

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**  
INTEROFFICE MEMORANDUM

**Date:** January 8, 2010

**To:** Office of the Chief Clerk

**From:** Courtney Sprague, Senior Attorney, Litigation Division, Office of Legal Services  
Christa McLintock, Litigation Division, Office of Legal Services

**Subject:** Original Documents for the American Zinc Agreed Administrative Order

Attached are the original proposed American Zinc Agreed Administrative Order, Executive Summary and three copies of the mailing list address labels. Also attached behind the original documents are seven (7) additional copies of the proposed American Zinc Agreed Administrative Order, Executive Summary and the mailing list.

If you have any questions, please contact Ms. Christa McLintock, Staff Attorney, Litigation Division at 239-4610.

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**  
INTEROFFICE MEMORANDUM

**To:** Commissioners

**Date:** December 14, 2009

**Through:**  Mark R. Vickery, P.G., Executive Director  
 John Sadlier, Deputy Director, Office of Compliance and Enforcement

**From:**  Brent Wade, Director, Remediation Division  
Robert Patton, Section Manager, SSDAP/Superfund Section

**Subject:**  Docket No. 2009-1355-SPF  
Executive Summary  
Consideration of a Final Administrative Order, pursuant to Tex. Health & Safety Code ch. 361, regarding the American Zinc State Superfund Site, Dumas, Moore County, RN: 105172894 which sets forth the terms of the agreement by which the agreeing respondent will conduct the remedial design/remedial action at the Site, orders the responsible parties to remediate the Site, and includes the listing of the Site on the state registry of superfund sites, the selection of the remedial action, and determination of responsible parties. The American Zinc State Superfund Site is located 3 miles east on F.M. 119, northeast of Dumas. (Otu Ekpo-otu, Christa McLintock)

**I. Overview**

The American Zinc Proposed State Superfund Site (Site) is located in Dumas, in Moore County, Texas, approximately 3.5 miles north on U.S. 287 and 3 miles east on F.M. 119. The Site is approximately 320 acres where historic activities associated with the operation of a zinc smelter facility resulted in the contamination of the soil with arsenic, lead, cadmium, and zinc, the chemicals of concern (COCs) for this Site. The Site includes the Source Property, consisting of the property tract (approximately 260 acres) where the former smelting facility once operated and the Non-source Property, consisting of the remaining area that is located outside the boundaries of the Source Property (approximately 60 acres) that has been impacted by the Source Property as depicted in the Site map, attached as Exhibit G to the Agreed Order. The surface soil (0-2 feet from the surface) on portions of the Source Property contains COCs at levels that are above the protective concentration levels (PCLs) for commercial/industrial sites. While the COCs in surface soils on the Non-source Property areas were below the commercial/industrial PCLs, the COCs are above the residential PCLs on some portions of the Non-source property. Subsurface soils, 2 feet and below from the surface, on both the Source and Non-source Properties were not affected by COCs. Groundwater was not affected by the COCs at the Site, so there are no current completed exposure pathways to groundwater.

The overlying land use on both the Source and the Non-source Properties is commercial/industrial. The Source Property is currently vacant, except for a commercial tenant who rents a building from the current owner to operate a welding business in the western portion of the Source Property, an area not affected by smelting operations. The Non-source Property consists of pastures (to the north, east and west) and cropland to the south and west.

The proposed remedy for this Site includes consolidation, capping and institutional controls for the affected surface soil on the Source Property and institutional controls, soil treatment, or other appropriate methods provided by rule for the affected surface soil on the Non-source Property. Blue Tee Corp. has agreed to perform the remedial action under the terms of this administrative order.

The remainder of this memorandum summarizes the American Zinc Site regulatory history, characterization of nature and extent of the contamination, removal action, remedy selection process, efforts to identify responsible parties (RPs), and staff recommendation.

## **II. Site Regulatory History**

The Site was operated as a zinc smelter from the late 1930's until the late 1960's/early 1970's, generating heavy metal waste (e.g. slag and retort) typical to that process. The facility was decommissioned in the early 1970s.

In November 1987, as part of an inspection, the Texas Water Commission (TWC), predecessor agency to the TCEQ, collected samples from various locations around the Site, including the adjacent dry Creek. Analysis showed significant contamination from lead and cadmium. In August 1989, the TWC and Texas Department of Highway and Public Transportation, predecessor agency to the Texas Department of Transportation, collected soil samples along the roadways within the city of Dumas. The analytical results indicated some contamination from lead and cadmium.

On September 6, 1989, TWC personnel collected surface soil samples along the dry bed of the south Palo Duro Creek and on the adjacent properties. Soil analytical results indicated elevated levels of cadmium and lead. South Palo Duro Creek is ephemeral and only flows following a significant precipitation, which is infrequent in this part of Texas. Because of its intermittent nature, the Palo Duro Creek on both the Source and Non-source properties does not represent aquatic habitat, and TCEQ evaluated the creek bed sediment samples as surface soil samples. After further evaluation of surface water samples collected from four locations in South Palo Duro Creek after a rainfall, TCEQ determined that the surface water samples did not contain COCs above PCLs. Therefore, surface water was not considered a potentially affected medium for this Site.

The TCEQ began an evaluation of the American Zinc Site for inclusion in the Superfund program by completing the Hazard Ranking System (HRS) report pursuant to 30 Texas Administrative Code (TAC) § 335.343. The HRS report is a numerically based screening system that uses information from initial investigations to assess whether a site qualifies for the State or Federal Superfund Program. The HRS scoring for the American Zinc Site was prepared by the TCEQ in March of

1993, and the Site earned a score of 15.21, which met the minimum HRS score qualifications for the State Superfund Program. On October 15, 1993, notices were published in the *Moore County News Press* and the *Texas Register* (18 Tex. Reg. 7201-7202) proposing the Site for listing on the State Registry of Superfund Sites and also proposing to use commercial/industrial land use specifications for remediation of the Site contamination. A public meeting to receive comment on the proposed listing was held at the City Hall in Dumas on November 16, 1993.

In accordance with Section 361.185 of the Texas Health and Safety Code, the identified potentially responsible parties (PRPs) were given an opportunity to fund or perform the remedial investigation/feasibility study (RI/FS) by letter dated, June 9, 1994. Upon receipt of a good faith offer (GFO) to fully fund or perform the RI/FS activities, the TCEQ negotiated an Administrative Order (docket number 95-0992-SPF-E) with Blue Tee Corp., Gold Fields Mining Corporation and Global Energy Finance, whereby the parties would perform the RI/FS activities to determine the nature and extent of contamination.

### **III. Characterization of the Nature and Extent of Contamination**

Blue Tee Corp. began conducting the Remedial Investigation (RI) in May 1996. The RI included the analysis of surface soils on both the Source and Non-source Properties. The RI analysis revealed that residue generated from the smelting operations was deposited in molten state that formed a solid mass upon cooling (slag). Another residue of the smelting process consists of broken clay vessels that were used to contain the zinc concentrates in the smelting furnaces (retort rubble). The RI confirmed that arsenic, cadmium, and lead were the only constituents of potential concern detected in surface soils on both the Source Property and the Non-source Property. Surface soil on the portion of the Source Property, where the former smelting facility once operated, also contained lead and arsenic above background. The RI concluded that the COCs are predominantly related to the presence or absence of slag within the Site. The RI also confirmed that the concentration of COCs decreased rapidly with distance from the location of the former smelter. Ambient air samples were collected from upwind and downwind directions and analyzed for COC's. The ambient air samples contained arsenic and zinc in one upwind location, cadmium and zinc in one downwind location at concentrations below their National Ambient Air Quality Standards.

In 1996, Blue Tee conducted a water well search and identified 113 wells within a three mile radius of the Site, including three production wells at the Source Property. On June 5, 1996 and July 10, 1996, Blue Tee Corp. collected and analyzed groundwater samples from two of the three production wells at the Site. Analytical results through two rounds of sampling indicated that COCs were not present in the groundwater at concentrations above their residential PCLs.

In July 1997, Blue Tee Corp. evaluated the potential ecological risks associated with the COCs at the Site (on both Source and Non-source Properties) and concluded that the concentrations of metals in the vicinity of the Site do not pose a potential risk to ecological receptors. Blue Tee Corp. submitted the R/I report to the TCEQ in January 1998 and TCEQ approved the RI in March 1998.

From October 1998 through March 1999, Blue Tee performed supplemental investigations to fully define the horizontal extent of the contamination at the Site. The concentrations of arsenic, lead, and cadmium in surface soils in some areas of the Source Property exceeded the commercial/industrial PCLs. Non-source Property concentrations of the COCs in surface soils along the drainage ditch south of the Source Property were above the residential PCLs, but below the commercial/industrial (current land use) PCLs. COCs within the subsurface soils were below the residential PCLs and were protective of groundwater.

The RI concluded that the Affected Property, the property area which contains releases of COCs at concentrations above PCLs, on the Site is limited to the surface soils on the Source Property and Non-source Property. Arsenic, cadmium, lead, and zinc were the only COCs found on the Source and Non-source Properties. The concentrations of these COCs are protective of the current commercial/industrial (including agricultural) land use on the Non-source Property, but are not protective of the current commercial/industrial land use on eastern half of the Source Property.

Additionally, in November 2003, Blue Tee Corp prepared a site-specific Ecological Risk Assessment (ERA) for the Site. The ERA documented no significant risk to ecological receptors from exposures at the Site.

#### **IV. Removal Action**

On May 26, 1994, the TNRCC (predecessor to TCEQ) held an informational gathering meeting in Dumas to conduct a survey of area residents who may have had slag material from the American Zinc Site placed on the residents' property. On June 26, 1994, a public notice was placed in The Moore County News Press to further assist TCEQ with efforts to coordinate with residents about addressing contamination on their property that was associated with the American Zinc Site. On October 17, 1997, sampling confirmed that the commercial property and four of the six residential properties sampled actually contained the slag material.

TCEQ completed the removal action to remove visible slag material and surrounding contaminated soil on October 19, 1998. The removal action was supported by a 1995 Texas Department of Health (TDH) health consultation that focused on the six residential properties and one commercial property, and the removal action consisted of the excavation and consolidation of surface soils from the four residential properties on the Non-source Property and on the affected areas of the eastern half of the Source Property. The contaminated soil from both the Source and Non-source Properties will be fully addressed within the proposed remedy for the Site.

#### **V. Remedy Selection Process**

In February 2006, Blue Tee submitted a FS to the TCEQ to evaluate the appropriate remedial options to clean-up the contaminated soil at the Site. The following options were considered in the FS:

- Option A, No Remedial Action

Under this alternative, the Source Property and Non-source Property portions of the Site would remain in their current state. Other than what may already be in place, institutional controls are not included under this alternative. This alternative would not include annual monitoring of the land use of the Source and Non-source Properties to ensure that human receptors are not at risk as a result of unlikely future development. This alternative was not selected because it was not compliant with the Texas Risk Reduction Program (TRRP) Rules, 30 T.A.C. § 350.1 et seq. The estimated cost for this option is \$24,525.

- Option B, Physical and Institutional Controls for Source and Non-source Property

The physical control would have included installing a fence around the soil cap with signs on both Source and Non-source Properties in order to limit access to and contact with surface soils that are not protective of human health and the environment. Institutional controls would have included filing either a restrictive covenant or deed notice on Source and Non-source Properties to notify the property owners and the public that the levels of the COCs present in the surface soil at the Site are not protective of human health and the environment. The institutional controls would have addressed the physical control, a soil cap, limiting access to soils where COCs are above PCLs, and would have included a provision limiting the land use of the Source Property area to industrial/commercial use only. This alternative includes an annual site investigation to ensure the land use remains commercial/industrial and the physical control remains in place, undisturbed. The estimated cost for this option is \$189,965.

- Option C, Consolidation, Capping and Institutional Controls for Source Property and Institutional Controls for Non-source Property Areas to the North, East, and South of the Site

Under this alternative, affected surface soil with a concentration of metal that is not protective of commercial and industrial land uses would be excavated and consolidated on the southeastern portion of the Source Property. The consolidated area would then be capped with approximately 12 inches of soil borrowed from the western one third portion of the Source Property area, where the soil metal concentration is below the PCLs. The use of a soil cap as a technology for limiting access to soils where COCs are above PCLs is based on the fact that vertical migration of COCs to groundwater has not been documented and is not expected. The capped thickness is based on the fact that metals have been demonstrated to not leach in the soil column, and groundwater is more than 250 feet below the ground surface at the Site. The capped area would be graded and vegetated to prevent erosion. A restrictive covenant or deed notice would be placed on the consolidated area to notify the public and property owner(s) that the area should not be disturbed and that the property may only be used for commercial and industrial purposes.

Institutional controls for Non-source Property areas of the Site would include filing either a restrictive covenant or deed notice on Non-source Properties to notify the property owners and the public that the levels of the COCs are not protective of human health and the environment. The institutional controls would have addressed the physical control, and would have included a provision limiting the land use of the Non-source Property area to industrial/commercial use only. The estimated cost for this remedial option is \$467,855.

- Option D, Consolidation, Capping and Institutional Controls for Source Property and a Restrictive Covenant, Soil Treatment, or Other Appropriate Methods for the Non-source Property Soil Exceeding Residential Protective Concentration Levels

Under the selected remedy on the Source Property, affected surface soil with metal concentrations above commercial and industrial PCLs will be excavated and consolidated on the southeastern portion of the Source Property. The consolidated area will be capped with approximately 12 inches of soil borrowed from the western one third portion of the Source Property, where the soil metal concentrations are below PCLs. The capped soil area will then be graded and vegetated to prevent soil erosion. The use of a soil cap is an effective remedy for limiting access and exposure to soil containing COCs above PCLs for the following reasons: (1) Vertical migration of the soil containing COCs to groundwater has not been documented; and (2) Metals also have not been demonstrated to leach through the thick, clay soil column and subsequently into the groundwater, which is more than 250 feet below the ground surface. Institutional controls, such as a restrictive covenant or a deed notice, will be placed on the consolidated area of the Source Property to notify the public and property owner(s) that the soil cap should not be disturbed and that the Source Property should only be used for commercial and industrial purposes.

Under the selected remedy on the Non-source Property, there are several remedial options, depending upon each landowner's preference. The first remedial option includes placing institutional controls, such as a restrictive covenant or a deed notice, on the Non-source Property areas with affected surface soil, containing metal concentrations above residential PCLs. Institutional controls will be placed on the affected soil on the Non-source Property to notify the public and property owner(s) that the affected surface soil should not be disturbed and the affected property should only be used for commercial and industrial purposes, which is the current land use.

If a land owner does not agree to place institutional controls on his or her property, other remedial options to address the affected surface soil are available. The second remedial option includes deep tilling and treating the affected Non-source Property soil with a soil amendment to the total depth of impacted soil in order to reduce and stabilize the metals. After treatment, the treated area will be sampled to confirm that the metals in soil are below their respective PCLs and are protective of human health and the environment in accordance with the

designated land use. The use of deep tilling and soil treatment of the affected soil on the Non-source Property will result in binding the metals to the soil reducing its solubility, and limiting its availability to humans and the environment.

If the landowner does not agree to the first remedial option, to place institutional controls on his or her property, or the second remedial option, deep tilling and treating the affected property, other appropriate remedial options are still available. Similarly, if the landowner agreed to the second option, but the second option is ultimately unsuccessful and after tilling and treating the affected soil, sampling confirms that the affected soil still contains metals above their respective PCLs, other appropriate remedial options are still available. The appropriate methods under the third remedial option to address affected surface soil will be property-specific, in compliance with the TRRP Rules, 30 T.A.C. § 350.1 et seq., and may include excavation of affected surface soil. Excavation of soil on the Non-source Property will include excavating the affected surface soil and transporting it to the Source Property, where the soil will be deposited into the consolidation area on the southeastern portion of the Source Property. As described above under the selected remedy of the Source Property, the consolidated area will be capped with approximately 12 inches of soil borrowed from the western one third portion of the Source Property area, where metal concentrations in the soil are below PCLs. The capped soil area will then be graded and vegetated to prevent soil erosion. The excavated area will be backfilled with soil that have not been affected by the operations at the Site and the surface of the backfilled area will be contoured and seeded to match the surrounding land. The use of the other identified appropriate methods on the affected soil on the Non-source Property is an effective remedy because it prevents exposure of affected soils to humans and the environment and complies with the applicable regulatory requirements. The estimated cost for this remedial option is \$778,170.

- Option E, Consolidation, Capping and Institutional Controls for Source Property and a Restrictive Covenant or Soil Excavation and Replacement of Non-source Property Soil Exceeding Residential Protective Concentrations

This alternative consists of capping and placing institutional controls, such as a restrictive covenant or a deed notice, similar to Alternative C and D above with the exception that the foot print of the capped area could be larger under this alternative because of the additional volume of soil potentially excavated from Non-source Property areas and transported on to the Source Property for use as capping material.

This alternative is similar to Alternative D above with the exception that if the property owners do not agree to the placement of a restrictive covenant on their land, soil from Non-source Property areas with metal concentrations exceeding the residential PCLs would be excavated and replaced with clean fill rather than treated. If the Non-source Property landowners do not agree to place a restrictive covenant on their land, then surface soil with metal concentrations exceeding the residential PCLs would be excavated and replaced with clean fill borrowed from

the western margin of the Site. The excavated material would be transported to Source Property, consolidated, and capped. After soil replacement, the remediated areas would be contoured and seeded. The depression from the Source Property borrow area would be graded using soil from surrounding unaffected area and seeded. The estimated cost for this option is \$1,777,645.

The evaluation of the remedial options was based on long-term effectiveness, compliance with applicable regulations, reduction in toxicity, mobility and volume of COCs, relative cost, impacts of implementation, and technical merit. Based on this evaluation, the selected remedy is consolidation, capping and institutional controls for the Source Property and institutional controls, soil treatment or other appropriate methods for the affected surface soil on the Non-source Property (Option D). The institutional controls will be secured and implemented in accordance with the TRRP Rules, 30 T.A.C. § 350.111 and will remain in place unless it is demonstrated that concentrations of contaminants in soil no longer exceed the applicable clean-up levels.

The selected remedy meets the criteria established in 30 T.A.C. §335.348, including the requirement that “the remedial action for a particular facility shall be selected based on the remedial alternative that the executive director determines to be the lowest cost alternative which is technologically feasible and reliable, effectively mitigates and minimizes damage to the environment, and provides adequate protection of the public health and safety of the environment.”

The proposed remedy was presented for public comment on November 9, 2007 and was the subject of a public meeting held in Dumas on December 13, 2007. TCEQ received no public comment in opposition to the proposed remedy.

A complete summary of TCEQ RI/FS activities can be found at <http://www.tceq.state.tx.us/remediation/superfund/state/americanzinc.html>.

## **VI. Efforts to Identify Responsible Parties**

The TCEQ has identified four persons that are RPs for the solid waste and/or hazardous substances at the Site in accordance with Section 361.271 of the Texas Health and Safety Code. The RPs have been identified after TCEQ retained Techlaw, Inc. as a subcontractor to conduct searches of record information to identify PRPs associated with the Site. Techlaw completed PRP searches, including an extensive review of available Site records, historic land ownership records, interviews of individuals associated with the Site, aerial photographs, corporate records, and other public records. Techlaw provided the collected PRP information to the TCEQ in a PRP search report, detailing which persons are considered PRPs. In accordance with Section 361.187 of the Texas Health and Safety Code, TCEQ provided the identified PRPs an opportunity to fund or perform the remedial action by letter dated, February 27, 2008. On March 22, 2008, Blue Tee Corp. (on behalf of American Zinc) made a GFO to fund/perform the Remedy at the Site. On April 17, 2008, the TCEQ conducted a meeting at the request of some of the PRPs to facilitate the possibility of settlement

among the PRPs and the TCEQ. Thereafter, the PRPs requested and were granted additional time to discuss settlement, but TCEQ received no other GFOs from any other PRP. After no other GFOs were received, the TCEQ and Blue Tee Corp. negotiated the terms of this Administrative Order.

## **VII. Staff Recommendation**

The TCEQ staff recommends that the Commission issue this Administrative Order to require the agreeing respondent and RPs to implement the selected Remedial Design/Remedial Action, which is cost effective and protective of public health and safety and the environment, and the RPs to repay the TCEQ investigation costs as authorized by Section 361.188 of the Texas Health and Safety Code. Issuance of the Order will also cause the Site to be listed on the state registry of superfund sites and make a determination as to RPs.

If you have any questions, please contact Mr. Otu Ekpo-Otu, P.G., Project Manager, Remediation Division at 239-2445, or Ms. Christa McLintock, Staff Attorney, Litigation Division at 239-4610.

**DOCKET NUMBER 2009-1355-SPF**

**IN THE MATTER OF  
THE SITE KNOWN AS  
AMERICAN ZINC STATE  
SUPERFUND SITE**

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**BEFORE THE  
TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY**

**AN ADMINISTRATIVE ORDER**

**I. Introduction**

On \_\_\_\_\_, the Texas Commission on Environmental Quality ("Commission" or "TCEQ") considered the Executive Director's ("ED") allegations of the existence of a release or threat of release of solid wastes and/or hazardous substances into the environment on, at or from the American Zinc Proposed State Superfund Site ("Site") that poses an imminent and substantial endangerment to the public health and safety or the environment pursuant to the Solid Waste Disposal Act, TEX. HEALTH & SAFETY CODE, Chapter 361 (the "Act"), and the ED's requested relief including issuance of a Commission order to require persons responsible for the release or threat of release of such solid wastes or hazardous substances to perform the Work, as defined herein, including conducting the Remedial Activities, as authorized by Sections 361.188 and 361.272 of the Act.

After proper notice, the TCEQ makes the following Findings of Fact and Conclusions of Law:

**II. Findings of Fact**

A. For purposes of this Administrative Order ("AO"), TCEQ has identified the following persons that are potentially responsible parties ("PRPs") for the solid waste and/or hazardous substances at the Site:

Illinois Zinc Company  
Defense Plant Corporation  
Peru Mining Company

and these parties

1. are the owners or operators of the Site;

2. owned or operated the Site at the time of processing, storage, or disposal of any solid waste;
  3. by contract, agreement, or otherwise, arranged to process, store, or dispose of, or arranged with a transporter for transport to process, store, or dispose of solid waste owned or possessed by the PRPs or by any other person or entity at the Site; or
  4. accepted solid waste for transport to the Site as selected by the PRP.
- B. Reserved.
- C. The following PRPs entered into this AO as Agreeing Respondent(s) but do not admit liability regarding the Site. The Agreeing Respondent(s) do, however, submit to the jurisdiction of the court for the purpose of enforcing this AO. Each of these Agreeing Respondent(s) entered into an Agreeing Respondent(s) Consent Form included in Exhibit B.
- Blue Tee Corp. (American Zinc)
- D. When ranked, the Site had a State Superfund Hazard Ranking System ("HRS") score of 15.21.
- E. The portion of the Site used for ranking on the state registry of superfund sites is comprised of five tracks of land described as follows:

Tract 1

That certain tract of 4.63 acres described in a deed from Daisy C. Nield to American Zinc Company of Illinois dated July 7, 1943, recorded in vol. 79 pages 526-527, Deed Records, Moore County, Texas

Tract 2

All of the southeast quarter (SE ¼) of section Three Hundred Sixty-one (361), Block forty-four (44), H&TC RY. Co. Survey, in Moore County, Texas, being all of the land described in that deed from W. Coffee to Illinois Zinc Company dated May 14, 1936, recorded volume 58, pages, Deed Records of Moore County, Texas.

Tract 3

All of the southwest quarter (SW ¼) of Section Three Hundred And Sixty One (361) Block Forty-Four (44) H&TC RY. Co. Survey, in Moore County, Texas being all of the land described in that deed from William L. Chamberlain to American Zinc Company of Illinois dated August 25, 1950, recorded in Vol. 111, pages 572-573, Deed Records of Moore County, Texas.

Tract 4

A Tract of 0.43 acres of land out of the southwest quarter (SW ¼) of section Three Hundred Sixty-one (361), Block forty-four (44), H&TC Ry. Co. Survey, in Moore County, Texas, being the land more particularly described in that certain deed from William L. Chamberlain to American Zinc Company of Illinois dated September 6, 1941, recorded in volume 76, pages 56-57, Deed Records of Moore County, Texas.

Tract 5

All of the right, title and interest of American Zinc Company, Grantor, in and to that tract of 6.71 acres of land out of section Three Hundred Sixty-one (361), Block forty-four (44), H&TC Ry. Co. Survey, in Moore County, Texas, described in that deed from William L. Chamberlain to North Plains and Santa Fe Railway company, recorded in Volume 58, pages 164-165, Deed Records of Moore County, Texas

- F. The Site consists of the area listed in Paragraph E above. In addition, the Site includes any areas outside the area listed in Paragraph E above where as a result, either directly or indirectly, of a release of solid waste or hazardous substances from the area described in Paragraph E above, solid waste or hazardous substances have been deposited, stored, disposed of, placed or have otherwise come to be located.
- G. The Site was proposed for listing on the State Registry of Superfund Sites in the *Texas Register* on October 15, 1993 [18 Tex. Reg. 7201-7202].
- H. The Site has historically been used as a zinc smelter from the late 1930's until as late as the early 1970's, generating heavy metal waste, slag material, which is waste typical the zinc smelting process.
- I. The Chemicals of Concern at the Site include those substances listed in Exhibit C. The substances listed in Exhibit C have been processed, deposited, stored, disposed of, placed or have otherwise come to be located on the Site.
- J. The substances listed in Exhibit C have been documented in surface soil at the Site.
- K. The substances listed in Exhibit C are:

1. substances designated under Section 311(b)(2)(A) of the Federal Water Pollution Control Act, as amended (33 United States Code ("U.S.C.") Section 1321);
  2. elements, compounds, mixtures, solutions, or substances designated under Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") (42 U.S.C. Section 9601 et seq., as amended);
  3. hazardous wastes having the characteristics identified under or listed under Section 3001 of the Federal Solid Waste Disposal Act, as amended (42 U.S.C. Section 6921), excluding wastes, the regulation of which has been suspended by Act of Congress;
  4. toxic pollutants listed under Section 307(a) of the Federal Water Pollution Control Act (33 U.S.C. Section 1317);
  5. hazardous air pollutants listed under Section 112 of the Federal Clean Air Act, as amended (42 U.S.C. Section 7412); or
  6. any imminently hazardous chemical substances or mixtures with respect to which the administrator of the Environmental Protection Agency ("EPA") has taken action under Section 7 of the Toxic Substances Control Act (15 U.S.C. Section 2606).
- L. The substances listed in Exhibit C include the following: garbage; rubbish; refuse; sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility; or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations and from community and institutional activities, or hazardous substances, for the purposes of TEX. HEALTH & SAFETY CODE Sections 361.271 through 361.277 and 361.343 through 361.345.
- M. The substances listed in Exhibit C are solid wastes or hazardous substances.
- N. Solid wastes or hazardous substances at the Site listed in Exhibits C are, or potentially are, spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.
- O. Potential pathways for exposure to the solid wastes or hazardous substances listed in Exhibit C include soil ingestion and inhalation of soil particulates.

- P. Exposure to levels of Lead, Cadmium, Arsenic and Zinc found at the Site poses an unacceptable carcinogenic risk or an unacceptable toxicity risk.
- Q. The solid wastes or hazardous substances at the Site are not capable of being managed separately under the remedial action plan.
- R. On October 4, 1993, the Commission provided written notice of the proposed listing of the Site on the State Registry to each PRP identified as of that date at the PRP's last known address.
- S. On October 31, 2007, the Commission provided written notice of the public meeting and of the opportunity to comment on the proposed Remedy as specified in Sections 361.187(b) and (c) of the Act to each PRP identified as of that date at the PRP's last known address.
- T. On February 27, 2008, each PRP identified as of that date was provided an opportunity to fully fund or perform the proposed Remedial Activities, as specified in Sections 361.187(d) and 361.133 (c) of the Act.
- U. The parties listed on Exhibit E entered into an Agreed Administrative Order with the TCEQ on July 12, 1995 and as amended on December 1, 1999 to voluntarily perform a Remedial Investigation/Feasibility Study ("RI/FS") that was performed and led to the development of the Remedy Selection Document ("RSD").
- V. The RSD for the Site is attached to this AO as Exhibit A.
- W. The remedy adopted in Exhibit A is selected as the Remedy, as defined in Section IV, B, to be implemented in accordance with this AO.

### III. Conclusions of Law and Determinations

- A. The PRPs listed in Section II (Findings of Fact) Paragraph A are responsible parties ("RPs") pursuant to Section 361.271 of the Act.
- B. Some of the substances referenced in Section II (Findings of Fact) Paragraph I, which are found at the Site, are hazardous substances as defined in Section 361.003(11) of the Act.
- C. Some of the substances referenced in Section II (Findings of Fact) Paragraph I, which are found at the Site, are solid wastes as defined in Section 361.003(34) of the Act.

- D. Hazardous substances were deposited, stored, disposed of, placed or otherwise came to be located at the Site and solid wastes were stored, processed, disposed of, or discarded at the Site.
- E. The Site is a facility as defined in Section 361.181(c) of the Act.
- F. The Site is a solid waste facility as defined in Section 361.003 (36) of the Act.
- G. "Imminent and substantial endangerment" is defined by rule as follows: A danger is imminent if, given the entire circumstances surrounding each case, exposure of persons or the environment to hazardous substances is more likely than not to occur in the absence of preventive action. A danger is substantial if, given the current state of scientific knowledge, the harm to public health and safety or the environment which would result from exposure could cause adverse environmental or health effects. 30 TEX. ADMIN. CODE Section 335.342.
- H. There has been a release (as defined in Section 361.003(28) of the Act) or threatened release of hazardous substances or solid wastes into the environment at the Site that poses an imminent and substantial endangerment (as defined in 30 TEX. ADMIN. CODE Section 335.342) to the public health and safety or the environment and, therefore, the Site will be listed on the State Registry of Superfund Sites as per Section V (Order) Paragraph A below.
- I. The release or threatened release of hazardous substances or solid wastes into the environment at or from the Site has not been proven to be divisible pursuant to Section 361.276 of the Act.
- J. The actions required by this AO are reasonable and necessary to protect the public health and safety or the environment.
- K. The Site is ineligible for listing on the National Priorities List ("NPL") because the HRS score was below 28.5.
- L. Funds from the Federal Government are unavailable for the Remedial Activities at this Site under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended (CERCLA) because the Site is ineligible for the NPL.
- M. The Agreeing Respondent(s) and the ED recognize, and the Commission by issuing this AO finds, that this AO has been negotiated in good faith and that implementation of this AO will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Agreeing Respondent(s) and the ED, and that this AO is fair, reasonable, and in the public interest.

N. This AO represents the complete and fully integrated agreement of the Agreeing Respondent(s) and the ED.

IV. Exhibits and Definitions

A. The following exhibits are incorporated by reference into this AO:

“Exhibit A” Remedy Selection Document

“Exhibit B” Agreeing Respondent(s) Consent Form

“Exhibit C” List of Solid Wastes and Hazardous Substances at the Site

“Exhibit D” Field Sampling Plan Contents Outline

“Exhibit E” List of Parties who entered into the RI/FS AO

“Exhibit F” Data Quality Objectives (“DQO”)

“Exhibit G” Site Map Depicting the Areas to be Addressed as Presented at the American Zinc Public Meeting Held on December 13, 2007

B. The following terms have the meaning set out below:

“Agreeing Respondent(s)” The PRPs listed in Section II (Findings of Fact) Paragraph C that fund or perform the Work and have agreed to the terms and conditions of this AO as evidenced by signing a consent form.

“Areas to be Addressed” The areas depicted in Exhibit G, which were identified during the Remedial Investigation and Feasibility Studies as containing chemicals of concern above protective concentration levels, as defined in the Texas Risk Reduction Program, 30 TEX. ADMIN. CODE Chapter 350.

“Chemicals of Concern” Any chemical that has the potential to adversely affect ecological or human receptors due to its concentration, distribution, and mode of toxicity.

“Day” A calendar day.

“Defaulting Performing” Any Performing Party that fails to comply with the terms or

Party”	conditions of this AO.
“De Minimis Responsible Party”	The PRPs listed in Section II (Findings of Fact ) Paragraph B.
“Demobilization”	The dismantling and removal of all construction equipment from the Site.
“Effective Date”	The Day ten (10) Days after the issue date of this AO.
“Executive Director (ED)”	The Executive Director of the TCEQ or a designee.
“Include”	Use of the term include, in all its forms, in this AO is intended to express an enlargement or illustrative application specifying a particular thing already included within the preceding general words. It is not used as a term of limitation.
“Institutional Control”	A legal instrument which indicates the limitations on or the conditions governing use of the property which ensures protection of human health and the environment in accordance with 30 TEX. ADMIN. CODE Chapter 350 and as required by the Remedy.
“Parties”	Collectively, the Respondent(s) and the Commission.
“Performing Parties”	Collectively, the Agreeing Respondent(s) and persons that did not enter into this AO but that fund or perform the Work.
“Post Construction Activities (PCA)”	All Remedial Activities at the Site, subsequent to issuance of the Approval of RA Completion, required to complete the Remedial Activities in accordance with this AO.
“Post Construction Cost Estimate”	An estimate of the cost to perform all of the PCA for as long as post construction activities are needed.
“Project Manager”	The individual designated by the ED to oversee implementation of the Work and to coordinate communications with the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties.
“Remedial Action (RA)”	Those Remedial Activities, except for Post Construction Activities, undertaken at the Site, including on-site physical construction and any required institutional controls, to implement the Remedy. The areal extent of the RA is not limited to the Site. It includes all suitable areas in proximity to the Site necessary for implementation of the Remedial Activities.

"Remedial Activities"	The RD, RA, PCA, (as defined herein) and any other actions required to implement and maintain the Remedy (as defined herein) pursuant to the RSD and 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350.
"Remedial Activities Contractors"	The individual, company, or companies retained by the Agreeing Respondent(s), or if there are no Agreeing Respondent(s) to this AO, by the Performing Parties to undertake any or all phases of the Remedial Activities. Remedial Activities Contractors cannot assume the role of any quality assurance official required by this AO.
"Remedial Design (RD)"	Those Remedial Activities during which engineering plans and technical specifications are developed for the Remedy.
"Remediation Goals"	Cleanup standards or other measures of achievement of the goals of the Remedy, consistent with the Act, 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350, determined by ED to be necessary at the Site to achieve and to maintain the Remedy.
"Remedy"	The Remedy adopted for the Site in the Remedy Selection Document to clean up or control exposure at the Site in accordance with all applicable laws and regulations and to be implemented in accordance with this AO. The Remedy includes all applicable requirements contained in the Act, 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350.
"Remedy Selection Document (RSD)"	The document that was developed for the Site, based on Site specific information, that specifies the Remedy, and that was adopted by the ED and TCEQ after the opportunity for public review and comment.
"Responsible Parties (RPs)"	The PRPs listed in Section II (Findings of Fact) Paragraph A.
"Respondent(s)"	Collectively, the Agreeing Respondent(s), the RPs, the De Minimis Responsible Parties, and the Performing Parties.
"Samples"	Samples of environmental media taken pursuant to and in accordance with this AO.
"Sections"	Those major divisions of this AO designated by Roman numerals.
"Site Coordinator"	The individual designated by the Agreeing Respondent(s), or if there are no Agreeing Respondent(s) to this AO, by the Performing Parties

to oversee the Remedial Activities Contractors and the implementation of the Remedial Activities and to coordinate communications with the ED.

“Site Representative” A person designated by the Project Manager that is authorized to oversee the Remedial Activities.

“Substantial Completion” The point, as determined by the ED in his sole discretion, at which the Work (or a specified part thereof) has been substantially completed in accordance with any work plans or documents required to be developed pursuant to this AO.

“Work” All activities to be undertaken or performed in accordance with and as required by this AO.

V. Order

Therefore, the TCEQ orders:

- A. The Site will be listed on the State Registry of Superfund Sites.
- B. Reserved.
- C. Respondent(s), other than any De Minimis Responsible Parties, and those parties that funded or performed the remedial investigation (“RI”) and Feasibility Study (“FS”), shall reimburse the Hazardous and Solid Waste Remediation Fee Account for all of the ED’s costs of the RI/FS, including the oversight costs of these activities. Respondent(s), other than any De Minimis Responsible Parties, shall reimburse the Hazardous and Solid Waste Fee Account for all uncompensated Pre-Remedial Investigation costs, including oversight costs of these activities. The Agreeing Respondent agrees to pay three thousand eighty-seven dollars and thirty-four cents (\$3,087.34).

The RPs and any Defaulting Performing Parties shall reimburse the Hazardous and Solid Waste Remediation Fee Account for all costs incurred by the ED in implementing and in overseeing the Work and for any costs incurred by the ED for activities other than the RI and FS to the extent that such costs have not been paid.

Reimbursement is to be made within sixty (60) Days after the ED transmits a Demand Letter stating the amount owed. Payment is to be paid by cashiers check or money order. All payments and accompanying letters or documentation should contain the following information: “American Zinc State Superfund Site,” “Cost Recovery Funds

for the Hazardous and Solid Waste Remediation Fee Account (Fund 550) of the State of Texas,” “PCA Code 55721,” “Docket Number Docket No. 2009-1355-SPF” and “Superfund Project Manager for American Zinc.” All payments and accompanying letters or documentation should be mailed to: Cashier’s Office, MC-214, TCEQ, P.O. Box 13088, Austin, TX 78711-3088. All checks and money orders shall be payable to the “Texas Commission on Environmental Quality,” or “TCEQ.” The requirement to make such payments will survive the termination of this AO in accordance with Section XXXIII (Termination of the Administrative Order).

- D. This AO applies to and is binding upon Respondent(s), other than any De Minimis Responsible Parties, their agents, successors, and assigns. Respondent(s), other than any De Minimis Responsible Parties as specified above, are jointly and severally responsible for carrying out the Work. Performance of any or all of the Work by the Performing Parties, Agreeing Respondent(s), or any De Minimis Responsible Parties shall not excuse any other Respondent(s) from such performance. Upon performance by any Respondent(s) of Remedial Activities, either alone or in conjunction with other Performing Parties, such Respondent(s) shall, from such performance forward, become a Performing Party. Such performance by a Respondent(s) of some of the Remedial Activities does not excuse the Respondent(s) from performance of those Remedial Activities that took place prior to the Respondent(s) becoming a Performing Party or any other preexisting requirement of this AO. No change in the ownership or corporate status and no acquisition of a Respondent(s) will alter its respective responsibilities under this AO.
- E. Respondent(s) that own or lease real property at the Site shall provide a copy of this AO to all of their lessees or sublessees of the Site until such time as this AO is terminated in accordance with Section XXXIII (Termination of the Administrative Order) and to any prospective owners or successors before all or substantially all property rights, stock, or assets are transferred.
- F. Respondent(s) shall provide a copy of this AO to all contractors, subcontractors, laboratories, and consultants retained by Respondent(s) to perform any or all of the Work within thirty (30) Days after the Effective Date or on the date such services are retained, whichever date occurs later. Notwithstanding the terms of any contract, Respondent(s) remain responsible for compliance with this AO and for ensuring that their contractors and agents comply with this AO.
- G. Within forty-five (45) Days after the Effective Date each Respondent that owns real property at the Site shall record a copy or copies of this AO, with all exhibits, in the appropriate office where land ownership and transfer records are filed or recorded, and shall ensure that the recording of this AO is properly indexed to each and every property comprising any part or all of the Site so as to provide notice to third parties of

the issuance and terms of this AO with respect to those properties. Each Respondent that owns real property comprising all or any part of the Site shall, within sixty (60) Days after the Effective Date, send notice of such recording and indexing to the ED. The obligations and restrictions of this AO run with the land and are binding upon any and all persons who acquire any interest in any real property comprising all or any part of the Site.

Not later than ninety (90) Days before any transfer of any property interest in any property included within the Site and in accordance with Section XII (Notices and Submittals) Respondent(s) that own or lease such real property shall submit the transfer documents to the ED.

- H. In accordance with Section 361.1855 of the Act and for the purpose of selecting the Remedy, the ED has selected commercial/industrial as the appropriate land use for the Site. Any change in use of any or the entire Site must comply with Section 361.190 of the Act.
- I. A qualified Remedial Activities Contractor shall direct and supervise all aspects of the Remedial Activities. Within ten (10) Days after the Effective Date each Respondent that is not an Agreeing Respondent shall notify the ED of its intent to perform the Work.

In addition to fulfilling the requirements of Section VIII (Project Manager/Site Coordinator) Paragraph C, within thirty (30) Days after the Effective Date, Agreeing Respondent(s) or, if there are no Agreeing Respondent(s), Performing Parties shall notify the ED in writing of the name, title, qualifications, relevant licenses, and permits of the Site Coordinator. Within thirty (30) days after the Effective Date, Agreeing Respondent(s) or, if there are no Agreeing Respondent(s), Performing Parties shall notify the ED in writing of the name, title, qualifications, relevant licenses, and permits of the Remedial Activities Contractor proposed to be used in carrying out the Remedial Activities. The Agreeing Respondent(s) shall demonstrate or, if there are no Agreeing Respondent(s), the Performing Parties shall demonstrate that each proposed Remedial Activities Contractor has any licenses necessary to do business in the State of Texas and permits necessary to perform any or all of the Remedial Activities. If at any time the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s), Performing Parties propose to use a different Remedial Activities Contractor, the Agreeing Respondent(s) or Performing Parties, as appropriate, shall notify the ED before the new Remedial Activities Contractor performs any of the Remedial Activities. The Agreeing Respondent(s)' Site Coordinator shall be the Project Manager's and Site Representative's point of contact for all Performing Parties. All Performing Parties must coordinate with and cooperate with any Agreeing Respondent(s) in the performance of any and all of the Work.

- J. The Remedy may be modified as specified in 30 TEX. ADMIN. CODE Section 335.349. Except as specified in the previous sentence and in Section XVIII (Extension of Deadlines), the terms of this AO may be amended upon approval by the Commission after notice to all Respondent(s).

If the ED plans to make significant or fundamental changes to the Remedy under 335.349 (b) (2) or (b) (3), the Agreeing Respondents will have the opportunity to participate in an informal discussion with the ED regarding the planned modification. If a significant or fundamental change is made, an objecting Agreeing Respondent will be allowed to withdraw its consent as an Agreeing Respondent in the AO. If an Agreeing Respondent withdraws its consent to the AO, the ED may change its status to another type of Respondent under the AO, at which time that Party will be bound to the AO terms applicable to its current status.

- K. Respondent(s) shall provide all the necessary information and assistance for TCEQ's Community Relations personnel to implement the Community Relations Plan.
- L. All ED-approved final submittals, documents, plans, and reports required to be developed and approved by the ED pursuant to this AO will be incorporated in and enforceable under this AO.
- M. In complying with this AO, Respondent(s) shall at all times comply with the requirements of the Act and 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350, as applicable.

## VI. Remedial Activities

- A. The Respondent(s) shall undertake the Remedial Activities in the following phases:
- Remedial Design ("RD");
- Remedial Action ("RA"); and
- Post Construction Activity ("PCA").

The ED may, in his sole discretion, waive, in writing, a requirement to submit any report, submittal, document or plan otherwise required to be submitted by this AO.

- B. Remedial Design

1. Not later than forty-five (45) Days after the Effective Date, Respondent(s) shall submit a Design Concept Memorandum (“DCM”) to the ED for review, comment, and approval. Respondent(s) must submit a DCM that includes:
  - a. Description of key performance and design criteria for the Remedy necessary to meet the requirements of the Remedy Selection Document;
  - b. Identification of all significant design options that may be considered by the design professional to meet the required performance and design criteria and the proposed option(s) to meet those criteria; and,
  - c. Identification of potential problems and unresolved issues which may affect the timely completion of the RD, RA and PCA, and proposed solutions to those problems.
  
2. Within sixty (60) Days after the ED approves the DCM, Respondent(s) shall:
  - a. Obtain written landowner consent for any institutional control to be placed on the land records for any or all of the Site as required by this AO or by TCEQ rule and submit a copy of the consent to the ED; and
  - b. Submit a 95% RD as outlined in subsections below to the ED for review, comment, and approval.
  
3. The Respondent(s) shall submit a 95% RD that meets the requirements as set forth in this Section and consists of 95% completion of all sections of the following RD submittals:

RA Schedule;

RA Field Sampling Plan (“RA FSP”);

Remedial Action Construction Quality Assurance Project Plan (“RA C-QAPP”);

RA Plans and Specifications;

RA Health and Safety Plan (“RA HASP”); and

Post Construction Activity Plan (“PCA Plan”).

4. The RA Schedule will describe the sequence, dependency on other activities, and duration of each activity to be conducted during the RA including project milestones (which will be subject to the provisions of Section XXI (Stipulated Penalties), Paragraph D) and the specific mobilization date to begin the RA.
5. The RA Sampling and Analysis Plan (RA SAP) and RA C-QAPP will describe the means of assuring quality during the RA and will specify a quality assurance official (“Respondent QA Official”), independent of the RA Contractors, to conduct a quality assurance program during the RA.
  - a. The RA SAP will be comprised of the RA FSP and the “Texas Commission on Environmental Quality Superfund Cleanup Section, Remediation Division, Quality Assurance Project Plan for the Superfund Program” (Program QAPP) which is most current as of the Effective Date of this AO. The RA SAP will address sampling and analysis relating to environmental parameters which may present toxic risk to human health or the environment. Respondent(s) and their contractors and subcontractors, including analytical laboratories, shall strictly adhere to all requirements of the approved RA SAP.
  - b. The Program QAPP text will not be altered. Alterations to the Program QAPP necessitated by project specific circumstances will be effected by appropriate notation in Section 8.0 “Exceptions, Additions and Changes to the Program QAPP” of the RA FSP.
  - c. The RA FSP will include:
    - i) All data required by the Program QAPP and the contents outline attached as Exhibit D to this AO;
    - ii) “The RA FSP must include and demonstrate achieving the Data Quality Objectives (“DQOs”) established in Exhibit F to this AO. Any additional DQO’s necessitated by site specific conditions will provide for the collection and analysis of a sufficient quantity and quality of data to demonstrate attainment of the Remediation Goals and to demonstrate protection of off-site receptors from exposure to Chemicals of Concern during the RA; DQOs will be developed in accordance with EPA “Guidance for the Data Quality Objectives Process, EPA QA/G-4,” and,

- iii) An adequate dust control plan for all activities relating to the remediation of the Site.
- d. In regard to laboratories and laboratory analytical work, Respondent(s) shall:
- i) Ensure that all contracts with laboratories utilized by Respondent(s) for analysis of Samples provide for access to those laboratories by the ED's personnel and the ED's authorized representatives to assure the accuracy of laboratory results related to the Site.
  - ii) Ensure that each laboratory it may use is qualified to conduct the proposed work. This includes use of methods and analytical protocols for the Chemicals of Concern in the media of interest within detection and quantitation limits consistent with both QA/QC procedures and approved DQOs for the Site. The Respondent QA Official shall provide written certification that it has reviewed the laboratory's Quality Assurance Plan and capabilities and has determined that:
    - (a) The laboratory has a documented quality assurance program in place that is generally consistent with National Environmental Laboratory Accreditation Conference (NELAC) standards;
    - (b) The laboratory has demonstrated and documented proficiency with each sample preparation and determinative combination to be used on the project;
    - (c) The laboratory has documented standard operating procedures for each of the methods required for the project;
    - (d) The laboratory has the capability of meeting the analytical objectives for the project; and,
    - (e) The laboratory is NELAC accredited under the Texas Laboratory Accreditation Program according to 30 TEX. ADMIN. CODE (TAC) Chapter 25 (relating to Environmental Testing Laboratory Accreditation and Certification) Subchapters A and B as amended, for the

matrices, methods and parameters of analysis, or a regulatory exception specified in 30 TAC 25.6 as allowed by TCEQ. In addition, the Respondent QA Official shall provide with this written certification as applicable a copy of the laboratory's current National Environmental Laboratory Accreditation Program (NELAP) accreditation certificate to verify that the laboratory is NELAC accredited by the TCEQ in accordance with these requirements.

A table which presents the laboratory's method detection limits and quantitation limits and the preliminary Remediation Goal for each analyte of concern, and a table that presents the laboratory's control limits for quality control parameters, i.e., surrogates, matrix spike/matrix spike duplicate samples, and laboratory control samples must be submitted along with the certification letter and must be submitted attached or inserted into the RA FSP.

- iii) Ensure that all laboratories used for analysis of Samples are acceptable to the ED. A laboratory may be deemed unacceptable for any of the following reasons:
  - (a) repeated or numerous deficiencies found in the laboratory quality assurance program during the ED's or EPA's laboratory inspections;
  - (b) repeated or numerous deficiencies in laboratory performance;
  - (c) debarment by EPA; or
  - (d) failure to comply with any requirement or criteria of the Program QAPP or this AO.
  
- iv) Ensure that all data submitted to the agency is produced by laboratories accredited by TCEQ according to 30 Tex. Admin. Code Chapter 25 (relating to Environmental Testing Laboratory Accreditation and Certification) Subchapters A and B.

6. The RA C-QAPP will describe the activities necessary to ensure that the Remedy is constructed to meet or exceed all design criteria, plans, specifications, and all applicable Remediation Goals. The RA C-QAPP will address sampling and analysis relating to physical properties of constructed engineered controls which must meet specified criteria to ensure the long-term performance of those features (e.g. physical soil properties of soil backfill or constructed clay caps, physical properties of geotextiles and liner materials, leak testing of piping systems and containment vessels, etc.). At a minimum, the RA C-QAPP will include the following elements:
  - a. The responsibility and authority of organizations and key personnel involved in designing and constructing the RA;
  - b. The qualifications of the Respondent QA Official(s) and supporting inspection personnel;
  - c. The observations and tests that will be used to ensure that the construction meets or exceeds all design criteria, plans and specifications and all applicable Remediation Goals;
  - d. The sampling activities, sample size, methods for determining locations, frequency of sampling, acceptance and rejection criteria, and methods for ensuring that corrective measures are implemented; and
  - e. Detailed reporting requirements.
  
7. The RA Plans and Specifications will establish the sequences, procedures and requirements to be implemented at the Site including, if applicable:
  - a. Demolition activities including monitor well closure, decontamination, building demolition methods, environmental controls, and disposal.
  - b. Excavation activities including: establishment of limits of initial excavation for surface and subsurface soils with provisions for field controls; excavation materials handling including stockpiling; excavation confirmation sampling; backfill procedures; air emissions control; stormwater management; cross-contamination prevention; and equipment and personnel decontamination procedures and facilities.
  - c. Estimated quantities of material to be excavated and estimated quantities of materials to be disposed of off-site.

- d. Details of cap(s) construction including, as applicable: lines, grades and cross-sections; clay and synthetic materials' properties, placement and testing; vegetative cover installation; cap infiltration testing; air emissions controls; stormwater management; and equipment and personnel decontamination procedures and facilities.
  - e. Details regarding construction and installation of fences, signs and other engineered controls.
  - f. Site restoration activities, including backfill materials, compaction, and final cover.
  - g. Plans including at a minimum:
    - i) Site plan;
    - ii) Demolition Plan
    - iii) Excavation Plan, plan view
    - iv) Excavation Plan, Sections
    - v) Cap Subgrade Plan;
    - vi) Cap Surface Plan
    - vii) Cap Cross Sections
    - viii) Final Site Grading Plan;
    - ix) Construction details; and
    - x) All other plans and specifications necessary to describe sequences, procedures, and requirements to conduct the Remedial Activities in a manner protective of human health and the environment.
8. The RA HASP will specify the procedures that are sufficient to protect on-site personnel and the public from the physical, chemical and/or biological hazards of the site. The HASP will address all requirements of 29 CFR Chapter XVII - "Occupational Safety and Health Administration (OSHA), Department of Labor," 40 CFR §35.6015(a)(21) "Health and Safety Plan," and all applicable safety regulations, ordinances and statutes pertaining to the safety of on-site personnel and the public. The HASP and any revisions or addenda will be reviewed and signed by a Board Certified Industrial Hygienist.

The TCEQ relies on the Respondent in the preparation of an adequate HASP. However, TCEQ reserves the right to review and provide comments on the Respondent's HASP. If TCEQ provides comments, they constitute only general safety guidelines which are not intended to cause the Respondent to reduce the level of protection. Any language in the comments or in this AO

which appears to give the TCEQ the right to direct or control the Respondent's means, methods and details of the Work shall be deemed to mean that the Respondent will follow TCEQ's desires only as to the results of the Work. The Respondent is solely responsible for preparing an adequate HASP, for complying with the RD and the applicable safety laws and regulations, for performing the Work in a safe manner and for protecting the health and safety of on-site personnel and the public. The Respondent shall address the TCEQ's comments and concerns and if necessary submit a revised HASP. TCEQ notation of "approval," "acceptance," or similar language in response to a HASP submittal for review shall not alter the responsibilities of the parties as described in this Section. In the event that TCEQ notes a HASP "approved" or "accepted" or uses similar language to indicate that there are no further comments, such notation shall be deemed to mean only:

*We have reviewed your HASP under the AO provision reserving the right for TCEQ to review and provide comments constituting general safety guidelines (not intended to cause the Respondent to reduce the level of protection). The reviewer(s) might not be Board Certified Industrial Hygienist or any other type of safety professional. We have no comments (or further comments) at this time on your HASP. We recognize this HASP as your final HASP. If you change this HASP you must submit a revision or addendum for review and potential comment in accordance with this AO.*

***Do not rely on TCEQ review or comments (or lack thereof) on your HASP for any purposes.***

*By telling you we have no comments (or further comments) we are not assuming responsibility for your means, methods, details or sequences, nor are we assuming any duty of protection to you, your employees, your subcontractors or suppliers, or their employees, or to any third party. Any language in the comments or in this AO which appears to give the TCEQ the right to direct or control your means, methods and details of the Work shall be deemed to mean that you will follow TCEQ's desires only as to the results of the Work. You are solely responsible for preparing and implementing an adequate HASP, for complying with the RD and the applicable safety regulations, ordinances and statutes, for performing the Work in a safe manner and for protecting the health and safety of on-site personnel and the public.*

9. The PCA Plan will describe all sequences, procedures and requirements for implementing the PCA. The PCA Plan will include the following, if applicable:

- a. A PC SAP and PC-QAPP meeting the criteria established herein for the RA SAP and RA C-QAPP but addressing all sampling and analyses relating to PCA;
  - b. Post Construction Plans and Specifications necessary to assure that the Remedial Activities attain and maintain the Remediation Goals;
  - c. A PCA Schedule describing the sequence, dependency on other activities, and duration of each activity to be conducted during the PCA including project milestones (which will be subject to Section XXI Stipulated Penalties Paragraph D), and the specific mobilization date to begin the PCA;
  - d. A Post Construction Cost Estimate providing an estimate for a qualified third party to perform all of the tasks necessary for post construction for as long as PCA are needed, in accordance with the PCA Schedule; and
  - e. A Post Construction Activities HASP ("PCA HASP") which meets all of the requirements specified above for the RA HASP but which is appropriate to protect on-site personnel and the public from any physical, chemical and/or biological hazards of the site relating to the Post Closure period and activities.
10. Within sixty (60) Days after the ED provides written comments to the Site Coordinator on the 95% RD, Respondent(s) shall submit to the ED a Final RD for review, comment, and approval. The Final RD will consist of 100% RA plans and Specifications prepared and sealed by a Professional Engineer registered in the State of Texas and revised versions of RA schedule, RA FSP, C-QAPP, RA HASP addressing the ED's written comments, complete RD submittals except the PCA Plan. A Professional Engineer shall include a certification that the design was prepared to attain all Remediation Goals upon implementation. In the Final RD, Respondent(s) shall address the ED's comments on the 95% RD and submit a summary note which clearly and explicitly indicates how each of the ED's comments on the 95% RD has been satisfactorily addressed and which will also identify all other revisions or changes made from the 95% RD.
  11. The ED will notify the Site Coordinator of his approval or disapproval of the Final RD including written comments. Within thirty (30) Days after the ED provides written comments to the Site Coordinator, Respondent(s) shall

resubmit the Final RD, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the previous draft of the Final RD has been satisfactorily addressed and which will also discuss all other revisions or changes from the previous draft of the Final RD.

12. The ED will notify the Site Coordinator of his approval or disapproval of each resubmittal of the Final RD. Each resubmittal will be submitted as specified in Paragraph 11 above. Disapproval of the first resubmittal, and each subsequent resubmittal, is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).
13. Upon the ED's approval, the documents comprising the Final RD will be incorporated as requirements into and will be enforceable under this AO.

C. Remedial Action

1. Respondent(s) and Respondent(s)' contractors and subcontractors shall not mobilize to the Site until the Final RD is approved by the TCEQ. Under no circumstance will mobilization occur prior to TCEQ approval of the RA HASP.<sup>1</sup> The Respondent(s) will be responsible for initiating, maintaining, and supervising all safety precautions and programs required for the protection of: all persons who may be affected by the Work, the Work, and any property which maybe affected by the Work.
2. As soon as practicable after the award of any contract to ship solid wastes and/or hazardous substances from the Site and prior to any such actual shipment, Respondent(s) shall submit to the Project Manager a written certification containing all relevant information regarding such shipments. The certification will include, if applicable:
  - a. The name and location of the facility to which the solid wastes and/or hazardous substances are to be shipped;
  - b. The type and quantity of the solid wastes and/or hazardous substances to be shipped;
  - c. The expected schedule for the shipment of the solid wastes and/or hazardous substances; and

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<sup>1</sup>TCEQ's "approval" or "acceptance" of the HASP will be given the meaning as explained in Section VI (Remedial Activities) Paragraph B.8.

- d. The method of transportation and the name, address, and phone number of the transporter.
3. In addition, Respondent(s) shall certify that, if applicable:
  - a. No enforcement order is currently imposed on any selected receiving facility or transporter by any regulating authorities;
  - b. The selected receiving facility and transporter are permitted to accept the specific solid wastes and/or hazardous substances to be shipped from the Site by all appropriate regulating authorities; and
  - c. After appropriate inquiry, they have no knowledge that either the selected receiving facility or transporter is non-compliant with any federal, state, or local requirement.
4. The ED may inspect the Remedial Activities and/or the Site at any time to evaluate compliance with this AO.
5. At least ten (10) Days prior to the expected date of achieving Substantial Completion of the RA, the Site Coordinator shall conduct a pre-Substantial Completion inspection and shall develop and submit to the ED a preliminary punch list identifying any nonconformance with the requirements of the RA Plans and Specifications.
6. At the same time that the Performing Parties submit the Substantial Completion punch list, they shall schedule a Substantial Completion inspection by the ED. The Site Coordinator shall accompany the ED during the Substantial Completion inspection.
7. Within thirty (30) Days after the ED's on-Site inspection, the Respondent(s) shall submit to the ED in writing a revised punch list incorporating any deficiencies identified by the ED during the Substantial Completion inspection, indicating those deficiencies that are completely addressed and providing a proposed schedule and list of activities necessary to complete the RA. The ED will notify the Site Coordinator in writing of his approval or disapproval of the revised punch list.

If the ED disapproves the revised punch list, the ED will provide written comments to the Site Coordinator. Within thirty (30) Days after the ED provides written comments to the Site Coordinator on the revised punch list,

Respondent(s) shall submit a final punch list, in both clean and redline, strikeout format, with a summary note that clearly and explicitly indicates how each of the ED's comments on the revised punch list has been satisfactorily addressed. The ED will notify the Site Coordinator of his approval or disapproval of the final punch list with comments. If disapproved by the ED, within fifteen (15) Days after the ED provides written comments, Respondent(s) shall resubmit the final punch list. The ED will notify the Site Coordinator of his approval or disapproval of each resubmittal of the final punch list. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).

When Respondent(s) believe that they have completed the RA, they shall submit a certification to the ED that the RA is complete. If the ED identifies RA items to be corrected or completed, Respondent(s) shall immediately correct or complete these items.

8. At the time of the ED's on-Site inspection, Respondent(s) shall submit to the ED a draft RA Report, containing the following:
  - a. A certification from a Professional Engineer licensed in the State of Texas that the RA is completed and has been completed in compliance with the Final RD and this AO;
  - b. All data collected during the RA and documentation of compliance with the terms of the RA Quality Assurance Project Plan and the RA Construction Quality Assurance Plan;
  - c. Copies of waste manifests for all Class II, Class I, and hazardous wastes and substances disposed of off-site, if applicable;
  - d. As-built drawings showing:
    - i) Areas and depths of excavation, with verification sample results by grid area;
    - ii) Final site plan with topographic contours for all disturbed areas of the Site;
    - iii) Progress photographs;

- iv) Proposed areas for soil that will require land use restrictions and/or other deed notices, certifications, or restrictions; and
  - v) Proposed language for any institutional controls in accordance with and as required by this AO and TCEQ rules.
9. The ED will notify the Site Coordinator of his approval or disapproval of the draft RA Report. If the ED disapproves the draft RA Report, the ED will provide written comments to the Site Coordinator.
  10. Within forty-five (45) Days after the ED provides written comments to the Site Coordinator on the draft RA Report, Respondent(s) shall submit a final RA Report, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the draft RA Report has been satisfactorily addressed and which also discusses all other revisions or changes from the draft RA Report.
  11. The ED will notify the Site Coordinator of his approval or disapproval of the final RA Report with comments.
  12. If disapproved by the ED, within thirty (30) Days after the ED provides written comments, Respondent(s) shall resubmit the RA Report as specified in Paragraph 11 above. Each resubmittal will also be submitted in accordance with Paragraph 11 above.
  13. The ED will notify the Site Coordinator of his approval or disapproval of each resubmittal of the final RA Report including written comments. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).
  14. Within thirty (30) Days after approval of the final RA Report and after obtaining the required written landowner consent in accordance with Subsections B and C of this Section Respondent(s) shall:
    - a. record a copy or copies of any required institutional controls in compliance with the requirements found in 30 Tex. Admin. Code Chapter 350.111 in the appropriate local or county office where land ownership and transfer records are filed or recorded;
    - b. ensure that the recording of these documents is properly indexed and recorded to each and every property at the Site in the appropriate office

where land ownership and transfer records are filed so as to provide notice to third parties concerning those properties; and

- c. send evidence of such recording, landowner consent, and indexing to the ED.
15. After he approves the final RA Report, receives evidence of the filing of any institutional control from each property owner or other person as required by Section V (Order) Paragraph G, and determines that the financial assurance requirements of Paragraph E below have been satisfied, or the ED waives financial assurance in accordance with 30 TAC 350.33(l), the ED will issue an Approval of RA Completion to the Agreeing Respondent(s), or if there are no Agreeing Respondent(s) to this AO, any Performing Parties.

D. Post Construction Activity

1. Concurrent with the submittal of the preliminary punch list for the Substantial Completion inspection, the Site Coordinator shall 1) submit a list of the name, title, qualifications, relevant licenses and permits of the Remedial Activities Contractors proposed to be used in carrying out any or all of the PCA and 2) submit to the ED a Revised PCA Plan, incorporating revisions from the PCA Plan that was approved during the RD phase.
2. The ED will notify the Site Coordinator of his approval or disapproval of the Revised PCA Plan including written comments to the Site Coordinator.
3. Within thirty (30) Days after the ED provides written comments to the Site Coordinator, Respondent(s) shall submit the Final PCA Plan, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the Revised PCA Plan has been satisfactorily addressed and which will also discuss all other revisions or changes from the Revised PCA Plan.
4. The ED will notify the Site Coordinator of his approval or disapproval of the submittal and each resubmittal of the Final PCA Plan. Each resubmittal will be submitted as specified in Paragraph 3 above. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).
5. Upon the ED's approval of the Final PCA Plan, Respondent(s) shall begin the PCA in accordance with the schedule included in the PCA Plan.

6. The Agreeing Respondent(s) shall submit a Five Year Review report to the TCEQ for TCEQ's approval no later than five (5) years after the ED approves the Final Remedial Action for the Site. The Five Year Review report must be conducted in accordance with the U.S. Environmental Protection Agency's "Comprehensive Five-Year Review Guidance." The Agreeing Respondent(s) shall submit Five Year Review reports for the Site to the TCEQ every five (5) years unless and until the TCEQ approves cessation.

E. Post Construction Financial Assurance

1. If Respondent(s) are required to post financial assurance for PCA, Respondent(s) shall provide financial assurance in the minimum amount of the final Post Construction Cost Estimate and shall maintain such financial assurance for the full duration of the PCA. Within ten (10) Days of the ED's approval of the PCA Plan, Respondent(s) shall submit a written proposal for providing financial assurance, if any, to the ED for approval.
2. Subject to the ED's approval, financial assurance may be demonstrated by one or a combination of the following mechanisms: letter of credit, surety bond guaranteeing payment, surety bond guaranteeing performance, fully funded trust, insurance, escrow account or other approved mechanism. Each financial assurance document will be issued by an institution with the authority to issue the document and whose operations are regulated and examined by a federal or state agency.
3. Within fifteen (15) Days after the ED provides written approval of Respondent(s) proposed financial assurance mechanism to the Site Coordinator, Respondent(s) shall submit the necessary financial assurance documents to the ED. The ED will notify the Site Coordinator of his approval or disapproval of the financial assurance documents with comments. If disapproved by the ED, within fifteen (15) Days after the ED provides written comments to the Site Coordinator, Respondent(s) shall resubmit the financial assurance documents, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the previous draft of the financial assurance documents has been satisfactorily addressed and which will also discuss all other revisions or changes from the previous draft of the financial assurance documents.
4. The ED will notify the Site Coordinator of his approval or disapproval, with comments, of each resubmittal of the financial assurance documents. Each resubmittal will be submitted in accordance with Paragraph 3 above. Disapproval of the first resubmittal and each subsequent resubmittal is subject

to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).

VII. Failure to Attain Remediation Goals or Findings of Significant Difference

- A. If at any point in the Remedial Activities the Performing Parties conclude that the Remedial Activities as implemented in accordance with this AO will not attain the Remediation Goals, or if the Performing Parties find that conditions at the Site differ from those that form the basis of the RSD and significantly change the scope, performance or costs of the Remedial Activities, then the Performing Parties shall take the actions specified in this Section.
- B. Within ten (10) Days after the Performing Parties initially determine that a failure to attain Remediation Goals or that a significant difference in the scope, performance or cost of the Remedial Activities as described in this Section exists, Performing Parties shall notify the ED of that determination with a description of its basis.
- C. Not later than sixty (60) Days after the initial assertion of a failure to attain Remediation Goals or of a significant difference in the scope, performance or cost of the Remedial Activities, the Performing Parties shall submit a Failure Evaluation Report to the ED for his approval.
- D. The Performing Parties shall submit a Failure Evaluation Report that meets the requirements of this Section. The Failure Evaluation Report will include a discussion of the following: the data related to the failure to attain Remediation Goals or to the assertion of a significant difference, conclusions concerning all such data, and any known cause of the failure to attain Remediation Goals or of the significant difference, and a recommendation for any necessary additional studies. Data presented in the Failure Evaluation Report will comply with the DQOs.
- E. The ED will not consider the failure of a design element or remedial action that is not required by this AO to be the basis for a failure to attain the Remediation Goals.
- F. The ED will consider differences in the quantity or extent of contaminants as the basis for a determination of a significant difference only when such differences are so significant as to cause the Remedy not to be the lowest cost alternative that is technologically feasible and reliable and that effectively mitigates and minimizes damage to and provides adequate protection of the public health and safety or the environment.
- G. After receipt of the Failure Evaluation Report, the ED will notify the Site Coordinator of his approval or disapproval of the report with comments. If the ED determines that

the basis of the Performing Parties' assertion of a failure to attain Remediation Goals or of a significant difference is valid, no applicable stipulated penalties will be imposed for missed deadlines subsequent to the Performing Parties' notification made in accordance with Paragraph B above, except for failure to submit documents pursuant to this Section. If the ED determines that the basis of a failure to attain Remediation Goals or of an assertion of a significant difference is not valid, the ED will direct that Remedial Activities continue and that the Performing Parties pay any applicable stipulated penalties for any missed deadlines.

- H. Unless the ED approves the Failure Evaluation Report and/or directs continuation of Remedial Activities, within thirty (30) Days after the ED provides written comments to the Site Coordinator, the Performing Parties shall resubmit the Failure Evaluation Report, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the previous draft of the Failure Evaluation Report has been satisfactorily addressed and which will also identify all other revisions or changes from the previous version of the Failure Evaluation Report.
- I. The ED will notify the Site Coordinator of his approval or disapproval, with comments, of each resubmittal of the Failure Evaluation Report. Each resubmittal will be submitted in accordance with Paragraph H above. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).
- J. Not later than ninety (90) Days after a determination by the ED that the Remedy will not attain the Remediation Goals or a significant difference exists, the Respondent(s) shall submit to the ED for approval a written report evaluating alternatives to the Remedial Activities and may submit a proposal for such alternative Remedial Activities as may be necessary to achieve the Remediation Goals. Any proposed alternatives must comply with the remedy selection criteria contained in 30 TEX. ADMIN CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350. The Remedy may be modified, as stated in Section V (Order) Paragraph J, only as specified in 30 TEX. ADMIN. CODE Section 335.349.
- K. In the event TCEQ determines that alternate or additional remedial actions are necessary because of the Remedy's failure, TCEQ may terminate this AO.

#### VIII. Project Manager/Site Coordinator

- A. Not later than the Effective Date, the ED will designate a Project Manager to oversee implementation of the Work and to coordinate communication between the ED and

the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties.

- B. Respondent(s) shall direct all communications regarding the Remedial Activities, whether written or oral, at a minimum, to the Project Manager or, if not available, the alternate Project Manager.
- C. In addition to fulfilling the requirements of Section V (Order) Paragraph I, within thirty (30) Days after the Effective Date, the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties shall submit a written notice to the Project Manager containing the Site Coordinator's address, phone number and/or pager number at which he/she may be contacted at any time in case of emergency. The Site Coordinator shall notify the ED in writing at least seven (7) Days prior to the start date of any field activities associated with the Remedial Activities. All Performing Parties must coordinate with and cooperate with any Agreeing Respondent(s) in the performance of any and all of the Work.
- D. The Project Manager has the authority to require that the Remedial Activities are performed in accordance with all applicable statutes and regulations and with this AO and to require a cessation of the performance of any part or all of the Remedial Activities that:
  - 1. In the Project Manager's opinion, may present or contribute to an imminent and substantial endangerment to public health, welfare, or the environment because of an actual or threatened release of solid wastes or hazardous substances from the Site; or
  - 2. In the Project Manager's opinion, is not in conformance with any approved plan or submittals developed in accordance with this AO; or
  - 3. In the Project Manager's opinion, is a violation of any approved plan or submittals developed in accordance with this AO, HASP, or RA Quality Assurance Project Plan.
- E. Within twenty-four (24) hours after the Project Manager issues an oral order to halt any or all of the Remedial Activities, if time permits, the Project Manager will provide a brief explanation of the basis for the order. As soon as possible, but in no event more than fourteen (14) Days after the initial order to halt any or all of the Remedial Activities, the Project Manager will provide a written explanation of the basis for the order to halt any or all of the Remedial Activities to the Site Coordinator. The Remedial Activities may be resumed only after the basis for the order to halt any or all of the Remedial Activities has been corrected and instructions to proceed have been

provided to the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties by the Project Manager. All additional costs associated with the cessation of any or all of the Remedial Activities will be borne by Respondent(s).

- F. During the RD and RA, the Project Manager and Site Coordinator shall hold meetings at least once per month to review the progress and details of the Remedial Activities and to review and resolve any discrepancies in data. At the ED's discretion, these meetings may be held by telephone. At least seven (7) Days prior to each meeting, the Performing Parties shall deliver an agenda for the meeting and any documents to be discussed to the Project Manager.
- G. The ED and the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties may change their respective Project Manager, Alternate Project Manager, or Site Coordinator by written notice to each other of the name, address, and telephone number of the new Project Manager, Alternate Project Manager, or Site Coordinator seven (7) Days prior to the change, or if seven (7) Days notice is not feasible, as soon as possible.
- H. The Project Manager may assign other persons, including other TCEQ employees or contractors, to serve as a Site Representative and may temporarily delegate her or his responsibilities to such Site Representative. The Project Manager will notify the Site Coordinator orally or in writing of such delegation.

IX. Endangerment and Immediate Threat

- A. In the event of any action or occurrence during the performance of the Remedial Activities which causes or threatens a release of a solid waste or hazardous substance or which may present an immediate threat to public health or welfare or the environment, Respondent(s) shall immediately take all appropriate action to prevent, abate, or minimize such release or threat and shall immediately notify the Project Manager and Site Representative or, if the Project Manager cannot be contacted, the alternate Project Manager and Site Representative. Respondent(s) shall also notify the TCEQ Emergency Response Unit (806) 353-9251 Region I. Respondent(s) shall take such action in accordance with all applicable provisions of the HASP. If Respondent(s) fail to take appropriate response action as required by this Section and the ED takes such action instead, Respondent(s) shall reimburse the ED all costs of the response action. Respondent(s) shall make payments of such costs as specified in Section V (Order) Paragraph B and not later than forty-five (45) Days after the ED transmits a Demand Letter stating the amount owed.

- B. Nothing in the preceding paragraph will be deemed to limit any authority of the State of Texas to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of solid wastes or hazardous substances to the environment on, at, or from the Site.

X. Submittals Requiring the ED's Approval

- A. Upon the ED's approval of a submittal, Respondent(s) shall proceed to implement all actions required by the submittal according to the schedule approved by the ED.
- B. Approved submittals may be modified upon agreement by the ED and the Performing Parties. The Performing Parties shall submit proposed modifications and obtain approval in accordance with the process for submittals specified in this AO generally. Upon approval of any modification, the modification is incorporated into the original submittal for all purposes.
- C. The ED's approval of submittals or modifications is administrative in nature and allows the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties to proceed to the next steps in the Remedial Activities. The ED's approval does not imply any warranty of performance, does not imply that the Remedy, when constructed, will meet the Remediation Goals, nor does it imply that the Remedy will function properly and ultimately be accepted by the ED.

XI. Submittal of Documents, Sampling, and Analyses

- A. During the conduct of the work under the AO, and within twenty (20) Days of any written request from the ED, Respondent(s) shall provide to the ED all data, information, documents, or records generated or obtained by any Respondent related to Site Work.
- B. Subject to the confidentiality provisions set forth in Paragraph C below, all data, information, documents, and records developed pursuant to this AO or submitted by Respondent(s) to the ED pursuant to this AO will be available to the public.
- C. Respondent(s) may assert a claim of business confidentiality pursuant to the Texas Public Information Act as to any process, method, technique, or any description thereof that the Respondent(s) claim constitutes proprietary or trade secret information developed by Respondent(s) or developed by their contractors or subcontractors. If no confidentiality claim accompanies the process, method, technique, or description thereof when submitted to the ED, any such process, method, technique, or description thereof may be made available to the public by the ED or the State of Texas without

further notice to Respondent(s). Respondent(s) shall make business confidentiality determinations in good faith.

- D. The ED or his Site Representatives may take splits or duplicates of any samples obtained by any Respondent at the Site at any time including during the implementation of the Remedial Activities. The Respondent(s) shall provide assistance necessary for the ED to take split or duplicate samples.
- E. Respondent(s) shall provide the ED with a schedule of routine sampling and notify the ED at least seven (7) Days before any non-routine sampling is conducted at the Site, except in the event of situations provided for by Section IX (Endangerment and Immediate Threat). Respondent(s) shall collect and analyze all Samples in accordance with approved work plans developed pursuant to this AO and shall handle all Samples in accordance with the approved RA QAPP.
- F. Respondent(s) shall submit all data, information, reports, schedules, and other documents required by this AO in hard copy format (two hard copies of draft submittals and three of final submittals) and in specific computer software format (one electronic copy of each draft and final submittal in word or excel) as determined by the Project Manager.

## XII. Notices and Submittals

- A. Respondent(s) shall make all notices and submittals required by this AO in writing and in accordance with the contact information contained in this Section unless otherwise expressly authorized. Receipt by the Site Coordinator of any notice or communication from the ED relating to this AO will be deemed by the ED to be receipt by all Respondent(s). All information required to be submitted pursuant to this AO, including data, documents, records, reports, approvals, and other correspondence, will be submitted to the following Parties at the addressees listed below or to such other addressees as such Party hereafter may designate in a written communication to all other Parties:

*As to the Texas Commission on Environmental Quality:*

*For mail:*

Texas Commission on Environmental Quality  
Remediation Division  
Mail Code 136  
P.O. Box 13087  
Austin, TX 78711-3087  
Attention: Project Manager /American Zinc State Superfund Site

*For overnight express mail or delivery service:*

Project Manager  
Mail Code 136  
American Zinc State Superfund Site  
TCEQ, Remediation Division  
Building D, Floor 1, Room 184  
12100 Park 35 Circle  
Austin, TX 78753

*By facsimile:*

Project Manager  
American Zinc State Superfund Site  
Superfund Cleanup Section  
(512) 239-2445

*As to Agreeing Respondent(s):*

*For mail:*

Terrance Gileo Faye  
Babst Calland Clements and Zomnir, P.C.  
I N. Maple Avenue  
Greensburg, PA 15601

*For overnight express mail or delivery service:*

Terrance Gileo Faye  
Babst Calland Clements and Zomnir, P.C.  
I N. Maple Avenue  
Greensburg, PA 15601

*By facsimile:*

Terrance Gileo Faye  
Babst Calland Clements and Zomnir, P.C.  
(724) 837-0971

XIII. Periodic Review

- A. Respondent(s) shall provide written progress reports on the Remedial Activities to the ED, as specified below in Paragraphs B and C.
- B. RD/RA Progress Reports
  - 1. Respondent(s) shall submit written monthly progress reports to the ED beginning on the tenth Day of the month following the Effective Date. These progress reports will describe the actions taken pursuant to this AO during the previous month, including a general description of activities and progress during the reporting period, activities projected to be commenced or completed during the next reporting period, and any problems encountered or anticipated by Performing Parties in commencing or completing the Remedial Activities. Progress reports will include all data received during the reporting period and an up-to-date progress schedule. Progress reports will identify any violations of this AO and calculate any applicable stipulated penalty required under Section XXI (Stipulated Penalties). The requirement to submit these monthly progress reports will be terminated at the earlier of: 1) if no PCA Plan is required, when the AO is terminated in accordance with Section XXXIII (Termination of the Administrative Order) or 2) if a PCA Plan is required, upon the ED's approval of a Final PCA Plan in accordance with Section VI (Remedial Activities) Paragraph C.
  - 2. If an RD/RA progress report submitted by Performing Parties is deficient, the ED will provide written notice to the Site Coordinator. The notice will include comments and a description of the deficiencies.
  - 3. Within ten (10) Days of the ED providing the Site Coordinator with a notice of deficiency of an RD/RA progress report, Performing Parties shall make such changes as the ED deems necessary and resubmit the progress report to the ED.
- C. Post Construction Monitoring Reports
  - 1. Performing Parties shall submit written annual post construction monitoring reports to the ED beginning on the tenth Day of the month following the

initiation of the PCA as described in Section VI (Remedial Activities) Paragraph D.1.. These monitoring reports will describe the actions taken pursuant to this AO, including a general description of any maintenance performed during the reporting period, activities projected to be commenced or completed during the next reporting period, and any problems encountered or anticipated by Performing Parties in commencing or completing the Remedial Activities. Post construction monitoring reports will include all data received during the reporting period and an up-to-date monitoring schedule. Post construction monitoring reports will identify any violations of this AO and calculate any applicable stipulated penalty required under Section XXI (Stipulated Penalties). The requirement to submit annual post construction monitoring reports will be terminated when the conditions specified in Section XIV (Termination of Post Construction Activities) have been met as determined by the ED in his sole discretion.

2. If a post construction monitoring report submitted by Performing Parties is deficient, the ED will provide written notice to the Site Coordinator. This notice will include comments and a description of the deficiencies.
3. Not later than ten (10) Days after the ED provides the Site Coordinator with a notice of deficiency of a post construction monitoring report, Performing Parties shall make such changes as the ED deems necessary and resubmit the post construction monitoring report to the ED.

#### XIV. Termination of Post Construction Activities

The ED will terminate the requirement to perform PCA if Respondent(s) demonstrate that all Remediation Goals have been met. The Respondent(s) shall satisfactorily perform PCA for the duration of time specified in the RSD, and the Remediation Goals will not be deemed achieved before the time specified in the RSD.

#### XV. Records

- A. Each Respondent shall preserve and retain, and shall instruct its accountants, attorneys, employees, agents, contractors, and subcontractors and anyone else acting on its behalf at the Site to preserve and retain, in the form of originals or copies, all data, records, documents, and information of whatever kind, nature, or description that relate in any way to the Site that are now or that come to be in its possession or control. The previous sentence is meant to include data, records, documents, or information relating to each Respondent's potential liability or to any other person's potential liability for the Site under Section 361.271 of the Act.

- B. All data, records, documents, and information required to be preserved and retained in accordance with Paragraph A will be preserved and retained for a minimum of ten (10) years after the ED's issuance of the Approval of RA Completion. At the end of these ten (10) years, each Respondent shall notify the ED at least ninety (90) Days before any such data, records, documents, or information is destroyed. If the ED requests, Respondent(s) shall, at no cost to TCEQ, provide the ED originals or copies of such data, records, documents, or information which are not protected by a privilege as per Paragraph C below.

Until this AO is terminated in accordance with Section XXXIII (Termination of the Administrative Order), Respondent(s) shall maintain an index of documents that Respondent(s) claim contain privileged information. The index will contain, for each document, the date, author, addressee, and subject of the document. Respondent(s) shall submit a copy of the index to the ED within ten (10) Days after the ED submits a written request.

- C. Any Respondent refusing to provide copies of any data, information, records, or documents based upon a claim of privilege shall identify the data, information, record, or document and explain the basis for the claim. Notwithstanding the immediately preceding sentence, any data, record, information, or document required to be developed or submitted pursuant to this AO will be available to the public.
- D. At any time prior to the completion of the Work, the ED may contact the Site Coordinator to determine the location and/or to obtain copies of any or all of the data, records, documents, or information developed pursuant to this AO. The Respondent(s) shall provide copies of any such data, records, documents, and information to the ED at no cost to TCEQ.
- E. Upon request by the ED, Respondent(s) shall submit to the ED all data, information, records, and documents requested, including those relevant to the items specified in Section 361.182(b) of the Act for possible inclusion in the administrative record in accordance with 30 TEX. ADMIN. CODE Section 335.345.

#### XVI. Access

- A. As of the Effective Date, any Respondent that owns, in whole or in part, the Site, an off-site area that is to be used for access to the Site, property subject to or affected by the Remedial Activities, shall provide access to such property to the ED; any federal, state or local authorities and their contractors approved by the ED; and the Performing Parties and their authorized representatives and contractors. Failure to provide such access may result in the imposition of statutory and/or stipulated penalties. Respondent(s) shall indemnify TCEQ, and TCEQ will not be liable, for any loss or

claim arising out of Respondent(s)' activities at the Site, on off-site areas to be used for access to the Site, on property subject to or affected by the Remedial Activities.

- B. If a person other than a Respondent owns, in whole or in part, the Site, an off-site area that is to be used for access to the Site, property subject to or affected by the Remedial Activities. Respondent(s) shall obtain, or use their best efforts to obtain, Site access agreements from the then current owner(s) within ninety (90) Days of the Effective Date. Respondent(s) shall insure that such agreements specify that TCEQ is not liable for any loss or claim arising out of any activities at the Site, on off-site areas to be used for access to the Site, on property subject to or affected by the Remedial Activities. Respondent(s) shall provide copies of such agreements to the ED before the Performing Parties initiate field activities. Respondent(s)' best efforts shall include, if necessary, providing reasonable compensation to any property owner not a Party. If access agreements are not obtained within the ninety (90) Days, Respondent(s) shall immediately notify the ED of their failure to obtain access. If the ED determines, in his sole discretion, that the Performing Parties have used best efforts to obtain such access, the ED will, pursuant to statutory authority, make appropriate efforts to obtain such access upon reasonable terms to the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, to the Performing Parties. Any revision to the deadlines specified in this AO necessitated by Respondent(s)' inability to obtain such access may be considered a reasonable ground for extending any affected deadline pursuant to Section XVIII (Extension of Deadlines).
- C. Subject to the Agreeing Respondent(s)' reasonable safety and internal security requirements, the ED will have the authority to enter, freely move about, and exit the Site, any off-site area that is to be used for access to the Site, property subject to or affected by the Remedial Activities, for the purposes of: inspecting conditions at the Site, the Remedial Activities and all information, documents, data, records, operating logs, and contracts related to the Site; reviewing the Performing Parties' progress in performing the Remedial Activities; conducting such tests as the ED deems necessary; using a camera, sound recording device, or other documentary type equipment; verifying the data submitted to the ED by the Performing Parties; and performing any Remedial Activities not being performed or not being satisfactorily performed by the Performing Parties. Nothing herein will be interpreted as limiting or affecting the ED's right of entry or inspection authority under state or federal law. All persons with access to the Site shall comply with the HASP.

#### XVII. Delay in Performance

Respondent(s) shall notify the ED of any delay or anticipated delay in achieving compliance with any requirement of this AO. Such notification will be made by telephone to the Project

Manager or, if not available, the alternate Project Manager, within forty-eight (48) hours after Respondent(s) first knew or should have known that an event might cause a delay. Within seven (7) Days after notifying the ED by telephone, Respondent(s) shall provide written notification fully describing the cause of the delay, the anticipated duration of the delay, the measures taken and to be taken by Respondent(s), their contractors, or consultants, to prevent or minimize the delay, and the timetable by which these measures have been, are being, and will be implemented. A revised timetable will be implemented upon its approval by the ED.

#### XVIII. Extension of Deadlines

Upon failure to comply with the terms and conditions of this AO, any Defaulting Performing Parties shall cease to be Performing Parties and all such rights and privileges as accrue to the Performing Parties pursuant to this AO will immediately terminate as to such Defaulting Performing Parties. At that time all responsibilities and obligations that attach to RPs in addition to those that attach to Performing Parties will attach to Defaulting Performing Parties that are RPs, including the requirement to pay TCEQ costs in accordance with Section V (Order) Paragraph C.

Notwithstanding anything to the contrary in this AO, the Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties shall bear no costs for any fines, penalties, or increases in the ED's oversight of the Remedial Activities resulting from Defaulting Performing Parties actions or inactions. Defaulting Performing Parties and the RPs may be assessed the ED's full costs for oversight of the Work. If actions required by this AO are delayed or are not timely completed because of acts or omissions of one or more Defaulting Performing Parties, the Agreeing Respondent(s), or if there are no Agreeing Respondent(s) to this AO, the Performing Parties may request a time extension. Upon such request, the ED will approve the time extension, disapprove it, or approve such alternative time extension as the ED in his sole discretion deems appropriate. Thereafter, Respondent(s) shall adhere to all remaining deadlines in this AO and in any documents developed in accordance with this AO and approved by the ED.

The Agreeing Respondent(s) may seek and the ED may grant an extension of any deadline contained in this AO or in any document submitted pursuant to this AO. Agreeing Respondent(s) shall submit the request for a deadline extension no later than seven (7) Days prior to the deadline date and shall substantiate good cause for extension of the deadline. The determination of what constitutes good cause and the length of any deadline extension will be at the ED's sole discretion.

#### XIX. Covenant Not to Sue

- A. Except as expressly provided herein, the TCEQ hereby covenants not to sue, not to take any administrative action against, and not to execute judgment against Agreeing

Respondent for any and all civil or administrative obligations or liability, including future liability, to the TCEQ for any causes of action arising under Sections 361.271 and 361.275(g) of the Texas Health and Safety Code and subsequently enacted statutory provisions authorizing equivalent causes of action for claims arising from or related to releases or threatened releases of hazardous substances at or from the Site. With respect to future liability, this covenant not to sue shall take effect upon TCEQ issuance of the notice as specified in Section XXXIII (Termination of the Administrative Order), of this Administrative Order.

- B. The Agreeing Respondent hereby covenants not to sue the State of Texas, including any and all departments, agencies, officers, administrators, State contractors and representatives thereof, for any claim, counterclaim, or cross-claim known to Agreeing Respondent at the Effective Date of this Administrative Order, and asserted, or that could have been asserted at the Effective Date of this Administrative Order, arising out of or relating to the Site.
- C. Notwithstanding any other provisions of this Section, the State of Texas reserves the right to seek modification of this Administrative Order or to institute a new action to seek additional removal or remedial measures at the Site through an action to compel the Agreeing Respondent to perform removal or remedial work or to institute an action to compel the Agreeing Respondent to reimburse the State of Texas for response costs if:
  - 1. Either:
    - a) Conditions at the Site (including the release or threat of release of hazardous substances), which were previously unknown to the TCEQ, are discovered after the entry of this Administrative Order; or
    - b) Information is received after the date of the entry of this Administrative Order; and
  - 2. These previously unknown conditions or this information indicates that the Remedial Activities are not protective of human health and the environment.
- D. For the purposes of Item C of this Section, conditions or information known to the TCEQ shall be limited to those matters contained in or referred to in Exhibit A, the Remedy Selection Document.

XX. Compliance with Applicable Laws

- A. Respondent(s) shall perform all actions pursuant to this AO in accordance with the requirements of all applicable or relevant and appropriate federal, state, and local laws, including the Texas Solid Waste Disposal Act as codified in the Texas Health and Safety Code and the Texas Oil and Hazardous Substance Spill Prevention and Control Act as codified in the Texas Water Code. This AO is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.
- B. All materials removed from the Site shall be disposed of or treated at a facility which is in compliance with all applicable or relevant and appropriate Federal, State, and local laws and shall be disposed of or treated in accordance with all such requirements.

XXI. Stipulated Penalties

- A. Subject to the provisions of Sections XXII (Force Majeure) and XXIII (Resolution of Disagreements), noncompliance with this AO shall result in the imposition of stipulated penalties as set forth below.
- B. Penalties Related to Timeliness of Submittals Required by this AO

For failure to:

1. meet the deadlines set forth in Sections V (Order) and VI (Remedial Activities);
2. submit timely reports as set forth herein;
3. submit data in a timely fashion or provide timely notice of sampling as required by Section XI (Submittal of Documents, Sampling, and Analyses); or
4. resubmit a document within the timeframes specified herein;

Agreeing Respondent(s) shall pay stipulated penalties in the following amounts for each Day and part thereof during which any delay listed in Subparagraphs B.1 through B.4 above continues:

<i>Period of Delay</i>	<i>Amount/Day</i>
1st through 14th Day	\$500.00
15th through 45th Day	\$2,000.00

46th Day and beyond

\$3,000.00

C. Penalties Related to Competency of Submittals

This Paragraph applies to submittals of any document required by Sections VI (Remedial Activities), VII (Failure to Attain Remediation Goals or Findings of Significant Difference), and XIII (Periodic Review) which fail to be responsive and acceptable. Agreeing Respondent(s) shall pay a stipulated penalty of \$5,000 for each week and part thereof that an acceptable and responsive document is not submitted. This penalty may be assessed in addition to any penalties assessed under Paragraph B of this Section.

D. Penalties Related to project milestones

For failure to:

1. achieve any RA project milestones in accordance with the schedule approved under Section VI (Remedial Activities) Paragraph B; or
2. achieve any PCA project milestones in accordance with the schedule approved under Section VI (Remedial Activities) Paragraph B.

Agreeing Respondent(s) shall pay stipulated penalties in the following amounts for each Day and part thereof during which any delay listed in Subparagraphs D.1 through D.2 above continues:

<i>Period of Delay</i>	<i>Amount/Day</i>
1st through 14th Day	\$1,000.00
15th through 45th Day	\$3,000.00
46th Day and beyond	\$10,000.00

E. For disobeying an order to halt any or all of the Remedial Activities under Section VIII (Project Manager/Site Coordinator), Agreeing Respondent(s) shall pay stipulated penalties of \$10,000 per Day.

F. For failure to use best efforts to obtain Site access in accordance with Section XVI (Access), Agreeing Respondent(s) shall pay a stipulated penalty of \$1,000 per Day.

- G. For denying access provided for in Section XVI (Access) Agreeing Respondent(s) shall pay stipulated penalties of \$10,000 per Day.
- H. Any Agreeing Respondent who fails to provide records within ten (10) Days after receipt of a written request from the ED or within such other period as specified herein shall pay a stipulated penalty of \$10,000 per Day.
- I. With the exception of the stipulated penalties referenced in Paragraphs E, G and H above which attach to individual Agreeing Respondent(s), all stipulated penalties assessed in accordance with this Section are joint and several, not individual, obligations.
- J. Agreeing Respondent(s) shall pay stipulated penalties assessed under this Section as specified in Paragraph K below within sixty (60) Days after ED transmits a demand letter stating that stipulated penalties have accrued or after resolution of a disagreement as specified in Section XXIII (Resolution of Disagreements), whichever comes later. Stipulated penalties will accrue from the date of noncompliance until the noncompliance is corrected, provided however, that if any Agreeing Respondent prevails in resolution of disagreements as specified in Section XXIII (Resolution of Disagreements), it shall have no liability to pay stipulated penalties with regard to those matters submitted for resolution of disagreements in accordance with Section XXIII (Resolution of Disagreements) in which it prevails.
- K. Agreeing Respondent(s) shall pay stipulated penalties to "General Revenue Fund of the State of Texas" and shall mail payments to:
- Chief Fiscal Officer (MC 180)  
Texas Commission on Environmental Quality  
"Re: American Zinc State Superfund Site Administrative Order, Docket No.  
2009-1355-SPF"  
P.O. Box 13088  
Austin, Texas 78711-3088
- L. The requirement to pay stipulated penalties that have been incurred prior to the termination of this AO in accordance with Section XXXIII (Termination of the Administrative Order) will survive termination of this AO.
- M. A single act or omission may be the basis for more than one type of stipulated penalty. A single act or omission may also be subject to more than one (1) Day of stipulated penalties. In cases where more than one stipulated penalty applies to a single act or omission, the ED may choose which stipulated penalties to assess.

- N. The ED has the sole discretion to reduce or waive stipulated penalties and to do so as to specific Agreeing Respondent(s) or groups of Agreeing Respondent(s).
- O. Stipulated penalties against Agreeing Respondent(s) will be in lieu of administrative and civil penalties for the same violation but will not prevent TCEQ from seeking enforcement of the ordering provisions by injunctive relief. Respondent(s) that are not Agreeing Respondent(s) are subject to administrative and civil penalties.

## XXII. Force Majeure

- A. If a delay in performance is caused (in whole or in part) by events beyond the reasonable control of the Agreeing Respondent(s), that failure will not be construed as a violation of this AO. The burden of establishing that an event is beyond their reasonable control lies with the Agreeing Respondent(s). The Agreeing Respondent(s) shall notify the ED in writing within seven (7) Days of the start of the Force Majeure event and within seven (7) Days of the end of the Force Majeure event. Agreeing Respondent(s) shall submit the notification as specified in this Section. Failure to so notify the ED will constitute a waiver of the claim of Force Majeure.

Such notice will describe in detail the cause of the delay, the anticipated duration of the delay, the measures taken and to be taken by the Agreeing Respondent(s) their contractors, or consultants, to prevent or minimize the delay, the timetable by which these measures have been, are being, and will be implemented. Measures to prevent or minimize the delay will be implemented upon the ED's written approval of the timetable. The Agreeing Respondent(s) shall also submit, for the ED's approval, a proposed schedule for subsequent Remedial Activities whose deadlines have been affected by the Force Majeure event. Neither the ED's approval of the timetable of measures to be taken to prevent or minimize delays or of the revised schedule of Remedial Activities will be construed as excusing the delay or as a waiver of TCEQ's rights to enforce this AO.

- B. Force Majeure events will not include increased costs or expenses of any part or all of the Work, nor the financial inability of any Agreeing Respondent to perform any part or all of the Work.
- C. If the ED and the Agreeing Respondent(s) cannot agree that the cause for the delay was a Force Majeure event or cannot agree upon the schedule for subsequent Remedial Activities, then the disagreement will be resolved according to Section XXIII (Resolution of Disagreements). The Agreeing Respondent(s) shall have the burden of demonstrating that Force Majeure is warranted.

## XXIII. Resolution of Disagreements

- A. The Agreeing Respondent(s) and the ED shall attempt to resolve on an informal basis any issues arising under Sections V (Order) through XXXIII (Termination of the Administrative Order) on which there is disagreement. The Agreeing Respondent(s) shall commence informal negotiations by notifying the Project Manager in writing that there is a disagreement and that this Section is being invoked. Except as provided below in Paragraph D, informal negotiations will not extend beyond thirty (30) Days from the date the Project Manager receives such notification, unless the Agreeing Respondent(s) and the ED agree otherwise in writing.
- B. The Agreeing Respondent(s) shall notify the Project Manager within thirty (30) Days after the Day the Agreeing Respondent(s) knew or should have known of the events giving rise to the disagreement. Should the Agreeing Respondent(s) fail to give such notice, the ED's decision on any disagreement will be binding.
- C. Notification of the Project Manager in accordance with Paragraph A above will not by itself postpone the deadlines established in accordance with this AO or stay the accrual of any applicable stipulated penalties for the matter at issue. However, the obligation to pay any applicable stipulated penalties to the TCEQ will be stayed pending resolution of the disagreement in accordance with this Section.
- D. If the ED makes a determination to perform a portion or all of the Remedial Activities, the Agreeing Respondent(s) shall have five (5) Days after notification to the Site Coordinator to commence informal negotiations by notifying the Project Manager in accordance with Paragraph A above. Informal negotiations will not extend beyond fifteen (15) Days from the date the ED receives notification, unless the Agreeing Respondent(s) and the ED agree otherwise in writing.
- E. The procedure for any resolution of disagreements subsequent to informal negotiations will be found in Sections 361.321 and/or 361.322 of the Act.
- F. Unless otherwise specifically set forth herein, the fact that resolution of disagreements is not specifically set forth in individual Sections is not intended to and will not bar the Agreeing Respondent(s) from invoking this Section as to any disagreement arising under Sections V (Order) through XXXIII (Termination of the Administrative Order), including any disagreement concerning the ED's exercise of discretion under the terms of this AO.

#### XXIV. Indemnification

Respondent(s) agree to indemnify and hold harmless TCEQ and its officers, employees, agents, principals and assigns from and against all fines, penalties, claims, damages, losses,

demands, judgments, settlements, costs of suit, and attorneys fees that arise out of or result from:

1. Respondent(s)' performance of an inherently dangerous activity or handling of a solid waste or hazardous substance at or from the Site;
2. Respondent(s)' negligent, reckless, or intentional acts or omissions or such acts or omissions of any of its agents or employees; and
3. the negligent, reckless, or intentional acts or omissions of any of Respondent(s)' contractors or suppliers or their agents or employees.

#### XXV. Liability

The State of Texas, by issuing this AO, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions of Respondent(s), or their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any of the Work. Neither TCEQ nor the State of Texas will be deemed a party to any contract entered into by any Respondent or its directors, officers, employees, agents, successors, assigns, contractors, or consultants to perform any or all of the Work or any other activity at the Site.

#### XXVI. Severability

The provisions of this AO are intended to be severable and are deemed severable. Should any provision of this AO be rendered unenforceable by a court of competent jurisdiction or other appropriate authority the remaining provisions will remain valid and enforceable.

#### XXVII. TCEQ's General Reservation of Rights and Retention of Claims

Except as specified herein, nothing in this AO will constitute or be construed as a covenant not to sue by TCEQ or the State of Texas or a release from any claim, cause of action, or demand in law or equity against any person, firm, partnership, or corporation. Except as specified herein, the ED reserves and this AO is without prejudice to all rights against Respondent(s) with respect to all matters including:

1. Claims based on Respondent(s)' failure to fulfill the requirements of this AO;
2. Liability arising from the past, present, or future disposal, release, or threat of release of solid wastes or hazardous substances outside of or not related to the Site;

3. Liability for future disposal of solid wastes or hazardous substances at the Site, other than as provided in the RSD or in any work plan required to be developed in accordance with this AO;
4. Liability for violations of federal or state law which occur during or after implementation of the Remedial Activities;
5. Claims based on criminal liability; and
6. Claims for natural resource damages as defined by CERCLA (42 U.S.C. Sections 9601 et seq.), the Oil Pollution Act of 1990 (33 U.S.C. Sections 2701 et seq.), the Oil Spill Prevention and Response Act (Texas Natural Resources Code Chapter 40), and the Federal Water Pollution Control Act (33 U.S.C. Sections 1251 et seq.).

Notwithstanding any other provisions of this Section, any De Minimis Responsible Party will be released from any further liability to the TCEQ and the State of Texas arising out of or relating to the Site only upon satisfactory completion of its requirements under this AO as specified in Section V (Order) Paragraph D.

#### XXVIII. Section Headings

Section headings are included for convenience of reference only and will be disregarded in the construction and interpretation of any of the provisions of this AO.

#### XXIX. Continuing Authority

TCEQ specifically retains authority over Respondent(s) for the duration of this AO for the purposes of issuing such further orders or directions as may be necessary or appropriate to construe, implement, modify, enforce, terminate, or reinstate the terms of this AO or for any further relief as the interest of the State of Texas may require.

#### XXX. Enforcement

Except as provided in Section XXI (Stipulated Penalties) Paragraph O, nothing herein will preclude TCEQ from taking any additional enforcement actions against Respondent(s) at any time including issuing such additional orders as TCEQ may deem necessary or from requiring Respondent(s), but not any De Minimis Responsible Parties, to perform additional activities in the future and to completely perform all of the Work.

This AO in no way obligates the State of Texas to assist Respondent(s) in defending contribution actions brought by other persons or entities.

### XXXI. Computation of Time

- A. Deadlines falling on a weekend or a State of Texas holiday will be extended until the next business day.
- B. The terms "submit" and "provide" as used herein will refer to the date on which information, data, a document, or a record is to be received by the appropriate Party. Submittals received on the deadline date will be deemed timely.

### XXXII. Opportunity to Conference

- A. The Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties may, within twenty (20) Days after the Effective Date, request a conference with the Project Manager. The request must be submitted in writing to the Project Manager. Any such conference will occur at the TCEQ's main campus in Austin.
- B. The purpose and scope of the conference will be limited to issues involving the implementation of the Remedial Activities. The conference is not an evidentiary hearing, does not constitute a proceeding to challenge this AO, and does not give Agreeing Respondent(s) or, if there are no Agreeing Respondent(s) to this AO, the Performing Parties the right to seek review of this AO.

### XXXIII. Termination of the Administrative Order

- A. The ED may terminate this AO when he determines that alternative or additional work is required at the Site because the Remediation Goals will not be attained by implementation of the Remedial Activities, unless Agreeing Respondent(s) and the ED agree on such alternative or additional work, agree to modify the Remedial Action to include such additional or alternative work in accordance with Section V (Order) Paragraph J, and agree to modify this AO in accordance with Section V (Order) Paragraph J.
- B. Except as provided in this Section, when the ED determines that the Work has been completed in accordance with this AO, the ED will provide written notice to Agreeing Respondent(s) that Agreeing Respondent(s) have fully satisfied the requirements of this AO. Such notice will be issued within one hundred and eighty (180) Days after the ED determines that the Work has been completed in accordance with this AO. This notice will not, however, terminate Respondent(s)' obligations to comply with those provisions specified herein that are intended to survive this AO, including requirements regarding record preservation and Sections XV (Records), XXI

(Stipulated Penalties), XXV (Liability), XXIX (Continuing Authority), and XXX (Enforcement and Reservations).

XXXIV. Rules of Construction

The masculine, feminine, and neuter gender will each include the other and the singular and plural number will each include the other.

This AO may be executed in two or more counterparts each of which will be deemed an original but all of which together will constitute one and the same document.

XXXV. Sovereign Immunity

The Parties hereby agree that nothing in this AO waives the State of Texas' sovereign immunity relating to suit, liability, and the payment of damages. The Parties further agree that all claims, suits, or obligations arising under or relating to this AO are subject to and limited to the availability of funds appropriated by the Texas Legislature for that respective claim, suit or obligation.

*The Chief Clerk shall send a copy of this Administrative Order to all Parties.*

Issue date:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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Bryan W. Shaw, Ph. D., Chairman  
For the Commission

**AMERICAN ZINC  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT A**

**REMEDY SELECTION DOCUMENT**

REMEDY SELECTION DOCUMENT



AMERICAN ZINC

*STATE SUPERFUND SITE*

*DUMAS, MOORE COUNTY, TEXAS*

January 31, 2008

Clerical Corrections Made October 30, 2008

***PREPARED BY: OTU EKPO-OTU, PROJECT MANAGER  
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
ENVIRONMENTAL CLEANUP SECTION  
REMEDICATION DIVISION***

1 of 6

American Zinc State Superfund Site Agreed Order- Exhibit A

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**AMERICAN ZINC PROPOSED STATE SUPERFUND SITE  
DUMAS, MOORE COUNTY, TEXAS**

**REMEDY SELECTION DOCUMENT**

**I. PURPOSE**

This Remedy Selection Document (RSD) presents the selected Remedial Action (also known as the remedy) for the Site, which is designed to address the contamination at the Site that presents an unacceptable risk to human health and the environment.

**II. PROPOSED REMEDIAL ACTION**

The October 11, 2007 Proposed Remedial Action Document (PRAD), presented a brief discussion of all the remedial alternatives the TCEQ evaluated and the specific remedy the TCEQ proposed to address the chemicals of concern (COCs) at the Site. A public meeting was held on December 13, 2007, at 7 p.m. in the Commissioners Chambers, 124 West 6<sup>th</sup> Street, Dumas, Moore County, Texas. The purpose of the public meeting was to present the PRAD and to solicit public comment about the proposed remedy. After consideration of the comments received during the public meeting and the public comment period, the TCEQ has selected the remedy described in this RSD.

**III. REMEDIAL ACTION LEVELS AND OBJECTIVES**

Remedial Action Objectives describe the remedy goals, which must be achieved to make a site protective of human health and the environment. Action levels describe the maximum numeric concentrations of COCs, which if allowed to remain on-site, will not pose an unacceptable risk or adverse health effects. For the American Zinc Site, the action levels were selected based on the Tier 1 protective concentration levels (PCLs) for the total soil combined pathway, as established in the Texas Risk Reduction Program Rules (TRRP), 30 Texas Administrative Code (TAC) Section 350.75. The objectives and action levels are presented in the following table, specific to the COCs found at the Site:

**MEDIA: SURFACE SOIL**

COC NAME	ACTION LEVEL (Critical PCL) for Source Property	ACTION LEVEL (Critical PCL) for Non-source property	REMEDIAL ACTION OBJECTIVES
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Zinc	250,000 parts per million (ppm) for source property, which is below action level.	9,900 parts per million (ppm) for non-source property.	Protective of soil ingestion, inhalation and dermal contact.
Arsenic	200 ppm for source property.	24 ppm for non-source property.	Protective of soil ingestion, inhalation and dermal contact.
Cadmium	850 ppm for source property.	52 ppm for non-source property.	Protective of soil ingestion, inhalation and dermal contact.
Lead	1,600 ppm for source property.	500 ppm for non-source property.	Protective of soil ingestion, inhalation and dermal contact.

Because the Remedial Investigation revealed no COCs in groundwater which present an unacceptable risk to human health or the environment, no remedial action objectives for groundwater are required at the Site.

#### **IV. THE SELECTED REMEDIAL ACTION**

In accordance with 30 TAC, Section 335.348(l) and the requirements of the Texas Solid Waste Disposal Act, Section 361.193, the TCEQ selects Remedial Action for a site by determining which remedial alternative is “the lowest cost alternative which is technologically feasible and reliable, effectively mitigates and minimizes damage to the environment, and provides adequate protection of the public health and safety and the environment.” For the American Zinc Site, the TCEQ selects consolidation, capping and institutional controls for the source Property and institutional controls, soil treatment or other appropriate methods for the affected surface soil on the non-source property. This remedy will be conducted in accordance with TRRP.

##### **A. Source Property**

Under the selected remedy on the source property, affected surface soil with metal concentrations above commercial and industrial PCLs will be excavated and consolidated on the southeastern portion of the source property area. The consolidated area will be capped with approximately 12 inches of soil borrowed from the western one third portion of the source property area, where the soil metal concentrations are below PCLs. The capped soil area will then be graded and vegetated to prevent soil erosion.

The use of a soil cap is an effective remedy for limiting access and exposure to soil containing COCs above PCLs for the following reasons: (1) Vertical migration of the soil containing COCs to groundwater has not been documented; and (2) Metals also have not been demonstrated to leach through the thick, clay soil column and subsequently into the groundwater, which is more than 250 feet below the ground surface.

Institutional controls (ICs), such as a restrictive covenant or a deed notice, will be placed on the consolidated area of the source property to notify the public and property owner(s) that the soil cap should not be disturbed and that the source property should only be used for commercial and industrial purposes.

## **B. Non-source Property**

Under the selected remedy on the non-source property, there are several remedial options, depending upon each landowner's preference.

### **1. Institutional Controls**

The first remedial option includes placing ICs, such as a restrictive covenant or a deed notice, on the non-source property areas with affected surface soil, containing metal concentrations above residential protective concentration levels (PCLs). The use of ICs on the affected soil on the non-source property is an effective remedy for limiting access and exposure to surface soil containing COCs above PCLs because ICs serve to notify the public and property owner(s) that the affected surface soil should not be disturbed and the affected property should only be used commercial and industrial purposes, which is the current land use.

### **2. Deep Tilling and Treating Affected Surface Soil**

If a land owner does not agree to place ICs on his or her property, other remedial options to address the affected surface soil are available. The second remedial option includes deep tilling and treating the affected non-source property soil with a soil amendment to the total depth of impacted soil in order to reduce and stabilize the metals. After treatment, the treated area will be sampled to confirm that the metals in soil are below their respective PCLs and are protective of human health and the environment. The use of deep tilling and soil treatment of the affected soil on the non-source property is an effective remedy because the soil treatment and deep tilling results in binding the metals to the soil reducing its solubility, and limiting its availability to humans and the environment.

### **3. Other Appropriate Methods**

If the landowner does not agree to either the first remedial option, to place ICs on his or her property, or the second remedial option, deep tilling and treating the affected property, other appropriate

remedial options are still available. Similarly, if the landowner agreed to the second option, but the second option is ultimately unsuccessful and after tilling and treating the affected soil, sampling confirms that the affected soil still contains metals above their respective PCLs, other appropriate remedial options are still available

The appropriate methods under the third remedial option to address affected surface soil will be property-specific and may include excavation of affected surface soil. Excavation of soil on the non-source property will include excavating the affected surface soil and transporting it to the source property, where the soil will be deposited into the consolidation area on the southeastern portion of the source property. As described above under the selected remedy of the source property, the consolidated area will be capped with approximately 12 inches of soil borrowed from the western one third portion of the source property area, where metal concentrations in the soil are below PCLs. The capped soil area will then be graded and vegetated to prevent soil erosion. The excavated area will be backfilled with soil that have not been affected by the operations at the site and the surface of the backfilled area will be contoured and seeded to match the surrounding land.

The use of other appropriate methods on the affected soil on the non-source property is an effective remedy because it prevents exposure of affected soils to humans and the environment.

**AMERICAN ZINC  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT B**

**AGREEING RESPONDENT CONSENT FORM**

## AGREEING RESPONDENT CONSENT FORM

This Administrative Order, which includes this Consent Form, represents the complete and fully integrated agreement of the parties hereto. This Administrative Order is binding upon Agreeing Respondent and its successors and assigns.

Agreeing Respondent is jointly and severally liable for the requirements set out in this Administrative Order. Neither the Agreeing Respondent's consent, nor anything in this document, will constitute or be considered evidence of an admission by the Agreeing Respondent or TCEQ of any findings of fact or conclusions of law set forth herein. For any other purposes, the Agreeing Respondent and TCEQ reserve their rights to deny all of these matters. This Administrative Order will not be construed as an admission of liability by the Agreeing Respondent for remediation of the Site or as an agreement to perform remedial activities except as otherwise specifically set forth herein. Notwithstanding compliance with the terms and conditions of this Administrative Order, Agreeing Respondent is hereby put on notice that further action at the Site may be necessary, including groundwater monitoring and assessment and natural resources damage assessment in accordance with the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601, *et. seq.* (1980), as amended, or other applicable state or federal laws.

The TCEQ and Agreeing Respondent acknowledge that the list of PRPs contained in Section II (Findings of Fact), Paragraph A of the Administrative Order will be added by the TCEQ after this Consent Form has been signed by the Agreeing Respondent and the list of PRPs will be incorporated into the Administrative Order upon its issuance. The TCEQ and Agreeing Respondent also acknowledge that the PRPs list in Section II (Findings of Fact), Paragraph A of the Administrative Order was developed by the TCEQ without the Agreeing Party's consent. The Agreeing Respondent reserves and does not waive the right to assert that other persons are responsible for any liabilities associated with the Site, to seek indemnity or contribution from such other persons, to assert that the release of any hazardous substances or solid wastes is divisible, or to assert any claim or defense which may be available under Section 361.344 of the Tex. Health and Safety Code or under other applicable law.

I, the undersigned, have read and understand the attached Administrative Order. I understand that it is an Administrative Order which does not constitute an admission by any Agreeing Respondent of the facts stated therein, but does constitute a waiver of the right to appeal this Administrative Order, except as provided herein. I am authorized to agree to the attached Administrative Order on behalf of the entity indicated below by my signature, and do hereby agree to the terms and conditions set forth herein.

Agreeing Respondent acknowledges and agrees that nothing in the Remedial Design or Remedial Action Work Plans constitutes a warranty or representation of any kind by TCEQ that compliance

with this Administrative Order will achieve the performance standards set forth in the Remedy Selection Document and that such compliance will not foreclose TCEQ from seeking performance of all terms and conditions of this Administrative Order, including the applicable performance standards.

The parties to this Administrative Order agree that the State of Texas will be under no obligation to assist the Agreeing Respondent in any way in defending contribution actions brought by persons or entities not parties to this Administrative Order.

The Agreeing Respondent agrees to indemnify and hold harmless the TCEQ and its officers, employees, agents, principals and assigns from and against all fines, penalties, claims, damages, losses, demands, judgments, settlements, costs of suit and attorneys fees that arise out of or result from:

- a. the Agreeing Respondent's performance of an inherently dangerous activity or handling of a hazardous substance;
- b. the negligent or reckless or intentional acts or omissions of the Agreeing Respondent or any of its agents or employees;
- c. the negligent or reckless or intentional acts or omissions of any of the Agreeing Respondent's contractors or suppliers or their agents or employees.

The Parties represent that this Administrative Order was negotiated in good faith and represents a settlement agreement for matters concerning the Site, considering, among other factors, the fact that it is in the best interest of the State of Texas to encourage equitable settlements without burdensome litigation.

This Administrative Order may be executed in two or more counter-parts, each of which will be deemed an original, but all of which together will constitute one and the same document.

**AGREEING RESPONDENT:**

BLUE TEE CORP.

*Name of Agreeing Respondent*

Signature Terrance Gileo Faye Date 3/12/09

Printed or Typed Name TERRANCE GILEO Title SPECIAL COUNSEL  
FAYE

*Address*

1 N. MAPLE AVENUE  
GREENSBURG, PA 15601

**EXHIBIT B**

*Agreeing Respondent Consent Form*

The Executive Director hereby executes the Consent Forms for the Agreeing Respondent listed in Section II (Findings of Fact), Paragraph C, of this AO on behalf of the Texas Commission on Environmental Quality:

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY:**

  
\_\_\_\_\_  
*Mark Vickery*  
*Executive Director*  
*Texas Commission on Environmental Quality*

Date 1-7-10

**AMERICAN ZINC  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT C**

**LIST OF SOLID WASTES AND HAZARDOUS  
SUBSTANCES AT THE SITE**

**LIST OF SOLID WASTES AND HAZARDOUS SUBSTANCES AT THE SITE**

The following is a list of the solid wastes and hazardous substances identified at the American Zinc Site:

-Lead

-Cadmium

-Arsenic

-Zinc

**AMERICAN ZINC  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT D**

**FIELD SAMPLING PLAN CONTENTS OUTLINE**

# FIELD SAMPLING PLAN CONTENTS OUTLINE

## TABLE OF CONTENTS

Title and Approval Sheet

Distribution List

Table of Content

### 1.0 Introduction/Purpose

- **Investigation Phase:** Purpose - Briefly states the specific purpose of this FSP relative to the Quality Assurance Project Plan and Work Plan and/or other documents. A schematic presentation of the project documents and the location of key planning components should be presented.
- **RA Phase:** Purpose - Briefly states the specific purpose of this FSP relative to the RA Contract Document and Quality Assurance Project Plan and/or other documents and a schematic presentation of the project documents and the location of key planning components.
- **Project/Task Organization** - Identify the key individuals or organization participating in the project and their role(s) and responsibilities, and the organizational chart for the project. (Project specific information for QAPP Element A4) <sup>1</sup>

### 2.0 Site and Project Summary

- **Investigation Phase: Problem Definition/Background-** Briefly states the site description, surrounding area, historical information, previous investigation, suspected contamination source, a probable transport pathways and other site information. Most of this information are available from the Conceptual Site Model developed during the planning phase. Any specific data gaps and methods to fill the data gaps should also be discussed. State the specific problem to be solved or the decision to be made and identify the decision maker. (Project specific information for QAPP Element A5) <sup>1</sup>
- **RA Phase: Problem Definition/Background-** Briefly states the site description, historical information, previous investigation, a summary of the selected remedy, a brief discussion of the remedial action activities. State the specific problem to be solved or the decision to be made and identify the decision maker. (Project specific information for QAPP Element A5) <sup>1</sup>
- **Project/Task Description and Schedule-** A summary of the project and the project tasks, the turn-around time for the project including the turn around time requirement of laboratory analysis. (Project specific information for QAPP Element A6) <sup>1</sup>
- **Describe any special personnel and equipment required for the specific type of work being planned or measurement being taken.** (Project specific information for QAPP Element A8) <sup>1</sup>

- *Data Acquisition Requirement (Non-direct Measurement)-Define the criteria for the use of non-measurement source such as computer databases, programs, literature files, and historical databases. (Project specific information for QAPP Element B9) <sup>1</sup>*
- *Assessment Technique-Define the number, frequency, and type of quality assessments activities, the responsible staff, and the procedures to be performed during the life of the project are specified in this section and any special training/certification requirements. (Project specific information for QAPP Element C1) <sup>1</sup>*

### 3.0 Sampling Objectives / Data Quality Objectives

- *Data Quality Objectives - Summarize the project specific quality objectives and measurement performance criteria. This section should include the summary of the 7-Step DQO process or a systematic planning process used and should include reference to Appendix B for the complete details of the proposed DQOs document for the project. Designates and briefly describes sampling units (e.g. AOCs, surface soil to 6 inches). States objectives by sampling unit or media. The Project specific calculations or algorithms are also specified in this section. (Project specific information for QAPP Element A7) <sup>1</sup>*

### 4.0 Sampling Plan Design

- *Sampling Process Design - All the relevant components of the experimental design and the key parameters to be evaluated are included in this section. This section shall include the sampling activities, the rationale for the design (in terms of meeting the DQOs), the sampling design assumptions, the procedures for locating and selecting environmental samples, a classification of measurements as critical or noncritical, the type and number of samples required for the project including the required field QC samples, the sampling locations and frequency, the applicable sample matrices, and an identification of samples critical to the project. Most of this information should be available from the output from Step 7 of the DQO process. (Project specific information for QAPP Element B1) <sup>1</sup>*
- *Describe the sampling plan for each media as applicable, including figures and tables.*

*Surface Soil*  
*Subsurface Soil*  
*Groundwater*  
*Surface Water and Sediment*  
*Air*  
*Other Matrices*

- *This section should also include a table summary containing a list of all chemicals of concern identified for the project with the corresponding Level of Required Performance (LORP) (e.g., action levels and preliminary remedial goals), analytical methods, including the preparation, analysis and cleanup methods, and the corresponding Method Detection Limit for all the analytes of concern.*

### 5.0 Sampling Method and Sample Handling

- *Sampling Method Requirements - Identify sampling methods and equipment and describe the procedures for sample collection, preparation, and decontamination. This section should reference*

*the Standard Operating Procedures located in Appendix B. (Project specific information for QAPP Element B2) <sup>1</sup>*

- *Sampling Handling and Custody Requirements- This section shall include the required sample volumes, container types, and preservation requirements for non-standard analytical methods proposed for project work that are not listed in Table B2-1 of the site-specific QAPP. This section also includes the field sample handling and custody requirements for the project. (Project specific information for QAPP Element B3) <sup>1</sup>*
- *This section should also contain specific requirements for field instrument/equipment testing, inspection and maintenance for the project. Additionally, field instrument calibration and frequency requirements for water level, pH, temperature, conductivity, dissolved oxygen, redox potential, and turbidity measurements are contained in this section. This section also includes the critical field supplies, the inspection or acceptance testing requirements, and the acceptance criteria. (Project specific information for QAPP Element B6, B7, and B8) <sup>1</sup>*

#### 6.0 Field Survey and Measurements

- *This section shall describe the sampling methods and criteria for field survey and measurements, such as land survey, hydrogeological tests and measurements, geophysical survey and or soil gas surveys, required for the project.*

#### 7.0 Additional Field Activities

- *This section contains description and procedures for other field activities such as pre-sampling/mobilization activities, required notification, property access, site restoration and IDW handling and disposal.*

#### 8.0 Exceptions, Additions and Changes to the TCEQ Superfund Program QAPP

*List any exceptions, additions and changes to the Superfund Program QAPP in each of the appropriate sub-sections corresponding to the table of contents of the Program QAPP. Site specific information (e.g., Group A and Group B elements) specified above shall not be re-stated in this section. Please refer to the Program QAPP for details. This section should also include specifications for non-standard methods and other analytical methods not contained in the Program QAPP.)*

##### GROUP A: PROJECT MANAGEMENT

- A.1 *Title and Approval Sheet*
- A.2 *Table of Contents*
- A.3 *Distribution List*
- A.4 *Project/Task Organization*
- A.5 *Problem Definition/Background*
- A.6 *Project/Task Description*
- A.7 *Quality Objectives and Criteria for Measurement Data*
- A.8 *Special Training Requirements/Certification*
- A.9 *Documentation and Records*
  - A.9.1 *Field Operation Records*
  - A.9.2 *Laboratory Records*
  - A.9.3 *Data Handling Records*

- A.9.4 *Data Reporting Package Format and Documentation Control*
- A.9.5 *Data Reporting Package Archiving and Retrieval*

GROUP B: MEASUREMENT/DATA ACQUISITION

- B.1 *Sampling Process Design*
- B.2 *Sampling Methods Requirements*
  - B.2.1 *Sample Containers*
  - B.2.2 *Sample Volumes, Container Types, and Preservation Requirements*
- B.3 *Sample Handling and Custody Requirements*
  - B.3.1 *Field Sample Handling and Custody Requirements*
  - B.3.2 *Laboratory Sample Handling and Custody Requirements*
- B.4 *Analytical Methods Requirements*
  - B.4.1 *Screening Methods*
  - B.4.2 *Definitive Preparation Methods*
  - B.4.3 *Definitive Analysis Methods*
  - B.4.4 *Non-standard Method Validation*
- B.5 *Quality Control Requirements*
  - B.5.1 *Definitive Analytical Methods*
  - B.5.2 *Screening Methods*
  - B.5.3 *Quality Control Measure Descriptions*
  - B.5.4 *Elements of Quality Control*
  - B.5.5 *Method Detection Limit and Sample Quantitation Limit*
- B.6 *Instrument/Equipment Testing, Inspection, and Maintenance Requirements*
  - B.6.1 *Maintenance Responsibilities*
  - B.6.2 *Maintenance Schedules*
  - B.6.3 *Spare Parts*
  - B.6.4 *Maintenance Records*
- B.7 *Instrument Calibration and Frequency*
- B.8 *Inspection/Acceptance Requirements for Supplies and Consumables*
- B.9 *Data Acquisition Requirements*
- B.10 *Data Management*
  - B.10.1 *Logbooks and Forms*
  - B.10.2 *Data Storage/Retrieval Requirements*

GROUP C: ASSESSMENT/OVERSIGHT

- C.1 *Assessments and Response Actions*
- C.2 *Reports to Management*

GROUP D: DATA VALIDATION AND USABILITY

- D.1 *Data Review, Validation, and Verification Requirements*
- D.2 *Validation and Verification Methods*
- D.3 *Reconciliation with User Requirements*

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- *Appendix A - Standard Operating Procedures*

- *Appendix B - Data Quality Objectives Document*
- Appendix C- Z- Other supporting documents as necessary.

**AMERICAN ZINC  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT E**

**LIST OF PARTIES WHO ENTERED INTO THE RI/FS AO AND AO  
AMENDMENT**

**LIST OF PARTIES WHO ENTERED INTO THE REMEDIAL INVESTIGATION/  
FEASIBILITY STUDY AGREED ORDER AND AGREED ORDER AMENDMENT**

The Following Parties entered into an Agreed Order with the TCEQ on July 12, 1995, agreeing to complete the Remedial Investigation/Feasibility Study for the American Zinc Site:

- Blue Tee Corporation
- Gold Fields American Corporation

On December 1, 1999, the Following Parties entered into an amendment to the July 12, 1995 Agreed Order with the TCEQ:

- Blue Tee Corporation
- Gold Fields Mining Corporation
- Global Energy Finance LLC (Successor to Gold Fields American Corporation)

**AMERICAN ZINC  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT F**

**DATA QUALITY OBJECTIVES**

# DATA QUALITY OBJECTIVES

## INTRODUCTION

This document describes the Data Quality Objectives (DQOs) for the collection of sufficient quality and quantity of sampling data to support remediation decisions at the American Zinc Superfund Site ("American Zinc Site"). The DQOs described in this document provide the basis for collecting appropriate soil sampling data and making "defensible decisions regarding the adequacy of site remediation. The DQOs were developed using the process identified in the U.S. EPA document EPA/540/G-93/071 "Data Quality Objectives Process for Superfund: Interim Final Guidance," (1993). This process consists of the following seven steps:

1. State the problem.
2. Identify the decision.
3. Identify the inputs to the decision.
4. Define the boundaries of the study.
5. Develop a decision rule.
6. Specify limits on decision errors.
7. Optimize the design.

The following sections describe the results of completing each step for the American Zinc Site:

### STEP 1: STATE THE PROBLEM

A. The remedial investigation and feasibility study at the American Zinc Site has identified five potential "affected areas" at the locations 8 through 12, on the source property, which are to be remediated to the protective concentration limits (PCLs) of the respective chemicals of concern specified in the Remedy Selection Document (RSD) Section III of Exhibit A. It also identified affected areas at locations 0 through 7 on the non-source properties which must be addressed in order to prevent exposure to the chemicals of concern specified in Section III of Exhibit A, of the RSD. Under the selected remedy for the source property, affected surface soil with metal concentrations above commercial and industrial PCLs will be excavated and consolidated on the southeastern portion of the source property area. The consolidated area will be capped with approximately 12 inches of soil borrowed from the western one third portion of the source property area, where the soil metal concentrations are below PCLs. The capped soil area will then be graded and vegetated to prevent soil erosion.

Institutional controls (ICs), such as a restrictive covenant or a deed notice, will be placed on the consolidated area of the source property to notify the public and property owner(s) that the soil cap should not be disturbed and that the source property should only be used for commercial and industrial purposes.

Under the selected remedy on the non-source property, there are several remedial options, depending upon each landowner's preference.

#### a. Institutional Controls

The first remedial option includes placing ICs, such as a restrictive covenant or a deed notice, on the non-source property areas with affected surface soil. The use of ICs on the affected soil on the non-source property is an effective remedy for limiting access and exposure to affected surface soil because ICs serve to notify the public and property owner(s) that the affected surface soil should not be disturbed and the affected property should only be used commercial and industrial purposes, which is the current land use.

#### b. Deep Tilling and Treating Affected Surface Soil

If a land owner does not agree to place ICs on his or her property, other remedial options to address the affected surface soil are available. The second remedial option includes deep tilling and treating the affected non-source property soil with a soil amendment to the total depth of impacted soil in order to reduce and stabilize the metals. After treatment, the treated area will be sampled to confirm that the metals in soil are protective of human health and the environment. The use of deep tilling and soil treatment of the affected soil on the non-source property is an effective remedy because the soil treatment and deep tilling results in binding the metals to the soil reducing its solubility, and limiting its availability to humans and the environment.

#### c. Other Appropriate Methods

If the landowner does not agree to either the first remedial option, to place ICs on his or her property, or the second remedial option, deep tilling and treating the affected property, other appropriate remedial options are still available. Similarly, if the landowner agreed to the second option, but the second option is ultimately unsuccessful and after tilling and treating the affected soil, sampling confirms that the affected soil still contains metals at concentrations that is not protective of human health and the environment, other appropriate remedial options are still available.

The appropriate methods under the third remedial option to address affected surface soil will be property-specific and may include excavation of affected surface soil. Excavation of soil on the non-source property will include excavating the affected surface soil and transporting it to the source property, where the soil will be deposited into the consolidation area on the southeastern portion of the source property. As described above under the selected remedy of the source property, the consolidated area will be capped with approximately 12 inches of soil borrowed from the western one third portion of the source property area, where metal concentrations in the soil are below PCLs. The capped soil area will then be graded and vegetated to prevent soil erosion. The excavated area will be backfilled with soil that have not been affected by the operations at the site and the surface of the backfilled area will be contoured and seeded to match the surrounding land.

The use of the third option, other appropriate methods, on the affected soil on the non-source property is an effective remedy because it prevents exposure of affected soils to humans and the environment.

STEP 2: IDENTIFY THE DECISION

The soil sampling data collected at the American Zinc Site will be used to decide whether remediation at each "affected area" has achieved the protective concentration limits. For the source property, the institutional control placed on the consolidated area will serve to notify the public and property owner(s) that the area should not be disturbed and that the property may only be used for commercial and industrial purposes.

For the non-source property area, the institutional control will address the physical control, and will include a provision limiting the land use of the non-source property area to industrial/commercial use only.

### STEP 3: IDENTIFY THE INPUTS TO THE DECISION

Confirmation soil samples will be collected and analyzed to determine the concentrations of the contaminants identified in Section III of the RSD within the "affected area." Confirmation soil samples will be collected after soils are excavated at each affected area. A five year review report documenting how the remedial design is meeting the response action objectives for the affected areas of both source and non-source properties.

On the source property, the excavated areas will be marked on a 200 foot grid and the floor of the excavation will be sampled in each grid to verify that the response action has been achieved. The excavation sidewalls will also be sampled at 200 foot intervals.

The footprint of the consolidated portion of the source area should be surveyed for institutional control purposes. The Institutional Control should notify the public and property owner(s) that the soil cap should not be disturbed and that the property should only be used for commercial and industrial purposes.

On the non-source property areas, The treated areas will be marked on a 200 foot grid and soil samples will be collected in each grid from depths of 0-6 inches, 6 to 12 inches, and if needed at further increments of six inches to verify that the response action objective has been achieved. If following treatment, re-sampling indicates that the soil continues to have contaminants of concern at concentrations that is not protective of human health and the environment; the soil will be excavated, consolidated and capped with the source property soils. If soil excavation is performed, then confirmation sampling will be implemented as described for the source property soil removal.

The analytical results for all discrete samples from each grid will be compared to their respective protective concentration limits. If the confirmation sample results in each grid meet their respective PCLs, no further action will be necessary in that grid area. If the cleanup criteria are not achieved in a grid, each grid failing to meet the cleanup criteria will be further excavated to a depth of at least 6 inches. Following excavation, the new exposed surfaces in the grids will be further divided into grids to delineate the bottom and each exposed side slope. The process of identifying exposed unit areas that fail the cleanup criteria, excavating each failed grid, and taking confirmation samples to verify that PCLs are met will be repeated until cleanup criteria are confirmed in each exposed grid at each affected area.

For the non-source property areas that will not be treated, the consent of the landowner(s) will be sought and obtained, prior to placing an institutional control limiting access and exposure to affected soils on their property.

#### STEP 4: DEFINE THE BOUNDARIES OF THE STUDY

For the source property, the lateral boundary of the area of concern is the combined lateral extent of each of the affected areas, as well as the consolidated and capped area.

For the non-source property, the lateral boundary of the area of concern is the combined lateral extent of each of the affected areas including areas that were treated and areas with institutional controls. The maximum vertical boundary of concern for both source and non-source affected areas will be 5 feet below the existing ground surface at the affected areas.

#### STEP 5: DEVELOP A DECISION RULE

For the source property, the parameter of interest is the concentration in each grid that will not be further sub-divided. The PCLs will be those specified in Section III of the RSD. If the sample result exceeds the PCLs, the affected area soils will be assumed to be contaminated and will be excavated, consolidated, and capped. If the confirmatory soil sample result does not exceed the PCLs, the affected area will be assumed to be protective of human health and the environment; therefore, no further excavation will be required.

The capped area will be regularly inspected to confirm that its integrity is not compromised, and the chemicals of concern are not exposed.

For non-source property areas, the parameter of interest for the treated areas is that the concentration of the chemicals of concern is reduced, stabilize, and rendered unavailable to surface and subsurface soils at concentrations that may not be protective of humans and the environment.

For the non-source property areas with institutional controls, the parameter of interest is that institutional controls are placed on all affected properties limiting access and exposure to affected surface soils.

#### STEP 6: SPECIFY LIMITS ON DECISION ERRORS

Because confirmation sampling will be conducted in each unit area less than 0.25 acres in size, a directed sampling plan requiring samples only within the boundary of each grid is appropriate. Decision errors are not relevant because sample data will be used only to assess contaminant concentration within each grid, and not to draw inferences about concentrations in a larger area.

Decision errors are also not relevant with regards to the non-source property areas because Institutional Controls will be used only to limit access and exposure to affected surface soils, and not to limit access or exposure to non affected areas of the non-source properties.

#### STEP 7: OPTIMIZE THE DESIGN

To obtain unbiased samples, sample locations within each grid will be selected using a systematic random sampling plan. Each sample will be taken to a depth of 6 inches perpendicular to the plane of the unit area being sampled.

**AMERICAN ZINC  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT G**

**SITE MAP DEPICTING THE AREAS OF CONCERN  
AS PRESENTED AT THE AMERICAN ZINC  
PUBLIC MEETING HELD ON DECEMBER 13, 2008**

# American Zinc State Superfund Site

1 inch equals 1,185 feet

## Legend

Source Property - Boundary

Areas that need to be addressed

Source Property

Non-Source Property



Area 7

Area 6

Area 11

Area 12

Area 10

Area 9

Area 8

Area 1

Area 2

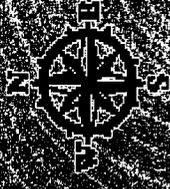
Area 0

Area 5

Area 4

Area 3

RANCHROAD 119



Chemical Plant

SOURCE PROPERTY

RANCHROAD 119

Docket No. 2009-1355-SPF  
American Zinc State Superfund Site  
Mailing List

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C.T. CORPORATION, REGISTERED AGENT  
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AMERICAN ZINC LEAD AND SMELTING  
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AMERICAN ZINC  
BLUE TEE CORP.  
C/O BABST, CALLAND, CLEMENS AND  
ZOMNIR, TERRANCE FAYE  
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GREENSBURG, PA 15601-5627

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**Docket No. 2009-1355-SPF  
American Zinc State Superfund Site  
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OTU EKPO-OTU  
TEXAS COMMISSION ON ENVIRONMENTAL  
QUALITY  
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P.O. BOX 13087  
AUSTIN, TX 78711-3087

Docket No. 2009-1355-SPF  
American Zinc State Superfund Site  
Mailing List

AMERICAN SMELTING COMPANY C/O  
C.T. CORPORATION, REGISTERED AGENT  
REPUBLIC NATIONAL BANK BUILDING  
350 N. ST. PAUL STREET  
DALLAS, TX 75201

AMERICAN ZINC  
BLUE TEE CORP.  
C/O BABST, CALLAND, CLEMENS AND  
ZOMNIR, TERRANCE FAYE  
ONE NORTH MAPLE AVE.  
GREENSBURG, PA 15601-5627

BLUE TEE CORPORATION  
OBO AMERICAN ZINC COMPANY AND  
AZCON CORPORATION  
1220 CERRITO ALGRE  
EL PASO, TX 19912

BLUE TEE CORPORATION  
OBO AMERICAN ZINC COMPANY AND  
GOLD FIELDS CORP  
AZCON CORPORATION  
250 PARK AVENUE SOUTH 2ND FLOOR  
NEW YORK, NY 10003

BLUE TEE CORPORATION  
OBO AMERICAN ZINC COMPANY AND  
GOLD FIELDS CORP  
446 COUNTRY OAKS  
EL PASO, TX 79932

BLUE TEE CORPORATION  
OBO AMERICAN ZINC COMPANY AND  
AZCON CORPORATION  
C/O THE PRENTICE-HALL CORPORATION  
SYSTEM, REGISTERED AGENT  
400 N. ST. PAUL STREET  
DALLAS, TX 75201

CORPORATION SERVICE COMPANY  
OBO BLUE TEE CORPORATION  
OBO AMERICAN ZINC COMPANY  
701 BRAZOS STREET, SUITE 1050  
AUSTIN, TEXAS 78701

AMERICAN ZINC COMPANY  
OBO GOLD FIELDS AMERICAN CORP AND  
GLOBAL ENERGY FINANCE LLC  
ATTN: JOHN F. STEPHENS JR., REGISTERED  
AGENT  
250 PARK AVE. SOUTH  
NEW YORK, NY 10003

AMERICAN ZINC COMPANY  
GOLD FIELDS AMERICAN CORP,  
C/O GARY D. UPHOFF, PRINCIPAL  
ENVIRONMENTAL MANAGEMENT SERVICES  
COMPANY  
1728 LAKE SHERWOOD DRIVE  
FORT COLLINS, CO 80525

AMERICAN ZINC LEAD AND SMELTING  
COMPANY C/O C.T. CORPORATION,  
REGISTERED AGENT  
REPUBLIC NATIONAL BANK BUILDING  
350 N. ST. PAUL STREET  
DALLAS, TX 75201

VOLCANIC STONE COMPANY  
ATTN: CLARENCE R. GETMAN  
1553 FM 2203  
DUMAS, TEXAS 79029

VOLCANIC STONE COMPANY  
ATTN: LOUIS T. DUBUQUE,  
REGISTERED AGENT  
105 WEST 7TH ST.  
DUMAS, TEXAS 79029

THE NEW YORK TRUST COMPANY  
123 MAIN STREET  
WHITE PLAINS, NY 10601

THE NEW YORK TRUST COMPANY  
100 BROADWAY  
NEW YORK, NY 10005

ATCHISON TOPEKA & SANTA FE  
RAILROAD BURLINGTON NORTHERN AND  
SANTA FE RAILWAY  
2650 LOU MENK DRIVE  
FORT WORTH, TX 76131

ATCHISON TOPEKA & SANTA FE  
RAILROAD BURLINGTON NORTHERN AND  
SANTA FE RAILWAY C/O THE CT  
CORPORATION, REGISTERED AGENT  
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DALLAS, TX 75201

COOPER & WOODRUFF INC.  
AMARILLO ROAD CO.  
OBO FORD AND FERRARO LLP  
2000 SAN JACINTO CENTER  
2000 SAN JACINTO BLVD. SUITE 2000  
AUSTIN, TX 78701

COOPER & WOODRUFF INC.  
AMARILLO ROAD CO.  
C/O CHARLES H. SCHMIDT,  
REGISTERED AGENT  
RT. 2 BOX 76-A-3  
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EXTRACTION SYSTEMS OF AMERICA, INC.  
C/O CHARLES F. JOHNSON,  
REGISTERED AGENT  
1445 WEBB CHAPEL ROAD, 3104  
DALLAS, TEXAS 75234

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316 NW 5TH STREET  
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PERU MINING COMPANY C/O  
HOUSEHOLD INTERNATIONAL, INC.,  
HYDROMETALS, INC.  
2700 SANDERS ROAD  
PROSPECT HEIGHT, IL 60070

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ILLINOIS ZINC COMPANY C/O  
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ILLINOIS ZINC COMPANY C/O  
PERU MINING COMPANY C/O  
QUARLES & BRADY  
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MILWAUKEE, WISCONSIN 52202

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Mailing List

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C/O US DEPARTMENT OF JUSTICE  
ENVIRONMENT AND NATURAL RESOURCE  
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