



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

Department of Environmental
Conservation

DIVISION OF SPILL PREVENTION &
RESPONSE
Contaminated Sites Program

43335 Kalifornsky Beach Road, Suite 11
Soldotna, Alaska 99669
Main: 907.262.5210
Fax: 907.262.2294

File: 2100.26.085

August 3, 2012

Anastasia E. Duarte
Retail Environmental Remediation Administrator
Tesoro Refining and Marketing Company
2450 South 344th Way, Suite 201
Auburn, WA 98001-5931

Re: ADEC Decision Document; Tesoro Northstore #11
Corrective Action Complete Determination

Dear Ms. Duarte:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Tesoro Northstore #11 located at 317 Muldoon Road, Anchorage, Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment, and no further remedial action will be required at this time.

Our determination is based on the administrative record for the Tesoro Northstore #11 which is located in the offices of the ADEC in Soldotna, Alaska. This letter summarizes the decision process used to determine the environmental status of this site, and provides a summary of the regulatory issues considered in this Corrective Action Complete Determination.

Introduction

Site Name and Location:

Tesoro Northstore #11
317 Muldoon Road
Anchorage, Alaska 99504

Name and Mailing Address of Contact Party:

Anastasia E. Duarte
Retail Environmental Remediation Administrator
Tesoro Refining and Marketing Company

3450 South 344th Way, Suite 201
Auburn, WA 98001-5931

Current Property Owner and Legal Description:

Tesoro Alaska Company

Lot Two (2), of Nevilla Park Subdivision, according to Plat No. P-384, recorded in the Anchorage Recording District, Third Judicial District, State of Alaska.

ADEC Site Identifiers:

File No.: 2100.26.085
Hazard ID No.: 24578
Reckey No.: 1997210015005

Regulatory authority under which the site is being cleaned up:

18 AAC 75 and 18 AAC 78

Background

Underground fuel storage tank systems (USTs) were installed at this property in 1974 and 1976. These systems consisted of one 6,000-gallon diesel, one 12,000-gallon diesel and one 12,000-gallon gasoline tank, one heating fuel tank, three dispenser islands with a canopy, and associated piping. The site was used as a retail fuel sales station until December of 1996, when the retail fuel sales station was closed. Petroleum impacted soil and groundwater were encountered during the UST removals in April of 1997. Soil and groundwater samples collected at this site have been tested for: diesel range organics (DRO); gasoline range organics (GRO); benzene, toluene, ethylbenzene and xylenes (BTEX); and lead.

The site currently is a vacant lot that contains the components of a remediation treatment system. This property is connected to the City of Anchorage public water and sewer service. A water well search was performed, and two drinking water wells were located 850 and 1200 feet from this property, indicating that some water wells remain in use in the surrounding area.

A more detailed history of this site is contained within ADEC's project file for this site, which is available for public review.

Site Characterization and Cleanup Activities

In April of 1997 the three fuel storage tanks, heating fuel tank, three dispenser islands with a canopy, and associated piping were removed. Approximately 1,606 tons of contaminated soil was removed and transported off-site for thermal remediation and disposal. Confirmation soil samples were collected from the depths of the tank removal excavation (17 to 21 feet below ground surface) with maximum soil contaminant concentrations of DRO at 1,200 mg/kg, GRO at 1,400 mg/kg, benzene at 11 mg/kg, toluene at 23 mg/kg, ethylbenzene at 24 mg/kg, and xylenes at 85 mg/kg. Confirmation soil samples were also collected from the depths of the former dispenser island (2.5 to 6.5 feet below ground surface) with a maximum benzene soil concentration of 0.056 mg/kg. Due to

the magnitude and extent of contamination the excavation was left open to allow for further corrective action.

In May of 1997 a Release Investigation was conducted to investigate the extent of soil and groundwater contamination discovered during the USTs removals. Soil contamination was discovered at 16.5 feet below ground surface along East Third Avenue, southeast of the former USTs location with GRO at 680 mg/kg and ethylbenzene at 14 mg/kg. Groundwater contamination was encountered in the monitoring well installed along East Third Avenue with GRO at 6.3 mg/L, DRO at 4.4 mg/L, and benzene at 0.10 mg/L. Following these release investigation activities, subsurface treatment piping was installed for use as an in-situ soil vapor extraction system.

In May of 1998 five (5) additional groundwater monitoring wells were installed to further define the extent of soil and groundwater contamination. Soil samples collected during the installation of a monitoring well along East Third Avenue (16 to 21.5 feet below ground surface) contained maximum GRO of 8,000 mg/kg, benzene of 18 mg/kg, toluene of 130 mg/kg, ethylbenzene of 180 mg/kg, and xylenes of 600 mg/kg. Soil samples collected during monitoring well installations in the East Third Avenue and Muldoon road intersection (17 to 25 feet below ground surface) contained maximum benzene soil contamination of 0.054 mg/kg. The maximum contaminant concentrations in groundwater samples collected in these groundwater monitoring wells were benzene at 0.370 mg/L, toluene at 3.3 mg/L, ethylbenzene at 1.1 mg/L, GRO at 27 mg/L, and DRO at 2.6 mg/L.

In July of 1999 three (3) additional groundwater monitoring wells were installed to further define the extent of soil and groundwater contamination. Soil samples collected from the well installed east of the former USTs (18 feet below ground surface) contained benzene at 0.090 mg/kg. Groundwater samples collected from this well contained benzene at 0.075 mg/L, GRO at 5.9 mg/L, and DRO at 33 mg/L.

In February of 2002 an additional five (5) soil borings were drilled to investigate the effectiveness of in-situ remediation and delineate remaining soil contamination. Four (4) additional groundwater monitoring wells were constructed. Soil samples collected from the borings (14.5 to 25 feet below ground surface) contained maximum concentrations of benzene at 5.10 mg/kg, ethylbenzene at 14.3 mg/kg, xylenes at 66.3 mg/kg, GRO at 1,270 mg/kg, and DRO at 750 mg/kg. Groundwater samples collected from the four monitoring wells contained maximum concentrations of benzene at 0.415 mg/L, toluene at 1.36 mg/L, ethylbenzene at 0.944 mg/L, GRO at 14.0 mg/L, and DRO at 8.92 mg/L.

In August of 2003 the soil vapor stripping and circulation system (VSC) was upgraded to further treat the subsurface soil and groundwater contamination. Two (2) additional VSC treatment wells were installed with soil samples collected from the depths 21 to 26 feet below ground surface. Benzene was detected at 0.523 mg/kg, ethylbenzene at 6.23 mg/kg, GRO at 302 mg/kg, and DRO at 1,590 mg/kg.

In October of 2006 following the corrective actions performed at the site, twelve (12) confirmation soil borings were advanced to define the remaining soil contaminant concentrations. Soil samples

collected from 14 to 22 feet below ground surface. Benzene was detected at 0.33 mg/kg, toluene at 8.62 mg/kg, ethylbenzene at 11.2 mg/kg, GRO at 416 mg/kg, and DRO at 1,520 mg/kg.

Remediation techniques have been performed at the site since 1997 using five soil vapor extraction wells, three soil vapor stripping circulation wells and three groundwater circulation wells. Various applications of in-situ chemical oxidation were completed from 2008 through 2011. In 2008 hydrogen peroxide was injected into each circulation well, and between 2009 and 2011, five rounds of potassium permanganate solution was injected into the circulation wells and designated groundwater monitoring wells. Following the in situ chemical oxidation treatments, test holes were advanced to a depth of 10 feet bgs and soil samples were collected to evaluate the effectiveness of the treatment efforts, with no soil contamination being detected to a depth of 10 feet below ground surface.

Following the completion of remedial action performed at this site from 1997 to 2011, residual soil contamination remained in the subsurface soil exceeding the ADEC's Method Two 'Migration to Groundwater' soil cleanup levels at depths exceeding 10 feet below ground surface.

Groundwater concentrations have consistently tested below the groundwater cleanup levels since 2010; with the exception that one groundwater sample collected in February of 2011 had a reported benzene concentration of 0.00568 mg/L. Subsequent sampling at this location since February of 2011 has not produced any additional concentrations exceeding groundwater cleanup levels. The affected groundwater is not currently used as a drinking water source, and the site is serviced by the City of Anchorage public water and sewer systems.

Contaminants of Concern

During the investigations at this site, soil and water samples were analyzed for diesel range organics (DRO); gasoline range organics (GRO); benzene, toluene, ethylbenzene, and xylenes (BTEX); and lead. Following the completion of the cleanup measures employed at this site, residual concentrations of the following Contaminants of Concern remained at this site in subsurface soil in excess of the ADEC Cleanup Levels:

- Gasoline Range Organics (GRO)
- Diesel Range Organics (DRO)
- BTEX

Cleanup Levels

The default **soil** cleanup levels for this site are established in 18 AAC 75.341, Method Two, Table B1 and B2 Under 40 inch Zone, Migration to Groundwater.

<u>Contaminant</u>	<u>Soil Cleanup Level (mg/kg)</u>
• Gasoline Range Organics	300
• Diesel Range Organics	250
• Benzene	0.025
• Toluene	6.5
• Ethylbenzene	6.9

- Xylenes

Pathway Evaluation

Following investigation and cleanup at the site, exposures to the remaining contaminants were evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De-minimis Exposure or Pathway Incomplete. A summary of this pathway evaluation is included in Table 1.

Table 1 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De-minimis Exposure	The contaminated surface soil was predominantly excavated and transported off site.
Sub-Surface Soil Contact	De-minimis Exposure	Contamination remains in the sub-surface soil exceeding the migration to groundwater cleanup levels at depths exceeding 10 feet bgs.
Inhalation – Outdoor Air	De-minimis Exposure	Contamination remains in the subsurface starting at depths greater than 10 feet in depth and isn't believed to pose a risk to outdoor air quality. The residual contaminant concentrations do not exceed ADEC outdoor air soil cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De-minimis Exposure	The site currently has no buildings constructed on the property. Based on the minimal mass of remaining contamination, indoor air quality is unlikely to be affected.
Groundwater Ingestion	De-minimis Exposure	City of Anchorage Municipal sewer and water service is connected to this property. Groundwater quality meets the ADEC groundwater cleanup levels and should not pose any risk to offsite water wells.
Surface Water Ingestion	Pathway Incomplete	There is no surface contamination remaining at the site, and no surface waters located within the potential area of impact from this site.
Wild Foods Ingestion	Pathway Incomplete	Contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	The residual sub-surface contamination has no potential to contact ecological receptors.

Notes to Table 1: “De-minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be affected by the minimal mass of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors.

ADEC Decision

The cleanup actions to date have served to adequately remove contaminated soil from this site, and reduce soil and groundwater contaminant concentrations. Contamination remains on site above established default soil cleanup levels; however ADEC has determined there is no unacceptable risk

to human health or the environment. Therefore, we are issuing this Corrective Action Complete determination, subject to the following conditions:

1. The most current soil sample analytical data reported BTEX, GRO, and DRO contamination exceeding the applicable soil cleanup levels, in the area of the former underground storage tanks, located within the center of the property boundaries. Any proposal to excavate, transport, move, treat, and/or dispose of residual contaminated soil at this "site" requires prior ADEC approval. This is consistent with the requirements of 18 AAC 78.274(b), and 18 AAC 78.600(h). A "site" [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.
2. Municipal public water service is currently provided to this property. Water wells may not be installed on this property without the prior notification, and approval, of ADEC.
3. All groundwater monitoring wells, treatment wells, and subsurface treatment piping associated with this project must now be properly decommissioned in accordance with ADEC's November 2011 Monitoring Well Guidance. Tesoro Refining and Marketing Company must now prepare and provide ADEC with a work plan which identifies proposed decommissioning procedures for ADEC review and approval, prior to implementation of those procedures. Decommissioning work should be completed when frost is not present in the soil. The decommissioning of these wells and any subsurface treatment piping should occur before September 30, 2012, and must be documented in a written report submitted to ADEC by December 30, 2012. This work must be performed or directly supervised by a 'qualified person', as defined in 18 AAC 78.995(118), and the report must be signed by a qualified person.

The ADEC Contaminated Sites Database will be updated to reflect the change in site status to 'Cleanup Complete', and will include a description of the contamination remaining at the site.

This determination is in accordance with 18 AAC 78.276(f) and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that this site may pose an unacceptable risk to human health or the environment. The Tesoro Refining and Marketing Company remains liable for any additional assessment and/or cleanup action, should ADEC impose such a requirement.

It should be noted that movement or use of potentially contaminated soil in a manner that results in a violation of 18 AAC 70 water quality standards is unlawful.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 -18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 30 days after the date of issuance of this letter, or within 30 days

after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this ADEC Decision Document, or any other aspect of this project, please contact me at (907) 262-3422, or via e-mail at paul.horwath@alaska.gov

Sincerely,

A handwritten signature in black ink that reads "Paul Horwath". The signature is written in a cursive, slightly slanted style.

Paul Horwath, PE
Engineer I, DEC

Cc: Robert Gilfilian, P.E. MWH, Anchorage
Michael Zidek, MWH, Anchorage