

**EPA Superfund
Explanation of Significant
Difference for the
Record of Decision:**

**Odessa Chromium II Superfund Site
Ector County, Texas
10/8/99**

EXPLANATION OF SIGNIFICANT DIFFERENCE

I. INTRODUCTION

Site Name and Location:

Odessa Chromium II, North Plume and South Plume, Superfund Site
Odessa, Ector County, Texas

Lead and Support Agencies:

North Plume:

U.S. Environmental Protection Agency (EPA) -- Lead Agency
Texas Natural Resource Conservation Commission (TNRCC) -- Support Agency

South Plume:

Texas Natural Resource Conservation Commission (TNRCC) -- Lead Agency
U. S. Environmental Protection Agency (EPA) -- Support Agency

Statute that requires Explanation of Significant Difference (ESD):

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 117(c) and National Oil and Hazardous Substances Contingency Plan (NCP), Section 300.435(c)(2)(i).

Purpose of ESD

The purpose of this ESD is to acknowledge the addition of *in-situ treatment*, to address residual chromium contamination in the soil and aquifer. The delay in achieving timely cleanup goals at these two sites required the TNRCC to propose and EPA to add this treatment to the remedial action described in the March 18, 1988, Record Of Decision (ROD). Circumstances that gave rise to the need for this ESD include:

- Full Pump and Treatment by ion exchange on the North plume began operations on August 15, 1993. The South plume began initial pump and electrochemical treatment on July 13, 1992, with full pump and treat operations beginning on December 12, 1993.
- The sites were estimated to have a four-year duration or less in operating the groundwater extraction systems; however, after an additional year of extended operation at these sites, remediation goals have still not been achieved.

- The Lead Agency on the South Plume Site, TNRCC, proposed and, with EPA's approval, conducted an experimental in-situ treatment on the Odessa Chromium II, South Plume Perch zone Recovery Wells (PRW-20 and PRW-28) in a three-step process in December 1998 and January 1999. Both wells dropped below the non-detect level for more than two weeks with PRW-20 meeting expected remediation goals. Follow-up treatment in PRW-28 is expected to accelerate cleanup of PRW-28 to meet remediation goals.
- Sequa Corporation (Sequa) expressed a desire to use in-situ treatment on the three remaining wells (MW-210, MW-219 and MW-221) as an accelerated effort in meeting its remediation goals. Sequa requested that the North Plume be included in this ESD request for in situ treatment and is currently preparing a work plan for EPA and TNRCC approval.

Administrative Record:

This ESD will become part of the Administrative Record of the Odessa Chromium II, North and South Plume, Superfund Site. The administrative record is available to the public for review during regular business hours at the following three locations. Advance scheduling to view records is requested:

U.S. Environmental Protection Agency
Region 6
12th Floor Library
1445 Ross Avenue
Dallas, Texas 75202-2733
(214) 665-6427, or
(214) 665-6424

Texas Natural Resource Conservation Commission
12100 Park 35 Circle
Building D, Room 190
Austin, Texas 78753
(512) 339-2920

Ector County Library
321 West 5th Street
Odessa, Texas 79761
(915) 332 - 0633

Permian Basin Regional Planning Commission
2910 La Force Blvd.
Midland International Airport
Midland, Texas 79711
(915) 563-1061

II. SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

The Odessa Chromium II, North Plume and South Plume, Superfund Site is located and bounded approximately by 57th Street on the north, 50th Street on the south, Andrews Highway on the east, and a line which extends from Arthur Avenue north to 57th Street. North of 54th Street is the North Plume area, and the South Plume area is located south of 54th Street. The ROD, signed on March 18, 1988, requires ground water recovery followed by electrochemical treatment.

North Plume: - Ion Exchange Treatment

Sequa signed the Consent Decree (effective date - July 16, 1991) which requires Sequa to implement the remedy described in the ROD. In April 1992, the Sequa Corporation submitted a letter requesting that EPA issue an ESD to the ROD to change the remedy from electrochemical treatment to treatment by ion exchange. Sequa requested a meeting with the EPA Regional Administrator to be held on May 14, 1992, to discuss their proposal. At the meeting, Sequa secured EPA approval to change the treatment to ion exchange, subject to proven performance. Sequa then structured a site pilot test.

Sequa began full treatment operations on August 15, 1993. The ESD was finalized on June 28, 1994. As of February 1999, approximately 42 million gallons have been treated. The perch zone wells are all below the maximum contaminant level (MCL) and have reached remediation goals. Approval for Sequa to plug and abandon these perch zone wells was issued in writing on March 3, 1999.

Sequa is currently preparing a Work Plan for in-situ treatment of the three remaining deep Trinity Wells that are slightly above the MCL (0.14 ppm on MW-210, 0.17 ppm on MW-219, and 0.27 ppm max. on MW-221). Remediation goals are anticipated to be achieved by the close of FY99 (September 30, 1999).

South Plume: - Electrochemical Treatment

The treatment plant building location is 5300 Dorothy Street. Only one of the perch zone wells remains to meet the remediation goals. In the deeper Trinity Wells, remediation goals were met, and all deep Trinity aquifer wells have been plugged and abandoned. In-situ secondary treatment of the two remaining perch zone wells was conducted in December 1998 and January 1999 by the TNRCC Contractor, WATEC; one perch zone well remains to be treated again. The total perch zone remediation goals are expected to be achieved in mid-June 1999 through the action described in this ESD.

Remedy Set Forth In The Record of Decision

The Record of Decision for the Odessa Chromium II site requires the following actions to address the chromium contaminated groundwater:

- Extraction of chromium-contaminated groundwater from a perched water-bearing zone and the Trinity Aquifer;
- Electrochemical treatment of groundwater which exceeds the Primary Drinking Water Standard for Chromium;
- Reinjection of treated groundwater into the Trinity Aquifer; and
- Monitoring of the site for a minimum of 30 years.

III. DESCRIPTION OF THE SIGNIFICANT DIFFERENCE AND THE BASIS FOR THE DIFFERENCE

This ESD adds one component, in-situ treatment, to the original remedy. The actual decrease in chromium concentrations when compared to the Remedial Investigation (RI) scheduled decrease was due to the following:

- Residual chromium [Cr(VI)] contamination the aquifer was not as responsive to the pump and treat operations as predicted. The following reasons are the basis for this occurrence:
 - (1) Cr (VI) was evident in the vadose zone during excavation of soil on site. Therefore, it is likely present in the vadose zone at greater depths. The RI was limited in scope and evidently missed localized deposits of Cr (VI) in the soils.
 - (2) The initial characterization of the extent of contamination exceeding the remedial goal was incomplete; therefore, the extent of the Cr (VI) contamination in the aquifer was greater than had been estimated.
 - (3) There is also the likelihood that Cr (VI) distribution within the plume contained higher concentrations that were not identified in the original RI.
- The in-situ treatment being used is ferrous sulfate heptahydrate, commercial grade $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ with hydrochloric acid added to the solution to inhibit oxidation of the Fe(II) solution. Implementation of the in-situ treatment accelerates the achievement of the remediation goals as the treatment injects the ferrous sulfate directly into the

contaminated plume . The additional benefits are its usage provides less expenditure of funds and appreciable decrease in time to achieve the remediation goal and thus accelerates the protectiveness of both the Trinity and Perch Zone aquifer usage. The accelerated protectiveness of the Trinity and Perch Zone aquifer usage coupled with the additional benefits of less expenditure and time reductions in achieving remediation goals have been estimated by the Site Engineers as follows:

(1) The North Plume's wells are all deep Trinity zone aquifer wells for which the annual pumping cost is approximately \$500,000 to operate. Pump and treat operations are estimated to continue at the earliest for an additional year to achieve remediation goals without in situ treatment. Using in-situ treatment on the three remaining wells at a cost of \$5,000 per well/per treatment and assuming pumping the wells for a three-month period, the expenditures for the in situ treatment, testing, and pumping would be approximately \$250,000; which is half the cost of treatment without the in-situ treatment, and the Potentially Responsible Party can still achieve the remediation goals.

(2) The South Plume has one remaining perch zone well. Using the current pump and treatment system, the estimate is that remediation goals would not be achieved before February 2000 and the projected cost of treatment would be \$123,200.00 without in situ treatment. The combined cost of two treatments with ferrous sulfate and plant operation for three months would be approximately \$42,600 versus \$123,200 without the in situ treatment. This represents a cost savings of \$80,600 on the South Plume.

(3) The above cost savings of \$250,000 on the North Plume, plus \$80,600 on the South plume, total \$330,600. This does not include the other additional beneficial cost to the EPA, TNRCC, and SEQUA for project oversight and management, added travel costs, along with the contractor's cost for additional operation and maintenance and potential change orders.

IV. SUPPORT AGENCY COMMENTS

The Texas Natural Resource Conservation Commission proposed in-situ treatment and requested this ESD, as evidenced by the attached letter dated March 16, 1999.

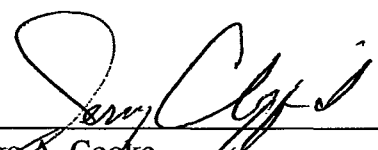
V. PUBLIC PARTICIPATION ACTIVITIES

This ESD will become part of the Administrative Record for the Odessa Chromium II Superfund Site. Because there has been little community interest in the site, this ESD will be made available to the public but will not be distributed for public comment. For additional information regarding this ESD, please contact the EPA Project Manager for the Odessa Chromium II Superfund site:

Ernest R. Franke, P.E., R.P.L.S.
Remedial Project Manager
U.S. Environmental Protection Agency
1445 Ross, Avenue (6SF-AP)
Dallas, Texas 75202-2733
(214) 665-8521

VI. STATUTORY DETERMINATIONS

Considering the new information developed during the remedial action and the resulting changes from the selected remedy described in the ROD, the EPA believes that the remedy remains protective of human health and the environment and does so at an additional benefit of time and cost reduction. The revised remedy utilizes permanent solutions to the maximum extent practicable for this site and is time-effective and cost-effective. The treatment complies with the NCP and other Federal and State requirements that are applicable or relevant and appropriate to this remedial action.



Gregg A. Cooke
Regional Administrator
U.S. Environmental Protection Agency
Region 6

10/25/99

Date