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NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

***Certified Mail 7005-0390-0002-0503-6549***

December 14, 2009

Michael J. Foster
Tronox, LLC.
3301 N. W. 150th
Oklahoma City, Oklahoma 73134

RE: Enforcement Action for Failure to Complete Approved Site Remediation Activities, and Show Cause Meeting, Tronox, LLC, (Tronox) Henderson, Nevada, NDEP Facility ID Number 8-000539

Dear Mr. Foster:

Enclosed please find a Finding of Alleged Violation, Order, and State Environmental Commission Form #3. This enforcement action is the result of the failure of Tronox, its predecessors in interest and affiliates to complete approved remediation activities for the known contamination in both soil and groundwater at the Tronox facility located within the Black Mountain Industrial ("BMI") Complex, 8000 West Lake Mead Parkway, Henderson, Nevada. Nevada Division of Environmental Protection (the "Division") facility ID Number H-000539. Among other things, the enforcement action seeks injunctive relief to ensure compliance with Tronox's remediation obligations going forward.

The enclosed Order requires a representative of Tronox to appear before the Division to show cause why the Division should not proceed with an action for injunctive or other relief in District Court. Any violation of the terms of this Order could subject you to an action for appropriate relief pursuant to NRS 445A.695, 445A.700, 445A.705, 459.580, or 459.585.

Pursuant to NRS 445A.690, this Order is final and not subject to review unless, within thirty (30) days after the date the Order is served, a request by written petition for a hearing is received by the State Environmental Commission, John Walker, Executive Secretary, via mail to 901 South Stewart Street, Suite 4001, Carson City, Nevada 89701, or via facsimile to (775) 687-5856. I have included the appropriate form for an appeal hearing (Form #3) for your convenience. Please provide me with a copy of any correspondence you have with the Commission.

If you have any questions regarding this matter, please call me at (775) 687-9484.

Sincerely,

James Najima, Chief
Bureau of Corrective Actions

JN/slg

Enclosures (3)
Finding of Alleged Violation
Order
SEC Form #3

cc: w/Enclosures
Bill Frey, Senior Deputy Attorney General, Attorney General's Office, Carson City
Carolyn Tanner, Deputy Attorney General, Attorney General's Office, Carson City
Leo Drozdoff, P.E., Nevada Department of Environmental Protection, Carson City
Tom Porta, NDEP, Carson City
John Walker, Nevada State Environmental Commission, Carson City
Brian Rakvica, P.E., NDEP, Las Vegas
Shannon Harbour, P.E., NDEP, Las Vegas
Mr. Ken Baker, Chartis, Pollution Cap Claims Department, 175 Water Street, 12th Floor, New York, New York 10038
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, Clark County DAQEM, 500 South Grand Central Parkway, PO Box 555210, Las Vegas, NV, 89155-5210
Robert Williams, Clark County Fire Department, 575 East Flamingo Road, Las Vegas, Nevada 89119
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, BEC, 875 West Warm Springs, Henderson, NV 89011
Rex Heppe, 2925 East Patrick Lane, Suite M, Las Vegas, NV 89120-2457
David Sadoff, AIG Consultants, Inc., 121 Spear Street, 3rd Floor, San Francisco, CA 94105
Leslie Hill, U.S. Department of Justice, PO Box 23896, Washington, DC 20026-3986
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409

Nicholas Pogoncheff, PES Environmental, Inc., 1682 Novato Blvd., Suite 100, Novato, CA 94947-7021
Susan Crowley, Crowley Environmental LLC, 366 Esquina Dr., Henderson, NV 89014
Susan Crowley, Tronox LLC, PO Box 55, Henderson, Nevada 89009
Mike Skromyda, Tronox LLC, PO Box 55, Henderson, Nevada 89009
Keith Bailey, Environmental Answers, 3229 Persimmon Creek Dr, Edmond, Oklahoma 73013
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 10733 Wave Crest Court Stockton, CA 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Deni Chambers, Northgate Environmental Management, Inc., 300 Frank H. Ogawa Plaza, Suite 510, Oakland, CA 94612
Robert Infelise, Cox Castle Nicholson, 555 California Street, 10th Floor, San Francisco, CA 94104-1513
Michael Ford, Bryan Cave, One Renaissance Square, Two North Central Avenue, Suite 2200, Phoenix, AZ 85004
Jeff Gibson, AMPAC, 3883 Howard Hughes Pkwy, Ste 700, Las Vegas, NV 89169

## ORDER

This Order is issued under the authority vested in the Director of the Department of Conservation and Natural Resources ("Department") by Nevada Revised Statutes (NRS) 445A.445 (1), 445A.450 (8), and 459.470, delegated to the Division of Environmental Protection ("Division") pursuant to NRS 445A.450 (9) and 459.480, and in accordance with NRS 445A.675, 445A.690, 459.565 (1), and 459.570.

On the basis of the attached Finding of Alleged Violation ("FOAV"), which is a part of this Order, the Administrator of the Division, pursuant to authority delegated to him by the Director of the Department of Conservation and Natural Resources, has determined that Tronox, LLC ("Tronox") is in violation of Nevada Water Pollution Control Law, the Nevada Hazardous Waste Law, the Resource Conservation and Recovery Act, the Phase 2 Consent Order, the 1986 Consent Order, and the 2001 Consent Order as outlined in the Finding of Alleged Violation and that, among other remedies, injunction relief is required to ensure Tronox's compliance with its remediation obligations going forward.

**IT IS HEREBY ORDERED:**

Tronox shall complete the following acts at/or with respect to the Tronox Facility located within the Black Mountain Industrial ("BMI") Complex, 8000 West Lake Mead Parkway in Henderson, Nevada (hereinafter "the Site") by the dates specified:

1. Immediately maintain the Site in compliance with all federal, state, and local environmental laws to protect human health and the environment.

2. Within ten (10) days of the date of this Order: Submit to the Division a written reply which states Tronox's intention to comply with the Order including its obligation to maintain the Site in compliance with all federal, state, and local environmental laws to protect human health and the environment.

3. Within sixty (60) days of the date of this Order: Submit to the Division a detailed plan, including a detailed schedule and timeline, that explains how Tronox will ensure that the existing groundwater treatment system ("GWTS") will remain fully operational, as defined herein, until the remedial actions are completed.

   a. The term "fully operational" is defined as the pumping and treating of impacted groundwater in accordance with the Administrative Orders on Consent issued by the Division on the following dates: September 9, 1986; April 25, 1991; August 1, 1996; July 26, 1999; October 8, 2001; and April 12, 2005; the following NDEP Bureau of Water Pollution Control

permits: NV 0023060; NEV2001515; NEV2001516; UNEV94218; and any additional permits and requirements as provided by the Division to determine that adequate capture and treatment is occurring to protect human health and the environment.

4. Within sixty (60) days of the date of this Order: Submit to the Division a detailed plan, including a detailed schedule and time line which explains how Tronox will complete the Remedial Alternative Studies ("RAS") required under the August 1, 1996 Consent Agreement ("the Phase 2 Consent Order"). The RAS documents shall address the issue of source control and reduction, and optimization of groundwater treatment.

5. Within sixty (60) days of the date of this Order: Tronox must provide documentation of financial assurance evidencing the existence of the funds necessary to conduct the required corrective actions at the Site.

6. Within thirty (30) days of the date of this Order: Tronox must present a plan for providing an emergency generator system for the GWTS or an alternate plan that is acceptable to the Division, to ensure continuous operation of the GWTS system.

7. Within thirty (30) days of the date of this Order: Tronox must provide a schedule for the complete removal of contaminated soils from the Site by December 31, 2010.

8. By December 31, 2010: Tronox must complete source control of contaminated soils at the Site.

9. Within ten (10) days of the date of this Order: Submit to the Division a copy of all insurance policies that are currently being used to fund the environmental activities at the Site, together with documentation evidencing (a) claims and payouts made pursuant to such policies, (b) any expenses incurred as part of any self-insured retention pursuant to such policies, (c) the term of such policy, and (d) and any other information related to coverage concerning the Site.

10. Within ten (10) days of the date of this Order: Contact Jim Najima, Chief of the Bureau of Corrective Actions of the Division to arrange a meeting at the Division's Carson City office to show cause why the Division should not seek civil penalties for the violations cited in the FOAV.

Dec 4, 2009
Date

James Najima, Chief
Bureau of Corrective Actions

## FINDING OF ALLEGED VIOLATION

I. This Finding of Alleged Violation is based upon the following:

### A. RELEVANT STATUTORY AND REGULATORY AUTHORITY UNDER THE NEVADA WATER POLLUTION CONTROL LAW:

1. It is the policy of the State of Nevada and the purpose of the Nevada Water Pollution Control Law, codified at Nevada Revised Statutes (NRS) 445A.300 to 445A.730 inclusive (the "NWPCL"), "(a) to maintain the quality of the waters of the State consistent with the public health and enjoyment, the propagation and protection of terrestrial and aquatic life, the operation of existing industries, the pursuit of agriculture, and the economic development of the State, and (b) to encourage and promote the use of methods of waste collection and pollution control for all significant sources of water pollution (including point and diffuse sources)."

2. The State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection (the "Division"), under the authority of NRS 445A.445 (1) and 459.475, has the power and the duty to administer and enforce the provisions of the NWPCL.

3. The Division is authorized by NRS 445A.675 and 445A.690 to make findings and issue orders to address violations of the NWPCL.

4. NRS 445A.465 states:

Injection of fluids through a well or discharge of pollutant without a permit prohibited; regulations:

1. Except as authorized by a permit issued by the department pursuant to the provisions of NRS 445A.300 to 445A.730, inclusive, and regulations adopted by the commission, it is unlawful for any person to:

(a) Discharge from any point source any pollutant into any waters of the state or any treatment works.
(c) Discharge from a point source a pollutant or inject fluids through a well that could be carried into the waters of the state by any means.
(d) Allow a pollutant discharged from a point source or fluids injected through a well to remain in place where the pollutant or fluids could be carried into waters of the state by any means.

5. The Division may issue an Order requiring the owner or operator of a property whereon hazardous waste, hazardous substances and/or regulated substances are released to take corrective action to address soil contamination pursuant NAC 445A.227, and to provide a plan and schedule for completing corrective action pursuant to NAC 445A.2271.

6. The Division may issue an Order requiring the owner or operator of a property whereon hazardous waste, hazardous substances and/or regulated substances are released to take corrective action to address groundwater contamination pursuant NAC 445A.22725, and to provide a plan and schedule for completing corrective action pursuant to NAC 445A.2273.

## B. RELEVANT STATUTORY AND REGULATORY AUTHORITY UNDER THE NEVADA HAZARDOUS WASTE LAW:

1. It is the purpose of the Nevada Hazardous Waste Law codified at NRS 459.400 to 459.600 inclusive (the "NHWL"), to "(1) Protect human health, public safety and the environment from the effects of improper, inadequate or unsound management of hazardous waste; (2) Establish a program for regulation of the storage, generation, transportation, treatment and disposal of hazardous waste; and (3) Ensure safe and adequate management of hazardous waste."

2. The Division has the power to enforce all rules, regulations and standards promulgated by the Nevada State Environmental Commission (the "SEC") under the NHWL pursuant to NRS 459.475 (1), to act as the state agency for the purposes of federal laws and regulations on hazardous waste pursuant to NRS 459.470, as delegated pursuant to NRS 459.480.

3. Pursuant to NRS 459.565, if the Division receives information that the handling, storage, transportation, treatment or disposal of any waste or hazardous substance at a facility may present an "*imminent and substantial hazard to human health, public safety or the environment,*" it may issue an order to the owner or operator of the facility or the custodian of the hazardous waste to take all necessary steps to prevent the act or eliminate the practice which constitutes the hazard. The Division may also order a site assessment to be conducted and a remediation plan to be developed, assess costs and expenses incurred by the Division in removing, correcting or terminating any hazard to human health, public safety or the environment, seek injunctive relief; and take any other action designed to reduce or eliminate the hazard.

4. NAC 459.9533 defines "Ammonium Perchlorate" as a highly hazardous substance, per all applicable thresholds.

5. Per the United States Environmental Protection Agency, National Center for Environmental Assessment, "Hexavalent Chromium" is classified as a human carcinogen. See http://www.epa.gov/ncea/iris/toxreviews/0144-tr.pdf chromium.

6. Pursuant to NRS 459.570, the Division has the power to issue orders to address violations of the NHWL, including any regulation, or term or condition of a permit issued by the Division.

7. Nevada adopts and enforces the regulations applicable to the Resource Conservation and Recovery Act ("RCRA"). NAC 444.8632 states in part: Compliance with federal regulations adopted by reference. In addition to the requirements of NAC 444.850 to 444.876, inclusive, a person who generates, transports, treats, stores, disposes or otherwise manages hazardous waste or used oil shall comply with all applicable requirements of, and may rely upon applicable exclusions or exemptions under, 40 C.F.R. Part 2, Subpart A, Part 124, Subparts A and B, Parts 260 to 270, inclusive, Part 273 and Part 279, as those provisions existed on July 1, 2007, which, except as otherwise modified by NAC 444.86325, 444.8633 and 444.8634, are hereby adopted by reference. The Commission may use federal statutes and regulations that are cited in 40 C.F.R. Part 2, Subpart A, Part 124, Subparts A and B, Parts 260 to 270, inclusive, Part 273 and Part 279 to interpret these sections and parts.

8. RCRA defines a "solid waste management unit" as "any discernable unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released." 55 Fed. Reg. 30808 (1990).

9. In relevant part, RCRA 3004 addresses solid waste management units as follows:

(u) Continuing releases at permitted facilities

Standards promulgated under this section shall require, and a permit issued after November 8, 1984, by the Administrator or a State shall require, corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit under this subchapter, regardless of the time at which waste was placed in such unit. Permits issued under section 6925 of this title shall contain schedules of compliance for such corrective action (where such corrective action

cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

(v) Corrective action beyond facility boundary

As promptly as practicable after November 8, 1984, the Administrator shall amend the standards under this section regarding corrective action required at facilities for the treatment, storage, or disposal, of hazardous waste listed or identified under section 6921 of this title to require that corrective action be taken beyond the facility boundary where necessary to protect human health and the environment unless the owner or operator of the facility concerned demonstrates to the satisfaction of the Administrator that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. Such regulations shall take effect immediately upon promulgation, notwithstanding section 6930(b) of this title, and shall apply to--

(1) all facilities operating under permits issued under subsection (c) of this section, and

(2) all landfills, surface impoundments, and waste pile units (including any new units, replacements of existing units, or lateral expansions of existing units) which receive hazardous waste after July 26, 1982.

Pending promulgation of such regulations, the Administrator shall issue corrective action orders for facilities referred to in paragraphs (1) and (2), on a case-by-case basis, consistent with the purposes of this subsection.

10. 40 C.F.R. 260.10 defines a "Facility" subject to RCRA regulation as:

(1) All contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste, or for managing hazardous secondary materials prior to reclamation. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).

(2) *For the purpose of implementing corrective action under 40 CFR 264.101 or 267.101, all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA. This definition also applies to facilities implementing corrective action under RCRA Section 3008(h).*

(3) Notwithstanding paragraph (2) of this definition, a remediation waste management site is not a facility that is subject to 40 CFR 264.101, but is subject to corrective action requirements if the site is located within such a facility.

[Emphasis added.]

11. RCRA 3005(e) defines a facility subject to interim status as:

(1) Any person who--

(A) owns or operates a facility required to have a permit under this section which facility--

(i) was in existence on November 19, 1980, or

(ii) is in existence on the effective date of statutory or regulatory changes under this chapter that render the facility subject to the requirement to have a permit under this section,

(B) has complied with the requirements of section 6930(a) of this title, and

(C) *has made an application for a permit under this section,*

shall be treated as having been issued such permit until such time as final administrative disposition of such application is made, unless the Administrator or other plaintiff proves that final administrative disposition of such application has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application. This paragraph shall not apply to any facility which has been previously denied a permit under this section or if authority to operate the facility under this section has been previously terminated.

[Emphasis added.]

12. Pursuant to RCRA 3008(h), facilities with interim status are subject to corrective action orders. Specifically, RCRA 3008(h) states in part:

(1) Whenever on the basis of any information the Administrator determines that there is or has been a release of hazardous waste into the environment from a facility authorized to operate under section 6925(e) of this title, *the Administrator may issue an order requiring corrective action or such other response measure as he deems necessary to protect human health or the environment* or the Administrator may commence a civil action in the United States district court in the district in which the

facility is located for appropriate relief, including a temporary or permanent injunction.

[Emphasis added].

13. Pursuant to 40 C.F.R. Part 265, Subpart H, the Division may require financial assurance from interim status facilities to ensure the funding of the costs of remediation, including adjustments for current cost estimates of clean-up, inflation, and insufficiency of posted financial assurance .

## C. RELEVANT BACKGROUND

1. Kerr-McGee Corporation, Kerr-McGee Chemical, LLC, its affiliates, and successors-in-interest have owned and operated an industrial facility at the BMI Complex in Henderson, Nevada (the "Site") for approximately fifty years. Tronox, LLC took ownership of the Site in or about 2005. These entities are collectively referred to herein as the "Parties."

2. Ending in approximately 1998, the Parties produced ammonium perchlorate, magnesium perchlorate, potassium perchlorate, and sodium perchlorate (collectively, "perchlorate") at the Site. As a result of manufacturing operations at the Site, additional contaminants are found in the groundwater at or near the Site in concentrations above the limits set by the NHWL. These contaminants include: hexavalent chromium, perchlorate, asbestos, dioxins, total petroleum hydrocarbons, organochlorine pesticides, aluminum, antimony, arsenic, lead, mercury, radium, thorium, uranium, various semi-volatile and volatile organic compounds. The contaminated groundwater flows into the Las Vegas Wash, into Lake Mead and on to the Colorado River.

3. Pursuant to its authority under the NWPCL, and the NHWL, the Division issued an Administrative Order on Consent on September 9, 1986 to Kerr McGee Chemical Corporation (the "1986 Consent Order") requiring the remediation of the hexavalent chromium contamination in groundwater. Pursuant to the 1986 Consent Order, the Parties installed a system of monitoring and interceptor wells and groundwater treatment systems at and around the Site and the larger BMI Complex to slow the migration of impacted groundwater.

4. On April 25, 1991, the Division entered an Administrative Order on Consent (the "Phase 1 Consent Order") with land and facility owners within the BMI Complex which set the first phase of a three phase process to investigate, characterize, and if necessary, remediate the hazardous waste releases in the common areas, as well as individually owned sites, within the BMI Complex and surrounding lands and waters.

5. Based upon the reports received pursuant to the Phase 1 Consent Order, the Division issued an Administrative Order on Consent on August 1, 1996 to Kerr-McGee Chemical Corporation (the "Phase 2 Order") to require additional investigation, characterization, and if necessary, remediation of waste releases at or associated with the Site which may pose a threat to human health, welfare, or the environment.

6. In 1997, perchlorate was detected in the Colorado River. The source of this contamination was subsequently traced to the groundwater beneath the Site. On July 26 1999, the Division issued an Administrative Order on Consent to Kerr McGee Chemical, LLC (the "1999 Consent Order"), requiring the establishment of groundwater collection and treatment facilities to remediate this perchlorate contamination.

7. Following the installation of such remedial systems, the Division issued an Administrative Order on Consent to Kerr-McGee Chemical, LLC on October 8, 2001 (the "2001 Consent Order"), and again on April 12, 2005 (the "2005 Consent Order"), modifying and refining the remedial technologies and systems employed at the Site.

8. Since 2007, Basic Remediation Company ("BRC") has managed a Corrective Action Management Unit ("CAMU") pursuant to a RCRA permit to address source contaminants within the BMI Complex. The CAMU has been permitted to accept contaminated soils from individual corporate landowners within the BMI Complex, at significant cost savings due to its proximate location. Upon information and belief, BRC intends to cap off the CAMU in late 2010, thereby precluding any further deposits of contaminated soils.

9. Upon information and belief, Tronox is the beneficiary of an insurance policy with Chartis to address remediation at and around the Site, including the removal of contaminated soils to a CAMU. Upon information and belief, the Chartis insurance policy expires on December 31, 2010.

## II. FINDINGS OF ALLEGED VIOLATIONS: The Division finds and alleges as follows:

A. **FINDING:** Without waiving any claim against Kerr-McGee Chemical Corporation, Kerr-McGee Chemical, LLC, Anadarko Petroleum Corporation, its affiliates, predecessors-in-interest, and successors-in-interest or any other party, the Division finds that Tronox is a successor-in-interest, and an owner and operator of the Site subject to all laws, rules, regulations and standards promulgated by the State Environmental

Commission ("SEC"), and all orders and permits promulgated by the Department, as delegated to the Division.

B. **FINDING**: The Parties are in violation of NAC 445A.227, 445A.2271, 445A.22725, and 445A.2273 of the NWPCL, and NRS 459.565 of the NHWL for failing to complete required assessments and reports of the effectiveness of the pump and treat groundwater system ("the GWTS"). These actions also give rise to the violation of the 1986 Consent Order, the Phase 2 Consent Order and the 2001 Consent Order which were executed in accordance with this authority.

1. Pursuant to its authority under NRS 445A.445 (1), NAC 445A.227, 445A.2271, 445A.22725, and 445A.2273 of the NWPCL, and NRS 459.475(1) and 459.565 of the NHWL, the Division issued multiple administrative orders on consent to the Parties requiring the investigation, characterization, and remediation of releases at or associated with the Site which may pose a threat to human health, welfare, or the environment.

2. Pursuant to the 1986 Consent Order, paragraph 6, the Parties are required to demonstrate on a monthly basis that overlapping cones of depression are achieved. This has not been done, nor has any acceptable alternative been performed or proposed.

3. Pursuant to the 1986 Consent Order, paragraph 7, "If the monitoring results required in Paragraph 6, occurring six (6) months after initial operation of the intercept system, demonstrate that the system is not effectively collecting the intended groundwater plume, the Department may require KMCC to implement the Contingency Plan set forth in Paragraph 8." Paragraph 8 states "KMCC shall prepare and submit to the Department for review and approval an Intercept System Contingency Plan, pursuant to the schedule set forth in Appendix B. This Plan will set forth additional measures to be implemented to improve and update the installed Intercept System to correct, to the extent possible, the deficiencies identified."

   According to Appendix B of the 1986 Consent Order "the schedule of implementation for the proposed groundwater mitigation program at the Henderson Facility with time for completion after approval by the Nevada DEP" for the Intercept System Contingency Plan was 7 months. On December 18, 1986, the Division approved the "electrochemical reduction process for chromium-removal". Upon information and belief, this is the approval date referenced in Appendix B, and thus the Intercept System Contingency Plan

should have been submitted in July 1987. Upon information and belief, the Parties failed to submit a contingency plan.

4. Pursuant to the 2001 Consent Order, Section II.B., the Parties are required to install an extraction well system at the Athens Road area of the Site (as further described by the 2001 Consent Order), designed to remove up to 400 gallons per minute of groundwater with the objective of capturing perchlorate flux at this location. As noted herein, the Parties have failed to demonstrate this capture.

5. The Division advised Tronox that the GWTS does not appear to be providing adequate capture at either the Plant Site well field or at the Athens Road well field (each as further described in the Orders).

6. The Division has advised Tronox that the Seep Area well field (as described in the Orders) fails to provide capture of contaminants, and Tronox is currently flow-rate limited to address the Seep Area. The Parties have failed to provide an assessment and report indicating that additional capture is unnecessary in this area, nor have they attempted to capture additional contaminants.

7. The Division advised Tronox to install additional wells and to explore alternate treatment processes such as in-situ bioremediation in the Seep Area.

8. On March 28, 2007, the Division notified Tronox that it must evaluate and report on the effectiveness the GWTS. The Division requires this information so that it may accurately determine the necessity of further corrective action.

9. The Division has attempted to obtain this required information from Tronox informally without success. Between August 29, 2006 and August 28, 2007, the Division reiterated this requirement to Tronox on at least four occasions.

10. Tronox refuses to comply with these directives. Tronox contends that its existing insurance policy under Chartis will not cover multiple treatment systems such as an in-situ bioremediation. And to date, Tronox has refused to install additional wells.

11. Tronox submitted a work plan to evaluate the effectiveness of the GWTS (also known as the Capture Zone Analysis) on May 30, 2007, a revised work plan on August 30, 2007, and a second revised work plan on November 29, 2007.

12. On December 11, 2007, the Division approved the revised work plan dated November 29, 2007.

13. Tronox has failed to fully implement the approved work plan. Specifically, Tronox has failed to install the required wells in the Seep Area. Without the installation of these wells, any evaluation of the GWTS will be incomplete.

14. As of the date of this FOAV, Tronox has failed to provide to the Division a complete evaluation of the effectiveness of the GWTS.

C. **FINDING:** The Parties are in violation of the Phase 2 Consent Order, Section III. Parties Bound. The Phase 2 Consent Order was executed by Kerr-McGee Chemical Corporation. The notification requirements of Section III. regarding change of corporate status have not been complied with.

D. **FINDING:** The Parties are in violation of the Phase 2 Consent Order, Section IV. Work To Be Performed.

1. On October 3, 2005, the Division agreed to allow Tronox to complete a phased approach to the investigation of the sources of contamination at the Site. The data obtained from the required investigation is to be used to generate a Remedial Alternative Study ("RAS") to fulfill the Parties' obligations under the Phase 2 Consent Order.

2. Tronox has shown a history of inappropriate delay in the completion of this investigation. Between October 3, 2005 and November 2, 2007, the Division met with Tronox sixteen times to discuss the first phase of this investigation ("Phase A").

3. After approximately six months of delays and discussions, Tronox implemented and reported to the Division on November 2, 2007.

4. Between April 5, 2007 and December 4, 2008, the Division met with Tronox twenty-four times to discuss the second phase of this investigation ("Phase B"). The Phase B work plan was broken into six segments - Areas I through IV for soils, one segment for soil gas, and one for site-wide groundwater. Each of these segments required numerous revisions, delays, and Division mark-ups before they were acceptable and approved.

5. The Phase B Work plan has only recently been completed on November 12, 2009.

6. On October 7, 2009, Tronox discussed the draft results of the Area I Phase B investigation with the Division. To date, Tronox has failed to submit either draft or final results to the Division.

7. Tronox advised the Division that it will further investigate Area I based upon their initial, and to date undisclosed, results. Additional sampling was proposed on November 19, 2009. Tronox's sampling proposal was wholly deficient, and the Division requested the submission of additional information to complete the sampling proposal.

8. The Division has repeatedly expressed concern to Tronox and Chartis that remediation appears necessary, and that Tronox and Chartis have failed to provide an appropriate schedule to ensure that this work is completed in a timely fashion.

9. Tronox's responses to the Division's requests are unacceptable and in bad faith. The Phase 2 Consent Order has been in place for over thirteen years, and Tronox has not produced a RAS for any media (soil, groundwater, etc.) or for any area of the Site, as required by the Phase 2 Consent Order.

10. Without completion of the Deliverables required by the Phase 2 Consent Order, remediation contemplated by a Phase 3 Consent Order is stalled.

**E.** **FINDING:** The Parties are in violation of the Phase 2 Consent Order, Section XVII. Reimbursement of Division Oversight Costs. Tronox has failed to reimburse the Division for $37,024.52 as invoiced on April 6, 2009.

**F.** **FINDING:** The Parties are in violation of RCRA §§ 3004(u) and 3008(h) and 40 C.F.R. Part 265, Subpart H, and the 1986 Consent Order, paragraph 28. The Parties have failed to provide adequate financial assurance to address the unacceptable risks to human health and the environment posed by the contaminants at the Site.

1. The Site is subject to corrective action under RCRA 3004(u) and 3008(h).

2. The financial assurance provided by Kerr-McGee Chemical Corporation in the Post Closure Permit Application dated July 24, 1987 is no longer viable as Kerr McGee Chemical Corporation is in default of its financial assurance obligations.

3. Pursuant to the 1986 Consent Order, Paragraph 28, the Parties agreed to unconditionally guarantee performance of its obligations thereunder, and to affirm their financial capability on an annual basis, upon request by the Division.

4. The Division finds that financial assurance provided by Tronox through the Chartis insurance policy is now insufficient.
   i. Upon information and belief, the Chartis Policy is due to expire on December 31, 2010.
   ii. Remediation at the Henderson Facility is estimated to take more than ten years, well in excess of the twelve months of coverage remaining under the Chartis Policy.
   iii. Upon information and belief, the Chartis Policy disallows coverage of in-situ bioremediation in the Seep Area, contrary to the directive of the Division.

G. **FINDING:** The Parties are in violation of NRS 445A.465 for allowing pollutants discharged from a point source or fluids injected through a well to remain in place where the pollutants or fluids could be carried into the waters of the State by any means.

1. The delays caused by the Parties in violation of the Administrative Orders on Consent as outlined herein have caused undue delay of source control at or around the Site.

2. Over 800,000 cubic yards of contaminated soil are believed to remain on Site, resulting in exponentially higher costs of maintaining the GWTS, and frustrating the process of remediation.

3. The Parties currently have the ability to access the CAMU within the BMI Complex with capacity to hold the contaminated soils from the Site.

4. Immediate source control will significantly reduce the overall costs of the GWTS and remediation.

H. **FINDING:** The Parties' failure to operate the GWTS will result in imminent degradation of the Las Vegas Wash, Lake Mead and the Colorado River, and an imminent and substantial threat to human health, in violation of NRS 445A.305, NRS 459.400, NAC 445A.144.

1. Based upon the modeling conducted by the Division, with the assumption of a Las Vegas Wash base load of sixty pounds per day of perchlorate, the following is estimated:

a. The loading of perchlorate will increase by 23% immediately upon the GWTS being shut down.

b. The loading of perchlorate will increase by over 100% within 18 months of the GWTS being shut down.

c. The loading of perchlorate will increase by over 860% within 24 months of the GWTS being shut down.

2. Based upon information provided by Veolia Water North America, the operator of the GWTS, the following is estimated:

a. The microbial culture used in the GWTS will die within two to three days of the GWTS being shutdown.

b. It may take between six and twelve months to reestablish the microbial culture within the GWTS, should it die.

3. Based upon information provided by the Southern Nevada Water Authority (SNWA) and modeling conducted by their environmental contractor Flowscience, the following is estimated:

a. Concentrations of perchlorate in Lake Mead are expected to increase by 1200% within 24 months in the event that the GWTS is shut off.

b. Concentrations of perchlorate in the Colorado River system and the Metropolitan Water District intake pipeline are expected to increase by 300% within 24 months in the event that the GWTS is shut off.

4. Upon information and belief, over 25 million people rely upon these water bodies as a source of drinking water.

5. The Division finds the degradation of these water bodies is an unacceptable and imminent threat to human health under NRS 445A.305, NRS 459.400, NAC 445A.144.

6. Upon information and belief, Tronox may seek to abandon the Henderson Site after a sale of its assets in bankruptcy. The abandonment of the Site, and/or any loss of power or disabling of the GWTS will cause an imminent and substantial threat to human health. Tronox must present a plan to the Division demonstrating the continuation of the GWTS system, including an emergency

generator back-up system for the GWTS, or an alternate plan that is acceptable to the Division.

III. **CONCLUSION: Based upon the information set forth herein, the Nevada Division of Environmental Protection has determined that Tronox, LLC is in violation of the following provisions of the Nevada Administrative Code (NAC), the Nevada Revised Statutes (NRS), the Resource Conservation and Recovery Act (RCRA), and Division Administrative Orders on Consent.**

1. NAC 445A.227, 445A.2271, 445A.22725, 445A.2273, and NRS 459.565. Failure to complete required assessments and reports of the effectiveness of the pump and treat groundwater system ("the GWTS").

2. Phase 2 Consent Order, Section III. Parties Bound.

3. Phase 2 Consent Order, Section IV. Work To Be Performed.

4. Phase 2 Consent Order, Section XVII. Reimbursement of Division Oversight Costs.

5. RCRA §§ 3004(u) and 3008(h) and 40 C.F.R. Part 265, Subpart H. Financial Assurance.

6. 1986 Consent Order, paragraph 28. Financial Assurance.

7. NRS 445A.465. Allowing pollutants discharged from a point source or fluids injected through a well to remain in place where the pollutants or fluids could be carried into the waters of the State by any means.

8. NRS 445A.305, NRS 459.400, NAC 445A.144. The Division has a duty to address the imminent and substantial threat to human health and the environment caused by the Site.

Dec 14, 2009
Date

James Najima, Chief
Bureau of Corrective Actions