stabilized with only minor variations. The figure shows that ART-3, 4 and 8 track together and have slightly decreasing concentrations. ART-7 has been decreasing again since mid-October except for one spike in early December whereas ART-6 has decreased significantly since about mid-September. ART-9 has decreased slightly over the same period. Figure 15, an west-east section graph through the well field, shows that perchlorate concentrations have generally decreased across the well field in the last five quarters; most significantly in ART-6. ART-3, at 431 mg/L, contains the highest perchlorate concentration although recent analyses have been in the 399 to 417 mg/L range. Note that the perchlorate concentrations on the western (PC-55 and ART-1) and the eastern sides of the well field (PC-122) continue to remain very low. The monthly perchlorate concentration in ART-8, as shown on Figure 16 currently containing 321 mg/L, continues to be at the low end of its range. Also shown on this graph is the monthly average perchlorate mass removed from the well field which was estimated to be 23,494 pounds in December.

About 250 feet north of the Athens Road well field, seven ARP-series wells make up the Athens Road piezometer well line. The perchlorate concentrations of these wells, completed in December 2001, are shown in Figure 17. The western two wells, ARP-1 and 2, and the eastern well, ARP-7, continue to contain very low perchlorate concentrations. ARP-5, which had been slowly increasing since September 2005, had decreased significantly to 237 mg/L in December 2006 since ART-9 came online. Likewise, MW-K4 has decreased to under 100 mg/L (93 mg/L in December 2006). Figure 18, an west-east section graph across the piezometer line, shows this decrease in ARP-5 and MW-K4 over the last five quarters. Figure 19 shows the steep decline in perchlorate concentration in well ARP-3 over the last three years as a result of the efficient recovery at the well field. It is expected to take longer to clean the piezometer line wells because pumping at the Athens Road well field and discharge by COH WRF has flattened the hydraulic gradient in the area of the piezometers. The graph also shows the increase in groundwater elevation as a result of probable summer over watering, leaking water supply pipes and rain events in upgradient residential areas.

Intermediate between the Athens Road area and the Seep area are the City of Henderson Wastewater Recovery Facility (COH WRF) and the Lower Ponds monitor well lines. Figure 20 shows the perchlorate concentrations in the COH WRF wells from January 2001 to November 2006. As shown, wells MW-K5 and PC98R, which have previously been erratic, have been stable since April 2004. As of November 2006 MW-K5 and PC-98R contain 23.6 and 29.5 mg/L perchlorate, respectively. Concentrations, though stable, have been creeping up slightly since about February 2006. Figure 21, the west-east section graph, shows that for the last five quarterly reporting periods the perchlorate concentrations in the well line have changed only slightly. Figure 22, the PC-98R perchlorate vs. water elevation trend graph, shows that since February 2003 the groundwater level has continued to generally decline, but significant groundwater “mounding events” due to increased COH WRF surface water infiltration continue sporadically. It is significant to note on this graph that during the last four mounding events, back to December 2003, a spike in perchlorate in groundwater occurs as well. This would indicate that during higher water levels additional perchlorate from the vadose zone is put into solution and that the current higher than normal perchlorate concentrations in this well line are more a function of COH WRF discharge than presumed perchlorate leakage past the Athens Road well field. Groundwater elevation data on this graph is current to January 15, 2007 and the current flatness of the water table should mean that the January perchlorate value should be lower than in December. As has often been stressed before, some factors affecting perchlorate in groundwater are beyond Tronox control.

The Lower Ponds well line is 2200 feet north of the COH WRF well line. Figure 23, the Lower Ponds Well Line Perchlorate Concentrations Trend Graph, shows that perchlorate concentrations have not shown much variation since about February 2004 and that in December 2006, PC-59 contains the highest concentration of 10 mg/L, down from 13 mg/L in August 2006. Figure 24, the Lower Ponds Well Line Perchlorate Concentration Section Graph, shows that in November 2006 PC-56 contained the highest perchlorate concentration (18 mg/L) along the well line, however, December 2006 data show that PC-56 has decreased to 6.8 mg/L. This graph also shows the narrowness of this anomalous groundwater spike that is probably caused by the short-term increase in water levels related to the recent COH WRF surface water release.

4.1.3 Seep Well Field Area

The original three recovery wells in the Seep well field went on-line in August 2002. In February 2003 five additional wells (PC117 to PC121) and in December 2004 one additional well (PC133) were completed in the Seep well field (Figure 1, Plates 1, 5 and 6). Now, the Seep well field consists of ten wells – two of which

(PC-99R2 and 99R3) are connected and operate as one – positioned over the deepest part of the alluvium channel that contains the highest concentrations of perchlorate. The well field is located about 600 feet upgradient of the seep surface-flow capture sump. Plate 6 and Figure 25 show the regional and detailed depiction of the perchlorate content of the wells, respectively. Recent mapping of the perchlorate concentrations shown on Plate 6, and the net drawdown mapped on Plate 4, suggests that the strong pumping of the Seep well field is drawing in water from the Wash to the north. Table 3 contains the December 2006 discharge rates from the individual wells and the total for the well field area (629 gpm total) which consisted of 559 gpm from the well field and 70 gpm from the seep stream.

Additional evidence for incoming Las Vegas Wash water comes in the form of greatly reduced perchlorate and conductivity concentrations in PC-95 and PC-97, north of the well field. For example, the perchlorate concentration in PC-95 has declined from 67 to 0.6 mg/L since January 2003, whereas the concentrations in PC-97 have declined from 120 to 0.9 mg/L over the same period (see Figure 26 and Appendix A). The figure also shows that when the groundwater level increases in the winter there is a concomitant bump in perchlorate concentrations. This situation will continue to be monitored and may result in a further decrease of the pumping rate.

The perchlorate concentrations in the Seep wells continue to occur within a narrow range of concentrations. The most recent data from December 11, 2006 plotted on Figure 25 show that all of the recovery wells currently contain 21 mg/L or less perchlorate. Figure 27, the Seep Well Field Perchlorate Section Graph, shows that the concentrations from the November 2006 sampling are little different from concentrations over the last five quarters. Data from May 2002 are shown for comparison. The monthly average perchlorate concentration, as shown on Figure 28, currently averages about 17 mg/L. Also shown on this graph is the monthly average perchlorate mass removed which was estimated to be 3,883 pounds in December 2006. TDS concentrations were inspected and were seen to range from 2940 to 5260 mg/L with the highest concentration in PC-116R.

The November 2006 Southern Nevada Water Authority (SNWA)6 sampling of three vegetation irrigation wells completed in Las Vegas Wash and plotted on Plate 6, show that these wells all contain less than 4.0 mg/L perchlorate. Upgradient well WMW6.15S which contained 14 mg/L in May 2005 contained 2.0 mg/L in November 2006. The 1 mg/L contour is therefore plotted only about 700 feet east of the Pabco structure.

As shown on Figure 29, the seep stream began its seasonal flow in mid-October 2006. The December 2006 average flow was about 70 gpm with an average perchlorate concentration of about 5 mg/L. The relationship of higher winter flow/water elevation and higher perchlorate concentration in water is evident back to the winter of 2002.

4.2 On-Site Perchlorate Groundwater Treatment System

Perchlorate treatment operations continued throughout the quarter. Bioplant throughput was reduced slightly in November by buildup of a biofilm in the 20,000 foot discharge pipeline. “Pigging” the pipeline with a cylindrical foam “pig” apparently removed the biofilm and restored the line to full flow in early December. The line will be pigged as necessary to maintain flow.

The 30-day performance demonstration for the expanded bioplant was completed successfully. The fifth primary bioreactor operates the same as the original four primary reactors. No exceedances of NPDES permit limits were recorded during the quarter.

As shown on Table 8, the fourth quarter 2006 perchlorate influent to the FBR ranged from 227 to 271 mg/L whereas the effluent discharged to Las Vegas Wash was a constant non-detect at < 0.01 mg/L perchlorate.

4.3 On-Site Perchlorate Remediation

Transfers of solution from the AP-5 pond to the GW-11 pond continued throughout the quarter. A total of 137.5 tons of perchlorate were transferred during the fourth quarter compared with 117.0 tons transferred in the third quarter of 2006. A total of 254.5 tons has been transferred which is about 25 percent of the estimated 1,000 tons of perchlorate thought to be in the pond at the beginning of the decommissioning process.

5.0 CONCLUSIONS

Chromium concentrations in monitor wells immediately downgradient of the on-site groundwater barrier wall show a marked decline. Groundwater recovery from the Interceptor well field has substantially increased due to the effectiveness of the groundwater barrier. Using an average of 14.5 mg/L total chromium and an average groundwater recovery rate of 63 gallons per minute, the chromium recovery and treatment system and the FBRs have captured about 11.5 pounds of chromium per day during 2006 for a total of about 4,230 pounds. Ongoing assessment and monitoring will continue during 2007 to monitor capture of the chromium-impacted groundwater upgradient of the groundwater barrier.

Chromium capture at the Athens Road well field is expected to be complete with the recent addition of recovery well ART-9 in the eastern portion of the plume. Overall recovery of chromium-impacted groundwater in this area has aided in reducing the plume to non-detect levels prior to reaching Las Vegas Wash.

Perchlorate continues to be effectively captured by the four components of the remediation program. The on-site Interceptor well field, coupled with the groundwater barrier wall, provides efficient capture in this on-site area. Since October 2002 the Athens Road area well field has been in continuous operation and is maturing into an efficient interception line. Based on Modflow particle tracking mass flux and groundwater underflow calculations, the Athens Road well field continues to capture the majority of available perchlorate. With the installation of the new ART-9 well, the percent captured has already increased.

The Seep well field and the seep surface capture make up the remaining portions of the perchlorate recovery system. The Seep well field is advantageously located over the main part of the alluvium channel and is in close proximity to Las Vegas Wash. Capture in this area makes the most immediate impact on Wash perchlorate concentrations. The perchlorate concentration in seep area groundwater is continuing to decrease with minor reversals partly due to periodic groundwater mounding events from the COH WRF. It is anticipated that the impact of continued pumping at the Athens Road well field – especially with ART-9 online - will continue to be observed in the seep area concentrations, modified by discharge activities at COH WRF. The amount of perchlorate removed by any of the four components depends on perchlorate movement in the groundwater which is influenced by many factors, some of which are beyond TRX control.

6.0 PROPOSED FUTURE ACTIVITIES

TRX will continue the process of merging the chromium mitigation report and the perchlorate recovery system performance report into one document. These ongoing changes will be based on discussions with NDEP to determine schedule implementation and format revisions.

TRX will evaluate the apparent movement of groundwater around the west end of the barrier wall and will propose appropriate measures to NDEP to remediate this situation. TRX will continue to record water levels in the AOC area. Potentiometric surface maps will be developed as well as chromium and perchlorate in groundwater maps. The effect of changing the pumping rates of the recovery wells will be monitored, and responses (i.e., pump rate adjustments) will be made to ensure optimal drawdown and plume interception at the well fields. Pumping wells will be rehabilitated as necessary. The monitoring plan in current use will be modified, as necessary, to facilitate collection of pertinent data to track the progress of chromium and perchlorate capture at the well fields and the seep.

FIGURES

TABLES

TABLE 1
INTERCEPTOR WELL DISCHARGE RATES (GPM)
Tronox, LLC
Henderson, Nevada

Well #	December 2001 (GPM)	December 2002 (GPM)	December 2003 (GPM)	December 2004 (GPM)	December 2005 (GPM)	December 2006 (GPM)
I-AR	1.1	0.8	0.9	1.0	0.7	0.1
I-B	1.5	1.7	1.6	1.7	1.2	1.2
I-C	3.8	3.5	3.5	4.4	3.5	4.5
I-D	1.1	2.4	1.4	2.6	1.3	1.7
I-E	0.9	1.4	1.4	1.6	0.8	2.3
I-F	3.9	3.9	3.5	4.2	4.0	4.3
I-G	0.1	0.1	0.1	0	0	0.0
I-H	0.8	1.1	0.9	1.0	1.7	1.2
I-I	3.8	3.8	4.4	4.9	4.8	5.0
I-J	5.1	5.0	4.8	5.9	3.3	7.5
I-K	4.1	2.8	3.8	4.2	5.3	3.6
I-L	1.5	0.6	1.3	1.7	2.3	2.3
I-M	3.7	3.7	3.3	3.6	3.8	2.3
I-N	3.7	3.5	3.5	3.6	3.2	3.0
I-O	2.8	3.6	3.0	2.8	3.4	3.0
I-P	3.2	4.5	3.3	3.6	4.5	4.2
I-Q	0.7	1.0	0.7	0.6	0.8	0.3
I-R	1.6	0.9	1.7	2.0	1.9	1.7
I-S	2.3	4.6	2.8	3.8	2.5	5.2
I-T	0.5	0.6	0.4	0.1	0.7	0.0
I-U	0.5	0.6	0.7	0.8	1.0	1.2
I-V	6.2	4.0	3.5	3.9	3.7	3.7
I-Z			6.9	6.9	9.3	6.5
TOTAL	52.9	54.1	57.4	64.9	63.7	64.8

GPM = gallons per minute

TABLE 2
ATHENS ROAD WELL DISCHARGE RATES (GPM)
Tronox, LLC
Henderson, Nevada

Well #	December 2006 (GPM)
ART-1	6.5
ART-1A	Not Pumping 12/11/06
ART-2	77.6
ART-2A	Not Pumping 12/11/06
ART-3	Not Pumping 12/11/06
ART-3A	30.0
ART-4	14.0
ART-4A	Not Pumping 12/11/06
ART-6	Not Pumping 12/11/06
ART-7	Not Pumping 12/11/06
ART-7A	30.2
ART-8	Not Pumping 12/11/06
ART-8A	62.7
ART-9	32.4
TOTAL	**253.4**

GPM = gallons per minute

TABLE 3
SEEP WELL AND SEEP STREAM DISCHARGE RATES (GPM)
Tronox, LLC
Henderson, Nevada

Well #	December 2006 (GPM)
PC-99R2/R3	155.6
PC-115R	58.8
PC-116R	182.3
PC-117	72.5
PC-118	52.6
PC-119	33.4
PC-120	0.1
PC-121	0.4
PC-133	3.8
TOTAL	**559.4**
SEEP STREAM	69.8
GRAND TOTAL	**629.2**
GPM = gallons per minute	

TABLE 4
GROUNDWATER CHROMIUM TREATMENT DATA 2006
Tronox, LLC
Henderson, Nevada

Month	Ave. Flow To Cr Treatment (MM Gals)	Ave. Total Cr Inflow (mg/L)	Ave. Cr VI Treated Outflow* (mg/L)	Ave. Total Cr Treated Outflow* (mg/L)
January	2.81	15.0	0.003	0.285
February	2.57	15.3	0.000	0.390
March	2.83	15.7	0.00	0.535
April	2.80	14.9	0.000	0.580
May	2.91	14.7	0.005	0.775
June	2.67	14.0	0.020	0.556
July	2.92	13.8	0.010	0.618
August	2.75	14.1	0.015	1.168
September	2.86	14.0	0.008	1.345
October	2.96	13.9	0.000	0.695
November	2.76	14.2	0.001	1.000
December	2.88	14.2	0.005	1.078

* Treated Outflow is directed to two 150,000 gallon tanks (BT-40 and BT-45) for equalization before being fed to the Fluidized Bed Reactors (FBRs).
mg/L = milligrams per liter

TABLE 5
SECOND HALF 2006 WEEKLY INFLUENT CHROMIUM (mg/L) TO THE FBR
Tronox LLC
Henderson, Nevada

Sample Date	Total Chromium mg/L ML/EPA 200.7	Total Chromium MRL mg/L	Hexavalent Chromium mg/L EPA 218.6	Hexavalent Chromium MRL mg/L
7/5/2006	0.026	0.02	0.0028	0.0001
7/10/2006	<0.02	0.02	0.0058	0.0001
7/17/2006	<0.02	0.02	0.011	0.0001
7/24/2006	0.037	0.02	0.016	0.0001
7/31/2006	0.022	0.02	NA	NA
8/2/2006	NA	0.02	0.021	0.0001
8/7/2006	0.032	0.02	0.022	0.0001
8/15/2006	0.036	0.02	0.027	0.0001
8/21/2006	0.037	0.02	0.026	0.0001
8/28/2006	0.06	0.02	0.026	0.0001
9/5/2006	0.087	0.02	0.024	0.0001
9/11/2006	0.086	0.02	NA	NA
9/12/2006	NA	NA	0.034	0.0001
9/18/2006	0.065	0.02	0.027	0.0001
9/25/2006	0.026	0.02	NA	NA
9/26/2006	NA	NA	0.031	0.0001
10/2/2006	0.035	0.02	NA	NA
10/4/2006	NA	NA	0.037	0.0001
10/9/2006	0.073	0.02	0.039	0.0001
10/16/2006	0.044	0.02	0.026	0.0001
10/23/2006	0.06	0.02	0.031	0.0001
10/30/2006	0.062	0.02	0.037	0.0001
11/6/2006	0.038	0.02	0.016	0.0001
11/13/2006	0.065	0.02	0.041	0.0001
11/20/2006	0.033	0.02	0.019	0.0001
11/27/2006	0.12	0.02	0.08	0.0005
12/4/2006	0.096	0.02	0.10	0.001
12/11/2006	0.096	0.02	0.018	0.0001
12/18/2006	0.068	0.02	0.043	0.0001
12/26/2006	0.12	0.02	0.07	0.0001

NA = No Analysis
FBR = Fluidized Bed Reactor
MRL = Method Reporting Limit (not adjusted for dilution)

TABLE 6
SECOND HALF 2006 WEEKLY EFFLUENT CHROMIUM (mg/L) FROM THE FBR
Tronox LLC
Henderson, Nevada

Sample Date	Total Chromium mg/L ML/EPA 200.7	Total Chromium MRL mg/L	Hexavalent Chromium mg/L EPA 218.6	Hexavalent Chromium MRL mg/L
7/5/2006	<0.02	0.02	<0.0001	0.0001
7/10/2006	<0.02	0.02	<0.0001	0.0001
7/17/2006	<0.02	0.02	<0.0001	0.0001
7/24/2006	<0.02	0.02	<0.0001	0.0001
7/31/2006	<0.01	0.01	NA	NA
8/2/2006	<0.02	0.02	<0.0001	0.0001
8/7/2006	<0.02	0.02	0.0014	0.0001
8/15/2006	<0.02	0.02	<0.0001	0.0001
8/21/2006	<0.02	0.02	<0.0001	0.0001
8/28/2006	<0.02	0.02	<0.0001	0.0001
9/5/2006	<0.01	0.01	<0.0001	0.0001
9/11-12/2006	<0.02	0.02	<0.0001	0.0001
9/18/2006	<0.02	0.02	<0.0001	0.0001
9/25-26/2006	<0.02	0.02	<0.0001	0.0001
10/2-4/2006	<0.02	0.02	<0.0001	0.0001
10/9/2006	<0.02	0.02	<0.0001	0.0001
10/16/2006	<0.02	0.02	<0.0001	0.0001
10/23/2006	<0.02	0.02	<0.0001	0.0001
10/30/2006	<0.02	0.02	<0.0001	0.0001
11/6/2006	<0.02	0.02	<0.0001	0.0001
11/13/2006	<0.02	0.02	<0.0001	0.0001
11/20/2006	<0.02	0.02	<0.0001	0.0001
11/27/2006	<0.02	0.02	<0.0001	0.0001
12/4/2006	<0.02	0.02	<0.0001	0.0001
12/11/2006	<0.02	0.02	<0.0001	0.0001
12/18/2006	<0.02	0.02	<0.0001	0.0001
12/26/2006	<0.02	0.02	<0.0001	0.0001

MRL = Method Reporting Limit
FBR = Fluidized Bed Reactor
Not adjusted for dilution

TABLE 7
PERCHLORATE REMOVED FROM THE ENVIRONMENT, HENDERSON, NEVADA
Tronox LLC
Henderson, Nevada

Date	Seep Wells and Seep (lbs/day)	Athens Rd. Well Field (lbs/day)	Interceptor Well Field (lbs/day)	Total (lbs/day)	Total Tons Removed (per month)
OCT 2002*	495	331	1402	2228	34.5
NOV 2002	422	1001	1146	2569	38.5
DEC 2002	208	1164	1292	2664	41.3
JAN 2003	335	1074	1467	2876	44.6
FEB 2003	570	783	1060	2413	33.8
MAR 2003**	485	806	1067	2358	36.5
APR 2003	713	713	1033	2460	36.9
MAY 2003	703	729	1148	2581	40.0
JUN 2003	686	907	1098	2691	40.4
JUL 2003	594	755	1034	2383	36.9
AUG 2003	452	741	999	2192	34.0
SEP 2003	417	770	937	2124	31.9
OCT 2003	370	769	1003	2142	33.2
NOV 2003	337	713	949	1999	30.0
DEC 2003	321	751	932	2005	31.1
JAN 2004	305	689	953	1947	30.2
FEB 2004	311	630	895	1836	26.6
MAR 2004	221	743	931	1895	29.4
APR 2004	151	733	849	1733	26.0
MAY 2004	126	765	904	1795	26.9
JUN 2004	157	754	994	1905	28.6
JUL 2004	195	757	968	1920	29.8
AUG 2004	201	805	914	1920	29.8
SEP 2004	169	835	981	1985	29.8
OCT 2004	262	799	1020	2081	31.2
NOV 2004	168	814	1032	2014	30.2
DEC 2004	122	816	1002	1940	30.1
JAN 2005	122	811	1008	1941	30.1
FEB 2005	157	859	991	2007	28.1
MAR 2005	158	781	980	1919	29.7
APR 2005	145	787	987	1919	28.8
MAY 2005	153	759	982	1894	29.4
JUN 2005***	150	794	985	1929	29.9
JUL 2005	154	770	1077	2001	31.0
AUG 2005	135	800	1109	2044	31.7
SEP 2005	84	821	1140	2045	31.7

TABLE 7 (Continued)

PERCHLORATE REMOVED FROM THE ENVIRONMENT, HENDERSON, NEVADA

Tronox LLC
Henderson, Nevada

Date	Seep Wells and Seep (lbs/day)	Athens Rd. Well Field (lbs/day)	Interceptor Well Field (lbs/day)	Total (lbs/day)	Total Tons Removed (per month)
OCT 2005	99	797	1077	1973	30.6
NOV 2005	111	773	1103	1987	30.8
DEC 2005	121	726	1141	1988	30.8
JAN 2006	141	750	999	1890	29.3
FEB 2006	136	752	993	1881	29.2
MAR 2006	107	736	983	1826	28.3
APR 2006	129	755	1027	1911	29.6
MAY 2006	131	712	960	1803	27.9
JUN 2006	135	753	887	1775	27.5
JUL 2006	123	647	935	1705	26.4
AUG 2006	141	652	932	1725	26.7
SEP 2006****	142	762	1062	1966	30.5
OCT 2006	134	778	1034	1946	30.2
NOV 2006	101	714	881	1696	26.3
DEC 2006#	125	758	933	1816	28.1

* Athens Rd recovery wells begin full time operation on 10/22/02

** Five new Seep Area recovery wells began operation on 3/24/03

*** One new Seep Area recovery well began operation on 6/21/05

**** One new Athens Rd recovery well began full time operation on 9/7/06

Estimated

lbs/day = pounds per day

TABLE 8
FOURTH QUARTER 2006 PERCHLORATE IN FBR INFLUENT AND EFFLUENT
Tronox, LLC
Henderson, Nevada

Sample Date	Sample Type	Perchlorate mg/L EPA 314	Perchlorate MRL mg/L
10/7/2006	Influent-Comp	266	0.01
10/7/2006	Effluent-Comp	<0.010	0.01
10/14/2006	Influent-Comp	253	0.01
10/14/2006	Effluent-Comp	<0.010	0.01
10/21/2006	Influent-Comp	227	0.01
10/21/2006	Effluent-Comp	<0.010	0.01
10/28/2006	Influent-Comp	271	0.01
10/28/2006	Effluent-Comp	<0.010	0.01
11/4/2006	Influent-Comp	271	0.01
11/4/2006	Effluent-Comp	<0.010	0.01
11/11/2006	Influent-Comp	253	0.01
11/11/2006	Effluent-Comp	<0.010	0.01
11/18/2006	Influent-Comp	242	0.01
11/18/2006	Effluent-Comp	<0.010	0.01
11/18/2006	Influent-Comp	255	0.01
11/18/2006	Effluent-Comp	<0.010	0.01
11/25/2006	Influent-Comp	235	0.01
11/25/2006	Effluent-Comp	<0.010	0.01
12/2/2006	Influent-Comp	252	0.01
12/2/2006	Effluent-Comp	<0.010	0.01
12/9/2006	Influent-Comp	243	0.01
12/9/2006	Effluent-Comp	<0.010	0.01
12/16/2006	Influent-Comp	233	0.01
12/16/2006	Effluent-Comp	<0.010	0.01

Comp = Weekly Composite Sample

FBR = Fluidized Bed Reactor

MRL = Detection Limit (not adjusted for dilution)