



81 EDi No. 117 152			21. Port Arthur Refinery Operations & Maintenance
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<b>22. Year Completed Professional Service:</b>	<b>Year Completed Construction:</b> (if applicable)	<b>1801 South Gulfway Drive Port Arthur, Texas 77640</b>
2004	n/a	<b>Contract Role:</b> <input type="checkbox"/> Prime Contractor <input checked="" type="checkbox"/> Subcontractor
<b>CAGE Code:</b> ID1U3		<b>DUNS Number:</b> 61.680.5073

<b>23 a. Project Owner/Customer #1:</b>  CH2M Hill, Inc. 3400 Hwy. 365, Suite #110 Port Arthur, TX 77642-7711	<b>23 b. Point of Contact Name:</b>  Steve Tsangaris, Project Manager (Tampa Office)	<b>23 c. POC Contact Info.:</b>  813.874.0777 (p)
<b>23 a. Project Owner/Customer #2:</b>  ChevronTexaco Corporation Chevron Environmental Management Health, Environment & Safety 4900 Fournace Place, BAX Room 530B Bellaire, Texas 77401	<b>23 b. Point of Contact Name:</b>  Mike Manka OE Review Advisor OE Assessment Group	<b>23 c. POC Contact Info.:</b>  713.432.3455 (p)

<b>Key Personnel:</b>			
Michael C. Bradshaw	Albuquerque Corporate Office	mbradshaw@edi-nm.com	505.341.3578
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<small>24. (Include scope, size, and cost)</small>		<b>Brief Description of Project and Relevance to this Contract:</b>	
<b>Awarded Price:</b> \$14,800.00	<b>Final/Projected Cost:</b> \$5,000,000.00 +		
<b>Award Date:</b> 09.01.1997	<b>Contract/Project No.</b> CH2M Hill BOA SC408-97-001 Chevron Project No. 164002.FL.01		
<b>Period of Performance:</b> 09.01.1997–07.31.2004	<b>Final or Projected Schedule:</b> 07.31.2004		
<b>Contract Type:</b> <input type="checkbox"/> Firm Fixed Price <input type="checkbox"/> Cost Reimbursement <input checked="" type="checkbox"/> Time and Materials <input type="checkbox"/> Cost Plus Fixed Fee <input type="checkbox"/> Cost Plus Award Fee <input type="checkbox"/> Performance Based			
<b>Type of Work Performed:</b> 541620, Environmental Consulting & 562910, Remediation Services			
<b>% of Work Self Performed:</b> 100%		<b>% of Work as Subcontractor:</b> 100%	

### Background

The Port Arthur Oil Refinery—formerly owned by Gulf Oil and then Chevron—waste site has been impacted by historical releases of hazardous substances from the refinement of oil located on the site. The refinery has been in operation since the discovery of oil at Spindletop in 1902. Operations at the Site have included crude oil refining, lubricant oil and chemical manufacturing, and product distribution. Products produced at the Site historically include gasoline, kerosene, jet fuel, fuel oils, naphtha, and petrochemicals. Polynuclear aromatic hydrocarbons (PAHs), lead, zinc, nickel, cadmium, and copper were identified as exceeding designated criteria in the surface water and sediments in the Joint Outfall Canal, in on-site ponded wetland habitats, in the North Marsh, and in other on-site water bodies, and are therefore the contaminants of concern (COCs) for this Site. Chevron worked cooperatively with the natural resource trustees to assess the potential for injuries or losses in the environment attributed to releases and to determine the need for compensatory restoration. Area of responsibility– 3,800 acres.

EDi was an active member of the Port Arthur Remediation Team (PART) formed in 1996 to manage Chevron’s environmental liability at the Port Arthur Refinery. The PART program, made up of the Chevron Environmental Management Company, LLC (CEMC), CH2M Hill, Inc., Zachry Construction Company, CDM, EDi, and other associated subcontractors.

EDi was contracted to CH2M Hill from 9/97 through 10/02 to perform a wide variety of project-related tasks. As a preferred vendor to EMEC, EDi was contracted from 11/02 through 7/04 to perform operations and maintenance tasks throughout the entire refinery site.

**Scope of Work—Operations and Maintenance (O&M)**

The EDi project manager maintained and managed project financial status through Chevron’s integrated Business Management Systems and was responsible for the direction and management of all personnel assigned to the Drainage and Maintenance Project. EDi was responsible for providing personnel, equipment, and materials for all aspects of the Chevron O&M Projects. Included in these management tasks were the oversight and management of all subcontractors related to the project. EDi tracked the overall progress of the project and facilitated planning and implementation strategies in accordance with the end-state vision of the refinery. EDi interacted and coordinated with other project teams to ensure access and integrity of all Corrective Action Areas and *Resource Conservation and Recovery Act-* (RCRA-) capped impoundment areas in compliance with regulatory guidelines from the Environmental Protection Agency (EPA) and the Texas Department of Environmental Compliance (TDEC).



*Port Arthur after years of remediation & restoration.*

EDi managed the O&M Project at approximately **\$1,000,000.00 per year**.

The O&M Project consisted of three primary tasks:

- Drainage and Maintenance
- Post Closure Care
- Site-Wide mowing and Herbicide Application

EDi planned and scheduled all field activities associated with three task areas that included approximately 500 acres of oversight.

**Drainage and Maintenance**

Designed to eliminate or reduce the site-wide attractiveness to wildlife through vegetation control and re-establishment of effective drainage in the tank farms which covered approximately 200 acres across the site, EDi responded to storm events and was responsible for monitoring stormwater flow and discharge from the tank farm in coordination with the refinery owners to comply with National Pollutant Discharge Elimination System (NPDES) permits at the site. EDi was also responsible for clearing vegetation to access remoter areas of the refinery, including access to over 1,000 ground-water monitoring well and seismic monitors as well as inter-tidal access areas. These areas included hurricane protection levee system sections within the footprint of all remediation areas on the refinery (approximately 1,500 feet) EDi maintained approximately 15 miles of gravel roads associated with the refinery including dust control applications. EDi used a variety of heavy equipment such as motor-graders and bulldozers.



*Port Arthur Tank Field*

**Post Closure Care Project Areas (PCC)**

The PCC consisted of Corrective Action Areas such as the former RCRA waste pits, which were remediated, capped and had long-term monitoring requirements. EDi was responsible for 12 PCC closed impoundment areas totaling approximately 87 acres. EDi conducted surveillance in all areas around and the adjacent RCRA units for seeps containing volatile organic compounds (VOCs) of benzene, toluene, ethylbenzene, and xylenes or BTEXs. These are some of the hydrocarbons and polychlorinated



biphenyl (PCB) contaminants present in shallow soils and groundwater monitoring wells. EDi was responsible for the removal and disposal of these seeps over the entire 87 acre area. EDi removed over 200 of these seep areas often found in roadways, parking lots, ditches, on soil areas, and even on surface water sheens. The RCRA units on site included 87 monitoring wells around the perimeter of these capped areas and 25% of them contained Light Non-aqueous Phase Liquids (LNAPL) or Phase Separated Hydrocarbons (PSHs).

PCC monitoring requirements were put into place to ensure no erosion of the impoundment areas occurred and integrity of the caps were secured. Field tasks included seeding and fertilizing coastal Bermuda grass, as necessary, covering all bare areas on the impoundments, as well as mowing ensuring grass cover was kept at no higher than 6 inches and no less than 3.5 inches. EDi's area of responsibility included the irrigation system for all the impoundments—20 hose reels systems capable of delivering water simulating 1/2-inch rainfall per hour to areas of the cap.

#### **Site-wide Mowing and Herbicide Areas**

Site-wide Mowing and Herbicide Areas were designed to maintain all areas needing access not covered in PCC or Drainage and Maintenance Areas. These areas included office buildings, parking areas, water treatment plant areas, lay-down yards, site support trailers and all other areas under CEMC's jurisdiction—approximately 15 acres.

*EDi operated all projects as Incident Free Operations and was a key teaming member in 2 million man-hours without a lost time accident.*

### **Additional EDi Areas of Responsibility throughout the Project:**

#### **Equipment Maintenance**

EDi managed approximately 50 pieces of equipment from heavy hauling and excavation equipment to tractors with mowers and weed eaters. EDi performed preventative maintenance and minor repairs.

#### **Water Treatment Plant (management/field support)**

Operated and maintained a permitted 24/7 stormwater treatment plant in support of Corrective Action Activities within a 167-acre impoundment called "Section 7."

#### **Engineering/Design and Facility Coordination (management/field support)**

Support off-site design engineers in all phases including Geotechnical Investigations, Data Gap Sampling, Conceptual Designs through to Final Design, and GPS/GIS operations. Assisted completion of Closure Plans for submittal to agency. Coordinated Remedial Investigation(RI) activities and logistics with facility owners, outside stakeholders, utility owners, design engineers, construction personnel, and sampling teams.

#### **Remedial Investigation Feasibility Study**

EDi provided sampling technicians; environmental, safety and health (ES&H) technicians; and field team leaders to conduct sampling activities in 60 solid waste management units (SWMUs) encompassing 1,000 acres. Sampling activities occurred over a two-year period and included soil, sediment, groundwater, and surface water sampling activities. EDi collected a broad scope of sample media such as groundwater and soils in over 660 perimeter monitoring wells (quarterly) and over 175 soil borings. EDi excelled and specialized in submerged sediment sampling in intercoastal canals, salt marsh, and swamp-like conditions using vibracore, direct-push technologies, and rotary drilling methods. EDi successfully collected, processed, and shipped 8,000 samples with *no incidents, accidents or injuries*.

#### **Nitrogen Pipeline**

EDi also managed the installation of a 1,400 foot, 6-inch carbon steel nitrogen pipeline that supplied the entire refinery. The line was a relocation of an active line and EDi coordinated replacement with no loss of to the refinery. The line installation was performed using directional drilling methodology and was conducted by an independent specialty subcontractor. The value of this activity alone was \$280,000.00 and was completed safely and under budget.