SITE INSPECTION REPORT
LORRAINE REFINERY
(Lorraine Refining Company)
CREEK COUNTY, OKLAHOMA
EPA CERCLIS ID # OKN000606909

August 18th, 2009

STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND PROTECTION DIVISION
SITE ASSESSMENT UNIT

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1. INTRODUCTION

The State of Oklahoma Department of Environmental Quality (DEQ) under the Multi-Site Cooperative Agreement (CA# V-00645-01) with the U.S. Environmental Protection Agency (EPA), as authorized by CERCLA and as amended by SARA, conducted a site inspection (SI) of the Lorraine Refinery Site (CERCLIS # OKN000606909), located in Creek County, Oklahoma. The purpose of this investigation was to collect information concerning conditions at the site sufficient to assess the threat posed to human health and the environment, to determine the need for additional investigation under CERCLA/SARA, and, if appropriate, support site evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL). This investigation included reviewing information collected during the site visits, sampling environmental media for determination of the presence and extent of hazardous substances on-site and the migration of these substances from the site, evaluating and documenting HRS factors, and collecting additional non-sampling information. The SI followed the procedures set forth in the *EPA Guidance for Performing Site Inspections Under CERCLA*, Interim Final, EPA 540-R-92-021 and will be used in support of a decision by EPA Region 6 as to whether the site warrants further investigation under CERCLA (Reference 1).

The project followed the procedures set forth in the Quality Assurance Project Plan (QAPP) (Reference 2) and the approved DEQ Quality Management Plan (QMP) for State fiscal year 2009-10, EPA QTRAK # 09-039 (Reference 3).

2. SITE DESCRIPTION

2.1 Location

The Lorraine Refinery site is located in NW ¼ NW1/4 of S29 T16N R9E and the SW corner of S20 T16N R9E in Creek County, Oklahoma. The site has the coordinates of 35° 50’ 33.37” north latitude and 96° 23’ 09.06” west longitude, The site covers approximately 15 acres (Reference 4).

The area is bounded to the south and east by the St. Louis and San Francisco Railroad, to the west by Sand Creek and highways 66 and 48, and the property extends 5.4 acres north of County road E0810. The property is divided into a northern portion and southern portion by E0810 (Reference 4; Figure 1).

2.2 Site Description

The northern portion of the site is rural land that is no longer in use, while the southern portion of the site is utilized by the First Assembly of God Church and one residence. Site access is not controlled. There are no fences on the property. There are no schools or day cares located within 200 feet of the site. The church owning the property has two full time employees. There are 31 residences within a quarter mile of the site, as well as a hotel with 36 rooms, and an owner, his wife and two children all of whom live there full time. The drainage pattern of the southern portion of the site is primarily to the west and the drainage pattern for the northern portion of the site is to the south. The site is the former location of the Lorraine Refinery, containing multiple storage tanks and refinery operation buildings. All refinery tanks and buildings have been leveled. The land is primarily pavement, church buildings, grasses, and trees. The southern portion of the site is outlined by trees and Sand Creek. There are multiple areas of stressed vegetation, barren areas, and visible black tarry waste deposits. The northern portion of the site is well vegetated, however the soil underneath the vegetation appears contaminated in addition to copious barren areas of black hard material of hydrocarbon nature (Reference 4).

2.3 Previous Investigations and Regulatory History

There is no information of any regulatory measures taking place at the refinery (Reference 4). A preliminary Assessment (PA) was performed at the adjacent property - the former Wilcox Refinery (Reference 5).

2.4 Operational History and Waste Characteristics

A detailed title search in the Creek County Clerk office confirms that the property was used in oil refinery operations from 1915 until it was bought by the H. F. Wilcox Oil and Gas Company in 1937. The first recorded owner of the property was Joe Abraham. Mr. Abraham sold the property to an industrial owner, the Bristow Oil and Refining Company, which purchased the property in May of 1915. The property was then sold to the Continental Refining Company in September of 1916. J. W. Woodford then received the company in November 1921 and then the property was sold to the Lorraine Petroleum Company in July of 1923. At some point, the Lorraine Petroleum Company became the Lorraine Refining Company. The Lorraine Refining Company then sold the property to Interocean Oil Company in October of 1925. The property was then bought by the Producers Oil Company in February of 1929. The Producers Oil Company then sold the property to the H. F. Wilcox Oil and Gas Company in June of 1937 as part of an expansion process for the Wilcox refinery. According to a report by the ODEQ in 1994, the Wilcox company area then totaled 110 acres, all of which was sold to Wendel Sandlin in November of 1963. After this, the property in question remained in private ownership (Reference 4).

The Sanborn Insurance Map indicates that the property contained approximately 25 storage tanks of various sizes, a cooling pond, and around 10 buildings housing refinery operations. The map also indicates that crude oil, fuel oil, gas oil, distillate, kerosene, benzene, and benzene (petroleum ether) were all stored on the property by the Lorraine Refining Company.

There are several areas of stressed vegetation, barren soil, and spots of tarry waste. In the southern portion of the property, the church and its parking lot appear to be where the refinery buildings were located (Reference 4).

The area was once occupied by the refinery. The wastes associated with this type of facility include crude oil, tank residues, brine, acid and caustic sludges, heavy metals, petroleum products, coke, sulfur compounds, and solvents. Waste management practices are unknown for this facility (Reference 4).

3. WASTE/SOURCE SAMPLING

3.1 Sample Locations

After reviewing a Soil Survey of Creek County and historical location of the Lorraine Refinery, the background samples locations were determined (References 6, 7; Figures 3).

Table 1 presents sample numbers, locations, and objectives for all samples collected during the SI. A total of twenty one soil and sediment samples, two background samples, and two QA/QC samples were collected to identify hazardous substances at the site and investigate whether these substances have been released into the environment, especially a possible migration of the contaminants from the site to Sand Creek and North Canadian River. Laboratory results indicate an area of contaminated soil, which, when triangulated, covers approximately 4 acres. The area of contaminated soil is considered a waste source for the purposes of this SI (Figure 4).

3.2 Analytical Results

The collected samples were analyzed for total metals, including mercury, volatile and semivolatile organics using Oklahoma State Environmental Laboratory (SEL) methods and procedures (Reference 7 and 8).

The following samples showed elevated levels when compared to background sample results: Samples LSS-5 and LSS-15 showed elevated levels of arsenic. Samples LSS-5, LSS-7, and LSS-17 showed elevated levels of Chromium. Samples LSS-1(2), LSS-3, LSS-4, LSS-5(6), LSS-17, LSD-2, and LSD-3(4) showed elevated levels of Lead. Samples LSS-3, LSS-5, LSS-7, LSS-15, LSS-16, and LSS-17 showed elevated levels of Nickel. Samples LSS-3, LSS-15, LSS-16, LSS-17, and LSD-3(4) showed elevated levels of Zinc. Samples LSD-1and LSD-2 showed elevated levels of Copper. Sample LSS-17 showed elevated levels of phenanthrene (Reference 9). The analytical data for these samples is shown in Tables 2, 3, and 4 of this document.

3.3 Sources

Based on the analytical data presented in Tables 2, 3, 4, and information collected during the sampling event, the location, type, and size of on-site source was determined (References 7 and 9; Figure 4).

After triangulating between sample points [LSS-1(2), LSS-4, LSS-7, LSS-5(6), LSD-3(4), LSS-17, LSS-16, and LSS-15], it was concluded that the contaminated soil source area is a polygon and covers about 4 acres. Acreage was plotted using Geographic Information System (GIS) mapping software (Figure 4).

3.4 Conclusions

The site area contains elevated concentrations of metals and one organic compound, which could be explained by the former activities at the Lorraine Refinery. The waste is unconfined and could migrate off site via ground water pathway, surface water runoff, or in the air. The presence of elevated metals in the sediment samples closest to the site [LSD-3(4)], and from samples LSD-1 and 2 collected from Sand Creek, might be considered as an indicator of the migration of the contaminants to off-site surface waters (Reference 9; Figure 5).

4. GROUND WATER PATHWAY

4.1 Hydrogeology

According to the Creek County Soil Survey, the specific soil series on the Lorraine Refinery site are Stephenville and Darnell fine sandy loam with a 4-7 percent slope, oil waste land, and Verdigris silt loam (Reference 4).

The Stephenville and Darnell fine sandy loam, sloping, is a shallow upland soil that developed over reddish-yellow to red sandstone or interbedded sandstone and sandy shale. The parent materials were slightly acidic to neutral. The Stephenville Darnell fine sandy loams, sloping, are droughty and low in natural productivity. These soils are highly susceptible to erosion. About 60 percent of the acreage consists of Stephenville soils and 40 percent of Darnell soils. The Stephenville soil depth ranges from 20-40 inches. The first four inches of the Stephenville soil is a grayish-brown fine sandy loam with a weak granular structure and slight acidity. From 4-12 inches, the soil is a pale-brown light fine sandy loam that is very friable when moist and loose when dry and maintains a slight acidity. From 12-28 inches, the soil is a yellowish-red sandy clay loam with massive structure. At this point the soil is crumbly and friable when moist and slightly sticky when wet. The soil is porous and permeable, and maintains a medium acidity. From 28-35 inches, the soil is a yellow-red sandy clay loam that is friable, permeable, and contains small, soft fragments of slightly weathered sandstone with medium to slight acidity. The bedrock typically begins at 35 inches and is a yellowish-red sandstone that is slightly acidic to neutral. The depth of the Darnell soil ranges from 5-20 inches. The Darnell soil is a pale-brown, light, fine sandy loam that is structure less and slightly acidic to a depth of about 10 inches. From 10-16 inches, the Darnell soil is a medium acidic, reddish-yellow fine sandy loam with a lower part that is slightly heavier and contains small fragments of partly weathered sandstone. Past 16 inches, the soil is a neutral reddish-yellow bedrock (Reference 4).

Oil-waste land is listed as having contamination by oil and saltwater waste from oil wells. This land is typically gullied and eroded and bare of vegetation (Reference 4).

The Verdigris silt loam is mapped on flood plains of streams. The parent material consisted of slightly acid to weakly alkaline alluvial sediments washed from dark soils of the prairies. Runoff is slow and internal drainage is moderate. The soil is flooded one to three times per year. The surface layer of soil runs about 16 inches deep, and is a dark grayish-brown silt loam that is friable when moist and hard when dry, and maintains a slight acidity. From 16-36 inches, the soil is a dark grayish-brown clay loam that is crumbly and friable when moist and hard when dry. At this level, the soil is porous and permeable and maintains a slight acidity to neutral pH. From 36 inches on, the soil is a dark grayish-brown clay loam that is friable, permeable, and weakly alkaline (Reference 4).

The Lorraine Refinery sits on the Pennsylvanian-aged Barnsdall Formation. This formation is composed of fine-grained sandstone overlain by shale. Thickness ranges from 80 to 200 ft (Reference 4). At approximately 0.25 miles to the southeast of the refinery, the underlying Pennsylvanian-aged Wann Formation and underlying Iola Limestone are exposed. The Wann Formation varies in thickness from 40 to 180 feet and is comprised of shale and fine- to medium-grained sandstone. The Iola Limestone ranges in thickness from 15 to 20 feet and consists of a calcareous fine-grained sandstone and limestone with some shale. Sand Creek appears to be the major drainage basin for the site. Sand Creek flows southward along the western side of the Lorraine Refinery site and begins flowing to the southeast at the southern boundary of this site. At approximately 0.25 miles to the southeast of the refinery Sand Creek is associated with Quaternary-aged alluvial deposits consisting of sand, silt, clay, and lenticular beds of gravel. Thickness in these deposits ranges from 5 to 50 feet (25 feet average). Because Sand Creek crosses the site, localized alluvium may be present at the refinery. A field of eight wells, which may be the public water supply for Bristow, Oklahoma, is located approximately 1.5 miles south of the refinery site. The average well is 200 feet deep and has a water level at 45 feet. The average yield from these wells is 25 to 50 gallons per minute (gpm). Water quality, obtained from Pennsylvanian rocks, is good with 500 mg/L or less of dissolved solids (Reference 4).

The Lorraine Refinery is located 2 miles from Little Deep Fork Creek, which is associated with the alluvial and terrace deposits of a groundwater recharge area. These deposits range in thickness from 10 to 50 feet. The yields from these aquifers are, generally, 10 to 500 (gpm) of good quality (less than 1,000 mg/L dissolved solids) water. Little Deep Fork Creek flows to the southeast, draining into the Deep Fork River, a tributary of the North Canadian River. Depth to shallow ground water is 12 to 20 feet, according to records of monitoring wells located within two miles of the site. Based on regional topography, flow direction of surface and shallow ground water is to the south/southeast. The Lorraine Refinery is located on the border between the recharge and potential recharge area of a major bedrock aquifer - the Pennsylvanian, Vamoosa Formation and Ada Group, comprised of fine- to coarse-grained sandstone irregularly interbedded with shale. A potential recharge area includes strata that may be in hydrological communication with the bedrock aquifer, so these regions should be protected as well as the recharge area proper. In 2000, 7.34 million gallons of freshwater per day were withdrawn from the Vamoosa-Ada groundwater aquifer, 75 percent of which was used for municipal purposes

and 25 percent for rural domestic and stock animal consumption. This quantity is significant and represents 10 percent of the fresh ground water withdrawal in Oklahoma for this year (Reference 4).

4.2 Targets

Updated information regarding municipal water wells was obtained for the purposes of this SI and which differs from data gathered during the PA (Reference 4 and 10).

The site is located within the city limits of the City of Bristow. The City of Bristow obtains its municipal water supply from five groundwater wells, located about 1 - 2 miles west of the site. There are no municipal water wells contributing more than 40% of the total output of the system, which serves an overwhelming majority of the population of the area of interest (Reference 10).

Based on regional topography, flow direction of surface and shallow ground water is to the south/southeast (Reference 4).

In the vicinity of the site the shallow groundwater most likely migrates and discharges to the south into Sand Creek, thereby the groundwater may serve as a source of pollution for area surface water. The nearest drinking water well, which is designated as domestic, is located one mile west of the site in the direction perpendicular to groundwater flow; therefore, it is unlikely that contaminants from the site would reach the well. This well, after consideration of the mentioned above facts, is considered to be a secondary target. The rest of the groundwater wells, both public and domestic, within the 4-mile study radius are also considered secondary targets due to their locations and distance from the site. It was decided that sampling of the groundwater is not warranted for the purposes of this SI (References 4, 7, 10).

The total population served by private wells is described in the table below. The numbers were arrived at by multiplying the number of wells by the estimated average number of persons (2.53) within each household in Creek County (References 4).

Private Wells

Distance from Site (mi)	# of Wells	Est. Population Served by Private Wells
On-site	0	0
0 – ¼	0	0
¼ - ½	0	0
½ - 1	0	0

1 - 2	4	10.12
2 – 3	16	40.48
3 – 4	26	65.78
Total	46	116.38

There are five groundwater wells, that compromise the City of Bristow public water supply system, located about 1-2 miles west, northwest, and southwest of the site, in the direction opposite and perpendicular to groundwater flow. There are no public water wells contributing more than 40% of the total output of the system, which serves an overwhelming majority of the population of the area of interest. The population was calculated by multiplication of the number of households connected to the public water system by the average number of persons per household (Reference 10).

Public Wells

Distance from Site (mi)	**# of Wells**	**Est. Population Served by Public Wells**
On-site	0	0
0 – ¼	0	0
¼ - ½	0	0
½ - 1	0	0
1 - 2	**5**	3869
2 – 3	0	0
3 – 4	0	0
Total	5	3869

4.3 Analytical Results

Based on the above mentioned information ground water samples were not collected for the purposes of this SI.

4.4 Conclusions

Primary target wells were not identified within the study area. Ground water samples were not collected for the purposes of the SI due to the locations of private and public wells. In the vicinity of the site the groundwater most likely migrates and discharges to the South into the Sand Creek, thereby the groundwater may serve as a source of pollution for area surface water.

5. SURFACE WATER PATHWAY

5.1 Hydrology

The drainage pattern for the northern portion of the site is to the south. The drainage pattern for the southern portion of the site is generally west. One intermittent stream exists on the site which flows east to west and links into Sand Creek. This point where the intermittent stream joins Sand Creek is likely the most significant probable point of entry (PPE). The PPE occurs in the NE corner of the NE corner of S30 T16N R9E. Sand Creek meanders approximately 2 miles east until it merges with Little Deep Fork Creek, which is the third surface water body within fifteen miles downstream of the PPE. (Reference 4, Figure 3)

According to gauging station #07243500 located in the NW ¼ of the SW ¼ of S20 T14N R12E in Okmulgee County, approximately 25 miles southeast from the site, the annual flow rate of the Deep Fork River is 806 cfs. The average annual precipitation in the area is about 37 inches. The 2-year, 24-hour rainfall is about 3.8 inches. The site is not located within the 100-year flood plain (Reference 4).

5.2 Targets

According to the State of Oklahoma, Sand Creek is considered a Habitat Limited Aquatic Community, and a Secondary Body Contact Beneficial Use, as well as having agricultural and aesthetic beneficial uses. Little Deep Fork Creek downstream from Sand Creek is considered a Warm Water Aquatic Community, and a Primary Body Contact Beneficial Use, as well as having agricultural and aesthetic beneficial uses. The Oklahoma Department of Wildlife Conservation lists the Heyburn Wildlife Management Area within the 15-mile target distance. This area and its associated watershed are considered to be sensitive areas (Reference 4).

Several species have been identified within the study area as endangered: American Burying Beetle (*Nicrophorus americanus)*, and Interior Least Tern (*Sterna antillarum)*. Species identified as threatened or vulnerable are: Woodchuck (*Marmota monax)*, Prairie Mole Cricket

(*Gryllotalpa major)*, and Bachman's Sparrow (*Aimophila aestivalis)*. There are no drinking water intakes associated with the surface water pathway (Reference 4).

5.3 Sample Locations

Six sediment samples were collected during this SI. Two sediment samples were collected from the perennial stream (Sand Creek) west of the site: One from the southern portion of the stream, downstream from the probable point of entry (PPE), and one at the PPE. One sample was collected at the 15-mile downstream location, one collected upstream of the site, and two collected from an intermittent stream along the eastern border of the site, which flows into Sand Creek. Actual sample locations, time of collections, and justification of the samples are described in Table 1 (References 7 and 11, Figures 2 and 3).

5.4 Analytical Results

When compared to the background sediment sample LSD-5, sample LSD-1 exhibited elevated levels of copper, sample LSD-2 exhibited elevated levels of copper and lead.
LSD-3(4) collected at an intermittent stream near the east boundary of the site exhibited the greatest levels of lead and zinc found in the samples that represent the surface water pathway.
(Reference 9, Figures 4 and 5). The analytical data for the sediment samples are presented in Tables 2, 3, and 4).

5.5 Conclusions

The presence of elevated metals in the sediment samples LSD-1, 2, 3(4) might be considered as an indicator of the migration of the contaminants from the site into Sand Creek. Results for sample LSD-3(4) indicate a possible migration of contaminants into an intermittent stream along the eastern boundary of the site. Samples were not collected where this intermittent stream converges with Sand Creek. The analytical results of the sample collected from the 15-mile downstream location segment of Little Deep Fork Creek does not shown elevated levels of the contaminants attributed to the site. (Reference 9, Figures 2, 3, 4, and 5)

6. SOIL EXPOSURE PATHWAY

6.1 Physical Conditions

The site is the former location of the Lorraine Refinery, containing multiple storage tanks and refinery operation buildings. All refinery tanks and buildings have been leveled. The land is primarily pavement, church buildings, grasses, and trees. The southern portion of the site is outlined by trees and Sand Creek. There are multiple areas of stressed vegetation, barren areas, and visible black tarry waste deposits. The northern portion of the site is well vegetated, however the soil underneath the vegetation appears contaminated in addition to copious barren areas of black hard material of hydrocarbon nature (Reference 4).
The site covers approximately 15 acres. The area is bounded to the south and east by the St. Louis and San Francisco Railroad, to the west by Sand Creek and highways 66 and 48, and the property extends 5.448 acres north of E0810 road. The property is divided into a northern portion

and southern portion by E0810. The northern portion of the site is rural, with one residence, while the southern portion of the site is utilized by the First Assembly of God Church and one residence. Site access is not controlled due to lack of fences on the property (Reference 4).

6.2 Targets

There are two residences located on-site. One located next to the church on the southern portion of the site, and one residence on the northwest portion. No other residences are within 200 feet of the site. There are no businesses, schools or daycare centers located within 200 feet of the site (Reference 4).

6.3 Sample Locations

Eighteen surface soil samples were collected from the former refinery area and one background sample collected outside the influence of the site. Eight samples were collected from the southern portion of the site and ten collected from the northern portion. Samples were collected near former locations of storage tanks and where impact from waste was visible. One sample was collected near the main church building, at children's play area. Soil samples were taken in order to determine whether the soil is contaminated and if so, to what extent (Reference 7). Soil samples locations are described in Table 1 and depicted in Figures 2 and 3.

6.4 Analytical Results

Soil samples collected during the SI were analyzed for total metals and the volatile and semi-volatile organics (Reference 2, 3, and 7). A concentration greater than three times background for arsenic, chromium, copper, lead, nickel, zinc, and phenanthrene, was detected in many soil samples collected during the SI, including one sample collected from the children's play area near the church on site (References 9, Figures 4 and 5). The analytical data for the soil samples are presented in Table 2.

6.5 Conclusions

After triangulating between sample points (LSS-1(2), LSS-4, LSS-7, LSS-5(6), LSD-3(4), LSS-17, LSS-16, and LSS-15), it was concluded that the contaminated soil source area has the shape of a polygon and covers about 4 acres. Acreage was plotted using Geographic Information System (GIS) mapping software (Reference 9, Figures 4 and 5).

7. AIR PATHWAY

7.1 Site Conditions

It is likely that air emissions occurred during the operational period of the Lorraine Refinery; however, the only emissions of concern currently at the site are contaminated soil particles and volatile organics that could become airborne. No releases to the air, water, or soil were observed nor were any unusual odors detected during the on-site reconnaissance of the site (References 4).

7.2 Targets

The five people on-site are considered the nearest individuals. The estimated population and wetland acreage within 4 miles of the site is described in the following table. The estimated population between the site and 1/4-mile radius was arrived at by multiplying the number of residences by the estimated average number of persons (2.53) per household in Creek County (Reference 4).

Estimated Population and Wetland Acreage

Distance from site (mi)	Estimated Population	Estimated Wetland Acreage
On-site	5	5.37
0 - ¼	143	11.03
¼ - ½	502	7.18
½ - 1	2185	49.75
1 – 2	2042	183.43
2 – 3	251	339.88
3 – 4	826	204.62
TOTALS	**5954**	**801.26**

Populations within certain geographic areas were determined by utilizing census data and GIS mapping software (Reference 4). Differences in total population within four miles of the site utilizing ground water versus census population data could be attributable to domestic/private wells not reported (References 4 and 10).

7.3 Sample Locations/Analytical Results

Since air sampling is outside the scope of a SI, no formal air monitoring program was conducted and no air samples were collected.

7.4 Conclusions

A release to the air pathway has not been documented at the site, and no hydrocarbon odor was detected during the sampling event.

8. SUMMARY AND CONCLUSIONS

The Lorraine Refinery site is a historical refinery in Bristow, Oklahoma. The site passed through various refinery co-operations from 1915 through 1937.

The site area contains elevated concentrations of metals and one organic compound, which can be explained by the former activities at the Lorraine Refinery. It is estimated that approximately 4 acres, including the church property and its residence, is covered by contaminated soil. The waste is unconfined and could migrate off site via ground water pathway, surface water runoff, or in the air. The presence of elevated metals in sediment samples collected from low-lying areas to the west and on the eastern border might be considered as an indicator of the migration of the contaminants from the site into Sand Creek. The final conclusion as to the migration of contaminants into Sand Creek requires an additional investigation.

Considering the fact that the Lorraine Refinery became part of H. F. Wilcox Oil and Gas Company in 1937 as part of an expansion process for Wilcox refining operations, it is proposed for further investigations to consider both refineries as one site - H. F. Wilcox Oil and Gas Company.

TABLES AND FIGURES

Table 1: Sample Collection

Sample Number	Sample Type	Location and Justification	Date	Time
LSS-1	Surface Soils	Former distillate tank location Waste and stressed vegetation observed	04.22.09.	9:44
LSS-2	Surface Soils	Former distillate tank location Duplicate sample of LSS-1	04.22.09.	9:44
LSS-3	Surface Soils	Playground area near church	04.22.09.	9:50
LSS-4	Surface Soils	Former fuel oil storage area Waste and stressed vegetation observed	04.22.09.	9:47
LSS-5	Surface Soils	Former storage tank area Waste and stressed vegetation observed	04.22.09.	10:18
LSS-6	Surface Soils	Former storage tank area Duplicate sample of LSS-5	04.22.09.	10:18
LSS-7	Surface Soils	Southwest area of site Waste and stressed vegetation observed	04.22.09.	10:32
LSS-8	Surface Soils	Former fuel oil storage tank location Waste and stressed vegetation observed	04.22.09.	9:45
LSS-9	Surface Soils	Northeast corner of site Waste and stressed vegetation observed	04.22.09.	10:12
LSS-10	Surface Soils	North end of site Waste and stressed vegetation observed	04.22.09.	9:59
LSS-11	Surface Soils	North end of site Waste and stressed vegetation observed	04.22.09.	10:16
LSS-12	Surface Soils	Former crude oil storage tank location Waste and stressed vegetation observed	04.22.09.	10:31
LSS-13	Surface Soils	Northwest corner of site Waste and stressed vegetation observed	04.22.09.	10:22
LSS-14	Surface Soils	Former fuel storage tank location Waste and stressed vegetation observed	04.22.09.	9:52
LSS-15	Surface Soils	Low-lying area south of dyke Waste and stressed vegetation observed	04.22.09.	10:12
LSS-16	Surface Soils	Southeast corner of north portion of site Stressed vegetation	04.22.09.	10:04
LSS-17	Surface Soils	Northeast corner of south portion of site Stressed vegetation	04.22.09.	9:54
LSS-18	Surface Soils	South of main entrance of site Waste and stressed vegetation observed	04.22.09.	9:37
LSS-19	Surface	Near parking lot of turnpike entrance north	04.22.09.	11:43

	Soils	of site Background Sample		
LSD-1	Surface water Sediment	Sand Creek, southern end of site, east of large fuel oil storage tank and cooling pond. Possible contamination from surface water migration	04.22.09.	11:22
LSD-2	Surface water Sediment	Merger from intermittent waters and Sand Creek. Possible contamination from surface water migration	04.22.09.	11:18
LSD-3	Surface water Sediment	Ditch south of church that parallels railroad Possible contamination from surface water migration	04.22.09.	10:14
LSD-4	Surface water Sediment	Ditch south of church that parallels railroad Duplicate of LSD-3	04.22.09.	10:14
LSD-5	Surface water Sediment	Upstream of site, point where Sand Creek crosses Highway 48/66 Upstream sample, outside the influence of surface water from site	04.22.09.	11:43
LSD-6	Surface water Sediment	15-mile downstream sample	04.22.09.	10:30

20 Site Characterization Sample Locations
2 Background Samples
3 QA/QC Samples

TABLE 2: ANALYTICAL RESULTS FOR CONTAMINATED SOIL SAMPLES (ppm)* COLLECTED DURING THE SI
LSS-#.
BACKGROUND SAMPLE: LSS-19.

Sample ID	# 19	# 1(2)	# 3	# 4	# 5(6)	# 7	# 15
Substance							
Arsenic	1.3	-	-	-	5.1	-	12.5
Chromium	4.4	-	-	-	13.6	23.5	-
Copper	5	-	-	-	-	96.5	-
Lead	11.5	44.3	155	513	52.1	-	-
Nickel	2.5	-	13.5	-	11.2	11	14
Zinc	14	-	43.8	-	-	-	63.2

TABLE 2(cont.): ANALYTICAL RESULTS FOR CONTAMINATED SOIL SAMPLES (ppm)* COLLECTED DURING THE SI
ER-SS-#.
BACKGROUND SAMPLE: LSS-19.

Sample ID	# 19	# 16	# 17	#18
Substance				
Chromium	4.4	-	118	2.0
Lead	11.5	-	89.5	-
Nickel	2.5	8.7	9.8	-
Zinc	14	114	119	-
Phenanthrene	<340.0	-	862	-

TABLE 3: ANALYTICAL RESULTS FOR SEDIMENT SAMPLES (ppm)* COLLECTED DURING THE SI AT THE INTERMITTENT STREAM
LSD-3(4)
BACKGROUND SAMPLE: LSS-19

Sample ID	LSS-19	LSD-3(4)
Substance		
Lead	11.5	37.2
Zinc	14	79.5

TABLE 4: ANALYTICAL RESULTS FOR SEDIMENT SAMPLES (ppm)* COLLECTED DURING SI AT SAND CREEK
LSD-#
BACKGROUND SAMPLE: LSD-5

Sample ID	# 5	# 1	# 2	# 6
Substance				
Copper	<1.00	2.5	2.8	-
Lead	2.5	-	9.6	-

***** The above information represents samples which showed elevated levels of contaminants (i. e. 3 x backgrounds). The laboratory analyses for all sample points are provided in Reference 9. The detection limits for SEL are provided in its Quality Assurance Plan (Reference 8).

Figure 1: Site Location Map

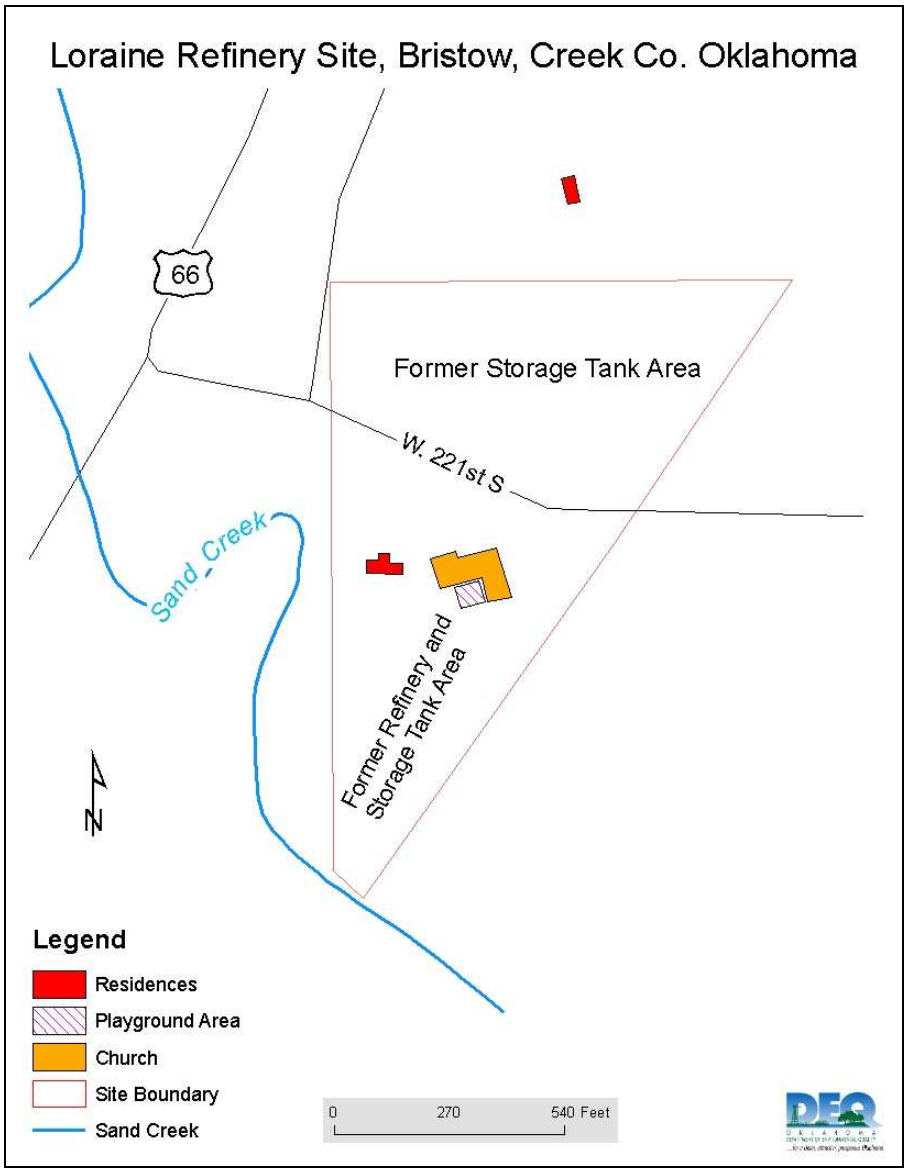


Figure 2: Sample Locations
Site-wide Surface Soil and Sediment

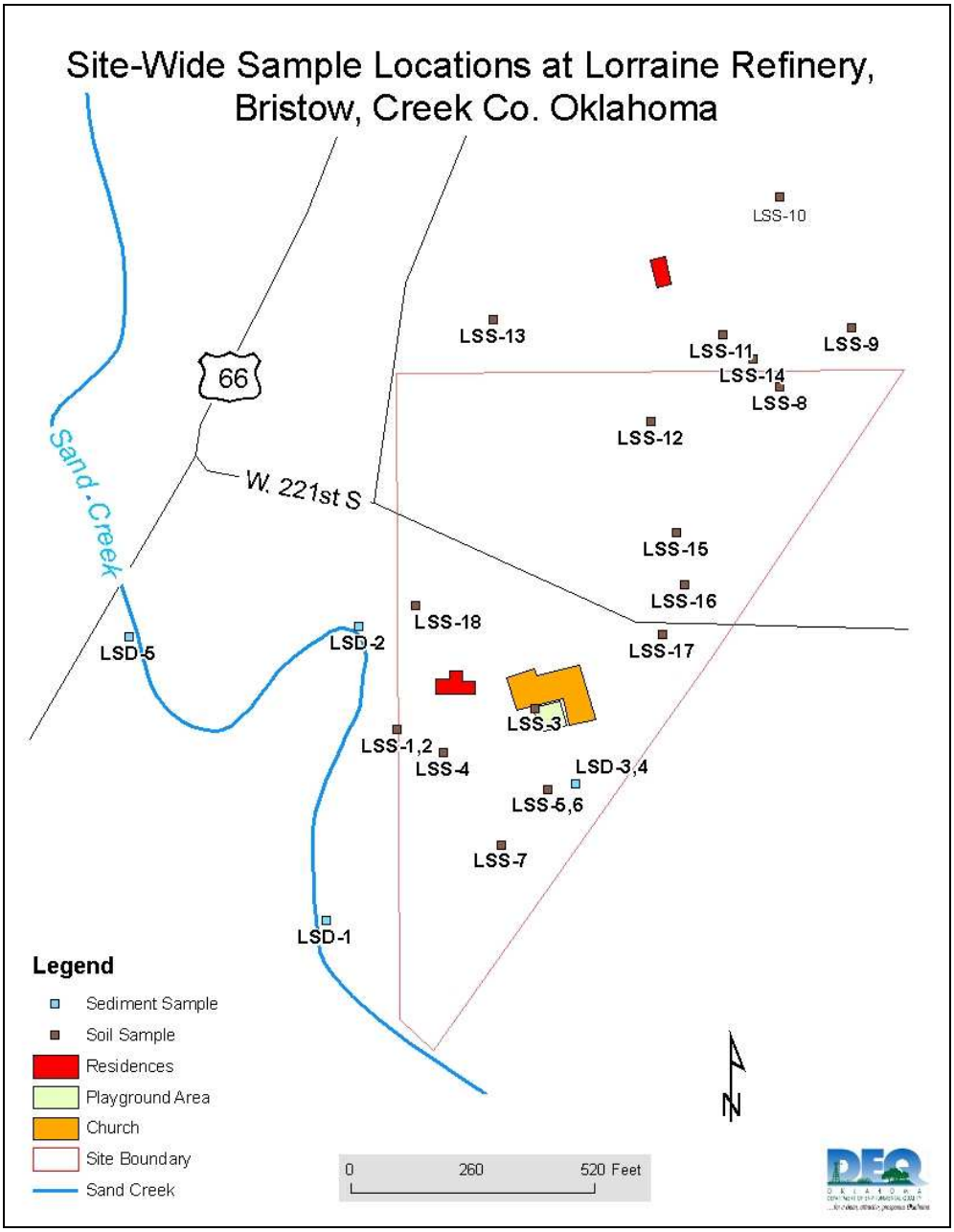


Figure 3: Sample Locations
Off-Site Surface Soil and Sediment

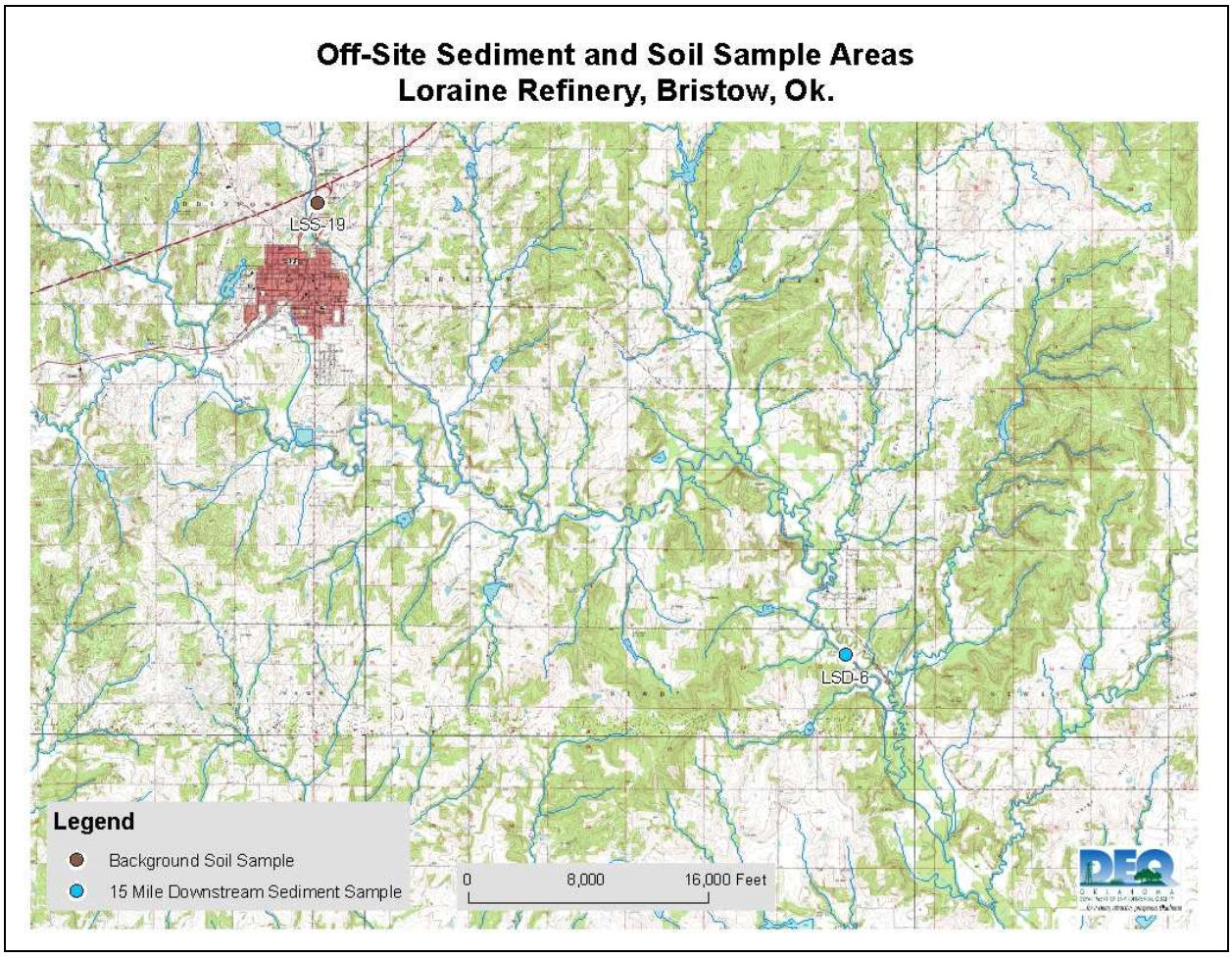


Figure 4: Area of Contaminated Soils

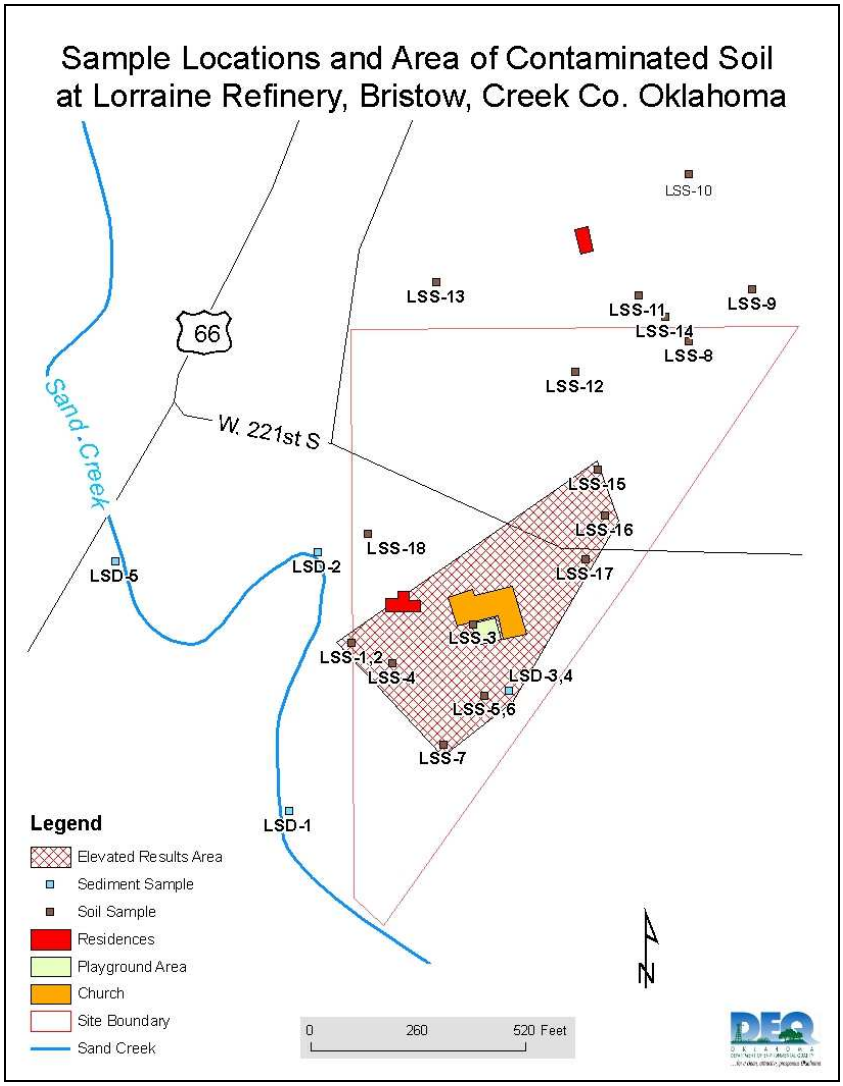


Figure 5: Sample Exceedences

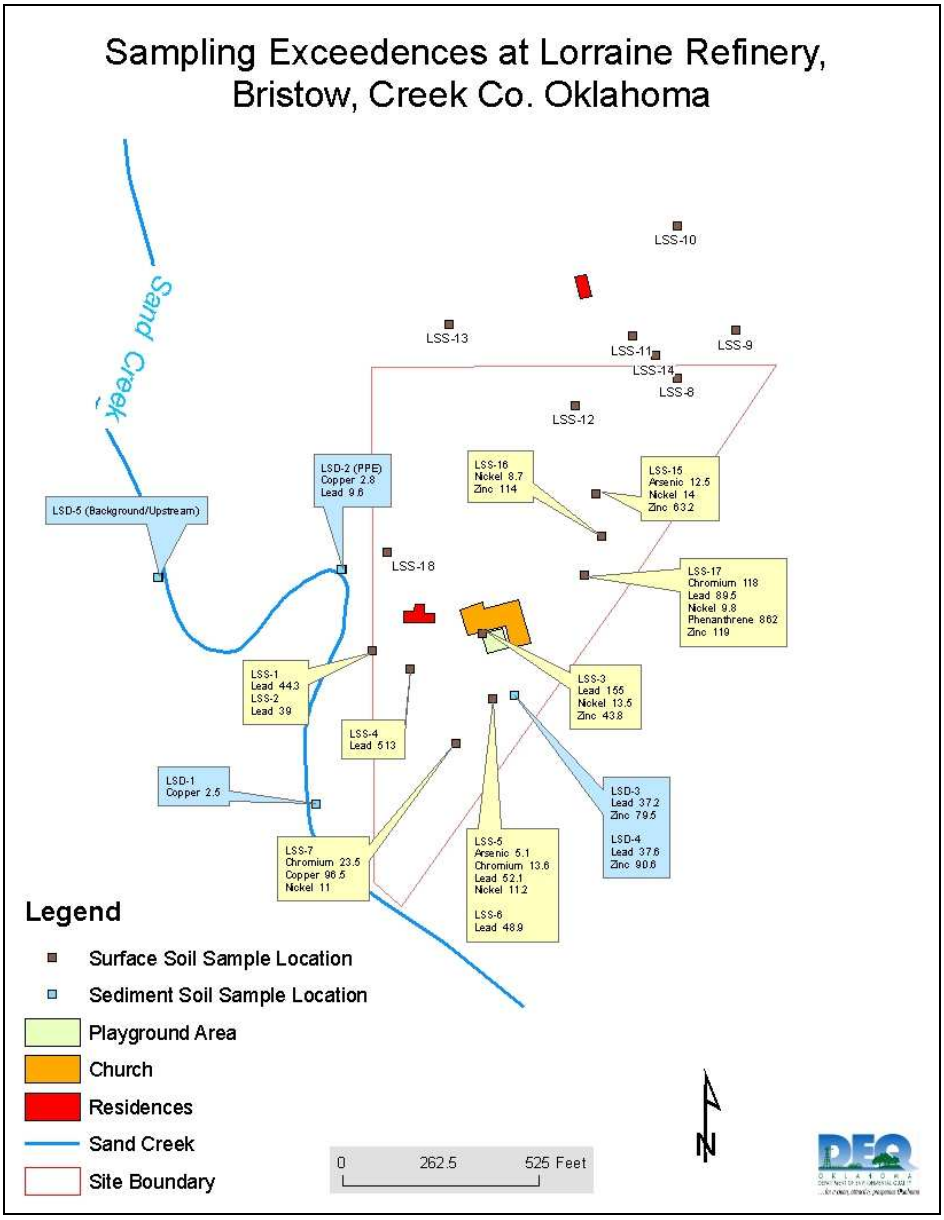


Photo documentation

Photographer: Hal Cantwell
Date: 4/22/09 Direction: Northeast

Comments: Background Surface Soil Sample Collection north of Site

Photographer: Hal Cantwell
Date: 4/22/09 Direction: West

Comments: Sample collection from Playground area near church

Photographer: Hal Cantwell
Date: 4/22/09 Direction: Northeast

Comments: Sample collection from intermittent stream on eastern border of site

Photographer: Randy Brown
Date: 4/22/09 Direction: North

Comments: Surface Soil Sample. Waste is visible surrounding sample jars

REFERENCE LIST

1. U. S. Environmental Protection Agency. *Guidance for Performing Site Inspections under CERCLA Interim Final.* EPA/540-R-92-021. September 1992.

2. State of Oklahoma, Department of Environmental Quality (ODEQ). *Quality Assurance Project Plan (QAPP) for Site Assessment Unit FFY-09.* September 9, 2008.

3. Johnson, Donald L., U.S. Environmental Protection Agency, Region 6. *A letter to Gayle Bartholomew*. November 10, 2008.

4. ODEQ. *Preliminary Assessment of the Lorraine Refinery, Creek County, Oklahoma*. September 28th, 2008.

5. ODEQ. *Preliminary Assessment of the Wilcox Refinery, Creek County, Oklahoma*. December 15th, 1994.

6. U.S. Department of Agriculture, *Soil Survey of Creek County, Oklahoma*. May, 1959.

7. ODEQ. *Site Inspection and Analysis Plan, Lorraine Refinery, Creek County, Oklahoma.* March 24, 2009.

8. ODEQ . State Environmental Laboratory. *Quality Assurance Plan.* State Fiscal Year 2009. January 1, 2009.

9. ODEQ. State Environmental Laboratory. *Report of Analysis by Metal Laboratory. Report of Analysis by Gas Chromatograph with Mass Spectrometer detection (GCMS) Laboratory.* May – June, 2009.

10. Record of Communication with Steve McGuire, City of Bristow, Oklahoma. August 3, 2009.

11. ODEQ. *Lorraine Refinery, Site SI Field Logbook.* April 22, 2009.

REFERENCES

Reference 1

47United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington DC 20460

EPA/540-R-92-021
PB92 -963375
September 1992

Superfund

9345.1-05

Guidance for Performing Site Inspections Under CERCLA

Interim Final

Reference 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

September 9, 2008

Ms. Subi John
Site Assessment Unit
Land Protection Division
Department of Environmental Quality
707 North Robinson
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

RE: Quality Assurance Project Plan (QAPP) QTRAK # Q-08-522 for Oklahoma Department of Environmental Quality - Site Assessment Unit.

Dear Ms. John:

The Fiscal Year 2009 Quality Assurance Project Plan for Oklahoma Department of Environmental Quality - Site Assessment Unit has been reviewed and is approved. This QAPP will expire one year from the date of my signature. Enclosed is a signed approval page for your records.

If you have any questions or concerns, please feel free to contact me at (214) 665 - 3178.

Sincerely,

Philip Ofosu
Site Assessment Manager

Enclosure

cc: Don Johnson, 6MD
Walt Helmick, 6SF-D
Kathy Gibson, 6SF-VC

QUALITY ASSURANCE PROJECT PLAN
for
Site Assessment Unit
Scope of Work
FFY 2009

STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND PROTECTION DIVISION
SITE REMEDIATION SECTION
SITE ASSESSMENT UNIT

Quality Management Plan EPA QTRAK # 08-148

Title and Approval Sheet

DEQ Site Assessment Unit Leader	Hal Cantwell	Date 08/29/08
DEQ Remediation Unit QA Coordinator	Subi John	Date 8/29/08
DEQ Quality Assurance Officer	Karen Khalafian	Date 8/29/08
DEQ Site Remediation Section Manager	Amy Brittain	Date 8/29/08
EPA-Region 6 Site Assessment Manager	Philip Ofosu	Date 9/9/08

August 29, 2008

Reference 3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

November 10, 2008

Ms. Gayle Bartholomew
Environmental Grants Administrator
Office of the Secretary of Environment
3800 North Classen Boulevard
Oklahoma City, OK 73118

Dear Ms. Bartholomew:

The Region 6 Quality Assurance Staff has reviewed the updated Quality Management Plan (QMP) for the Oklahoma Department of Environmental Quality (ODEQ), which was assigned the QTRAK number 09-039. Since the QMP, as per your letter dated October 22, 2008, the QMP has only had minor changes since it was last approved, the QA Staff has recommended that the revised document be approved as submitted.

I have enclosed six originals of the QMP signature page, with my approval signature, for your and ODEQ's records. We appreciate your and ODEQ's efforts in keeping this document current. If you or OCC have any questions or concerns, Dr. Romig, who reviewed your QMP, may be reached at (214) 665-8346, or I may be reached at (214) 665-8343.

Sincerely yours,

Donald L. Johnson
Region 6 Quality Assurance Manager

enclosures

cc: Tim Herfel (6WQ-AT)

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
QUALITY MANAGEMENT PLAN (QMP)
For State FY 2009—FY 2010

Effective: (Date of EPA Approval)

APPROVALS

Name	Title	Division	Signature	Date
Steven A. Thompson	Executive Director			10-10-08
Eddie Terrell	Division Director	Air Quality		10/10/08
Scott Thompson	Division Director	Land Protection		10-10-08
Gary Collins	Division Director	Environmental Complaints & Local Services		10/10/08
David Dyke	Division Director	Administrative Services		10/10/08
Jon Craig	Division Director	Water Quality		10/10/08
Judith A. Duncan	Division Director	Customer Services		10/10/08
Joe Mashburn	QA Coordinator	Air Quality		10/10/08
Keisha Cornelius	QA Coordinator	Land Protection	Michelle Worbel for KC	10/10/08
Subi John	QA Coordinator	Land Protection		10/10/08
Hillary Young	QA Coordinator	Land Protection		10-10-08
Amber Brawdy	QA Coordinator	Land Protection		10/10/08
Roy Walker	QA Coordinator	Administrative Services		10/10/8
Karen Miles	QA Coordinator	Water Quality		10/10/08
April Beltz	SEL QA Officer	Customer Services		10/10/08
Karen Khalafian	QA Officer	Land Protection		10/10/08

Kara Williams
Environmental Programs Manager/QA Officer
Office of the Secretary of Environment

Kara Williams
Signature

10.22.08
Date

Donald L. Johnson
Region 6 Quality Assurance Manager
U. S. Environmental Protection Agency

Signature

11/10/08
Date

J.D. STRONG
SECRETARY OF ENVIRONMENT

BRAD HENRY
GOVERNOR

STATE OF OKLAHOMA
OFFICE OF THE
SECRETARY OF ENVIRONMENT

Memorandum

November 20, 2008

To: Karen Khalafian, Oklahoma Department of Environmental Quality

From: Gayle Bartholomew

Re: Quality Management Plan (QMP) – QTRAK #09-039

The attached letter from U.S. EPA approves DEQ's Quality Management Plan. Also enclosed are fully executed signature pages. The plan will remain in effect for one year from the date of Mr. Johnson's signature. Updates or a revised plan will be submitted to EPA in October 2009. If you have any questions or need additional information, please do not hesitate to contact me by phone at (405) 530-8996 or email gnbartholomew@environment.ok.gov.

Enc.

3800 North Classen Boulevard Oklahoma City, Oklahoma 73118
(405) 530-8995 fax (405) 530-8999

Reference 4

PRELIMINARY ASSESMENT

of the

LORRAINE REFINERY SITE

Located near

BRISTOW, CREEK COUNTY, OKLAHOMA

September 28, 2008

STATE OF OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

Prepared by:

Vanessa Peterson, Land Protection Division Intern

Pamela Turner, Land Protection Division Intern

Reviewed by:

Karen Khalaflan, Environmental Programs Specialist III

Approved by:

Hal Cantwell, Environmental Programs Specialist IV

Reference 5

PRELIMINARY ASSESSMENT
of the
WILCOX OIL COMPANY

located in
BRISTOW, CREEK COUNTY, OKLAHOMA

STATE OF OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

Prepared by:

David A. Cates, Environmental Specialist

Reviewed by:

Rita Kottke, Senior Environmental Specialist

Approved by:

Hal Cantwell, Environmental Specialist Supervisor

December 15,1994

Reference 6

Series 1950, No. 5

Issued May 1959

SOIL SURVEY

Creek County Oklahoma

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with the
OKLAHOMA AGRICULTURAL EXPERIMENT STATION

moderately granular structure; friable when moist, very hard and compact when dry; slightly acid.
8 to 24 inches, grayish-brown heavy clay, mottled with yellowish brown and yellowish brown; weak blocky structure; very compact and very sticky when moist, extremely hard when dry; very slowly permeable; medium acid.
24 to 42 inches+, mottled gray and light olive-brown heavy clay; very sticky and stiff when wet; very slowly permeable; slightly acid in upper part, neutral in lower part.

The thickness of the surface soil ranges from about 8 to 18 inches, and the texture ranges from very fine sandy loam to loam. On a few low sandy mounds the surface soil is fine sandy loam 18 to 30 inches thick. The subsoil layer ranges from dense clay to compact, slowly permeable sandy clay; in places it contains pockets and layers of sandy loam.

Use and management (Capability unit IIs–1).—This soil is not susceptible to erosion. Fertility is low to moderate. The soil remains wet and cold late in the spring, and when it dries the surface soil crusts and bakes. If the soil is not worked at exactly the right moisture content, large clods form that make it very difficult to maintain a good seedbed.

This soil is not well suited to most common field crops, but it is moderately well suited to native hay or pasture. Most of it is now used for pasture. About one-third of the soil is used for crops, mostly cotton, corn, and sorghums. This soil is in the Claypan prairie range site.

Oil-waste land

Oil-waste land (Oa).—The areas mapped in this miscellaneous land type have been practically ruined for agricultural use by oil and salt-water waste from oil wells. They are more or less gullied and eroded and are almost bare of vegetation. They range in size from about one acre to several acres.

Use and management (Capability unit VIII).—This land is of no value for crops or pasture in its present condition. Some of the less strongly sloping and less severely gullied areas may eventually be revegetated by natural means if no more oil or salt-water waste is dumped on them.

Okemah series

These soils have developed from weakly alkaline shales and clays under a cover of grass in nearly level to gently sloping shallow valleys. They are moderately well drained, dark colored, and slightly acid. They have a dark-colored, crumbly and granular surface soil and upper subsoil. Their lower subsoil is mottled olive-yellow and gray compact clay.

Okemah soils are not mapped separately in Creek County. They are closely associated with soils of the Dennis series in some places and with soils of the Woodson series in others, and are mapped in units with soils of one or the other of these series. The Woodson soils differ from the Okemah soils in being dark gray and having a claypan. The Dennis soils, where they are associated with the Okemah soils, lie in slightly higher positions and have developed from less clayey materials. The Dennis soils are browner than the Okemah soils, and they have more rapid runoff and internal drainage.

A profile of an Okemah soil as mapped with the Woodson soils is described under Okemah and Woodson clay loams, and a profile of an Okemah soil as mapped with Dennis soils is described under Dennis and Okemah loams, gently sloping.

Okemah and Woodson clay loams (0 to 1 percent slopes) (Ob).—These two soils occur intermixed in small areas or separately in areas of several acres. Woodson clay loam occupies the nearly level, usually lower-lying parts of shallow valleys, and Okemah clay loam the gently sloping, slightly higher surrounding areas, but the two soils are so closely associated that it is not practical to map them separately. They merge with little or no difference in surface appearance. The parent materials of both soils are olive or olive and yellow weakly alkaline clays and shales. The mapping unit occurs mostly in shallow valleys near Kiefer, Mounds, and Edna. Runoff is slow to moderate, and internal drainage is very slow. The native vegetation was tall grasses, mainly big bluestem, little bluestem, side-oats grama, and Indiangrass.

Profile of Okemah clay loam near Mounds in the SW¼SW¼ sec. 17, T. 16 N., R. 12 E.:

0 to 15 inches, dark-gray clay loam, lower part slightly mottled with brown; granular and friable when moist, very hard when dry; surface crusts in cultivated fields on drying; slightly acid.
15 to 20 inches, dark grayish-brown silty clay loam, slightly mottled with brownish yellow and strong brown; crumbly and friable when moist, sticky and plastic when wet; moderately permeable; slightly acid.
20 to 35 inches, mottled grayish-brown and light olive-brown heavy clay; very sticky and stiff when wet, extremely hard when dry; compact and very slowly permeable; neutral.
35 to 48 inches+, mottled light-gray and olive-yellow clay; very compact; very slowly permeable; weakly alkaline.

The texture of Okemah clay loam ranges from loam to clay loam. The depth to the heavy clay layer ranges from 18 to 25 inches. A few shotlike concretions of iron oxide occur in the two clay layers.

Profile of Woodson clay loam about 1 mile south of Kiefer in the SW¼SW¼ sec. 28, T. 17 N., R. 12 E.:

0 to 12 inches, dark-gray clay loam; the 6-inch plow layer is slightly lighter in color; crumbly and friable when moist, very hard when dry; surface crusts on drying; slightly acid.
12 to 22 inches, dark-gray heavy clay, faintly mottled with brown; very compact claypan; very sticky and stiff when wet; very slowly permeable; slightly acid to neutral.
22 to 38 inches, dark grayish-brown clay, mottled with yellowish brown; very compact; extremely hard when dry; very slowly permeable; weakly alkaline.
38 to 46 inches+, mottled gray, olive-brown, and yellowish-brown clay or shaly clay; contains a few crystals of gypsum and small shotlike concretions of iron oxide; alkaline but not calcareous.

The thickness of the surface soil ranges from 10 to 14 inches. Considerable mottling occurs in the upper subsoil in the areas that grade toward the Okemah soil.

Some small areas of Parsons silt loam near Kiefer are included in this mapping unit. These areas have a dark grayish-brown silt loam surface soil 12 inches thick, which rests on a mottled grayish-brown, strong-brown, and pale-yellow claypan subsoil. The Parsons soils are not extensive enough in Creek County to be mapped separately and are not described in this report.

Use and management (Capability unit I–4).—The two soils in this mapping unit are the darkest colored and finest textured soils of the prairies. They are the most fertile and productive soils for common field crops that occur in the uplands of this county. Okemah clay loam is slightly more productive than Woodson clay loam. Both soils have a moderately high water-holding capacity

These inclusions consist of 10 to 18 inches of light-brown fine sandy loam over dark grayish-brown silt loam or clay loam, overlain by recent deposits of lighter colored, sandier soil materials.

Use and management (Capability unit IIIw–1).—This soil is moderately productive. It is easily worked and fairly resistant to drought. It is not susceptible to erosion, but some material may be deposited on the surface by flood waters. Cropping is hazardous because most areas are flooded several times a year.

This soil is moderately well suited to crops and, in spite of the flood hazard, about one-fifth of the area is cropped. Cotton, corn, and sorghums are the chief crops. This soil is well suited to pasture, and about one-third is used for this purpose. Nearly half has been left in native forest. The soil is in the Loamy bottom-land range site.

Reinach series

Soils of the Reinach series developed from alkaline to calcareous, reddish, silty to moderately sandy alluvium on low, nearly level stream terraces. They are moderately productive soils and easily worked. They are well suited to all general crops of this area, including alfalfa.

The Reinach soils have a brown to reddish-brown friable surface soil and a silty to moderately sandy subsoil. They are similar to the Yahola soils that occur on the present flood plains, but the Reinach soils lie a little higher and are above ordinary overflow. Their surface soil is darker than the Yahola surface soil, and is alkaline, though usually noncalcareous. Only one Reinach soil is mapped in Creek County.

Reinach very fine sandy loam (0 to 1 percent slopes) (Ra).—This soil occurs on low terraces or benches a few feet higher than the flood plains of the Cimarron River. It developed from reddish, silty to moderately sandy, alkaline, calcareous alluvial sediments. Prairie grasses and scattered elm, hackberry, pecan, and oak trees were the native vegetation. Runoff is slow, and internal drainage is moderate to rapid.

Profile of Reinach very fine sandy loam about 3½ miles north of Drumright on a low terrace of the Cimarron River:

0 to 14 inches, reddish-brown very fine sandy loam; the 6-inch plow layer is light reddish brown; weak granular structure; very friable; neutral.
14 to 46 inches+, light reddish-brown very fine sandy loam that contains thin strata of reddish-brown and brown silt loam in lower part; friable; very permeable; neutral.

The surface soil ranges from brown to light reddish brown in color and from fine sandy loam to silt loam in texture. Some small areas next to more strongly sloping Teller soils have an overwash of light-brown, slightly acid fine sandy loam, 4 to 10 inches thick.

Use and management (Capability unit I–1).—This soil is well suited to crops and pasture. Most of it is cultivated. Corn, cotton, sorghums, and alfalfa are the principal crops. This soil is easily worked and is not susceptible to erosion. It is in the Loamy bottom-land range site.

Roebuck series

Soils of this series consist of only slightly modified clayey alluvium washed from prairie soils that developed over redbeds. The alluvial deposits are alkaline to weakly calcareous. The native vegetation was forest. Both runoff and internal drainage are slow to very slow. Most areas are too poorly drained or too frequently flooded to be suitable for cropping unless artificially drained and protected from floods.

The surface soil is reddish brown. The subsoil is reddish clay, slightly mottled with brown and grayish brown. Roebuck clay is the only soil of this series that is mapped in Creek County.

Roebuck clay (0 to 1 percent slopes) (Rb).—This soil occupies parts of the flood plain of the Deep Fork River, where the channel is choked or partly filled by silting. It developed from clayey and silty, alkaline or calcareous, reddish alluvium. A native forest of elm, hackberry, oak, willow, pecan, and cottonwood covers these areas.

This is a poorly drained soil. Both runoff and internal drainage are very slow. The level flood plains are subject to frequent floods. This soil is not susceptible to erosion, but most areas are rapidly being covered with silt.

Profile of Roebuck clay:

0 to 20 inches, reddish-brown clay; moderately crumbly when moist, very sticky and plastic when wet; weakly alkaline.
20 to 45 inches+, reddish-brown heavy clay, slightly mottled with other shades of brown and some grayish brown; very sticky and stiff when wet, very hard when dry; slowly permeable; weakly calcareous.

Small areas have recent deposits of reddish-brown or brown, alkaline or calcareous, somewhat stratified clay loam and clay, 5 to 15 inches thick. In some places the subsoil below about 30 inches is stratified with brown clay loam and dark-gray calcareous clay.

Use and management (Capability unit Vw–1).—Nearly all of this soil is still in woodland. It is very fertile and would be highly productive if it were drained and protected from flooding, but drainage and flood protection are so difficult as to be almost impossible. Clearing underbrush and culling trees to allow native pecan orchards and bermudagrass pastures to develop may be practical. This soil is in the Heavy bottom-land range site.

Stephenville series

Soils of this series are of medium depth over the parent materials of soft reddish sandstone or interbedded sandstone and sandy shale. They developed under a scrubby forest of mixed blackjack oak and post oak. Scattered coarse grasses grew in open areas.

These soils are slightly acid. They have a light-colored friable sandy surface layer and a yellowish-red or red friable sandy clay loam subsoil. The subsoil grades into the parent material, usually at a depth of less than 3 feet.

The Stephenville soils occupy nearly level to moderately sloping areas and are closely associated with the very shallow Darnell soils. The two soils are similar in surface appearance, but the Stephenville soils are 20 to 36 inches deep and the Darnell soils are 5 to 20 inches deep over sandstone. Sandstone outcrops are common in both.

In this county, the Stephenville soils are mapped only in units with the Darnell soils. The two series have similar uses and are about equal in productivity.

Stephenville and Darnell fine sandy loams, gently sloping (2 to 4 percent slopes) (Sa).—Stephenville fine sandy loam occupies about 70 percent of this mapping unit. Small areas of Darnell fine sandy loam make up the other 30 percent. This unit is very extensive in the central, southern, and western parts of the county.

These shallow to moderately deep upland soils developed over reddish-yellow to red sandstone or interbedded sandstone and sandy shale. The parent materials were slightly acid to neutral. The native vegetation was a thin to moderately thick forest of scrubby blackjack oak and post oak, and a thin ground cover of bluestem grasses. Both soils are well drained. Runoff is slow to moderate, but internal drainage is moderate to rapid.

Profile of Stephenville fine sandy loam, gently sloping, under a moderately thick cover of scrubby post oak and blackjack oak and bluestem grasses, about 2 miles east of Depew in the SW¼SW¼ sec. 9, T. 15 N., R. 8 E.:

0 to 4 inches, grayish-brown fine sandy loam; in plowed fields this layer is pale brown; weak granular structure; very friable; slightly acid.
4 to 12 inches, pale-brown light fine sandy loam; very friable when moist, nearly loose when dry; slightly acid.
12 to 28 inches, yellowish-red sandy clay loam; massive structure; crumbly and friable when moist, slightly sticky when wet; porous and permeable; medium acid.
28 to 35 inches, yellowish-red sandy clay loam, mottled with red; friable; permeable; contains small soft fragments of partly weathered sandstone; medium to slightly acid.
35 inches +, yellowish-red sandstone bedrock; slightly acid to neutral.

The depth to bedrock ranges from about 20 to 40 inches; normally it is less than 30 inches. A few small outcrops of the sandstone bedrock occur.

Profile of Darnell fine sandy loam in a cultivated field of about 2 percent slope, in the NW¼NW¼ sec. 16, T. 15 N., R. 8 E.:

0 to 10 inches, pale-brown light fine sandy loam; structureless; very friable when moist, nearly loose when dry; slightly acid.
10 to 16 inches, reddish-yellow fine sandy loam, slightly heavier in lower part; structureless; friable; lower part contains small fragments of partly weathered sandstone; medium acid.
16 inches +, reddish-yellow sandstone bedrock; neutral.

The depth of the Darnell soil ranges from about 5 to 20 inches. Most areas are between 8 and 15 inches deep. Small outcrops of sandstone bedrock occur here and there. The transition between the deeper Stephenville soil and the shallower Darnell soil is hardly noticeable; there is no change in slope or in color of the surface soil. Another profile of Darnell soil, as it typically occurs when associated with soils of the Pottsville series, is described under Darnell and Pottsville soils, sloping.

Use and management (Capability unit IIIe–2).—These soils are droughty and low in fertility. They are slightly to moderately susceptible to erosion if cultivated. Most of the cleared acreage has lost up to 20 percent of its surface soil through erosion. Some shallow gullies occur on the more strongly sloping cleared areas.

These soils are moderately well suited to crops and pasture. Yields are moderate under good management. Intensive management is needed to maintain or increase productivity.

About half of this mapping unit is cleared. Most of the cleared acreage has been abandoned for cropping, and it is now used for pasture. Cotton, peanuts, sorghums, corn, cowpeas, and sweetpotatoes are the principal crops. The pastures have a thin cover of three-awn grasses, bluestem grasses, and weeds. This unit is in the Sandy savanna range site. Nearly half of it is native woodland.

Stephenville and Darnell fine sandy loams, sloping (4 to 7 percent slopes) (Sb).—These soils are like Stephenville and Darnell fine sandy loams, gently sloping, except that the surface soil is somewhat thinner, the bedrock is nearer the surface, and outcrops of sandstone are more common. About 60 percent of the acreage consists of Stephenville soils and about 40 percent of Darnell soils.

Use and management (Capability unit VIe–1).—This land is not well suited to crops. It is droughty, low in natural productivity, and highly erodible if cultivated. Moderate yields of common field crops are produced when the soils are first cultivated, but yields decline rapidly.

More than half of this mapping unit is still in woodland. The remainder has been cleared, but little is still used for crops. Cotton, corn, sorghums, peanuts, and cowpeas are grown. Yields are about three-fourths as much as on the gently sloping soils. Most of the acreage that was cleared, cultivated, and abandoned is now in pasture. The vegetation is three-awn grass and weeds. This unit is in the Sandy savanna range site.

If these soils are cultivated, very careful management is needed. They should be terraced, stripcropped, and contour-cultivated, and erosion-resistant crops should be planted. Areas where the soils are too shallow to be terraced should be used for pasture.

Stephenville and Darnell fine sandy loams, sloping, severely eroded (4 to 7 percent slopes) (Sc).—The soils in this mapping unit have been so severely eroded that they are worthless for crops. Originally, they were like Stephenville and Darnell fine sandy loams, sloping, but erosion has removed much of the surface soil. Numerous gullies are now active; some cannot be crossed with tillage implements.

Use and management (Capability unit VIIe–2).—These soils were never well suited to crops, and now they are of no value for crops. All of the acreage has been cultivated, but most of it is now idle or in pasture. A thin stand of annual grasses and weeds furnishes poor grazing. It would take careful management to establish even moderately good pastures. Cotton, corn, sorghums, cowpeas, and peanuts are still grown on a few acres, but yields are low. This mapping unit is in the Eroded savanna range site.

Stidham series

The Stidham soils developed from acid sandy old alluvium on stream terraces under a mixed hardwood forest. They are low in natural fertility, but they are very responsive to management. They are well suited to fruits, special crops, and field crops.

Soils of this series have a light brownish-gray to pale-brown, friable, acid surface soil. The subsoil is yellowish-brown friable sandy clay loam, mottled with light gray and strong brown in the lower part.

Stidham soils are closely associated with Dougherty soils, which have a reddish subsoil, and with Eufaula soils, which have no loamy subsoil within 4 feet of the surface. In Creek County, the Stidham soils are not mapped separately. They are mapped in units with soils of the Dougherty series. A profile of a Stidham soil is described under Dougherty and Stidham fine sandy loams, nearly level.

Talihina series

The Talihina soils developed from beds of slightly acid to neutral, gray, brown, and olive shale that included a little sandstone. They are very shallow, slightly acid

grasses and scattered elm, hackberry, and mesquite trees grew on these soils. Runoff is slow, and internal drainage is moderate. This soil is closely associated with Teller silt loam, nearly level, but it has a darker colored surface soil and a brown or yellowish-brown, instead of a red, subsoil.

Profile of Vanoss silt loam, nearly level, in a cultivated field about 3 miles east of Oilton in the NE¼ sec. 34, T. 19 N., R. 7 E.:

0 to 16 inches, dark grayish-brown silt loam; the 6-inch plow layer is slightly lighter in color; moderate granular structure; friable when moist, hard when dry; neutral.
16 to 28 inches, dark-brown clay loam; medium granular structure; crumbly and friable when moist, hard when dry; permeable; neutral.
28 to 38 inches, brown clay loam, faintly mottled with strong brown; crumbly and friable; permeable; neutral.
38 to 48 inches +, yellowish-brown clay loam; slightly more friable and noticeably more sandy than layer above; neutral to weakly alkaline.

The surface soil ranges in color from very dark grayish brown in undisturbed areas to grayish brown in cultivated fields, and in texture from very fine sandy loam to heavy silt loam. In areas where this soil grades toward the Teller soils, the upper subsoil is brown and the lower subsoil is strong brown to reddish brown.

A few small level areas of Brewer silt loam are included in this mapping unit. These areas have a dark-gray silt loam surface soil 14 inches thick over a dark-gray crumbly clay subsoil. Brewer soils are not mapped separately in Creek County, and they are not described in this report.

Use and management (Capability unit I–3).—This is a moderately productive, easily worked soil. It responds well to good management, and it is not susceptible to erosion.

This soil is excellent for crops and well suited to pasture. About three-fourths of it is cultivated. The principal crops are cotton, corn, sorghums, and oats. The rest is used for pasture. This soil is in the Loamy prairie range site.

Vanoss silt loam, gently sloping (2 to 4 percent slopes) (Va).—This soil is similar to Vanoss silt loam, nearly level, but its slope makes it slightly susceptible to erosion if cultivated. It occurs in small areas in association with nearly level Vanoss and Teller soils.

Use and management (Capability unit IIe–1).—More than half of this soil is used for crops. The same crops are grown as on Vanoss silt loam, nearly level, but yields are slightly lower. Eroded areas are 10 to 20 percent less productive than the normal soil. Good management would restore the original productivity in 2 or 3 years. This soil is in the Loamy prairie range site.

Verdigris series

These soils occupy the flood plains of streams. The alluvium from which they developed came mostly from dark soils of the prairies; some came from light-colored soils. Soils of this series are moderately well drained, but they are flooded occasionally to frequently. The periodic floods do not prevent successful cultivation except in the narrow flood plains of small streams.

These soils have a dark grayish-brown, friable, slightly acid surface soil and a dark grayish-brown clay loam subsoil. The subsoil is slightly mottled and somewhat finer textured in the lower part. Verdigris soils are darker colored than the Pulaski soils and have mor retentive, less sandy subsoils. They are similar to th Mason soils, which lie slightly higher and are abov ordinary overflow.

Verdigris fine sandy loam (0 to 1 percent slopes) (Vd).—This soil occupies parts of narrow flood plains, mainly i the central and western parts of the county. The paren materials were slightly acid to weakly alkaline alluvia sediments, most of which were washed from dark soils o the prairie; some were derived from light-colored soils o forested areas. Runoff is slow, and internal drainage i moderate. These soils are flooded for short period several times a year. Fresh alluvial sediments are de posited on most areas during floods. Native forests o elm, hackberry, oak, pecan, and cottonwood grew or these soils, and some coarse grasses and shrubs covered the ground.

Profile of Verdigris fine sandy loam:

0 to 14 inches, grayish-brown fine sandy loam, weakly stratified in lower part with dark grayish-brown silt loam; very friable when moist; slightly acid.
14 to 32 inches, dark grayish-brown clay loam; crumbly and friable when moist, moderately sticky when wet; slightly acid to neutral.
32 to 50 inches +, dark grayish-brown clay loam, mottled or splotched with light brown; contains thin seams or lenses of light-brown fine sandy loam below about 40 inches; neutral.

Most areas of this soil are covered by recent alluvium, 5 to 15 inches thick. This alluvium ranges from brown to dark grayish brown in color. The texture is fine sandy loam. It is somewhat stratified below plow depth. The clay loam subsoil is dark gray or dark grayish brown in most places.

Use and management (Capability unit I–2).—This is a moderately productive soil. It is likely to be flooded late in spring; consequently, cropping is uncertain. This soil does not erode, but a considerable amount of soil material is deposited by floodwater. Areas where floods are least frequent are well suited to crops. Corn, cotton, and sorghums are the most common crops. The soil is also well suited to pasture. Two-thirds of the acreage has been cleared for crops and pasture, and one-third is still under native forest. This soil is in the Loamy bottom-land range site.

Verdigris silt loam (0 to 1 percent slopes) (Ve).—This soil is mapped on flood plains of streams throughout the county. The parent material consisted of slightly acid to weakly alkaline alluvial sediments washed from dark soils of the prairies. The native vegetation was a hardwood forest of elm, oak, hackberry, cottonwood, and pecan trees, and scattered coarse grasses. Runoff is slow, and internal drainage is moderate. This soil is flooded one to three times a year; nevertheless, most of it can be successfully cropped.

Profile of Verdigris silt loam in a cultivated field about 4 miles west of Bristow in the SW¼SW¼ sec. 34, T. 16 N., R. 8 E.:

0 to 16 inches, dark grayish-brown silt loam; friable and easily worked when moist, hard when dry; slightly acid.
16 to 36 inches, dark grayish-brown clay loam, faintly mottled with brown in the lower part; crumbly and friable when moist, hard when dry; porous and permeable; slightly acid to neutral.
36 to 46 inches +, dark grayish-brown clay loam, splotched or mottled with brown and gray; friable; permeable; weakly alkaline.

The surface layer is 10 to 20 inches thick. In some places the lower part of this layer is weakly stratified with fine sandy loam and clay loam. The subsoil is slightly acid to weakly alkaline. Stratified darker colored and lighter colored sediments may occur in the lowest layer.

Use and management (Capability unit I–2).—This soil is well suited to crops or pasture. It is somewhat more productive than Verdigris fine sandy loam. It is not susceptible to erosion, but soil material may be deposited on the surface by floods. The flood-deposited material replenishes the supply of plant nutrients. About one-fourth of this soil is still under native forest. Half of the remainder is cropped, mostly to corn, cotton, sorghums, and alfalfa. Yields range from almost complete failures to very high yields. Some of the soil is in pasture. This soil is in the Loamy bottom-land range site.

Verdigris clay loam (0 to 1 percent slopes) (Vc).—This soil occurs on the wider flood plains of the larger creeks of the county. The alluvial sediments from which it developed are slightly acid to weakly alkaline. They were washed from dark-colored soils of the prairies. Runoff is slow, and internal drainage is moderate. The native vegetation was a forest of elm, hackberry, ash, oak, pecan, and cottonwood, and coarse grasses.

Profile of Verdigris clay loam about ½ mile southeast of Sapulpa in the NW¼SW¼ sec. 6, T. 17 N., R. 12 E.:

0 to 20 inches, dark grayish-brown clay loam; moderately granular structure; crumbly and friable when moist, hard when dry; porous; slightly acid.
20 to 38 inches, grayish-brown clay loam, slightly mottled with brown and some pale brown; friable; permeable; slightly acid.
38 to 46 inches +, grayish-brown clay loam, mottled with other shades of brown; contains pockets and thin seams of brown fine sandy loam; slightly acid.

The color of the surface layer ranges from very dark brown in undisturbed areas to dark grayish brown or dark brown where cultivated. Small areas have a 3- to 5-inch layer of grayish-brown loam that has been deposited on the surface by floodwaters.

Use and management (Capability unit I–2).—This is a highly productive soil. Most of the areas are flooded one to three times a year, but this does not prevent their use for cultivated crops. This soil is not susceptible to erosion, but on most areas soil material is deposited during floods.

About one-third of this soil is cultivated. Corn, cotton, and sorghums are the principal crops. About one-fourth is in woodland. The rest is idle or used for pasture. This soil is in the Loamy bottom-land range site.

Woodson series

These are claypan soils that developed from alkaline or weakly calcareous shales and clays on nearly level to gently sloping prairies. They occupy small nearly level areas in gently sloping shallow valleys. These soils are dark grayish brown to dark gray. They are slightly acid.

Woodson soils are closely associated with soils of the Okemah series. The two series differ little in surface appearance. The Woodson soils have a thinner and more granular surface soil than the Okemah soils, and they have a dark-gray claypan subsoil. Woodson soils are not mapped separately in this county. Areas of Woodson clay loam are included in Okemah and Woodson clay loams, and a profile of the Woodson soil is described under that unit.

Yahola series

These soils occur on the flood plains of the Deep Fork and Cimarron Rivers and other large streams. The parent material was alluvium derived from grassland soils underlain by redbeds. Soils of the Yahola series have a reddish-brown alkaline or calcareous surface soil and a moderately sandy subsoil.

These soils are moderately to highly productive. Areas that are not flooded too often are well suited to general field crops. Yahola soils are similar to Port soils in surface appearance, but they have a sandier subsoil. They are more alkaline than Pulaski soils. Yahola soils have a sandier subsoil and more rapid internal drainage than the Roebuck soils.

Yahola very fine sandy loam (0 to 1 percent slopes) (Yb).—This soil occurs on the flood plains of the Cimarron and Deep Fork Rivers. It developed from calcareous or alkaline sandy alluvial sediments washed from prairies underlain by redbeds. Runoff is slow to moderate, and internal drainage is moderate to rapid. All areas of this soil are periodically flooded. Those on the flood plain of the Deep Fork River are too frequently flooded to be suitable for crops, and they have been left in native hardwood forest. The native vegetation was a forest of elm, ash, oak, cottonwood, and pecan trees. Coarse grasses grew where the forest was thin.

Profile of Yahola very fine sandy loam about ½ mile north of Oilton in the NW¼SW¼ sec. 28, T. 19 N., R. 7 E.

0 to 16 inches, reddish-brown very fine sandy loam; structureless; very friable; alkaline but not calcareous.
16 to 46 inches+, reddish-yellow light fine sandy loam, weakly stratified in the lower part with loamy fine sand; very friable and freely permeable; alkaline but not calcareous

The surface soil is alkaline or calcareous. In color it ranges from light brown to reddish brown and in texture from fine sandy loam to silt loam. Small areas where floodwaters have recently deposited sediments may be weakly stratified.

Use and management (Capability unit I–2).—This soil is easily worked and moderately productive. Areas that are not flooded too often are well suited to crops. The soil is not susceptible to erosion. It receives fresh deposits of soil material during floods.

All of the cropland is on the flood plain of the Cimarron River. Cotton, corn, and sorghums are the principal crops. This soil is in the Loamy bottom-land range site.

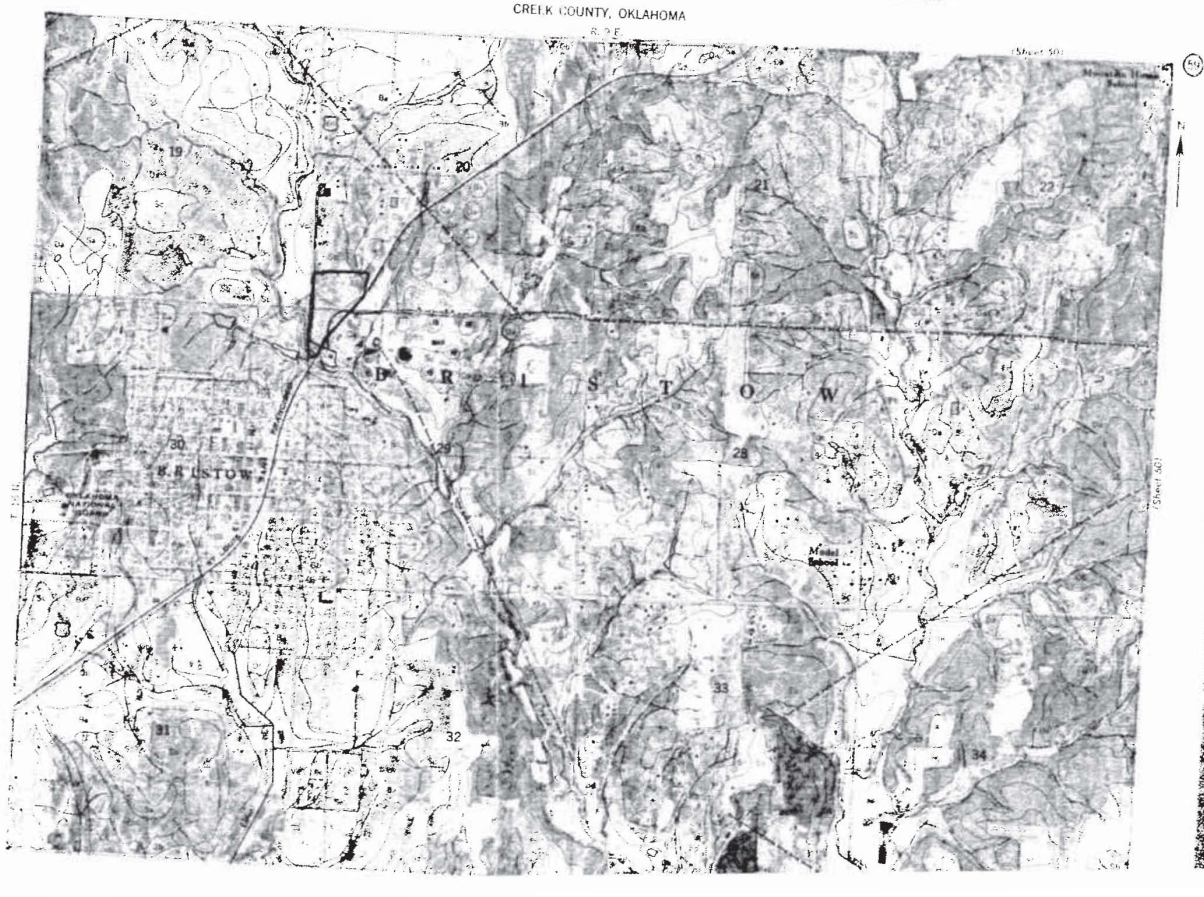
Yahola clay loam (0 to 1 percent slopes) (Ya).—This soil developed from reddish, calcareous, sandy alluvium on the flood plains of the Deep Fork and Cimarron Rivers. The native vegetation was a forest of elm, hackberry, oak, pecan, cottonwood, and ash. Coarse grasses grew where the forest was thin. Runoff is slow but internal drainage is rapid through the sandy substratum.

This soil is associated with Yahola very fine sandy loam. It is like that soil except for having a finer textured surface soil.

Profile of Yahola clay loam:

0 to 14 inches, reddish-brown clay loam; crumbly and friable when moist, moderately sticky when wet; alkaline or weakly calcareous.
14 to 45 inches +, reddish-yellow very fine sandy loam, weakly stratified in lower part with loamy sands and clay loams; very permeable; weakly calcareous.

- Qa
- Ve
- Sb


CREEK COUNTY, OKLAHOMA
R. 9 E.
B R I S T O W
S.R. BUSTOW
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U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CREEK COUNT

SOILS LEGEND

SYMBOL	NAME
Ba	Bates fine sandy loam, gently sloping
Bb	Bates fine sandy loam, sloping
Bc	Bates fine sandy loam, sloping, severely eroded
Bd	Broken or gullied sandy upland
Ca	Choteau very fine sandy loam, gently sloping
Cb	Choteau very fine sandy loam, nearly level
Cc	Cleburnes fine sandy loam
Cd	Collinsville and Bates soils, gently sloping
Ce	Collinsville and Talihina soils, sloping
Cf	Collinsville and Talihina soils, strongly sloping
Da	Darnell and Pottsville soils, sloping
Db	Darnell and Pottsville soils, strongly sloping
Dc	Dennis and Okemah loams, gently sloping
Dd	Dennis and Okemah loams, sloping
De	Dennis and Okemah loams, sloping, severely eroded
Df	Dougherty and Stidham fine sandy loams, gently sloping
Dg	Dougherty and Stidham fine sandy loams, nearly level
Dh	Dougherty and Stidham fine sandy loams, sloping
Dk	Dougherty and Stidham loamy fine sands, gently sloping
Dl	Dougherty and Stidham loamy fine sands, nearly level
Ea	Eufaula loamy fine sand, gently sloping
Eb	Eufaula loamy fine sand, strongly sloping
Ga	Gullied bottom land
Ma	Mason clay loam
Mb	Mason silt loam
Na	Neosho silt loam
Oa	Oil-waste land
Ob	Okemah and Woodson clay loams
Pa	Port clay loam
Pb	Pulaski fine sandy loam
Ra	Reinach very fine sandy loam
Rb	Roebuck clay
Sa	Stephenville and Darnell fine sandy loams, gently sloping
Sb	Stephenville and Darnell fine sandy loams, sloping
Sc	Stephenville and Darnell fine sandy loams, sloping, severely eroded
Ta	Teller silt loam, gently sloping
Tb	Teller silt loam, nearly level
Tc	Teller silt loam, sloping
Va	Vanoss silt loam, gently sloping
Vb	Vanoss silt loam, nearly level
Vc	Verdigris clay loam
Vd	Verdigris fine sandy loam
Ve	Verdigris silt loam
Wa	Riverwash
Ya	Yahola clay loam
Yb	Yahola very fine sandy loam

Soils surveyed 1940-1949 by O. H. Brensing, Dale Scriven, E. C. Talley, Oklahoma Agricultural Experiment Station; H. P. Mikles, Soil Conservation Service, and H. M. Galloway, Oklahoma Agricultural Experiment Station and U. S. Department of Agriculture.
Correlation by James Thorp, U. S. Department of Agriculture.

Soil map constructed by Cartographic Division, Soil Conservation Service, USDA, from 1949 aerial photographs. Controlled mosaic based on polyconic projection, 1927 North American datum.

WORKS AND

- Roads
  - Good motor
  - Poor motor
  - Trail
  - Marker, U. S.
- Railroads
  - Single track
  - Multiple track
  - Abandoned
- Bridges and crossings
  - Road
  - Trail, foot
  - Railroad
  - Ferry
  - Ford
  - Grade
  - R. R. over
  - R. R. under
  - Tunnel
- Buildings
  - School
  - Church
  - Station
- Mine and Quarry
  - Shaft
  - Dump
  - Prospect
- Pits, gravel or other
- Power line
- Pipeline
- Cemetery
- Dam
- Levee
- Tank
- Oil well
- Windmill
- Canal lock (point upstream)

003336

Reference 7

Site Inspection and Analysis Plan

Loraine Refinery

Creek County, Oklahoma

CIRCLA # OKN000606909

Date:

March 24th, 2009

State of Oklahoma

Department of Environmental Quality

Prepared by:

Todd Downham, Environmental Programs Specialist II

Approved by:

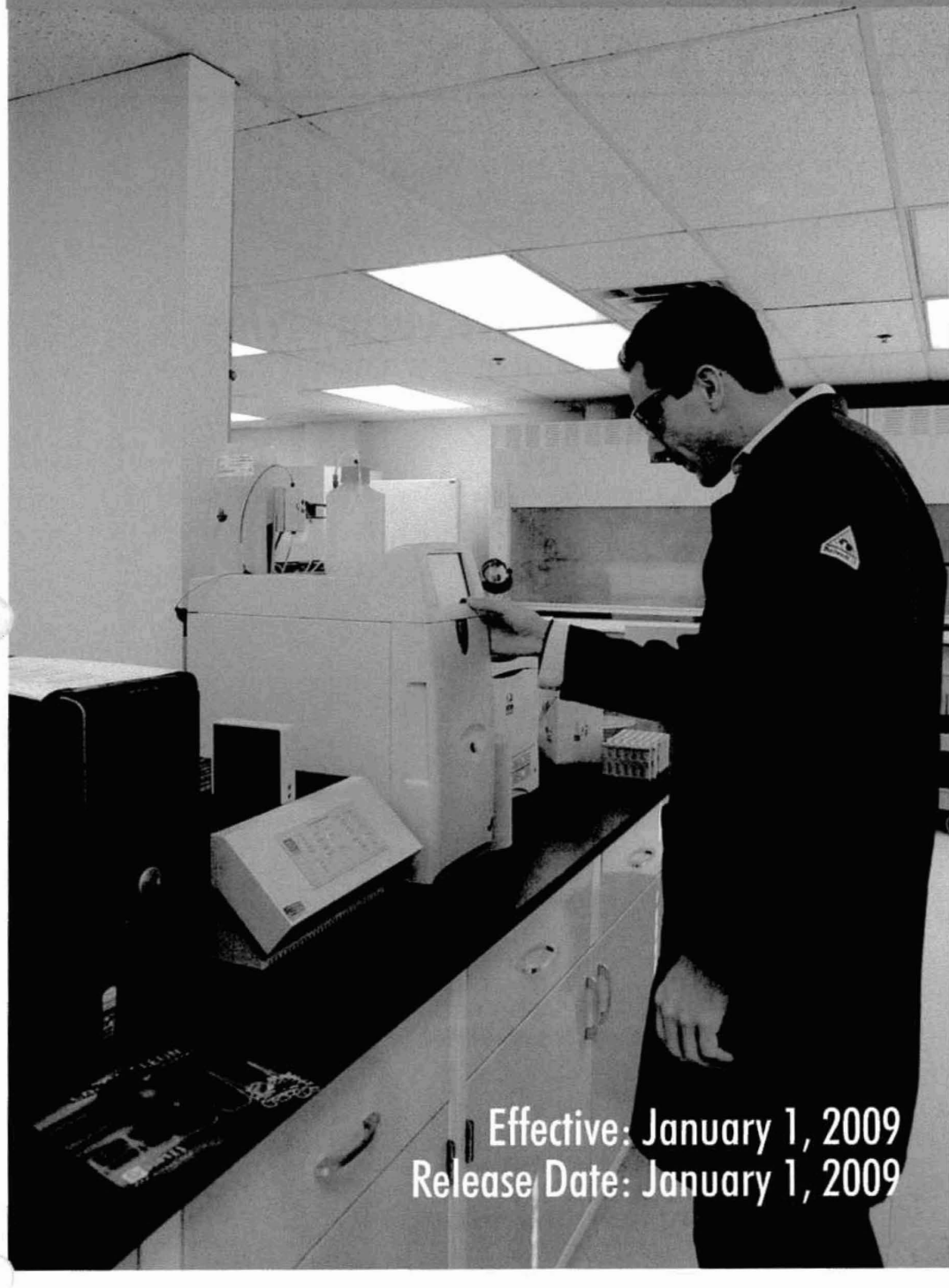
Hal Cantwell, Environmental Programs Specialist IV

Approved by:

Philip Ofosu, EPA Region VI Site Assessment Manager

Reference 8

QUALITY ASSURANCE PLAN



STATE ENVIRONMENTAL LABORATORY
DEPARTMENT OF ENVIRONMENTAL QUALITY

Effective: January 1, 2009
Release Date: January 1, 2009

707 N. ROBINSON, P.O. BOX 1677
OKLAHOMA CITY, OK 73101-1677
(405) 702-1000

DEQ
OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
...for a clean, attractive, prosperous Oklahoma

QUALITY ASSURANCE PLAN

STATE ENVIRONMENTAL LABORATORY
DEPARTMENT OF ENVIRONMENTAL QUALITY

Effective: January 1, 2009

Release Date: January 1, 2009

707 N. ROBINSON
P.O. BOX 1677
OKLAHOMA CITY, OK 73101-1677
(405) 702-1000

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TABLES

APPENDICES

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PLAN APPROVAL SIGNATURES

CUSTOMER SERVICES DIVISION

Division Director, Judith A. Duncan

Signature 1-6-09 Date

State Environmental Laboratory Manager, Chris Armstrong

Signature 12/31/08 Date

Laboratory Quality Assurance Officer, April Beltz

Signature 12/30/08 Date

STATE ENVIRONMENTAL LABORATORY

Environmental Programs Manager, Inorganics Group, Jeff Franklin

Signature 12-31-08 Date

Environmental Programs Manager, Organics Group, Joe Brown

Signature 1/6/09 Date

Environmental Programs Manager, Microbiology/Metals/Radiochemistry, Jeff Franklin

Signature 12-31-08 Date

Environmental Programs Manager, GC Organics Section, Jennifer Baughn-Fennell

Signature 12/30/08 Date

Environmental Programs Manager, GC/MS Section, Milton L. Campbell

Signature 1/6/09 Date

Environmental Programs Manager, General Chemistry Section, Susan Mensik

Signature 12/31/08 Date

LABORATORY CUSTOMER ASSISTANCE

Environmental Programs Manager, Customer Assistance Group, Rocke Amonette

Rocke L Amonette — Signature

1-6-09 — Date

Environmental Programs Manager, Customer Assistance Group, Jay Wright

Jay WJ — Signature

12-30-08 — Date

Administrative Programs Officer, Statewide Sample Management Unit, Andrea Newberry

Andrea Newberry — Signature

1-6-09 — Date

ACRONYMS AND ABBREVIATIONS

AA	Atomic absorption
ACS	American Chemical Society
APM	(DEQ) Administrative Procedures Manual
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
CA	Corrective action
CCB	Continuing calibration blank
CCV	Continuing calibration verification
CFR	Code of Federal Regulations
CFU	Colony forming unit
CLP	Contract Laboratory Program
COC	Chain of custody
CRQL	Contract required quantitation limit
CSD	Customer Services Division (DEQ)
CWA	Clean Water Act
CVAA	Cold vapor atomic absorption
DEQ	Oklahoma Department of Environmental Quality
DF	Dilution or detection factor
DQO	Data quality objective
DVP	Data validation policy (SEL)
EPA	United States Environmental Protection Agency
FIA	Flow injection analysis
GC	Gas chromatograph/chromatography
GC/MS	Gas chromatography/mass spectrometer
HCl	Hydrochloric acid
HNO_3	Nitric acid
H_2SO_4	Sulfuric acid
ICB	Initial calibration blank
ICP	Inductively coupled plasma
ICP-AES	Inductively coupled plasma-atomic emission spectroscopy
ICP-MS	Inductively coupled plasma-mass spectrometry
ICS	Interference check sample
ICV	Initial calibration verification
LCS	Laboratory control sample
LFB	Laboratory fortified blank
LFM	Laboratory fortified matrix
LIMS	Laboratory information management system
LPD	Land Protection Division (DEQ)
LRB	Laboratory reagent blank
LRS	Linear range study
MCLADW	Manual for the Certification of Laboratories Analyzing Drinking Water
MCL	Maximum contaminant level
MDL	Method detection limit
MF	Membrane filter
mg/kg	Milligrams per kilogram (ppm)

Reference 9

Sample Number: 462183
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		34.9				
Acenaphthylene	<	340.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	340.0	UG/KG	05/28/09	8270DM	
Anthracene	<	340.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	340.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	340.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	340.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	340.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	340.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	340.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	340.0	UG/KG	05/28/09	8270DM	
Chrysene	<	340.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	340.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	340.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	340.0	UG/KG	05/28/09	8270DM	
Fluorene	<	340.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	340.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	340.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	340.0	UG/KG	05/28/09	8270DM	
Isophorone	<	340.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	340.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	340.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	340.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	340.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	340.0	UG/KG	05/28/09	8270DM	
Phenanthrene	<	340.0	UG/KG	05/28/09	8270DM	
Pyrene	<	340.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	340.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	340.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	340.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	340.0	UG/KG	05/28/09	8270DM	

Sample Number: 462183
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
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OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	340.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	340.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	340.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	340.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	340.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	340.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	1700.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	1700.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	340.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	690.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	340.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	340.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	1700.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	1700.0	UG/KG	05/28/09	8270DM	
Phenol	<	340.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	1700.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	340.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	340.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	340.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	340.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	340.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	340.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	340.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	340.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	1700.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	340.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	1700.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	1700.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	1700.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	340.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		4.61	%		1005 M	

Sample Number: 462183
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	96
2-FLUOROBIPHENYL	86
2-FLUOROPHENOL	69
NITROBENZENE-D5	78
P-TERPHENYL-D14	85
PHENOL-D5	84

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
(3.beta.)-Stigmast-5-en-3-ol		672	ug/kg
Dotriacontane		565	ug/kg
Stigmast-4-en-3-one		386	ug/kg
Triacontane		595	ug/kg

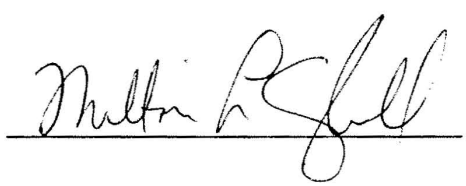
Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-19

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST 

Sample Number: 462165
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

To: TODD/DOWNHAM/LPD

CC: FILE COPY

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STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		297.6				
Acenaphthylene	<	2900.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	2900.0	UG/KG	05/20/09	8270DM	
Anthracene	<	2900.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	2900.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	2900.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	2900.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	2900.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	2900.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe	<	2900.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	2900.0	UG/KG	05/20/09	8270DM	
Chrysene	<	2900.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	2900.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	2900.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	2900.0	UG/KG	05/20/09	8270DM	
Fluorene	<	2900.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	2900.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	2900.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	2900.0	UG/KG	05/20/09	8270DM	
Isophorone	<	2900.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	2900.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	2900.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	2900.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	2900.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	2900.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	2900.0	UG/KG	05/20/09	8270DM	
Pyrene	<	2900.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	2900.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	2900.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	2900.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	2900.0	UG/KG	05/20/09	8270DM	

Sample Number: 462165
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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707 N. ROBINSON
OKLAHOMA CITY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	2900.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	2900.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	2900.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	2900.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	2900.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	2900.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	14000.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	2900.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	5900.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	2900.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	2900.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	14000.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	14000.0	UG/KG	05/20/09	8270DM	
Phenol	<	2900.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	2900.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	2900.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	2900.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	2900.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	2900.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	2900.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	2900.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	2900.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	2900.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	2900.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		10.38	%		1005 M	

Sample Number: 462165
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

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COMPOUND	SURROGATE RECOVERIES RECOVERY %
2,4,6-TRIBROMOPHENOL	41
2-FLUOROBIPHENYL	47
2-FLUOROPHENOL	33
NITROBENZENE-D5	39
P-TERPHENYL-D14	54
PHENOL-D5	30

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

None Found

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-1

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462166
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		289.1				
Acenaphthylene	<	2800.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	2800.0	UG/KG	05/20/09	8270DM	
Anthracene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	2800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	2800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	2800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	2800.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Chrysene	<	2800.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	2800.0	UG/KG	05/20/09	8270DM	
Fluorene	<	2800.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	2800.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	2800.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	2800.0	UG/KG	05/20/09	8270DM	
Isophorone	<	2800.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	2800.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	2800.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	2800.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	2800.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	2800.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	2800.0	UG/KG	05/20/09	8270DM	
Pyrene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	2800.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	2800.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	2800.0	UG/KG	05/20/09	8270DM	

Sample Number: 462166
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

To: TODD/DOWNHAM/LPD

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OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	2800.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	2800.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	2800.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	2800.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	2800.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	14000.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	2800.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	5700.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	2800.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	2800.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	14000.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	14000.0	UG/KG	05/20/09	8270DM	
Phenol	<	2800.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	2800.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	2800.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	2800.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	2800.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	2800.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	2800.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	2800.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		7.75	%		1005 M	

Sample Number: 462166
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	47
2-FLUOROBIPHENYL	50
2-FLUOROPHENOL	35
NITROBENZENE-D5	43
P-TERPHENYL-D14	54
PHENOL-D5	31

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

None Found

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-2

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462167
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0950
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		214.7				
Acenaphthylene	<	2100.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	2100.0	UG/KG	05/20/09	8270DM	
Anthracene	<	2100.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	2100.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	2100.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	2100.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	2100.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	2100.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	2100.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	2100.0	UG/KG	05/20/09	8270DM	
Chrysene	<	2100.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	2100.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	2100.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	2100.0	UG/KG	05/20/09	8270DM	
Fluorene	<	2100.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	2100.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	2100.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	2100.0	UG/KG	05/20/09	8270DM	
Isophorone	<	2100.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	2100.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	2100.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	2100.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	2100.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	2100.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	2100.0	UG/KG	05/20/09	8270DM	
Pyrene	<	2100.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	2100.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	2100.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	2100.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	2100.0	UG/KG	05/20/09	8270DM	

Sample Number: 462167
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0950
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	2100.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	2100.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	2100.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	2100.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	2100.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	2100.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	10000.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	2100.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	4200.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	2100.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	2100.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	10000.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	10000.0	UG/KG	05/20/09	8270DM	
Phenol	<	2100.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	2100.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	2100.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	2100.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	2100.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	2100.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	2100.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	2100.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	2100.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	2100.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	2100.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		6.84	%		1005 M	

003361

Sample Number: 462167
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0950
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	58
2-FLUOROBIPHENYL	69
2-FLUOROPHENOL	30
NITROBENZENE-D5	55
P-TERPHENYL-D14	84
PHENOL-D5	28

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

None Found

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-3

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST _____

Sample Number: 462168
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0947
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

C-55-4

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		205.8				
Acenaphthylene	<	2000.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	2000.0	UG/KG	05/20/09	8270DM	
Anthracene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	2000.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	2000.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	2000.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	2000.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Chrysene	<	2000.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	2000.0	UG/KG	05/20/09	8270DM	
Fluorene	<	2000.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	2000.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	2000.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	2000.0	UG/KG	05/20/09	8270DM	
Isophorone	<	2000.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	2000.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	2000.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	2000.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	2000.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	2000.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	2000.0	UG/KG	05/20/09	8270DM	
Pyrene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	2000.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	2000.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	2000.0	UG/KG	05/20/09	8270DM	

Sample Number: 462168
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0947
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	2000.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	2000.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	2000.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	2000.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	2000.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	10000.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	2000.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	4100.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	2000.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	2000.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	10000.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	10000.0	UG/KG	05/20/09	8270DM	
Phenol	<	2000.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	2000.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	2000.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	2000.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	2000.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	2000.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	2000.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	2000.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		2.82	%		1005 M	

Sample Number: 462168
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0947
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

COMPOUND	SURROGATE RECOVERIES RECOVERY %
2,4,6-TRIBROMOPHENOL	45
2-FLUOROBIPHENYL	65
2-FLUOROPHENOL	36
NITROBENZENE-D5	46
P-TERPHENYL-D14	71
PHENOL-D5	34

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

None Found

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-4

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462169
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		120.7				
Acenaphthylene	<	1200.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	1200.0	UG/KG	05/20/09	8270DM	
Anthracene	<	1200.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	1200.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	1200.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	1200.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	1200.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	1200.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe	<	1200.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	1200.0	UG/KG	05/20/09	8270DM	
Chrysene	<	1200.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	1200.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	1200.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	1200.0	UG/KG	05/20/09	8270DM	
Fluorene	<	1200.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	1200.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	1200.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	1200.0	UG/KG	05/20/09	8270DM	
Isophorone	<	1200.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	1200.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	1200.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	1200.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	1200.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	1200.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	1200.0	UG/KG	05/20/09	8270DM	
Pyrene	<	1200.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	1200.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	1200.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	1200.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	1200.0	UG/KG	05/20/09	8270DM	

Sample Number: 462169
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	1200.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	1200.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	1200.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	1200.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	1200.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	1200.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	6000.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	6000.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	1200.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	2400.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	1200.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	1200.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	6000.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	6000.0	UG/KG	05/20/09	8270DM	
Phenol	<	1200.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	6000.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	1200.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	1200.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	1200.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	1200.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	1200.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	1200.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	1200.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	1200.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	6000.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	1200.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	6000.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	6000.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	6000.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	1200.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		0.54	%		1005 M	

Sample Number: 462169
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	39
2-FLUOROBIPHENYL	41
2-FLUOROPHENOL	25
NITROBENZENE-D5	32
P-TERPHENYL-D14	46
PHENOL-D5	23

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
Cyclic octaatomic sulfur		1900	ug/kg

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-5

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton L Gill

Sample Number: 462170
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		93.83				
Acenaphthylene	<	930.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	930.0	UG/KG	05/20/09	8270DM	
Anthracene	<	930.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	930.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	930.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	930.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	930.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	930.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	930.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	930.0	UG/KG	05/20/09	8270DM	
Chrysene	<	930.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	930.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	930.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	930.0	UG/KG	05/20/09	8270DM	
Fluorene	<	930.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	930.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	930.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	930.0	UG/KG	05/20/09	8270DM	
Isophorone	<	930.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	930.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	930.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	930.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	930.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	930.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	930.0	UG/KG	05/20/09	8270DM	
Pyrene	<	930.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	930.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	930.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	930.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	930.0	UG/KG	05/20/09	8270DM	

Sample Number: 462170
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	930.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	930.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	930.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	930.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	930.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	930.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	4600.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	4600.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	930.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	1800.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	930.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	930.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	4600.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	4600.0	UG/KG	05/20/09	8270DM	
Phenol	<	930.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	4600.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	930.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	930.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	930.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	930.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	930.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	930.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	930.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	930.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	4600.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	930.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	4600.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	4600.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	4600.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	930.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		0.53	%		1005 M	

Sample Number: 462170
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	33
2-FLUOROBIPHENYL	37
2-FLUOROPHENOL	20
NITROBENZENE-D5	28
P-TERPHENYL-D14	42
PHENOL-D5	19

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
Cyclic octaatomic sulfur		3820	ug/kg

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-6

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton P Cyfl

Sample Number: 462171
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1032
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		74.91				
Acenaphthylene	<	740.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	740.0	UG/KG	05/20/09	8270DM	
Anthracene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	740.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	740.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	740.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	740.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
Chrysene	<	740.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	740.0	UG/KG	05/20/09	8270DM	
Fluorene	<	740.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	740.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	740.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	740.0	UG/KG	05/20/09	8270DM	
Isophorone	<	740.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	740.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	740.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	740.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	740.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	740.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	740.0	UG/KG	05/20/09	8270DM	
Pyrene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	740.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	740.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	740.0	UG/KG	05/20/09	8270DM	

Sample Number: 462171
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1032
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	740.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	740.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	740.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	740.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	740.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	3700.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	3700.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	740.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	1400.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	740.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	740.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	3700.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	3700.0	UG/KG	05/20/09	8270DM	
Phenol	<	740.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	3700.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	740.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	740.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	740.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	740.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	740.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	740.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	740.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	3700.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	740.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	3700.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	3700.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	3700.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	740.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		11.0	%		1005 M	

Sample Number: 462171
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1032
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	104
2-FLUOROBIPHENYL	101
2-FLUOROPHENOL	75
NITROBENZENE-D5	94
P-TERPHENYL-D14	130
PHENOL-D5	90

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
3-methoxy-(3.beta.)-D-Friedoole		903	ug/kg

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-7

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton L Gilly

003374

Sample Number: 462172
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

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STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		66.92				
Acenaphthylene	<	660.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	660.0	UG/KG	05/20/09	8270DM	
Anthracene	<	660.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	660.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	660.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	660.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	660.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	660.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	660.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	660.0	UG/KG	05/20/09	8270DM	
Chrysene	<	660.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	660.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	660.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	660.0	UG/KG	05/20/09	8270DM	
Fluorene	<	660.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	660.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	660.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	660.0	UG/KG	05/20/09	8270DM	
Isophorone	<	660.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	660.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	660.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	660.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	660.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	660.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	660.0	UG/KG	05/20/09	8270DM	
Pyrene	<	660.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	660.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	660.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	660.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	660.0	UG/KG	05/20/09	8270DM	

Sample Number: 462172
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

To: TODD/DOWNHAM/LPD

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OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	660.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	660.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	660.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	660.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	660.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	660.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	3300.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	3300.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	660.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	1300.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	660.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	660.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	3300.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	3300.0	UG/KG	05/20/09	8270DM	
Phenol	<	660.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	3300.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	660.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	660.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	660.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	660.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	660.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	660.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	660.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	660.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	3300.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	660.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	3300.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	3300.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	3300.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	660.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		0.38	%		1005 M	

Sample Number: 462172
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

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STATE ENVIRONMENTAL LABORATORY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

COMPOUND	SURROGATE RECOVERIES RECOVERY %
2,4,6-TRIBROMOPHENOL	66
2-FLUOROBIPHENYL	72
2-FLUOROPHENOL	46
NITROBENZENE-D5	53
P-TERPHENYL-D14	87
PHENOL-D5	45

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
1,1,4a-Trimethyl-5,6-dimethylen		1760	ug/kg

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-8

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton L Gill

Sample Number: 462173
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		282.7				
Acenaphthylene	<	2800.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	2800.0	UG/KG	05/20/09	8270DM	
Anthracene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	2800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	2800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	2800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	2800.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Chrysene	<	2800.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	2800.0	UG/KG	05/20/09	8270DM	
Fluorene	<	2800.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	2800.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	2800.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	2800.0	UG/KG	05/20/09	8270DM	
Isophorone	<	2800.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	2800.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	2800.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	2800.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	2800.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	2800.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	2800.0	UG/KG	05/20/09	8270DM	
Pyrene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	2800.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	2800.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	2800.0	UG/KG	05/20/09	8270DM	

Sample Number: 462173
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	2800.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	2800.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	2800.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	2800.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	2800.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	14000.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	2800.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	5600.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	2800.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	2800.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	14000.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	14000.0	UG/KG	05/20/09	8270DM	
Phenol	<	2800.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	2800.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	2800.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	2800.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	2800.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	2800.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	2800.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	2800.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	14000.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	2800.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	14000.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	2800.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		0.95	%		1005 M	

Sample Number: 462173
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	28
2-FLUOROBIPHENYL	30
2-FLUOROPHENOL	20
NITROBENZENE-D5	21
P-TERPHENYL-D14	34
PHENOL-D5	17

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS

None Found

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-9

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton L Gill

Sample Number: 462174
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0959
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		200.8				
Acenaphthylene	<	2000.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	2000.0	UG/KG	05/20/09	8270DM	
Anthracene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	2000.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	2000.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	2000.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	2000.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Chrysene	<	2000.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	2000.0	UG/KG	05/20/09	8270DM	
Fluorene	<	2000.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	2000.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	2000.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	2000.0	UG/KG	05/20/09	8270DM	
Isophorone	<	2000.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	2000.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	2000.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	2000.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	2000.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	2000.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	2000.0	UG/KG	05/20/09	8270DM	
Pyrene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	2000.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	2000.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	2000.0	UG/KG	05/20/09	8270DM	

Sample Number: 462174
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0959
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

To: TODD/DOWNHAM/LPD

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STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	2000.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	2000.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	2000.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	2000.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	2000.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	10000.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	2000.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	4000.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	2000.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	2000.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	10000.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	10000.0	UG/KG	05/20/09	8270DM	
Phenol	<	2000.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	2000.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	2000.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	2000.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	2000.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	2000.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	2000.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	2000.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	10000.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	2000.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	10000.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	2000.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		0.38	%		1005 M	

Sample Number: 462174
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0959
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	23
2-FLUOROBIPHENYL	27
2-FLUOROPHENOL	15
NITROBENZENE-D5	20
P-TERPHENYL-D14	31
PHENOL-D5	15

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH		
COMPOUND	VALUE	UNITS

None Found

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-10

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton P Gill

Sample Number: 462175
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1016
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		80.48				
Acenaphthylene	<	800.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	800.0	UG/KG	05/20/09	8270DM	
Anthracene	<	800.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	800.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	800.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	800.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	800.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	800.0	UG/KG	05/20/09	8270DM	
Chrysene	<	800.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	800.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	800.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	800.0	UG/KG	05/20/09	8270DM	
Fluorene	<	800.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	800.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	800.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	800.0	UG/KG	05/20/09	8270DM	
Isophorone	<	800.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	800.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	800.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	800.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	800.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	800.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	800.0	UG/KG	05/20/09	8270DM	
Pyrene	<	800.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	800.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	800.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	800.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	800.0	UG/KG	05/20/09	8270DM	

Sample Number: 462175
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1016
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	800.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	800.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	800.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	800.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	800.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	800.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	4000.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	4000.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	800.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	1600.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	800.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	800.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	4000.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	4000.0	UG/KG	05/20/09	8270DM	
Phenol	<	800.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	4000.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	800.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	800.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	800.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	800.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	800.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	800.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	800.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	800.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	4000.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	800.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	4000.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	4000.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	4000.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	800.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		0.59	%		1005 M	

Sample Number: 462175
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1016
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

COMPOUND	SURROGATE RECOVERIES	RECOVERY %
2,4,6-TRIBROMOPHENOL		33
2-FLUOROBIPHENYL		44
2-FLUOROPHENOL		22
NITROBENZENE-D5		32
P-TERPHENYL-D14		49
PHENOL-D5		21

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

None Found

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-11

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462176
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1031
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		76.2				
Acenaphthylene	<	760.0	UG/KG	05/19/09	8270DM	
Acenaphthene	<	760.0	UG/KG	05/19/09	8270DM	
Anthracene	<	760.0	UG/KG	05/19/09	8270DM	
Benzo(b)fluoranthene	<	760.0	UG/KG	05/19/09	8270DM	
Benzo(k)fluoranthene	<	760.0	UG/KG	05/19/09	8270DM	
Benzo(a)pyrene	<	760.0	UG/KG	05/19/09	8270DM	
Bis(2-chloroethyl)ether	<	760.0	UG/KG	05/19/09	8270DM	
Bis(2-chloroethoxy)methane	<	760.0	UG/KG	05/19/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	760.0	UG/KG	05/19/09	8270DM	
Butylbenzylphthalate	<	760.0	UG/KG	05/19/09	8270DM	
Chrysene	<	760.0	UG/KG	05/19/09	8270DM	
Diethylphthalate	<	760.0	UG/KG	05/19/09	8270DM	
Dimethylphthalate	<	760.0	UG/KG	05/19/09	8270DM	
Fluoranthene	<	760.0	UG/KG	05/19/09	8270DM	
Fluorene	<	760.0	UG/KG	05/19/09	8270DM	
Hexachlorocyclopentadiene	<	760.0	UG/KG	05/19/09	8270DM	
Hexachloroethane	<	760.0	UG/KG	05/19/09	8270DM	
Indeno(123cd)pyrene	<	760.0	UG/KG	05/19/09	8270DM	
Isophorone	<	760.0	UG/KG	05/19/09	8270DM	
Nitrosodipropylamine	<	760.0	UG/KG	05/19/09	8270DM	
Nitrosodiphenylamine	<	760.0	UG/KG	05/19/09	8270DM	
Naphthalene	<	760.0	UG/KG	05/19/09	8270DM	
Nitrobenzene	<	760.0	UG/KG	05/19/09	8270DM	
p-Chloro-m-cresol	<	760.0	UG/KG	05/19/09	8270DM	
Phenanthrene	<	760.0	UG/KG	05/19/09	8270DM	
Pyrene	<	760.0	UG/KG	05/19/09	8270DM	
Benzo(ghi)perylene	<	760.0	UG/KG	05/19/09	8270DM	
Benzo(a)anthracene	<	760.0	UG/KG	05/19/09	8270DM	
Dibenzo(ah)anthracene	<	760.0	UG/KG	05/19/09	8270DM	
2-Chloronaphthalene	<	760.0	UG/KG	05/19/09	8270DM	

Sample Number: 462176
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1031
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	760.0	UG/KG	05/19/09	8270DM	
2-Nitrophenol	<	760.0	UG/KG	05/19/09	8270DM	
Di-n-octylphthalate	<	760.0	UG/KG	05/19/09	8270DM	
2,4-Dichlorophenol	<	760.0	UG/KG	05/19/09	8270DM	
2,4-Dimethylphenol	<	760.0	UG/KG	05/19/09	8270DM	
2,4-Dinitrotoluene	<	760.0	UG/KG	05/19/09	8270DM	
2,4-Dinitrophenol	<	3800.0	UG/KG	05/19/09	8270DM	
2,4,6-Trichlorophenol	<	3800.0	UG/KG	05/19/09	8270DM	
2,6-Dinitrotoluene	<	760.0	UG/KG	05/19/09	8270DM	
3,3'-Dichlorobenzidine	<	1500.0	UG/KG	05/19/09	8270DM	
4-Bromophenylphenyl ether	<	760.0	UG/KG	05/19/09	8270DM	
4-Chlorophenylphenyl ether	<	760.0	UG/KG	05/19/09	8270DM	
4-Nitrophenol	<	3800.0	UG/KG	05/19/09	8270DM	
4,6-Dinitro-o-cresol	<	3800.0	UG/KG	05/19/09	8270DM	
Phenol	<	760.0	UG/KG	05/19/09	8270DM	
Pentachlorophenol	<	3800.0	UG/KG	05/19/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	760.0	UG/KG	05/19/09	8270DM	
Di-n-butylphthalate	<	760.0	UG/KG	05/19/09	8270DM	
Hexachlorobenzene	<	760.0	UG/KG	05/19/09	8270DM	
Hexachlorobutadiene	<	760.0	UG/KG	05/19/09	8270DM	
Benzyl alcohol	<	760.0	UG/KG	05/19/09	8270DM	
Dibenzofuran	<	760.0	UG/KG	05/19/09	8270DM	
2-Methylphenol	<	760.0	UG/KG	05/19/09	8270DM	
4-Methylphenol	<	760.0	UG/KG	05/19/09	8270DM	
2,4,5-Trichlorophenol	<	3800.0	UG/KG	05/19/09	8270DM	
4-Chloroaniline	<	760.0	UG/KG	05/19/09	8270DM	
2-Nitroaniline	<	3800.0	UG/KG	05/19/09	8270DM	
3-Nitroaniline	<	3800.0	UG/KG	05/19/09	8270DM	
4-Nitroaniline	<	3800.0	UG/KG	05/19/09	8270DM	
2-Methylnaphthalene	<	760.0	UG/KG	05/19/09	8270DM	
% Moisture - GC/MS Lab		12.5	%		1005 M	

Sample Number: 462176
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1031
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

To: TODD/DOWNHAM/LPD

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STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

COMPOUND	SURROGATE RECOVERIES RECOVERY %
2,4,6-TRIBROMOPHENOL	58
2-FLUOROBIPHENYL	38
2-FLUOROPHENOL	64
NITROBENZENE-D5	67
P-TERPHENYL-D14	54
PHENOL-D5	73

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

None Found

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-12

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton L Gill

Sample Number: 462177
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1022
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA						
Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		74.76				
Acenaphthylene	<	740.0	UG/KG	05/20/09	8270DM	
Acenaphthene	<	740.0	UG/KG	05/20/09	8270DM	
Anthracene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(b)fluoranthene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(k)fluoranthene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(a)pyrene	<	740.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethyl)ether	<	740.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroethoxy)methane	<	740.0	UG/KG	05/20/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	740.0	UG/KG	05/20/09	8270DM	
Butylbenzylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
Chrysene	<	740.0	UG/KG	05/20/09	8270DM	
Diethylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
Dimethylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
Fluoranthene	<	740.0	UG/KG	05/20/09	8270DM	
Fluorene	<	740.0	UG/KG	05/20/09	8270DM	
Hexachlorocyclopentadiene	<	740.0	UG/KG	05/20/09	8270DM	
Hexachloroethane	<	740.0	UG/KG	05/20/09	8270DM	
Indeno(123cd)pyrene	<	740.0	UG/KG	05/20/09	8270DM	
Isophorone	<	740.0	UG/KG	05/20/09	8270DM	
Nitrosodipropylamine	<	740.0	UG/KG	05/20/09	8270DM	
Nitrosodiphenylamine	<	740.0	UG/KG	05/20/09	8270DM	
Naphthalene	<	740.0	UG/KG	05/20/09	8270DM	
Nitrobenzene	<	740.0	UG/KG	05/20/09	8270DM	
p-Chloro-m-cresol	<	740.0	UG/KG	05/20/09	8270DM	
Phenanthrene	<	740.0	UG/KG	05/20/09	8270DM	
Pyrene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(ghi)perylene	<	740.0	UG/KG	05/20/09	8270DM	
Benzo(a)anthracene	<	740.0	UG/KG	05/20/09	8270DM	
Dibenzo(ah)anthracene	<	740.0	UG/KG	05/20/09	8270DM	
2-Chloronaphthalene	<	740.0	UG/KG	05/20/09	8270DM	

Sample Number: 462177
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1022
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	740.0	UG/KG	05/20/09	8270DM	
2-Nitrophenol	<	740.0	UG/KG	05/20/09	8270DM	
Di-n-octylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
2,4-Dichlorophenol	<	740.0	UG/KG	05/20/09	8270DM	
2,4-Dimethylphenol	<	740.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrotoluene	<	740.0	UG/KG	05/20/09	8270DM	
2,4-Dinitrophenol	<	3700.0	UG/KG	05/20/09	8270DM	
2,4,6-Trichlorophenol	<	3700.0	UG/KG	05/20/09	8270DM	
2,6-Dinitrotoluene	<	740.0	UG/KG	05/20/09	8270DM	
3,3'-Dichlorobenzidine	<	1400.0	UG/KG	05/20/09	8270DM	
4-Bromophenylphenyl ether	<	740.0	UG/KG	05/20/09	8270DM	
4-Chlorophenylphenyl ether	<	740.0	UG/KG	05/20/09	8270DM	
4-Nitrophenol	<	3700.0	UG/KG	05/20/09	8270DM	
4,6-Dinitro-o-cresol	<	3700.0	UG/KG	05/20/09	8270DM	
Phenol	<	740.0	UG/KG	05/20/09	8270DM	
Pentachlorophenol	<	3700.0	UG/KG	05/20/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	740.0	UG/KG	05/20/09	8270DM	
Di-n-butylphthalate	<	740.0	UG/KG	05/20/09	8270DM	
Hexachlorobenzene	<	740.0	UG/KG	05/20/09	8270DM	
Hexachlorobutadiene	<	740.0	UG/KG	05/20/09	8270DM	
Benzyl alcohol	<	740.0	UG/KG	05/20/09	8270DM	
Dibenzofuran	<	740.0	UG/KG	05/20/09	8270DM	
2-Methylphenol	<	740.0	UG/KG	05/20/09	8270DM	
4-Methylphenol	<	740.0	UG/KG	05/20/09	8270DM	
2,4,5-Trichlorophenol	<	3700.0	UG/KG	05/20/09	8270DM	
4-Chloroaniline	<	740.0	UG/KG	05/20/09	8270DM	
2-Nitroaniline	<	3700.0	UG/KG	05/20/09	8270DM	
3-Nitroaniline	<	3700.0	UG/KG	05/20/09	8270DM	
4-Nitroaniline	<	3700.0	UG/KG	05/20/09	8270DM	
2-Methylnaphthalene	<	740.0	UG/KG	05/20/09	8270DM	
% Moisture - GC/MS Lab		10.82	%		1005 M	

Sample Number: 462177
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1022
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
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Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

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SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	67
2-FLUOROBIPHENYL	41
2-FLUOROPHENOL	56
NITROBENZENE-D5	58
P-TERPHENYL-D14	52
PHENOL-D5	62

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH		
COMPOUND	VALUE	UNITS
4b,5,6,7,8,8a,9,10-octahydro-4b	1010	ug/kg

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-13

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462190
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		33.3				
Acenaphthylene	<	330.0	UG/KG	05/19/09	8270DM	
Acenaphthene	<	330.0	UG/KG	05/19/09	8270DM	
Anthracene	<	330.0	UG/KG	05/19/09	8270DM	
Benzo(b)fluoranthene	<	330.0	UG/KG	05/19/09	8270DM	
Benzo(k)fluoranthene	<	330.0	UG/KG	05/19/09	8270DM	
Benzo(a)pyrene	<	330.0	UG/KG	05/19/09	8270DM	
Bis(2-chloroethyl)ether	<	330.0	UG/KG	05/19/09	8270DM	
Bis(2-chloroethoxy)methane	<	330.0	UG/KG	05/19/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	330.0	UG/KG	05/19/09	8270DM	
Butylbenzylphthalate	<	330.0	UG/KG	05/19/09	8270DM	
Chrysene	<	330.0	UG/KG	05/19/09	8270DM	
Diethylphthalate	<	330.0	UG/KG	05/19/09	8270DM	
Dimethylphthalate	<	330.0	UG/KG	05/19/09	8270DM	
Fluoranthene	<	330.0	UG/KG	05/19/09	8270DM	
Fluorene	<	330.0	UG/KG	05/19/09	8270DM	
Hexachlorocyclopentadiene	<	330.0	UG/KG	05/19/09	8270DM	
Hexachloroethane	<	330.0	UG/KG	05/19/09	8270DM	
Indeno(123cd)pyrene	<	330.0	UG/KG	05/19/09	8270DM	
Isophorone	<	330.0	UG/KG	05/19/09	8270DM	
Nitrosodipropylamine	<	330.0	UG/KG	05/19/09	8270DM	
Nitrosodiphenylamine	<	330.0	UG/KG	05/19/09	8270DM	
Naphthalene	<	330.0	UG/KG	05/19/09	8270DM	
Nitrobenzene	<	330.0	UG/KG	05/19/09	8270DM	
p-Chloro-m-cresol	<	330.0	UG/KG	05/19/09	8270DM	
Phenanthrene	<	330.0	UG/KG	05/19/09	8270DM	
Pyrene	<	330.0	UG/KG	05/19/09	8270DM	
Benzo(ghi)perylene	<	330.0	UG/KG	05/19/09	8270DM	
Benzo(a)anthracene	<	330.0	UG/KG	05/19/09	8270DM	
Dibenzo(ah)anthracene	<	330.0	UG/KG	05/19/09	8270DM	
2-Chloronaphthalene	<	330.0	UG/KG	05/19/09	8270DM	

Sample Number: 462183
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
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Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.30	MG/KG	04/27/09	6020	3050
Barium, Sediment		31.6	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		4.40	MG/KG	04/27/09	6020	3050
Copper, Sediment		5.00	MG/KG	04/27/09	6020	3050
Lead, Sediment		11.5	MG/KG	04/27/09	6020	3050
Nickel, Sediment		2.50	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		14.0	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		97.1	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-19

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462184
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1122
Date Received: 4/22/2009
Date Completed: 05/19/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/19/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		2.20	MG/KG	04/27/09	6020	
Barium, Sediment		32.5	MG/KG	04/27/09	6020	
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	
Chromium, Sediment		7.10	MG/KG	04/27/09	6020	
Copper, Sediment		2.50	MG/KG	04/27/09	6020	
Lead, Sediment		6.90	MG/KG	04/27/09	6020	
Nickel, Sediment		4.40	MG/KG	04/27/09	6020	
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	
Zinc, Sediment		11.5	MG/KG	04/27/09	6020	
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	
Mercury, Sediment	<	0.25	MG/KG	04/29/09	6020	
% Solids		72.1	%	04/27/09	CLP 5.4	

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-1

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462185
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1118
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Barium, Sediment		15.2	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		3.70	MG/KG	04/27/09	6020	3050
Copper, Sediment		2.80	MG/KG	04/27/09	6020	3050
Lead, Sediment		9.60	MG/KG	04/27/09	6020	3050
Nickel, Sediment		2.00	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		14.7	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		81.6	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-2

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462186
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

To: TODD/DOWNHAM/LPD

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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.90	MG/KG	04/27/09	6020	3050
Barium, Sediment		36.0	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		7.40	MG/KG	04/27/09	6020	3050
Copper, Sediment		8.60	MG/KG	04/27/09	6020	3050
Lead, Sediment		37.2	MG/KG	04/27/09	6020	3050
Nickel, Sediment		5.30	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		79.5	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		82.7	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-3

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462187
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		2.00	MG/KG	04/27/09	6020	3050
Barium, Sediment		33.7	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		7.40	MG/KG	04/27/09	6020	3050
Copper, Sediment		8.20	MG/KG	04/27/09	6020	3050
Lead, Sediment		37.6	MG/KG	04/27/09	6020	3050
Nickel, Sediment		5.00	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		90.6	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	05/01/09	7471	3050
% Solids		81.5	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-4

ANALYST`S COMMENTS:

*** * ANALYST** _____

Sample Number: 462188
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

To: TODD/DOWNHAM/LPD

CC: FILE COPY

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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.40	MG/KG	04/27/09	6020	3050
Barium, Sediment		16.0	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		4.90	MG/KG	04/27/09	6020	3050
Copper, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Lead, Sediment		2.50	MG/KG	04/27/09	6020	3050
Nickel, Sediment		2.20	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		6.40	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	05/01/09	7471	3050
% Solids		76.0	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-5

ANALYST`S COMMENTS:

*** * ANALYST** _____

Sample Number: 462189
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Barium, Sediment		15.2	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		3.80	MG/KG	04/27/09	6020	3050
Copper, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Lead, Sediment		2.00	MG/KG	04/27/09	6020	3050
Nickel, Sediment		2.00	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		5.10	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	05/01/09	7471	3050
% Solids		80.8	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-6

ANALYST`S COMMENTS:

***** *** ANALYST** _____

Sample Number: 462165
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD CC: FILE COPY

LSS-1

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Barium, Sediment		25.8	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		4.40	MG/KG	04/27/09	6020	3050
Copper, Sediment		3.40	MG/KG	04/27/09	6020	3050
Lead, Sediment		44.3	MG/KG	04/27/09	6020	3050
Nickel, Sediment		3.00	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		23.8	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		86.4	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-1

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462166
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Barium, Sediment		23.7	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		4.10	MG/KG	04/27/09	6020	3050
Copper, Sediment		3.00	MG/KG	04/27/09	6020	3050
Lead, Sediment		39.0	MG/KG	04/27/09	6020	3050
Nickel, Sediment		2.80	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		23.2	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		93.1	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-2

ANALYST`S COMMENTS:

*** * ANALYST** _____

Sample Number: 462167
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0950
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.50	MG/KG	04/27/09	6020	3050
Barium, Sediment		48.1	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		8.60	MG/KG	04/27/09	6020	3050
Copper, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Lead, Sediment		155	MG/KG	04/27/09	6020	3050
Nickel, Sediment		13.5	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		43.8	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		92.7	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-3

ANALYST`S COMMENTS:

***** *** ANALYST** _____

Sample Number: 462168
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0947
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.50	MG/KG	04/27/09	6020	3050
Barium, Sediment		50.9	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		4.90	MG/KG	04/27/09	6020	3050
Copper, Sediment		7.80	MG/KG	04/27/09	6020	3050
Lead, Sediment		513	MG/KG	04/29/09	6020	3050
Nickel, Sediment		6.70	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		16.7	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		95.0	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-4

ANALYST`S COMMENTS:

*** * ANALYST** _____

Sample Number: 462169
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		5.10	MG/KG	04/27/09	6020	3050
Barium, Sediment		60.0	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		13.6	MG/KG	04/27/09	6020	3050
Copper, Sediment		14.6	MG/KG	04/27/09	6020	3050
Lead, Sediment		52.1	MG/KG	04/27/09	6020	3050
Nickel, Sediment		11.2	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		38.3	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		98.8	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-5

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462170
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		3.10	MG/KG	04/27/09	6020	3050
Barium, Sediment		53.1	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		8.60	MG/KG	04/27/09	6020	3050
Copper, Sediment		13.0	MG/KG	04/27/09	6020	3050
Lead, Sediment		48.9	MG/KG	04/27/09	6020	3050
Nickel, Sediment		7.10	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		30.4	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		98.8	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-6

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462171
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1032
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		3.60	MG/KG	04/27/09	6020	3050
Barium, Sediment		71.5	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		23.5	MG/KG	04/27/09	6020	3050
Copper, Sediment		96.5	MG/KG	04/27/09	6020	3050
Lead, Sediment		15.1	MG/KG	04/27/09	6020	3050
Nickel, Sediment		11.0	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		26.1	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		78.2	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-7

ANALYST`S COMMENTS:

*** * ANALYST** _____

Sample Number: 462172
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

To: TODD/DOWNHAM/LPD

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707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		2.30	MG/KG	04/27/09	6020	3050
Barium, Sediment		36.2	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		8.80	MG/KG	04/27/09	6020	3050
Copper, Sediment		5.50	MG/KG	04/27/09	6020	3050
Lead, Sediment		31.1	MG/KG	04/27/09	6020	3050
Nickel, Sediment		4.00	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		29.1	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		99.1	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-8

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462173
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

To: TODD/DOWNHAM/LPD

CC: FILE COPY

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.90	MG/KG	04/27/09	6020	3050
Barium, Sediment		25.0	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		5.00	MG/KG	04/27/09	6020	3050
Copper, Sediment		5.00	MG/KG	04/27/09	6020	3050
Lead, Sediment		23.1	MG/KG	04/27/09	6020	3050
Nickel, Sediment		3.40	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment			MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		96.9	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-9

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462174
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0959
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.10	MG/KG	04/27/09	6020	3050
Barium, Sediment		26.5	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		5.50	MG/KG	04/27/09	6020	3050
Copper, Sediment		4.20	MG/KG	04/27/09	6020	3050
Lead, Sediment		10.0	MG/KG	04/27/09	6020	3050
Nickel, Sediment		3.20	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment			MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		99.2	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-10

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462175
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1016
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

To: TODD/DOWNHAM/LPD

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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.10	MG/KG	04/27/09	6020	3050
Barium, Sediment		25.1	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		4.50	MG/KG	04/27/09	6020	3050
Copper, Sediment		3.30	MG/KG	04/27/09	6020	3050
Lead, Sediment		21.0	MG/KG	04/27/09	6020	3050
Nickel, Sediment		2.20	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		15.1	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		99.0	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-11

ANALYST`S COMMENTS:

***** *** ANALYST** _____

003411

Sample Number: 462176
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1031
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Barium, Sediment		21.6	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		9.60	MG/KG	04/27/09	6020	3050
Copper, Sediment		6.70	MG/KG	04/27/09	6020	3050
Lead, Sediment		16.3	MG/KG	04/27/09	6020	3050
Nickel, Sediment		3.40	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		16.3	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/28/09	7471	3050
% Solids		84.5	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-12

ANALYST`S COMMENTS:

***** *** ANALYST** _____

003412

Sample Number: 462177
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1022
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Barium, Sediment		16.6	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		4.20	MG/KG	04/27/09	6020	3050
Copper, Sediment		9.00	MG/KG	04/27/09	6020	3050
Lead, Sediment		3.90	MG/KG	04/27/09	6020	3050
Nickel, Sediment		2.00	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		11.0	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		88.7	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-13

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462178
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0952
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

To: TODD/DOWNHAM/LPD

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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		1.70	MG/KG	04/27/09	6020	3050
Barium, Sediment		30.3	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		9.90	MG/KG	04/27/09	6020	3050
Copper, Sediment		4.70	MG/KG	04/27/09	6020	3050
Lead, Sediment		4.40	MG/KG	04/27/09	6020	3050
Nickel, Sediment		4.50	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		11.1	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		86.5	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-14

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462179
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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707 N. ROBINSON
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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		12.5	MG/KG	04/27/09	6020	3050
Barium, Sediment		62.9	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		11.8	MG/KG	04/27/09	6020	3050
Copper, Sediment		14.2	MG/KG	04/27/09	6020	3050
Lead, Sediment		30.5	MG/KG	04/27/09	6020	3050
Nickel, Sediment		14.0	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		63.2	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		88.6	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-15

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462180
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1004
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		2.90	MG/KG	04/27/09	6020	3050
Barium, Sediment		29.7	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		6.00	MG/KG	04/27/09	6020	3050
Copper, Sediment		8.70	MG/KG	04/27/09	6020	3050
Lead, Sediment		30.6	MG/KG	04/27/09	6020	3050
Nickel, Sediment		8.70	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		114.	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		89.7	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-16

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462181
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0954
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment		3.50	MG/KG	04/27/09	6020	3050
Barium, Sediment		42.2	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		118	MG/KG	04/27/09	6020	3050
Copper, Sediment		14.3	MG/KG	04/27/09	6020	3050
Lead, Sediment		89.5	MG/KG	04/27/09	6020	3050
Nickel, Sediment		9.80	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		119	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		91.7	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-17

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462182
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0937
Date Received: 4/22/2009
Date Completed: 05/12/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/12/2009

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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Barium, Sediment		22.4	MG/KG	04/27/09	6020	3050
Beryllium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Cadmium , Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Chromium, Sediment		5.50	MG/KG	04/27/09	6020	3050
Copper, Sediment		5.00	MG/KG	04/27/09	6020	3050
Lead, Sediment		11.0	MG/KG	04/27/09	6020	3050
Nickel, Sediment		3.30	MG/KG	04/27/09	6020	3050
Silver, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Zinc, Sediment		19.3	MG/KG	04/27/09	6020	3050
Antimony, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Selenium, Sediment	<	1.00	MG/KG	04/27/09	6020	3050
Thallium, Sediment	<	1.00	MG/KG	04/30/09	6020	3050
Mercury, Sediment	<	0.25	MG/KG	04/29/09	7471	3050
% Solids		89.6	%	04/27/09	CLP 5.4	3050

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-18

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462190
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/19/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/19/2009

To: TODD/DOWNHAM/LPD

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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by Metals

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Arsenic, Sediment	R		MG/KG		6020	
Barium, Sediment	R		MG/KG		6020	
Beryllium, Sediment	R		MG/KG		6020	
Cadmium , Sediment	R		MG/KG		6020	
Chromium, Sediment	R		MG/KG		6020	
Copper, Sediment	R		MG/KG		6020	
Lead, Sediment	R		MG/KG		6020	
Nickel, Sediment	R		MG/KG		6020	
Silver, Sediment	R		MG/KG		6020	
Zinc, Sediment	R		MG/KG		6020	
Antimony, Sediment	R		MG/KG		6020	
Selenium, Sediment	R		MG/KG		6020	
Thallium, Sediment	R		MG/KG		6020	
Mercury, Sediment	R		MG/KG		7471	
% Solids	R		%		CLP 5.4	

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LAB BLANK

ANALYST`S COMMENTS:
(R) Rejected- no sample to analyze.

*** * ANALYST** _____

003419

Sample Number: 462155
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		04/30/09	8260BM	
Benzene	<	14.0	UG/KG	04/30/09	8260BM	
Bromoform	<	14.0	UG/KG	04/30/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	04/30/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	04/30/09	8260BM	
Chloroethane	<	14.0	UG/KG	04/30/09	8260BM	
Chloroform	<	14.0	UG/KG	04/30/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	04/30/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	04/30/09	8260BM	
Methyl chloride	<	14.0	UG/KG	04/30/09	8260BM	
Methylene chloride	<	14.0	UG/KG	04/30/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Toluene	<	14.0	UG/KG	04/30/09	8260BM	
Trichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	04/30/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	04/30/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	04/30/09	8260BM	
Total Xylenes	<	14.0	UG/KG	04/30/09	8260BM	
Acetone	<	14.0	UG/KG	04/30/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	04/30/09	8260BM	
2-Hexanone	<	14.0	UG/KG	04/30/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	04/30/09	8260BM	

Sample Number: 462155
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	04/30/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	04/30/09	8260BM	
% Moisture - GC/MS Lab		4.60	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	04/30/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	04/30/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	04/30/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	04/30/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Cyclohexane	<	14.0	UG/KG	04/30/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	04/30/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	04/30/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	107
4-BROMOFLUOROBENZENE	87
TOLUENE-D8	97

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

Number: 462155
ct Code: SW-SP
ency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-19

ANALYST`S COMMENTS:

* * **ANALYST** Milton R Sfl

003422

Sample Number: 462137
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

LSS-1

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		04/28/09	8260BM	
Benzene	<	14.0	UG/KG	04/28/09	8260BM	
Bromoform	<	14.0	UG/KG	04/28/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	04/28/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	04/28/09	8260BM	
Chloroethane	<	14.0	UG/KG	04/28/09	8260BM	
Chloroform	<	14.0	UG/KG	04/28/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	04/28/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	04/28/09	8260BM	
Methyl chloride	<	14.0	UG/KG	04/28/09	8260BM	
Methylene chloride	<	14.0	UG/KG	04/28/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	04/28/09	8260BM	
Toluene	<	14.0	UG/KG	04/28/09	8260BM	
Trichloroethene	<	14.0	UG/KG	04/28/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	04/28/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	04/28/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	04/28/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	04/28/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	04/28/09	8260BM	
Total Xylenes	<	14.0	UG/KG	04/28/09	8260BM	
Acetone	<	14.0	UG/KG	04/28/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	04/28/09	8260BM	
2-Hexanone	<	14.0	UG/KG	04/28/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	04/28/09	8260BM	

Sample Number: 462137
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	04/28/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	04/28/09	8260BM	
% Moisture - GC/MS Lab		10.0	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	04/28/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	04/28/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	04/28/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	04/28/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	04/28/09	8260BM	
Cyclohexane	<	14.0	UG/KG	04/28/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	04/28/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	04/28/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	125
4-BROMOFLUOROBENZENE	80
TOLUENE-D8	101

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003424

Sample Number: 462137
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-1

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462138
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

L-1-2

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		04/28/09	8260BM	
Benzene	<	14.0	UG/KG	04/28/09	8260BM	
Bromoform	<	14.0	UG/KG	04/28/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	04/28/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	04/28/09	8260BM	
Chloroethane	<	14.0	UG/KG	04/28/09	8260BM	
Chloroform	<	14.0	UG/KG	04/28/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	04/28/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	04/28/09	8260BM	
Methyl chloride	<	14.0	UG/KG	04/28/09	8260BM	
Methylene chloride	<	14.0	UG/KG	04/28/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	04/28/09	8260BM	
Toluene	<	14.0	UG/KG	04/28/09	8260BM	
Trichloroethene	<	14.0	UG/KG	04/28/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	04/28/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	04/28/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	04/28/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	04/28/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	04/28/09	8260BM	
Total Xylenes	<	14.0	UG/KG	04/28/09	8260BM	
Acetone	<	14.0	UG/KG	04/28/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	04/28/09	8260BM	
2-Hexanone	<	14.0	UG/KG	04/28/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	04/28/09	8260BM	

Sample Number: 462138
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	04/28/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	04/28/09	8260BM	
% Moisture - GC/MS Lab		8.00	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	04/28/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	04/28/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	04/28/09	8260BM	
Methyl tert-butyl ether (MT	<	14.0	UG/KG	04/28/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	04/28/09	8260BM	
Cyclohexane	<	14.0	UG/KG	04/28/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	04/28/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	
1,2-Dibromo-3-chloropropane	<	14.0	UG/KG	04/28/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	04/28/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	125
4-BROMOFLUOROBENZENE	81
TOLUENE-D8	99

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462138
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0944
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: ;LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-2

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462139
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0950
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.50		04/28/09	8260BM	
Benzene	<	15.0	UG/KG	04/28/09	8260BM	
Bromoform	<	15.0	UG/KG	04/28/09	8260BM	
Carbon tetrachloride	<	15.0	UG/KG	04/28/09	8260BM	
Chlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
Dibromochloromethane	<	15.0	UG/KG	04/28/09	8260BM	
Chloroethane	<	15.0	UG/KG	04/28/09	8260BM	
Chloroform	<	15.0	UG/KG	04/28/09	8260BM	
Bromodichloromethane	<	15.0	UG/KG	04/28/09	8260BM	
Ethylbenzene	<	15.0	UG/KG	04/28/09	8260BM	
Methyl chloride	<	15.0	UG/KG	04/28/09	8260BM	
Methylene chloride	<	15.0	UG/KG	04/28/09	8260BM	
Tetrachloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Toluene	<	15.0	UG/KG	04/28/09	8260BM	
Trichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Vinyl chloride	<	15.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
1,1,1-Trichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2,2-Tetrachloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichloropropane	<	15.0	UG/KG	04/28/09	8260BM	
trans-1,2-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
trans-1,3-Dichloropropene	<	15.0	UG/KG	04/28/09	8260BM	
cis-1,3-Dichloropropene	<	15.0	UG/KG	04/28/09	8260BM	
Total Xylenes	<	15.0	UG/KG	04/28/09	8260BM	
Acetone	<	15.0	UG/KG	04/28/09	8260BM	
Methylethyl ketone	<	15.0	UG/KG	04/28/09	8260BM	
2-Hexanone	<	15.0	UG/KG	04/28/09	8260BM	
Methylisobutyl ketone	<	15.0	UG/KG	04/28/09	8260BM	

Sample Number: 462139
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0950
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	15.0	UG/KG	04/28/09	8260BM	
Carbon disulfide	<	15.0	UG/KG	04/28/09	8260BM	
% Moisture - GC/MS Lab		7.00	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	15.0	UG/KG	04/28/09	8260BM	
Trichlorofluoromethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	15.0	UG/KG	04/28/09	8260BM	
Methyl Acetate	<	15.0	UG/KG	04/28/09	8260BM	
Methyl tert-butyl ether (M	<	15.0	UG/KG	04/28/09	8260BM	
cis-1,2-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Cyclohexane	<	15.0	UG/KG	04/28/09	8260BM	
Methylcyclohexane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dibromoethane	<	15.0	UG/KG	04/28/09	8260BM	
Isopropylbenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,3-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,4-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dibromo-3-chloropropan	<	15.0	UG/KG	04/28/09	8260BM	
1,2,4-Trichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	130
4-BROMOFLUOROBENZENE	69
TOLUENE-D8	104

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462139
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0950
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-3

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462140
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0947
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

LSS-4

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.50		04/28/09	8260BM	
Benzene	<	15.0	UG/KG	04/28/09	8260BM	
Bromoform	<	15.0	UG/KG	04/28/09	8260BM	
Carbon tetrachloride	<	15.0	UG/KG	04/28/09	8260BM	
Chlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
Dibromochloromethane	<	15.0	UG/KG	04/28/09	8260BM	
Chloroethane	<	15.0	UG/KG	04/28/09	8260BM	
Chloroform	<	15.0	UG/KG	04/28/09	8260BM	
Bromodichloromethane	<	15.0	UG/KG	04/28/09	8260BM	
Ethylbenzene	<	15.0	UG/KG	04/28/09	8260BM	
Methyl chloride	<	15.0	UG/KG	04/28/09	8260BM	
Methylene chloride	<	15.0	UG/KG	04/28/09	8260BM	
Tetrachloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Toluene	<	15.0	UG/KG	04/28/09	8260BM	
Trichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Vinyl chloride	<	15.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
1,1,1-Trichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2,2-Tetrachloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichloropropane	<	15.0	UG/KG	04/28/09	8260BM	
trans-1,2-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
trans-1,3-Dichloropropene	<	15.0	UG/KG	04/28/09	8260BM	
cis-1,3-Dichloropropene	<	15.0	UG/KG	04/28/09	8260BM	
Total Xylenes	<	15.0	UG/KG	04/28/09	8260BM	
Acetone	<	15.0	UG/KG	04/28/09	8260BM	
Methylethyl ketone	<	15.0	UG/KG	04/28/09	8260BM	
2-Hexanone	<	15.0	UG/KG	04/28/09	8260BM	
Methylisobutyl ketone	<	15.0	UG/KG	04/28/09	8260BM	

Sample Number: 462140
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0947
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	15.0	UG/KG	04/28/09	8260BM	
Carbon disulfide	<	15.0	UG/KG	04/28/09	8260BM	
% Moisture - GC/MS Lab		3.00	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	15.0	UG/KG	04/28/09	8260BM	
Trichlorofluoromethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	15.0	UG/KG	04/28/09	8260BM	
Methyl Acetate	<	15.0	UG/KG	04/28/09	8260BM	
Methyl tert-butyl ether (M	<	15.0	UG/KG	04/28/09	8260BM	
cis-1,2-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Cyclohexane	<	15.0	UG/KG	04/28/09	8260BM	
Methylcyclohexane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dibromoethane	<	15.0	UG/KG	04/28/09	8260BM	
Isopropylbenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,3-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,4-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dibromo-3-chloropropan	<	15.0	UG/KG	04/28/09	8260BM	
1,2,4-Trichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	128
4-BROMOFLUOROBENZENE	83
TOLUENE-D8	99

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003433

Sample Number: 462140
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0947
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-4

ANALYST'S COMMENTS:

* * ANALYST

003434

Sample Number: 462141
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

LSS-5

SAMPLE DATA						
Name	**Qualifier**	**Value**	**Units**	**Analyzed**	**Method**	**Prep Type**
Dilution Factor, Purgeable:		1.50		04/28/09	8260BM	
Benzene	<	15.0	UG/KG	04/28/09	8260BM	
Bromoform	<	15.0	UG/KG	04/28/09	8260BM	
Carbon tetrachloride	<	15.0	UG/KG	04/28/09	8260BM	
Chlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
Dibromochloromethane	<	15.0	UG/KG	04/28/09	8260BM	
Chloroethane	<	15.0	UG/KG	04/28/09	8260BM	
Chloroform	<	15.0	UG/KG	04/28/09	8260BM	
Bromodichloromethane	<	15.0	UG/KG	04/28/09	8260BM	
Ethylbenzene	<	15.0	UG/KG	04/28/09	8260BM	
Methyl chloride	<	15.0	UG/KG	04/28/09	8260BM	
Methylene chloride	<	15.0	UG/KG	04/28/09	8260BM	
Tetrachloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Toluene	<	15.0	UG/KG	04/28/09	8260BM	
Trichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Vinyl chloride	<	15.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
1,1,1-Trichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2,2-Tetrachloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichloropropane	<	15.0	UG/KG	04/28/09	8260BM	
trans-1,2-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
trans-1,3-Dichloropropene	<	15.0	UG/KG	04/28/09	8260BM	
cis-1,3-Dichloropropene	<	15.0	UG/KG	04/28/09	8260BM	
Total Xylenes	<	15.0	UG/KG	04/28/09	8260BM	
Acetone	<	15.0	UG/KG	04/28/09	8260BM	
Methylethyl ketone	<	15.0	UG/KG	04/28/09	8260BM	
2-Hexanone	<	15.0	UG/KG	04/28/09	8260BM	
Methylisobutyl ketone	<	15.0	UG/KG	04/28/09	8260BM	

Sample Number: 462141
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	15.0	UG/KG	04/28/09	8260BM	
Carbon disulfide	<	15.0	UG/KG	04/28/09	8260BM	
% Moisture - GC/MS Lab		0.50	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	15.0	UG/KG	04/28/09	8260BM	
Trichlorofluoromethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	15.0	UG/KG	04/28/09	8260BM	
Methyl Acetate	<	15.0	UG/KG	04/28/09	8260BM	
Methyl tert-butyl ether (M	<	15.0	UG/KG	04/28/09	8260BM	
cis-1,2-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Cyclohexane	<	15.0	UG/KG	04/28/09	8260BM	
Methylcyclohexane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dibromoethane	<	15.0	UG/KG	04/28/09	8260BM	
Isopropylbenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,3-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,4-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dibromo-3-chloropropan	<	15.0	UG/KG	04/28/09	8260BM	
1,2,4-Trichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	**127**
4-BROMOFLUOROBENZENE	**92**
TOLUENE-D8	**95**

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
NONE FOUND		0	

Summary

Labs performing analysis on this Sample:

GCMS

003436

Sample Number: 462141
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-5

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462142
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

L55-6

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.50		04/28/09	8260BM	
Benzene	<	15.0	UG/KG	04/28/09	8260BM	
Bromoform	<	15.0	UG/KG	04/28/09	8260BM	
Carbon tetrachloride	<	15.0	UG/KG	04/28/09	8260BM	
Chlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
Dibromochloromethane	<	15.0	UG/KG	04/28/09	8260BM	
Chloroethane	<	15.0	UG/KG	04/28/09	8260BM	
Chloroform	<	15.0	UG/KG	04/28/09	8260BM	
Bromodichloromethane	<	15.0	UG/KG	04/28/09	8260BM	
Ethylbenzene	<	15.0	UG/KG	04/28/09	8260BM	
Methyl chloride	<	15.0	UG/KG	04/28/09	8260BM	
Methylene chloride	<	15.0	UG/KG	04/28/09	8260BM	
Tetrachloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Toluene	<	15.0	UG/KG	04/28/09	8260BM	
Trichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Vinyl chloride	<	15.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
1,1,1-Trichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2,2-Tetrachloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichloroethane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichloropropane	<	15.0	UG/KG	04/28/09	8260BM	
trans-1,2-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
trans-1,3-Dichloropropene	<	15.0	UG/KG	04/28/09	8260BM	
cis-1,3-Dichloropropene	<	15.0	UG/KG	04/28/09	8260BM	
Total Xylenes	<	15.0	UG/KG	04/28/09	8260BM	
Acetone	<	15.0	UG/KG	04/28/09	8260BM	
Methylethyl ketone	<	15.0	UG/KG	04/28/09	8260BM	
2-Hexanone	<	15.0	UG/KG	04/28/09	8260BM	
Methylisobutyl ketone	<	15.0	UG/KG	04/28/09	8260BM	

003438

Sample Number: 462142
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	15.0	UG/KG	04/28/09	8260BM	
Carbon disulfide	<	15.0	UG/KG	04/28/09	8260BM	
% Moisture - GC/MS Lab		0.50	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	15.0	UG/KG	04/28/09	8260BM	
Trichlorofluoromethane	<	15.0	UG/KG	04/28/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	15.0	UG/KG	04/28/09	8260BM	
Methyl Acetate	<	15.0	UG/KG	04/28/09	8260BM	
Methyl tert-butyl ether (MT	<	15.0	UG/KG	04/28/09	8260BM	
cis-1,2-Dichloroethene	<	15.0	UG/KG	04/28/09	8260BM	
Cyclohexane	<	15.0	UG/KG	04/28/09	8260BM	
Methylcyclohexane	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dibromoethane	<	15.0	UG/KG	04/28/09	8260BM	
Isopropylbenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,3-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,4-Dichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	
1,2-Dibromo-3-chloropropane	<	15.0	UG/KG	04/28/09	8260BM	
1,2,4-Trichlorobenzene	<	15.0	UG/KG	04/28/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	**126**
4-BROMOFLUOROBENZENE	**89**
TOLUENE-D8	**96**

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003439

Sample Number: 462142
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1018
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-6

ANALYST`S COMMENTS:

* * ANALYST

003440

Sample Number: 462143
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1032
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

C55-1

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.60		04/28/09	8260BM	
Benzene	<	16.0	UG/KG	04/29/09	8260BM	
Bromoform	<	16.0	UG/KG	04/29/09	8260BM	
Carbon tetrachloride	<	16.0	UG/KG	04/29/09	8260BM	
Chlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
Dibromochloromethane	<	16.0	UG/KG	04/29/09	8260BM	
Chloroethane	<	16.0	UG/KG	04/29/09	8260BM	
Chloroform	<	16.0	UG/KG	04/29/09	8260BM	
Bromodichloromethane	<	16.0	UG/KG	04/29/09	8260BM	
Ethylbenzene	<	16.0	UG/KG	04/29/09	8260BM	
Methyl chloride	<	16.0	UG/KG	04/29/09	8260BM	
Methylene chloride	<	16.0	UG/KG	04/29/09	8260BM	
Tetrachloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Toluene	<	16.0	UG/KG	04/29/09	8260BM	
Trichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Vinyl chloride	<	16.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
1,1,1-Trichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2,2-Tetrachloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichloropropane	<	16.0	UG/KG	04/29/09	8260BM	
trans-1,2-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
trans-1,3-Dichloropropene	<	16.0	UG/KG	04/29/09	8260BM	
cis-1,3-Dichloropropene	<	16.0	UG/KG	04/29/09	8260BM	
Total Xylenes	<	16.0	UG/KG	04/29/09	8260BM	
Acetone	<	16.0	UG/KG	04/29/09	8260BM	
Methylethyl ketone	<	16.0	UG/KG	04/29/09	8260BM	
2-Hexanone	<	16.0	UG/KG	04/29/09	8260BM	
Methylisobutyl ketone	<	16.0	UG/KG	04/29/09	8260BM	

Sample Number: 462143
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1032
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	16.0	UG/KG	04/29/09	8260BM	
Carbon disulfide	<	16.0	UG/KG	04/29/09	8260BM	
% Moisture - GC/MS Lab		11.0	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	16.0	UG/KG	04/29/09	8260BM	
Trichlorofluoromethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	16.0	UG/KG	04/29/09	8260BM	
Methyl Acetate	<	16.0	UG/KG	04/29/09	8260BM	
Methyl tert-butyl ether (M	<	16.0	UG/KG	04/29/09	8260BM	
cis-1,2-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Cyclohexane	<	16.0	UG/KG	04/29/09	8260BM	
Methylcyclohexane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dibromoethane	<	16.0	UG/KG	04/29/09	8260BM	
Isopropylbenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,3-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,4-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dibromo-3-chloropropan	<	16.0	UG/KG	04/29/09	8260BM	
1,2,4-Trichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	125
4-BROMOFLUOROBENZENE	97
TOLUENE-D8	93

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003442

Sample Number: 462143
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1032
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-7

ANALYST`S COMMENTS:

* * ANALYST

003443

Sample Number: 462144
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QU.
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

145-8

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		04/30/09	8260BM	
Benzene	<	14.0	UG/KG	04/30/09	8260BM	
Bromoform	<	14.0	UG/KG	04/30/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	04/30/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	04/30/09	8260BM	
Chloroethane	<	14.0	UG/KG	04/30/09	8260BM	
Chloroform	<	14.0	UG/KG	04/30/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	04/30/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	04/30/09	8260BM	
Methyl chloride	<	14.0	UG/KG	04/30/09	8260BM	
Methylene chloride	<	14.0	UG/KG	04/30/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Toluene	<	14.0	UG/KG	04/30/09	8260BM	
Trichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
l,1,1-Trichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
.,1,2-Trichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
,1,2,2-Tetrachloroethane	<	14.0	UG/KG	04/30/09	8260BM	
,2-Dichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
2-Dichloropropane	<	14.0	UG/KG	04/30/09	8260BM	
ans-1,2-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
ans-1,3-Dichloropropene	<	14.0	UG/KG	04/30/09	8260BM	
:-1,3-Dichloropropene	<	14.0	UG/KG	04/30/09	8260BM	
al Xylenes	<	14.0	UG/KG	04/30/09	8260BM	
tone	B	31.0	UG/KG	04/30/09	8260BM	
ıylethyl ketone	<	14.0	UG/KG	04/30/09	8260BM	
xanone	<	14.0	UG/KG	04/30/09	8260BM	
ylisobutyl ketone	<	14.0	UG/KG	04/30/09		

Sample Number: 462144
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	04/30/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	04/30/09	8260BM	
% Moisture - GC/MS Lab		0.40	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	04/30/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	04/30/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	04/30/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	04/30/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Cyclohexane	<	14.0	UG/KG	04/30/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	04/30/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	04/30/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	101
4-BROMOFLUOROBENZENE	72
TOLUENE-D8	112

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
NONE FOUND		0	

Summary

Labs performing analysis on this Sample:

GCMS

003445

Sample Number: 462144
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-8

ANALYST`S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST

Sample Number: 462144
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: FILE COPY

CC: TODD DOWNHAM/LPD

SAMPLE DATA

Name	Qualifier		Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:			1.40		04/30/09	8260BM	
Benzene		<	14.0	UG/KG	04/30/09	8260BM	
Bromoform		<	14.0	UG/KG	04/30/09	8260BM	
Carbon tetrachloride		<	14.0	UG/KG	04/30/09	8260BM	
Chlorobenzene		<	14.0	UG/KG	04/30/09	8260BM	
Dibromochloromethane		<	14.0	UG/KG	04/30/09	8260BM	
Chloroethane		<	14.0	UG/KG	04/30/09	8260BM	
Chloroform		<	14.0	UG/KG	04/30/09	8260BM	
Bromodichloromethane		<	14.0	UG/KG	04/30/09	8260BM	
Ethylbenzene		<	14.0	UG/KG	04/30/09	8260BM	
Methyl chloride		<	14.0	UG/KG	04/30/09	8260BM	
Methylene chloride		<	14.0	UG/KG	04/30/09	8260BM	
Tetrachloroethene		<	14.0	UG/KG	04/30/09	8260BM	
Toluene		<	14.0	UG/KG	04/30/09	8260BM	
Trichloroethene		<	14.0	UG/KG	04/30/09	8260BM	
Vinyl chloride		<	14.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethane		<	14.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethene		<	14.0	UG/KG	04/30/09	8260BM	
1,1,1-Trichloroethane		<	14.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloroethane		<	14.0	UG/KG	04/30/09	8260BM	
1,1,2,2-Tetrachloroethane		<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichloroethane		<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichloropropane		<	14.0	UG/KG	04/30/09	8260BM	
trans-1,2-Dichloroethene		<	14.0	UG/KG	04/30/09	8260BM	
trans-1,3-Dichloropropene		<	14.0	UG/KG	04/30/09	8260BM	
cis-1,3-Dichloropropene		<	14.0	UG/KG	04/30/09	8260BM	
Total Xylenes		<	14.0	UG/KG	04/30/09	8260BM	
Acetone	B		31.0	UG/KG	04/30/09	8260BM	
Methylethyl ketone		<	14.0	UG/KG	04/30/09	8260BM	
2-Hexanone		<	14.0	UG/KG	04/30/09	8260BM	
Methylisobutyl ketone		<	14.0	UG/KG	04/30/09	8260BM	

Sample Number: 462144
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: FILE COPY

CC: TODD DOWNHAM/LPD

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	04/30/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	04/30/09	8260BM	
% Moisture - GC/MS Lab		0.40	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	04/30/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	04/30/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	04/30/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	04/30/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Cyclohexane	<	14.0	UG/KG	04/30/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	04/30/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	04/30/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	101
4-BROMOFLUOROBENZENE	72
TOLUENE-D8	112

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462144
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0945
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: FILE COPY

CC: TODD DOWNHAM/LPD

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-8

ANALYST'S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST

Sample Number: 462145
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

LSS-9

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		04/29/09	8260BM	
Benzene	<	14.0	UG/KG	04/29/09	8260BM	
Bromoform	<	14.0	UG/KG	04/29/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	04/29/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	04/29/09	8260BM	
Chloroethane	<	14.0	UG/KG	04/29/09	8260BM	
Chloroform	<	14.0	UG/KG	04/29/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	04/29/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	04/29/09	8260BM	
Methyl chloride	<	14.0	UG/KG	04/29/09	8260BM	
Methylene chloride	<	14.0	UG/KG	04/29/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	04/29/09	8260BM	
Toluene	<	14.0	UG/KG	04/29/09	8260BM	
Trichloroethene	<	14.0	UG/KG	04/29/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	04/29/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	04/29/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	04/29/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	04/29/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	04/29/09	8260BM	
Total Xylenes	<	14.0	UG/KG	04/29/09	8260BM	
Acetone	<	14.0	UG/KG	04/29/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	04/29/09	8260BM	
2-Hexanone	<	14.0	UG/KG	04/29/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	04/29/09	8260BM	

Sample Number: 462145
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	04/29/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	04/29/09	8260BM	
% Moisture - GC/MS Lab		1.00	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	04/29/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	04/29/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	04/29/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	04/29/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	04/29/09	8260BM	
Cyclohexane	<	14.0	UG/KG	04/29/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	04/29/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	04/29/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	**128**
4-BROMOFLUOROBENZENE	**90**
TOLUENE-D8	**96**

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003451

Sample Number: 462145
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-9

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462146
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0959
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

LSS-10

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		04/29/09	8260BM	
Benzene	<	14.0	UG/KG	04/29/09	8260BM	
Bromoform	<	14.0	UG/KG	04/29/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	04/29/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	04/29/09	8260BM	
Chloroethane	<	14.0	UG/KG	04/29/09	8260BM	
Chloroform	<	14.0	UG/KG	04/29/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	04/29/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	04/29/09	8260BM	
Methyl chloride	<	14.0	UG/KG	04/29/09	8260BM	
Methylene chloride	<	14.0	UG/KG	04/29/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	04/29/09	8260BM	
Toluene	<	14.0	UG/KG	04/29/09	8260BM	
Trichloroethene	<	14.0	UG/KG	04/29/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	04/29/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	04/29/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	04/29/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	04/29/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	04/29/09	8260BM	
Total Xylenes	<	14.0	UG/KG	04/29/09	8260BM	
Acetone	<	14.0	UG/KG	04/29/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	04/29/09	8260BM	
2-Hexanone	<	14.0	UG/KG	04/29/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	04/29/09	8260BM	

003453

Sample Number: 462146
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0959
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	04/29/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	04/29/09	8260BM	
% Moisture - GC/MS Lab		0.40	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	04/29/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	04/29/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	04/29/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	04/29/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	04/29/09	8260BM	
Cyclohexane	<	14.0	UG/KG	04/29/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	04/29/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	04/29/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	04/29/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	**127**
4-BROMOFLUOROBENZENE	**77**
TOLUENE-D8	**108**

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003454

Sample Number: 462146
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0959
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-10

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462147
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1016
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

LSS-11

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		05/04/09	8260BM	
Benzene	<	14.0	UG/KG	05/04/09	8260BM	
Bromoform	<	14.0	UG/KG	05/04/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	05/04/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	05/04/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	05/04/09	8260BM	
Chloroethane	<	14.0	UG/KG	05/04/09	8260BM	
Chloroform	<	14.0	UG/KG	05/04/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	05/04/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	05/04/09	8260BM	
Methyl chloride	<	14.0	UG/KG	05/04/09	8260BM	
Methylene chloride	<	14.0	UG/KG	05/04/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	05/04/09	8260BM	
Toluene	<	14.0	UG/KG	05/04/09	8260BM	
Trichloroethene	<	14.0	UG/KG	05/04/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	05/04/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	05/04/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	05/04/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	05/04/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	05/04/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	05/04/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	05/04/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	05/04/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	05/04/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	05/04/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	05/04/09	8260BM	
Total Xylenes	<	14.0	UG/KG	05/04/09	8260BM	
Acetone	<	14.0	UG/KG	05/04/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	05/04/09	8260BM	
2-Hexanone	<	14.0	UG/KG	05/04/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	05/04/09	8260BM	

003456

Sample Number: 462147
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1016
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	05/04/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	05/04/09	8260BM	
% Moisture - GC/MS Lab		0.60	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	05/04/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	05/04/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	05/04/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	05/04/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	05/04/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	05/04/09	8260BM	
Cyclohexane	<	14.0	UG/KG	05/04/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	05/04/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	05/04/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	05/04/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	05/04/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	05/04/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	05/04/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	05/04/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	05/04/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	98
4-BROMOFLUOROBENZENE	84
TOLUENE-D8	108

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003457

Sample Number: 462148
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1031
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-12

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462149
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1022
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

LSS-13

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.60		04/29/09	8260BM	
Benzene	<	16.0	UG/KG	04/29/09	8260BM	
Bromoform	<	16.0	UG/KG	04/29/09	8260BM	
Carbon tetrachloride	<	16.0	UG/KG	04/29/09	8260BM	
Chlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
Dibromochloromethane	<	16.0	UG/KG	04/29/09	8260BM	
Chloroethane	<	16.0	UG/KG	04/29/09	8260BM	
Chloroform	<	16.0	UG/KG	04/29/09	8260BM	
Bromodichloromethane	<	16.0	UG/KG	04/29/09	8260BM	
Ethylbenzene	<	16.0	UG/KG	04/29/09	8260BM	
Methyl chloride	<	16.0	UG/KG	04/29/09	8260BM	
Methylene chloride	<	16.0	UG/KG	04/29/09	8260BM	
Tetrachloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Toluene	<	16.0	UG/KG	04/29/09	8260BM	
Trichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Vinyl chloride	<	16.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
1,1,1-Trichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2,2-Tetrachloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichloropropane	<	16.0	UG/KG	04/29/09	8260BM	
trans-1,2-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
trans-1,3-Dichloropropene	<	16.0	UG/KG	04/29/09	8260BM	
cis-1,3-Dichloropropene	<	16.0	UG/KG	04/29/09	8260BM	
Total Xylenes	<	16.0	UG/KG	04/29/09	8260BM	
Acetone	B	40.0	UG/KG	04/29/09	8260BM	
Methylethyl ketone	<	16.0	UG/KG	04/29/09	8260BM	
2-Hexanone	<	16.0	UG/KG	04/29/09	8260BM	
Methylisobutyl ketone	<	16.0	UG/KG	04/29/09	8260BM	

Sample Number: 462149
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1022
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	16.0	UG/KG	04/29/09	8260BM	
Carbon disulfide	<	16.0	UG/KG	04/29/09	8260BM	
% Moisture - GC/MS Lab		11.0	%	04/24/09	1005 M	
Dichlorodifluoromethane	<	16.0	UG/KG	04/29/09	8260BM	
Trichlorofluoromethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	16.0	UG/KG	04/29/09	8260BM	
Methyl Acetate	<	16.0	UG/KG	04/29/09	8260BM	
Methyl tert-butyl ether (M	<	16.0	UG/KG	04/29/09	8260BM	
cis-1,2-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Cyclohexane	<	16.0	UG/KG	04/29/09	8260BM	
Methylcyclohexane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dibromoethane	<	16.0	UG/KG	04/29/09	8260BM	
Isopropylbenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,3-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,4-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dibromo-3-chloropropan	<	16.0	UG/KG	04/29/09	8260BM	
1,2,4-Trichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	127
4-BROMOFLUOROBENZENE	93
TOLUENE-D8	92

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003460

Sample Number: 462149
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1022
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-13

ANALYST'S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST _____

Sample Number: 462150
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0952
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

L 55-14

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.80		04/29/09	8260BM	
Benzene	<	18.0	UG/KG	04/29/09	8260BM	
Bromoform	<	18.0	UG/KG	04/29/09	8260BM	
Carbon tetrachloride	<	18.0	UG/KG	04/29/09	8260BM	
Chlorobenzene	<	18.0	UG/KG	04/29/09	8260BM	
Dibromochloromethane	<	18.0	UG/KG	04/29/09	8260BM	
Chloroethane	<	18.0	UG/KG	04/29/09	8260BM	
Chloroform	<	18.0	UG/KG	04/29/09	8260BM	
Bromodichloromethane	<	18.0	UG/KG	04/29/09	8260BM	
Ethylbenzene	<	18.0	UG/KG	04/29/09	8260BM	
Methyl chloride	<	18.0	UG/KG	04/29/09	8260BM	
Methylene chloride	<	18.0	UG/KG	04/29/09	8260BM	
Tetrachloroethene	<	18.0	UG/KG	04/29/09	8260BM	
Toluene	<	18.0	UG/KG	04/29/09	8260BM	
Trichloroethene	<	18.0	UG/KG	04/29/09	8260BM	
Vinyl chloride	<	18.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethane	<	18.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethene	<	18.0	UG/KG	04/29/09	8260BM	
1,1,1-Trichloroethane	<	18.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloroethane	<	18.0	UG/KG	04/29/09	8260BM	
1,1,2,2-Tetrachloroethane	<	18.0	UG/KG	04/29/09	8260BM	
1,2-Dichloroethane	<	18.0	UG/KG	04/29/09	8260BM	
1,2-Dichloropropane	<	18.0	UG/KG	04/29/09	8260BM	
trans-1,2-Dichloroethene	<	18.0	UG/KG	04/29/09	8260BM	
trans-1,3-Dichloropropene	<	18.0	UG/KG	04/29/09	8260BM	
cis-1,3-Dichloropropene	<	18.0	UG/KG	04/29/09	8260BM	
Total Xylenes	<	18.0	UG/KG	04/29/09	8260BM	
Acetone	B	22.0	UG/KG	04/29/09	8260BM	
Methylethyl ketone	<	18.0	UG/KG	04/29/09	8260BM	
2-Hexanone	<	18.0	UG/KG	04/29/09	8260BM	
Methylisobutyl ketone	<	18.0	UG/KG	04/29/09	8260BM	

Sample Number: 462150
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0952
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	18.0	UG/KG	04/29/09	8260BM	
Carbon disulfide	<	18.0	UG/KG	04/29/09	8260BM	
% Moisture - GC/MS Lab		13.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	18.0	UG/KG	04/29/09	8260BM	
Trichlorofluoromethane	<	18.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	18.0	UG/KG	04/29/09	8260BM	
Methyl Acetate	<	18.0	UG/KG	04/29/09	8260BM	
Methyl tert-butyl ether (M	<	18.0	UG/KG	04/29/09	8260BM	
cis-1,2-Dichloroethene	<	18.0	UG/KG	04/29/09	8260BM	
Cyclohexane	<	18.0	UG/KG	04/29/09	8260BM	
Methylcyclohexane	<	18.0	UG/KG	04/29/09	8260BM	
1,2-Dibromoethane	<	18.0	UG/KG	04/29/09	8260BM	
Isopropylbenzene	<	18.0	UG/KG	04/29/09	8260BM	
1,2-Dichlorobenzene	<	18.0	UG/KG	04/29/09	8260BM	
1,3-Dichlorobenzene	<	18.0	UG/KG	04/29/09	8260BM	
1,4-Dichlorobenzene	<	18.0	UG/KG	04/29/09	8260BM	
1,2-Dibromo-3-chloropropan	<	18.0	UG/KG	04/29/09	8260BM	
1,2,4-Trichlorobenzene	<	18.0	UG/KG	04/29/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	130
4-BROMOFLUOROBENZENE	94
TOLUENE-D8	86

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
NONE FOUND		0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462150
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0952
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-14

ANALYST`S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST _____

Sample Number: 462151
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

L99-5

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.70		04/29/09	8260BM	
Benzene	<	17.0	UG/KG	04/29/09	8260BM	
Bromoform	<	17.0	UG/KG	04/29/09	8260BM	
Carbon tetrachloride	<	17.0	UG/KG	04/29/09	8260BM	
Chlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	
Dibromochloromethane	<	17.0	UG/KG	04/29/09	8260BM	
Chloroethane	<	17.0	UG/KG	04/29/09	8260BM	
Chloroform	<	17.0	UG/KG	04/29/09	8260BM	
Bromodichloromethane	<	17.0	UG/KG	04/29/09	8260BM	
Ethylbenzene	<	17.0	UG/KG	04/29/09	8260BM	
Methyl chloride	<	17.0	UG/KG	04/29/09	8260BM	
Methylene chloride	<	17.0	UG/KG	04/29/09	8260BM	
Tetrachloroethene	<	17.0	UG/KG	04/29/09	8260BM	
Toluene	<	17.0	UG/KG	04/29/09	8260BM	
Trichloroethene	<	17.0	UG/KG	04/29/09	8260BM	
Vinyl chloride	<	17.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethene	<	17.0	UG/KG	04/29/09	8260BM	
1,1,1-Trichloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,1,2,2-Tetrachloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dichloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dichloropropane	<	17.0	UG/KG	04/29/09	8260BM	
trans-1,2-Dichloroethene	<	17.0	UG/KG	04/29/09	8260BM	
trans-1,3-Dichloropropene	<	17.0	UG/KG	04/29/09	8260BM	
cis-1,3-Dichloropropene	<	17.0	UG/KG	04/29/09	8260BM	
Total Xylenes	<	17.0	UG/KG	04/29/09	8260BM	
Acetone	<	17.0	UG/KG	04/29/09	8260BM	
Methylethyl ketone	<	17.0	UG/KG	04/29/09	8260BM	
2-Hexanone	<	17.0	UG/KG	04/29/09	8260BM	
Methylisobutyl ketone	<	17.0	UG/KG	04/29/09	8260BM	

Sample Number: 462151
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	17.0	UG/KG	04/29/09	8260BM	
Carbon disulfide	<	17.0	UG/KG	04/29/09	8260BM	
% Moisture - GC/MS Lab		12.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	17.0	UG/KG	04/29/09	8260BM	
Trichlorofluoromethane	<	17.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	17.0	UG/KG	04/29/09	8260BM	
Methyl Acetate	<	17.0	UG/KG	04/29/09	8260BM	
Methyl tert-butyl ether (MT	<	17.0	UG/KG	04/29/09	8260BM	
cis-1,2-Dichloroethene	<	17.0	UG/KG	04/29/09	8260BM	
Cyclohexane	<	17.0	UG/KG	04/29/09	8260BM	
Methylcyclohexane	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dibromoethane	<	17.0	UG/KG	04/29/09	8260BM	
Isopropylbenzene	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dichlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	
1,3-Dichlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	
1,4-Dichlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dibromo-3-chloropropane	<	17.0	UG/KG	04/29/09	8260BM	
1,2,4-Trichlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	105
4-BROMOFLUOROBENZENE	87
TOLUENE-D8	102

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003466

Sample Number: 462151
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-15

ANALYST`S COMMENTS:

* * **ANALYST** _____

Sample Number: 462152
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1004
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

L55-16

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.70		04/29/09	8260BM	
Benzene	<	17.0	UG/KG	04/29/09	8260BM	
Bromoform	<	17.0	UG/KG	04/29/09	8260BM	
Carbon tetrachloride	<	17.0	UG/KG	04/29/09	8260BM	
Chlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	
Dibromochloromethane	<	17.0	UG/KG	04/29/09	8260BM	
Chloroethane	<	17.0	UG/KG	04/29/09	8260BM	
Chloroform	<	17.0	UG/KG	04/29/09	8260BM	
Bromodichloromethane	<	17.0	UG/KG	04/29/09	8260BM	
Ethylbenzene	<	17.0	UG/KG	04/29/09	8260BM	
Methyl chloride	<	17.0	UG/KG	04/29/09	8260BM	
Methylene chloride	<	17.0	UG/KG	04/29/09	8260BM	
Tetrachloroethene	<	17.0	UG/KG	04/29/09	8260BM	
Toluene	<	17.0	UG/KG	04/29/09	8260BM	
Trichloroethene	<	17.0	UG/KG	04/29/09	8260BM	
Vinyl chloride	<	17.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethene	<	17.0	UG/KG	04/29/09	8260BM	
1,1,1-Trichloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,1,2,2-Tetrachloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dichloroethane	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dichloropropane	<	17.0	UG/KG	04/29/09	8260BM	
trans-1,2-Dichloroethene	<	17.0	UG/KG	04/29/09	8260BM	
trans-1,3-Dichloropropene	<	17.0	UG/KG	04/29/09	8260BM	
cis-1,3-Dichloropropene	<	17.0	UG/KG	04/29/09	8260BM	
Total Xylenes	<	17.0	UG/KG	04/29/09	8260BM	
Acetone	<	17.0	UG/KG	04/29/09	8260BM	
Methylethyl ketone	<	17.0	UG/KG	04/29/09	8260BM	
2-Hexanone	<	17.0	UG/KG	04/29/09	8260BM	
Methylisobutyl ketone	<	17.0	UG/KG	04/29/09	8260BM	

Sample Number: 462152
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1004
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	17.0	UG/KG	04/29/09	8260BM	
Carbon disulfide	<	17.0	UG/KG	04/29/09	8260BM	
% Moisture - GC/MS Lab		12.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	17.0	UG/KG	04/29/09	8260BM	
Trichlorofluoromethane	<	17.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	17.0	UG/KG	04/29/09	8260BM	
Methyl Acetate	<	17.0	UG/KG	04/29/09	8260BM	
Methyl tert-butyl ether (MT	<	17.0	UG/KG	04/29/09	8260BM	
cis-1,2-Dichloroethene	<	17.0	UG/KG	04/29/09	8260BM	
Cyclohexane	<	17.0	UG/KG	04/29/09	8260BM	
Methylcyclohexane	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dibromoethane	<	17.0	UG/KG	04/29/09	8260BM	
Isopropylbenzene	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dichlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	
1,3-Dichlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	
1,4-Dichlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	
1,2-Dibromo-3-chloropropane	<	17.0	UG/KG	04/29/09	8260BM	
1,2,4-Trichlorobenzene	<	17.0	UG/KG	04/29/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	103
4-BROMOFLUOROBENZENE	85
TOLUENE-D8	104

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003469

Sample Number: 462152
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1004
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-16

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462153
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0954
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

L45-17

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.60		04/29/09	8260BM	
Benzene	<	16.0	UG/KG	04/29/09	8260BM	
Bromoform	<	16.0	UG/KG	04/29/09	8260BM	
Carbon tetrachloride	<	16.0	UG/KG	04/29/09	8260BM	
Chlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
Dibromochloromethane	<	16.0	UG/KG	04/29/09	8260BM	
Chloroethane	<	16.0	UG/KG	04/29/09	8260BM	
Chloroform	<	16.0	UG/KG	04/29/09	8260BM	
Bromodichloromethane	<	16.0	UG/KG	04/29/09	8260BM	
Ethylbenzene	<	16.0	UG/KG	04/29/09	8260BM	
Methyl chloride	<	16.0	UG/KG	04/29/09	8260BM	
Methylene chloride	<	16.0	UG/KG	04/29/09	8260BM	
Tetrachloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Toluene	<	16.0	UG/KG	04/29/09	8260BM	
Trichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Vinyl chloride	<	16.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
1,1,1-Trichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2,2-Tetrachloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichloroethane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichloropropane	<	16.0	UG/KG	04/29/09	8260BM	
trans-1,2-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
trans-1,3-Dichloropropene	<	16.0	UG/KG	04/29/09	8260BM	
cis-1,3-Dichloropropene	<	16.0	UG/KG	04/29/09	8260BM	
Total Xylenes	<	16.0	UG/KG	04/29/09	8260BM	
Acetone	<	16.0	UG/KG	04/29/09	8260BM	
Methylethyl ketone	<	16.0	UG/KG	04/29/09	8260BM	
2-Hexanone	<	16.0	UG/KG	04/29/09	8260BM	
Methylisobutyl ketone	<	16.0	UG/KG	04/29/09	8260BM	

Sample Number: 462153
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0954
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	16.0	UG/KG	04/29/09	8260BM	
Carbon disulfide	<	16.0	UG/KG	04/29/09	8260BM	
% Moisture - GC/MS Lab		11.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	16.0	UG/KG	04/29/09	8260BM	
Trichlorofluoromethane	<	16.0	UG/KG	04/29/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	16.0	UG/KG	04/29/09	8260BM	
Methyl Acetate	<	16.0	UG/KG	04/29/09	8260BM	
Methyl tert-butyl ether (MT	<	16.0	UG/KG	04/29/09	8260BM	
cis-1,2-Dichloroethene	<	16.0	UG/KG	04/29/09	8260BM	
Cyclohexane	<	16.0	UG/KG	04/29/09	8260BM	
Methylcyclohexane	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dibromoethane	<	16.0	UG/KG	04/29/09	8260BM	
Isopropylbenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,3-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,4-Dichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	
1,2-Dibromo-3-chloropropane	<	16.0	UG/KG	04/29/09	8260BM	
1,2,4-Trichlorobenzene	<	16.0	UG/KG	04/29/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	108
4-BROMOFLUOROBENZENE	74
TOLUENE-D8	104

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462153
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0954
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-17

ANALYST`S COMMENTS:

* * **ANALYST**

Sample Number: 462154
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0937
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.50		04/30/09	8260BM	
Benzene	<	15.0	UG/KG	04/30/09	8260BM	
Bromoform	<	15.0	UG/KG	04/30/09	8260BM	
Carbon tetrachloride	<	15.0	UG/KG	04/30/09	8260BM	
Chlorobenzene	<	15.0	UG/KG	04/30/09	8260BM	
Dibromochloromethane	<	15.0	UG/KG	04/30/09	8260BM	
Chloroethane	<	15.0	UG/KG	04/30/09	8260BM	
Chloroform	<	15.0	UG/KG	04/30/09	8260BM	
Bromodichloromethane	<	15.0	UG/KG	04/30/09	8260BM	
Ethylbenzene	<	15.0	UG/KG	04/30/09	8260BM	
Methyl chloride	<	15.0	UG/KG	04/30/09	8260BM	
Methylene chloride	<	15.0	UG/KG	04/30/09	8260BM	
Tetrachloroethene	<	15.0	UG/KG	04/30/09	8260BM	
Toluene	<	15.0	UG/KG	04/30/09	8260BM	
Trichloroethene	<	15.0	UG/KG	04/30/09	8260BM	
Vinyl chloride	<	15.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethane	<	15.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethene	<	15.0	UG/KG	04/30/09	8260BM	
1,1,1-Trichloroethane	<	15.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloroethane	<	15.0	UG/KG	04/30/09	8260BM	
1,1,2,2-Tetrachloroethane	<	15.0	UG/KG	04/30/09	8260BM	
1,2-Dichloroethane	<	15.0	UG/KG	04/30/09	8260BM	
1,2-Dichloropropane	<	15.0	UG/KG	04/30/09	8260BM	
trans-1,2-Dichloroethene	<	15.0	UG/KG	04/30/09	8260BM	
trans-1,3-Dichloropropene	<	15.0	UG/KG	04/30/09	8260BM	
cis-1,3-Dichloropropene	<	15.0	UG/KG	04/30/09	8260BM	
Total Xylenes	<	15.0	UG/KG	04/30/09	8260BM	
Acetone	B	150.0	UG/KG	04/30/09	8260BM	
Methylethyl ketone	<	15.0	UG/KG	04/30/09	8260BM	
2-Hexanone	<	15.0	UG/KG	04/30/09	8260BM	
Methylisobutyl ketone	<	15.0	UG/KG	04/30/09	8260BM	

Sample Number: 462154
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0937
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	15.0	UG/KG	04/30/09	8260BM	
Carbon disulfide	<	15.0	UG/KG	04/30/09	8260BM	
% Moisture - GC/MS Lab		9.40	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	15.0	UG/KG	04/30/09	8260BM	
Trichlorofluoromethane	<	15.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	15.0	UG/KG	04/30/09	8260BM	
Methyl Acetate	<	15.0	UG/KG	04/30/09	8260BM	
Methyl tert-butyl ether (M	<	15.0	UG/KG	04/30/09	8260BM	
cis-1,2-Dichloroethene	<	15.0	UG/KG	04/30/09	8260BM	
Cyclohexane	<	15.0	UG/KG	04/30/09	8260BM	
Methylcyclohexane	<	15.0	UG/KG	04/30/09	8260BM	
1,2-Dibromoethane	<	15.0	UG/KG	04/30/09	8260BM	
Isopropylbenzene	<	15.0	UG/KG	04/30/09	8260BM	
1,2-Dichlorobenzene	<	15.0	UG/KG	04/30/09	8260BM	
1,3-Dichlorobenzene	<	15.0	UG/KG	04/30/09	8260BM	
1,4-Dichlorobenzene	<	15.0	UG/KG	04/30/09	8260BM	
1,2-Dibromo-3-chloropropan	<	15.0	UG/KG	04/30/09	8260BM	
1,2,4-Trichlorobenzene	<	15.0	UG/KG	04/30/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	105
4-BROMOFLUOROBENZENE	74
TOLUENE-D8	105

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
NONE FOUND		0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462154
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0937
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-18

ANALYST`S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST

Sample Number: 462156
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1122
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier		Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:			1.70		04/30/09	8260BM	
Benzene		<	17.0	UG/KG	04/30/09	8260BM	
Bromoform		<	17.0	UG/KG	04/30/09	8260BM	
Carbon tetrachloride		<	17.0	UG/KG	04/30/09	8260BM	
Chlorobenzene		<	17.0	UG/KG	04/30/09	8260BM	
Dibromochloromethane		<	17.0	UG/KG	04/30/09	8260BM	
Chloroethane		<	17.0	UG/KG	04/30/09	8260BM	
Chloroform		<	17.0	UG/KG	04/30/09	8260BM	
Bromodichloromethane		<	17.0	UG/KG	04/30/09	8260BM	
Ethylbenzene		<	17.0	UG/KG	04/30/09	8260BM	
Methyl chloride		<	17.0	UG/KG	04/30/09	8260BM	
Methylene chloride		<	17.0	UG/KG	04/30/09	8260BM	
Tetrachloroethene		<	17.0	UG/KG	04/30/09	8260BM	
Toluene		<	17.0	UG/KG	04/30/09	8260BM	
Trichloroethene		<	17.0	UG/KG	04/30/09	8260BM	
Vinyl chloride		<	17.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethane		<	17.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethene		<	17.0	UG/KG	04/30/09	8260BM	
1,1,1-Trichloroethane		<	17.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloroethane		<	17.0	UG/KG	04/30/09	8260BM	
1,1,2,2-Tetrachloroethane		<	17.0	UG/KG	04/30/09	8260BM	
1,2-Dichloroethane		<	17.0	UG/KG	04/30/09	8260BM	
1,2-Dichloropropane		<	17.0	UG/KG	04/30/09	8260BM	
trans-1,2-Dichloroethene		<	17.0	UG/KG	04/30/09	8260BM	
trans-1,3-Dichloropropene		<	17.0	UG/KG	04/30/09	8260BM	
cis-1,3-Dichloropropene		<	17.0	UG/KG	04/30/09	8260BM	
Total Xylenes		<	17.0	UG/KG	04/30/09	8260BM	
Acetone	B		117.0	UG/KG	04/30/09	8260BM	
Methylethyl ketone		<	17.0	UG/KG	04/30/09	8260BM	
2-Hexanone		<	17.0	UG/KG	04/30/09	8260BM	
Methylisobutyl ketone		<	17.0	UG/KG	04/30/09	8260BM	

Sample Number: 462156
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1122
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	17.0	UG/KG	04/30/09	8260BM	
Carbon disulfide	<	17.0	UG/KG	04/30/09	8260BM	
% Moisture - GC/MS Lab		25.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	17.0	UG/KG	04/30/09	8260BM	
Trichlorofluoromethane	<	17.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	17.0	UG/KG	04/30/09	8260BM	
Methyl Acetate	<	17.0	UG/KG	04/30/09	8260BM	
Methyl tert-butyl ether (MT	<	17.0	UG/KG	04/30/09	8260BM	
cis-1,2-Dichloroethene	<	17.0	UG/KG	04/30/09	8260BM	
Cyclohexane	<	17.0	UG/KG	04/30/09	8260BM	
Methylcyclohexane	<	17.0	UG/KG	04/30/09	8260BM	
1,2-Dibromoethane	<	17.0	UG/KG	04/30/09	8260BM	
Isopropylbenzene	<	17.0	UG/KG	04/30/09	8260BM	
1,2-Dichlorobenzene	<	17.0	UG/KG	04/30/09	8260BM	
1,3-Dichlorobenzene	<	17.0	UG/KG	04/30/09	8260BM	
1,4-Dichlorobenzene	<	17.0	UG/KG	04/30/09	8260BM	
1,2-Dibromo-3-chloropropane	<	17.0	UG/KG	04/30/09	8260BM	
1,2,4-Trichlorobenzene	<	17.0	UG/KG	04/30/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	104
4-BROMOFLUOROBENZENE	89
TOLUENE-D8	101

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003478

Sample Number: 462156
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1122
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-1

ANALYST'S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST _____

Sample Number: 462157
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1118
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

L-1-2

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		04/30/09	8260BM	
Benzene	<	14.0	UG/KG	04/30/09	8260BM	
Bromoform	<	14.0	UG/KG	04/30/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	04/30/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	04/30/09	8260BM	
Chloroethane	<	14.0	UG/KG	04/30/09	8260BM	
Chloroform	<	14.0	UG/KG	04/30/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	04/30/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	04/30/09	8260BM	
Methyl chloride	<	14.0	UG/KG	04/30/09	8260BM	
Methylene chloride	<	14.0	UG/KG	04/30/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Toluene	<	14.0	UG/KG	04/30/09	8260BM	
Trichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	04/30/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	04/30/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	04/30/09	8260BM	
Total Xylenes	<	14.0	UG/KG	04/30/09	8260BM	
Acetone	B	191.0	UG/KG	04/30/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	04/30/09	8260BM	
2-Hexanone	<	14.0	UG/KG	04/30/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	04/30/09	8260BM	

003480

Sample Number: 462157
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1118
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

To: TODD DOWNHAM/LPD

CC: FILE COPY

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	04/30/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	04/30/09	8260BM	
% Moisture - GC/MS Lab		16.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	04/30/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	04/30/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	04/30/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	04/30/09	8260BM	
Methyl tert-butyl ether (MT	<	14.0	UG/KG	04/30/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	04/30/09	8260BM	
Cyclohexane	<	14.0	UG/KG	04/30/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	04/30/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	
1,2-Dibromo-3-chloropropane	<	14.0	UG/KG	04/30/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	04/30/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	106
4-BROMOFLUOROBENZENE	92
TOLUENE-D8	98

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
NONE FOUND		0	

Summary

Labs performing analysis on this Sample:

GCMS

003481

Sample Number: 462157
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1118
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

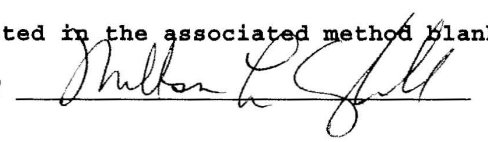
To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-2

ANALYST`S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST 

Sample Number: 462158
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

LSD-5

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.60		05/01/09	8260BM	
Benzene	<	16.0	UG/KG	05/01/09	8260BM	
Bromoform	<	16.0	UG/KG	05/01/09	8260BM	
Carbon tetrachloride	<	16.0	UG/KG	05/01/09	8260BM	
Chlorobenzene	<	16.0	UG/KG	05/01/09	8260BM	
Dibromochloromethane	<	16.0	UG/KG	05/01/09	8260BM	
Chloroethane	<	16.0	UG/KG	05/01/09	8260BM	
Chloroform	<	16.0	UG/KG	05/01/09	8260BM	
Bromodichloromethane	<	16.0	UG/KG	05/01/09	8260BM	
Ethylbenzene	<	16.0	UG/KG	05/01/09	8260BM	
Methyl chloride	<	16.0	UG/KG	05/01/09	8260BM	
Methylene chloride	<	16.0	UG/KG	05/01/09	8260BM	
Tetrachloroethene	<	16.0	UG/KG	05/01/09	8260BM	
Toluene	<	16.0	UG/KG	05/01/09	8260BM	
Trichloroethene	<	16.0	UG/KG	05/01/09	8260BM	
Vinyl chloride	<	16.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethane	<	16.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethene	<	16.0	UG/KG	05/01/09	8260BM	
1,1,1-Trichloroethane	<	16.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloroethane	<	16.0	UG/KG	05/01/09	8260BM	
1,1,2,2-Tetrachloroethane	<	16.0	UG/KG	05/01/09	8260BM	
1,2-Dichloroethane	<	16.0	UG/KG	05/01/09	8260BM	
1,2-Dichloropropane	<	16.0	UG/KG	05/01/09	8260BM	
trans-1,2-Dichloroethene	<	16.0	UG/KG	05/01/09	8260BM	
trans-1,3-Dichloropropene	<	16.0	UG/KG	05/01/09	8260BM	
cis-1,3-Dichloropropene	<	16.0	UG/KG	05/01/09	8260BM	
Total Xylenes	<	16.0	UG/KG	05/01/09	8260BM	
Acetone	<	16.0	UG/KG	05/01/09	8260BM	
Methylethyl ketone	<	16.0	UG/KG	05/01/09	8260BM	
2-Hexanone	<	16.0	UG/KG	05/01/09	8260BM	
Methylisobutyl ketone	<	16.0	UG/KG	05/01/09	8260BM	

Sample Number: 462158
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

To: TODD DOWNHAM/LPD

CC: FILE COPY

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	16.0	UG/KG	05/01/09	8260BM	
Carbon disulfide	<	16.0	UG/KG	05/01/09	8260BM	
% Moisture - GC/MS Lab		16.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	16.0	UG/KG	05/01/09	8260BM	
Trichlorofluoromethane	<	16.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	16.0	UG/KG	05/01/09	8260BM	
Methyl Acetate	<	16.0	UG/KG	05/01/09	8260BM	
Methyl tert-butyl ether (M	<	16.0	UG/KG	05/01/09	8260BM	
cis-1,2-Dichloroethene	<	16.0	UG/KG	05/01/09	8260BM	
Cyclohexane	<	16.0	UG/KG	05/01/09	8260BM	
Methylcyclohexane	<	16.0	UG/KG	05/01/09	8260BM	
1,2-Dibromoethane	<	16.0	UG/KG	05/01/09	8260BM	
Isopropylbenzene	<	16.0	UG/KG	05/01/09	8260BM	
1,2-Dichlorobenzene	<	16.0	UG/KG	05/01/09	8260BM	
1,3-Dichlorobenzene	<	16.0	UG/KG	05/01/09	8260BM	
1,4-Dichlorobenzene	<	16.0	UG/KG	05/01/09	8260BM	
1,2-Dibromo-3-chloropropan	<	16.0	UG/KG	05/01/09	8260BM	
1,2,4-Trichlorobenzene	<	16.0	UG/KG	05/01/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	**111**
4-BROMOFLUOROBENZENE	**79**
TOLUENE-D8	**107**

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003484

Sample Number: 462158
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-3

ANALYST`S COMMENTS:

* * ANALYST Milton P. Gilly

Sample Number: 462159
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

LPD-4

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.70		05/01/09	8260BM	
Benzene	<	17.0	UG/KG	05/01/09	8260BM	
Bromoform	<	17.0	UG/KG	05/01/09	8260BM	
Carbon tetrachloride	<	17.0	UG/KG	05/01/09	8260BM	
Chlorobenzene	<	17.0	UG/KG	05/01/09	8260BM	
Dibromochloromethane	<	17.0	UG/KG	05/01/09	8260BM	
Chloroethane	<	17.0	UG/KG	05/01/09	8260BM	
Chloroform	<	17.0	UG/KG	05/01/09	8260BM	
Bromodichloromethane	<	17.0	UG/KG	05/01/09	8260BM	
Ethylbenzene	<	17.0	UG/KG	05/01/09	8260BM	
Methyl chloride	<	17.0	UG/KG	05/01/09	8260BM	
Methylene chloride	<	17.0	UG/KG	05/01/09	8260BM	
Tetrachloroethene	<	17.0	UG/KG	05/01/09	8260BM	
Toluene	<	17.0	UG/KG	05/01/09	8260BM	
Trichloroethene	<	17.0	UG/KG	05/01/09	8260BM	
Vinyl chloride	<	17.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethane	<	17.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethene	<	17.0	UG/KG	05/01/09	8260BM	
1,1,1-Trichloroethane	<	17.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloroethane	<	17.0	UG/KG	05/01/09	8260BM	
1,1,2,2-Tetrachloroethane	<	17.0	UG/KG	05/01/09	8260BM	
1,2-Dichloroethane	<	17.0	UG/KG	05/01/09	8260BM	
1,2-Dichloropropane	<	17.0	UG/KG	05/01/09	8260BM	
trans-1,2-Dichloroethene	<	17.0	UG/KG	05/01/09	8260BM	
trans-1,3-Dichloropropene	<	17.0	UG/KG	05/01/09	8260BM	
cis-1,3-Dichloropropene	<	17.0	UG/KG	05/01/09	8260BM	
Total Xylenes	<	17.0	UG/KG	05/01/09	8260BM	
Acetone	<	17.0	UG/KG	05/01/09	8260BM	
Methylethyl ketone	<	17.0	UG/KG	05/01/09	8260BM	
2-Hexanone	<	17.0	UG/KG	05/01/09	8260BM	
Methylisobutyl ketone	<	17.0	UG/KG	05/01/09	8260BM	

Sample Number: 462159
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	17.0	UG/KG	05/01/09	8260BM	
Carbon disulfide	<	17.0	UG/KG	05/01/09	8260BM	
% Moisture - GC/MS Lab		16.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	17.0	UG/KG	05/01/09	8260BM	
Trichlorofluoromethane	<	17.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	17.0	UG/KG	05/01/09	8260BM	
Methyl Acetate	<	17.0	UG/KG	05/01/09	8260BM	
Methyl tert-butyl ether (M	<	17.0	UG/KG	05/01/09	8260BM	
cis-1,2-Dichloroethene	<	17.0	UG/KG	05/01/09	8260BM	
Cyclohexane	<	17.0	UG/KG	05/01/09	8260BM	
Methylcyclohexane	<	17.0	UG/KG	05/01/09	8260BM	
1,2-Dibromoethane	<	17.0	UG/KG	05/01/09	8260BM	
Isopropylbenzene	<	17.0	UG/KG	05/01/09	8260BM	
1,2-Dichlorobenzene	<	17.0	UG/KG	05/01/09	8260BM	
1,3-Dichlorobenzene	<	17.0	UG/KG	05/01/09	8260BM	
1,4-Dichlorobenzene	<	17.0	UG/KG	05/01/09	8260BM	
1,2-Dibromo-3-chloropropan	<	17.0	UG/KG	05/01/09	8260BM	
1,2,4-Trichlorobenzene	<	17.0	UG/KG	05/01/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	110
4-BROMOFLUOROBENZENE	79
TOLUENE-D8	100

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462159
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-4

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462160
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

LCU-5

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		05/01/09	8260BM	
Benzene	<	14.0	UG/KG	05/01/09	8260BM	
Bromoform	<	14.0	UG/KG	05/01/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	05/01/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	05/01/09	8260BM	
Chloroethane	<	14.0	UG/KG	05/01/09	8260BM	
Chloroform	<	14.0	UG/KG	05/01/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	05/01/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	05/01/09	8260BM	
Methyl chloride	<	14.0	UG/KG	05/01/09	8260BM	
Methylene chloride	<	14.0	UG/KG	05/01/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	05/01/09	8260BM	
Toluene	<	14.0	UG/KG	05/01/09	8260BM	
Trichloroethene	<	14.0	UG/KG	05/01/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	05/01/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	05/01/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	05/01/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	05/01/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	05/01/09	8260BM	
Total Xylenes	<	14.0	UG/KG	05/01/09	8260BM	
Acetone	B	17.0	UG/KG	05/01/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	05/01/09	8260BM	
2-Hexanone	<	14.0	UG/KG	05/01/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	05/01/09	8260BM	

Sample Number: 462160
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	05/01/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	05/01/09	8260BM	
% Moisture - GC/MS Lab		18.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	05/01/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	05/01/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	05/01/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	05/01/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	05/01/09	8260BM	
Cyclohexane	<	14.0	UG/KG	05/01/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	05/01/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	05/01/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	110
4-BROMOFLUOROBENZENE	90
TOLUENE-D8	97

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462160
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

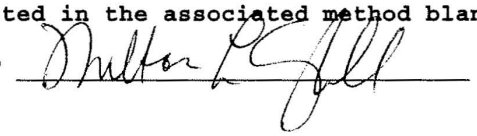
EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-5

ANALYST`S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST 

Sample Number: 462161
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.40		05/01/09	8260BM	
Benzene	<	14.0	UG/KG	05/01/09	8260BM	
Bromoform	<	14.0	UG/KG	05/01/09	8260BM	
Carbon tetrachloride	<	14.0	UG/KG	05/01/09	8260BM	
Chlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	
Dibromochloromethane	<	14.0	UG/KG	05/01/09	8260BM	
Chloroethane	<	14.0	UG/KG	05/01/09	8260BM	
Chloroform	<	14.0	UG/KG	05/01/09	8260BM	
Bromodichloromethane	<	14.0	UG/KG	05/01/09	8260BM	
Ethylbenzene	<	14.0	UG/KG	05/01/09	8260BM	
Methyl chloride	<	14.0	UG/KG	05/01/09	8260BM	
Methylene chloride	<	14.0	UG/KG	05/01/09	8260BM	
Tetrachloroethene	<	14.0	UG/KG	05/01/09	8260BM	
Toluene	<	14.0	UG/KG	05/01/09	8260BM	
Trichloroethene	<	14.0	UG/KG	05/01/09	8260BM	
Vinyl chloride	<	14.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethene	<	14.0	UG/KG	05/01/09	8260BM	
1,1,1-Trichloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,1,2,2-Tetrachloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dichloroethane	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dichloropropane	<	14.0	UG/KG	05/01/09	8260BM	
trans-1,2-Dichloroethene	<	14.0	UG/KG	05/01/09	8260BM	
trans-1,3-Dichloropropene	<	14.0	UG/KG	05/01/09	8260BM	
cis-1,3-Dichloropropene	<	14.0	UG/KG	05/01/09	8260BM	
Total Xylenes	<	14.0	UG/KG	05/01/09	8260BM	
Acetone	B	84.0	UG/KG	05/01/09	8260BM	
Methylethyl ketone	<	14.0	UG/KG	05/01/09	8260BM	
2-Hexanone	<	14.0	UG/KG	05/01/09	8260BM	
Methylisobutyl ketone	<	14.0	UG/KG	05/01/09	8260BM	

Sample Number: 462161
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Styrene	<	14.0	UG/KG	05/01/09	8260BM	
Carbon disulfide	<	14.0	UG/KG	05/01/09	8260BM	
% Moisture - GC/MS Lab		20.0	%	05/05/09	1005 M	
Dichlorodifluoromethane	<	14.0	UG/KG	05/01/09	8260BM	
Trichlorofluoromethane	<	14.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	14.0	UG/KG	05/01/09	8260BM	
Methyl Acetate	<	14.0	UG/KG	05/01/09	8260BM	
Methyl tert-butyl ether (M	<	14.0	UG/KG	05/01/09	8260BM	
cis-1,2-Dichloroethene	<	14.0	UG/KG	05/01/09	8260BM	
Cyclohexane	<	14.0	UG/KG	05/01/09	8260BM	
Methylcyclohexane	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dibromoethane	<	14.0	UG/KG	05/01/09	8260BM	
Isopropylbenzene	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dichlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	
1,3-Dichlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	
1,4-Dichlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	
1,2-Dibromo-3-chloropropan	<	14.0	UG/KG	05/01/09	8260BM	
1,2,4-Trichlorobenzene	<	14.0	UG/KG	05/01/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	**114**
4-BROMOFLUOROBENZENE	**86**
TOLUENE-D8	**92**

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

003493

Sample Number: 462161
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/11/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/11/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-6

ANALYST`S COMMENTS:
(B) The analyte was detected in the associated method blank and in the sample.

* * ANALYST

Sample Number: 462162
Project Code: SW-WP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

TB

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.00		04/28/09	8260BM	
Bromodichloromethane	<	10.0	UG/L	04/28/09	8260BM	
Carbon tetrachloride	<	10.0	UG/L	04/28/09	8260BM	
Bromoform	<	10.0	UG/L	04/28/09	8260BM	
Chloroform	<	10.0	UG/L	04/28/09	8260BM	
Toluene	<	10.0	UG/L	04/28/09	8260BM	
Benzene	<	10.0	UG/L	04/28/09	8260BM	
Chlorobenzene	<	10.0	UG/L	04/28/09	8260BM	
Dibromochloromethane	<	10.0	UG/L	04/28/09	8260BM	
Chloroethane	<	10.0	UG/L	04/28/09	8260BM	
Ethylbenzene	<	10.0	UG/L	04/28/09	8260BM	
Bromomethane	<	10.0	UG/L	04/28/09	8260BM	
Methylene chloride	<	10.0	UG/L	04/28/09	8260BM	
Tetrachloroethene	<	10.0	UG/L	04/28/09	8260BM	
1,1-Dichloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,1-Dichloroethene	<	10.0	UG/L	04/28/09	8260BM	
1,1,1-Trichloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,1,2-Trichloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,1,2,2-Tetrachloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dichloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dichloropropane	<	10.0	UG/L	04/28/09	8260BM	
trans-1,2-Dichloroethene	<	10.0	UG/L	04/28/09	8260BM	
trans-1,3-Dichloropropene	<	10.0	UG/L	04/28/09	8260BM	
cis-1,3-Dichloropropene	<	10.0	UG/L	04/28/09	8260BM	
Vinyl chloride	<	10.0	UG/L	04/28/09	8260BM	
Trichloroethene	<	10.0	UG/L	04/28/09	8260BM	
Methylisobutyl ketone	<	10.0	UG/L	04/28/09	8260BM	
Carbon disulfide	<	10.0	UG/L	04/28/09	8260BM	
2-Hexanone	<	10.0	UG/L	04/28/09	8260BM	
Styrene	<	10.0	UG/L	04/28/09	8260BM	
Total Xylenes	<	10.0	UG/L	04/28/09	8260BM	

003495

Sample Number: 462162
Project Code: SW-WP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Acetone	<	10.0	UG/L	04/28/09	8260BM	
Methylethyl Ketone	<	10.0	UG/L	04/28/09	8260BM	
Dichlorodifluoromethane	<	10.0	UG/L	04/28/09	8260BM	
Trichlorofluoromethane	<	10.0	UG/L	04/28/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	10.0	UG/L	04/28/09	8260BM	
Methyl Acetate	<	10.0	UG/L	04/28/09	8260BM	
Methyl tert-butyl ether (MT	<	10.0	UG/L	04/28/09	8260BM	
cis-1,2-Dichloroethene	<	10.0	UG/L	04/28/09	8260BM	
Cyclohexane	<	10.0	UG/L	04/28/09	8260BM	
Methylcyclohexane	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dibromoethane	<	10.0	UG/L	04/28/09	8260BM	
Isopropylbenzene	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dichlorobenzene	<	10.0	UG/L	04/28/09	8260BM	
1,3-Dichlorobenzene	<	10.0	UG/L	04/28/09	8260BM	
1,4-Dichlorobenzene	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dibromo-3-chloropropane	<	10.0	UG/L	04/28/09	8260BM	
1,2,4-Trichlorobenzene	<	10.0	UG/L	04/28/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	96
4-BROMOFLUOROBENZENE	95
TOLUENE-D8	98

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
NONE FOUND		0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462162
Project Code: SW-WP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
TRIP BLANK

ANALYST`S COMMENTS:

* * ANALYST

Sample Number: 462163
Project Code: SW-WP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.00		04/28/09	8260BM	
Bromodichloromethane	<	10.0	UG/L	04/28/09	8260BM	
Carbon tetrachloride	<	10.0	UG/L	04/28/09	8260BM	
Bromoform	<	10.0	UG/L	04/28/09	8260BM	
Chloroform	<	10.0	UG/L	04/28/09	8260BM	
Toluene	<	10.0	UG/L	04/28/09	8260BM	
Benzene	<	10.0	UG/L	04/28/09	8260BM	
Chlorobenzene	<	10.0	UG/L	04/28/09	8260BM	
Dibromochloromethane	<	10.0	UG/L	04/28/09	8260BM	
Chloroethane	<	10.0	UG/L	04/28/09	8260BM	
Ethylbenzene	<	10.0	UG/L	04/28/09	8260BM	
Bromomethane	<	10.0	UG/L	04/28/09	8260BM	
Methylene chloride	<	10.0	UG/L	04/28/09	8260BM	
Tetrachloroethene	<	10.0	UG/L	04/28/09	8260BM	
1,1-Dichloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,1-Dichloroethene	<	10.0	UG/L	04/28/09	8260BM	
1,1,1-Trichloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,1,2-Trichloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,1,2,2-Tetrachloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dichloroethane	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dichloropropane	<	10.0	UG/L	04/28/09	8260BM	
trans-1,2-Dichloroethene	<	10.0	UG/L	04/28/09	8260BM	
trans-1,3-Dichloropropene	<	10.0	UG/L	04/28/09	8260BM	
cis-1,3-Dichloropropene	<	10.0	UG/L	04/28/09	8260BM	
Vinyl chloride	<	10.0	UG/L	04/28/09	8260BM	
Trichloroethene	<	10.0	UG/L	04/28/09	8260BM	
Methylisobutyl ketone	<	10.0	UG/L	04/28/09	8260BM	
Carbon disulfide	<	10.0	UG/L	04/28/09	8260BM	
2-Hexanone	<	10.0	UG/L	04/28/09	8260BM	
Styrene	<	10.0	UG/L	04/28/09	8260BM	
Total Xylenes	<	10.0	UG/L	04/28/09	8260BM	

Sample Number: 462163
Project Code: SW-WP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Acetone		26.0	UG/L	04/28/09	8260BM	
Methylethyl Ketone	<	10.0	UG/L	04/28/09	8260BM	
Dichlorodifluoromethane	<	10.0	UG/L	04/28/09	8260BM	
Trichlorofluoromethane	<	10.0	UG/L	04/28/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	10.0	UG/L	04/28/09	8260BM	
Methyl Acetate	<	10.0	UG/L	04/28/09	8260BM	
Methyl tert-butyl ether (M	<	10.0	UG/L	04/28/09	8260BM	
cis-1,2-Dichloroethene	<	10.0	UG/L	04/28/09	8260BM	
Cyclohexane	<	10.0	UG/L	04/28/09	8260BM	
Methylcyclohexane	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dibromoethane	<	10.0	UG/L	04/28/09	8260BM	
Isopropylbenzene	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dichlorobenzene	<	10.0	UG/L	04/28/09	8260BM	
1,3-Dichlorobenzene	<	10.0	UG/L	04/28/09	8260BM	
1,4-Dichlorobenzene	<	10.0	UG/L	04/28/09	8260BM	
1,2-Dibromo-3-chloropropan	<	10.0	UG/L	04/28/09	8260BM	
1,2,4-Trichlorobenzene	<	10.0	UG/L	04/28/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	95
4-BROMOFLUOROBENZENE	95
TOLUENE-D8	97

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
NONE FOUND		0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462163
Project Code: SW-WP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
FIELD BLANK

ANALYST'S COMMENTS:

* * ANALYST

Sample Number: 462147
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1016
Date Received: 4/22/2009
Date Completed: 05/07/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/07/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

EPA Drinking Water Certification #OK00013

To: TODD DOWNHAM/LPD CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-11

ANALYST'S COMMENTS:

* * ANALYST

Sample Number: 462190
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 05/28/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 05/28/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	330.0	UG/KG	05/19/09	8270DM	
2-Nitrophenol	<	330.0	UG/KG	05/19/09	8270DM	
Di-n-octylphthalate	<	330.0	UG/KG	05/19/09	8270DM	
2,4-Dichlorophenol	<	330.0	UG/KG	05/19/09	8270DM	
2,4-Dimethylphenol	<	330.0	UG/KG	05/19/09	8270DM	
2,4-Dinitrotoluene	<	330.0	UG/KG	05/19/09	8270DM	
2,4-Dinitrophenol	<	1600.0	UG/KG	05/19/09	8270DM	
2,4,6-Trichlorophenol	<	1600.0	UG/KG	05/19/09	8270DM	
2,6-Dinitrotoluene	<	330.0	UG/KG	05/19/09	8270DM	
3,3'-Dichlorobenzidine	<	660.0	UG/KG	05/19/09	8270DM	
4-Bromophenylphenyl ether	<	330.0	UG/KG	05/19/09	8270DM	
4-Chlorophenylphenyl ether	<	330.0	UG/KG	05/19/09	8270DM	
4-Nitrophenol	<	1600.0	UG/KG	05/19/09	8270DM	
4,6-Dinitro-o-cresol	<	1600.0	UG/KG	05/19/09	8270DM	
Phenol	<	330.0	UG/KG	05/19/09	8270DM	
Pentachlorophenol	<	1600.0	UG/KG	05/19/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	330.0	UG/KG	05/19/09	8270DM	
Di-n-butylphthalate	<	330.0	UG/KG	05/19/09	8270DM	
Hexachlorobenzene	<	330.0	UG/KG	05/19/09	8270DM	
Hexachlorobutadiene	<	330.0	UG/KG	05/19/09	8270DM	
Benzyl alcohol	<	330.0	UG/KG	05/19/09	8270DM	
Dibenzofuran	<	330.0	UG/KG	05/19/09	8270DM	
2-Methylphenol	<	330.0	UG/KG	05/19/09	8270DM	
4-Methylphenol	<	330.0	UG/KG	05/19/09	8270DM	
2,4,5-Trichlorophenol	<	1600.0	UG/KG	05/19/09	8270DM	
4-Chloroaniline	<	330.0	UG/KG	05/19/09	8270DM	
2-Nitroaniline	<	1600.0	UG/KG	05/19/09	8270DM	
3-Nitroaniline	<	1600.0	UG/KG	05/19/09	8270DM	
4-Nitroaniline	<	1600.0	UG/KG	05/19/09	8270DM	
2-Methylnaphthalene	<	330.0	UG/KG	05/19/09	8270DM	
% Moisture - GC/MS Lab			%		1005 M	

Sample Number: 462178
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0952
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	380.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	380.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	380.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	760.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	380.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	380.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	1900.0	UG/KG	05/28/09	8270DM	
Phenol	<	380.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	380.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	380.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	380.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	380.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	380.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	380.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	380.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	380.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		13.2	%		1005 M	

Sample Number: 462178
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0952
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	93
2-FLUOROBIPHENYL	86
2-FLUOROPHENOL	73
NITROBENZENE-D5	84
P-TERPHENYL-D14	83
PHENOL-D5	88

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH		
COMPOUND	VALUE	UNITS

NONE FOUND

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-14

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462179
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		38.0				
Acenaphthylene	<	380.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	380.0	UG/KG	05/28/09	8270DM	
Anthracene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	380.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	380.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	380.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe	<	380.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Chrysene	<	380.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	380.0	UG/KG	05/28/09	8270DM	
Fluorene	<	380.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	380.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	380.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	380.0	UG/KG	05/28/09	8270DM	
Isophorone	<	380.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	380.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	380.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	380.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	380.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	380.0	UG/KG	05/28/09	8270DM	
Phenanthrene	<	380.0	UG/KG	05/28/09	8270DM	
Pyrene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	380.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	380.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	380.0	UG/KG	05/28/09	8270DM	

Sample Number: 462179
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
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Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	380.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	380.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	380.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	760.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	380.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	380.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	1900.0	UG/KG	05/28/09	8270DM	
Phenol	<	380.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	380.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	380.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	380.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	380.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	380.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	380.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	380.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	380.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		12.2	%		1005 M	

Sample Number: 462179
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1012
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
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Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	99
2-FLUOROBIPHENYL	71
2-FLUOROPHENOL	70
NITROBENZENE-D5	78
P-TERPHENYL-D14	73
PHENOL-D5	85

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

NONE FOUND

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-15

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST 

Sample Number: 462180
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1004
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		38.0				
Acenaphthylene	<	380.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	380.0	UG/KG	05/28/09	8270DM	
Anthracene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	380.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	380.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	380.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	380.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Chrysene	<	380.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	380.0	UG/KG	05/28/09	8270DM	
Fluorene	<	380.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	380.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	380.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	380.0	UG/KG	05/28/09	8270DM	
Isophorone	<	380.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	380.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	380.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	380.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	380.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	380.0	UG/KG	05/28/09	8270DM	
Phenanthrene	<	380.0	UG/KG	05/28/09	8270DM	
Pyrene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	380.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	380.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	380.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	380.0	UG/KG	05/28/09	8270DM	

Sample Number: 462180
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1004
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	380.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	380.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	380.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	380.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	760.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	380.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	380.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	1900.0	UG/KG	05/28/09	8270DM	
Phenol	<	380.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	380.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	380.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	380.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	380.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	380.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	380.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	380.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	380.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	380.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	380.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		12.4	%		1005 M	

Sample Number: 462180
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1004
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	110
2-FLUOROBIPHENYL	89
2-FLUOROPHENOL	82
NITROBENZENE-D5	98
P-TERPHENYL-D14	100
PHENOL-D5	100

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
(4bS-trans)-4b,5,6,7,8,8a,9,10-	2640	ug/kg
Camphene	421	ug/kg
[1S-(1.alpha.,3a.beta.,4.alpha.	839	ug/kg

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-16

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462181
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0954
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		74.5				
Acenaphthylene	<	740.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	740.0	UG/KG	05/28/09	8270DM	
Anthracene	<	740.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	740.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	740.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	740.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	740.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	740.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	740.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	740.0	UG/KG	05/28/09	8270DM	
Chrysene	<	740.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	740.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	740.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	740.0	UG/KG	05/28/09	8270DM	
Fluorene	<	740.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	740.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	740.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	740.0	UG/KG	05/28/09	8270DM	
Isophorone	<	740.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	740.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	740.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	740.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	740.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	740.0	UG/KG	05/28/09	8270DM	
Phenanthrene		862.0	UG/KG	05/28/09	8270DM	
Pyrene	<	740.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	740.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	740.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	740.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	740.0	UG/KG	05/28/09	8270DM	

Sample Number: 462181
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0954
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	740.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	740.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	740.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	740.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	740.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	740.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	3700.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	3700.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	740.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	1400.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	740.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	740.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	3700.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	3700.0	UG/KG	05/28/09	8270DM	
Phenol	<	740.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	3700.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	740.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	740.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	740.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	740.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	740.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	740.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	740.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	740.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	3700.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	740.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	3700.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	3700.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	3700.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	740.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		10.5	%		1005 M	

Sample Number: 462181
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0954
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	104
2-FLUOROBIPHENYL	106
2-FLUOROPHENOL	69
NITROBENZENE-D5	91
P-TERPHENYL-D14	106
PHENOL-D5	78

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
NONE FOUND			

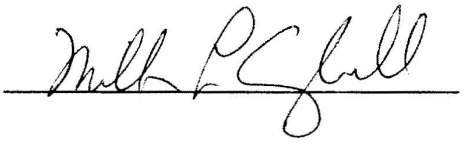
Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-17

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST 

Sample Number: 462182
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0937
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		73.5				
Acenaphthylene	<	730.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	730.0	UG/KG	05/28/09	8270DM	
Anthracene	<	730.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	730.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	730.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	730.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	730.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	730.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	730.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	730.0	UG/KG	05/28/09	8270DM	
Chrysene	<	730.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	730.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	730.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	730.0	UG/KG	05/28/09	8270DM	
Fluorene	<	730.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	730.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	730.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	730.0	UG/KG	05/28/09	8270DM	
Isophorone	<	730.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	730.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	730.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	730.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	730.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	730.0	UG/KG	05/28/09	8270DM	
Phenanthrene	<	730.0	UG/KG	05/28/09	8270DM	
Pyrene	<	730.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	730.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	730.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	730.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	730.0	UG/KG	05/28/09	8270DM	

Sample Number: 462182
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0937
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
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Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	730.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	730.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	730.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	730.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	730.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	730.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	3600.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	3600.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	730.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	1400.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	730.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	730.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	3600.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	3600.0	UG/KG	05/28/09	8270DM	
Phenol	<	730.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	3600.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	730.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	730.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	730.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	730.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	730.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	730.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	730.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	730.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	3600.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	730.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	3600.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	3600.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	3600.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	730.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		9.40	%		1005 M	

Sample Number: 462182
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 0937
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
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Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

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SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	96
2-FLUOROBIPHENYL	88
2-FLUOROPHENOL	70
NITROBENZENE-D5	82
P-TERPHENYL-D14	85
PHENOL-D5	82

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND		

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSS-18

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462184
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1122
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		44.5				
Acenaphthylene	<	440.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	440.0	UG/KG	05/28/09	8270DM	
Anthracene	<	440.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	440.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	440.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	440.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	440.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	440.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	440.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	440.0	UG/KG	05/28/09	8270DM	
Chrysene	<	440.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	440.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	440.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	440.0	UG/KG	05/28/09	8270DM	
Fluorene	<	440.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	440.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	440.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	440.0	UG/KG	05/28/09	8270DM	
Isophorone	<	440.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	440.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	440.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	440.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	440.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	440.0	UG/KG	05/28/09	8270DM	
Phenanthrene	<	440.0	UG/KG	05/28/09	8270DM	
Pyrene	<	440.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	440.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	440.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	440.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	440.0	UG/KG	05/28/09	8270DM	

Sample Number: 462184
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1122
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	440.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	440.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	440.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	440.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	440.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	440.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	2200.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	2200.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	440.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	890.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	440.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	440.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	2200.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	2200.0	UG/KG	05/28/09	8270DM	
Phenol	<	440.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	2200.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	440.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	440.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	440.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	440.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	440.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	440.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	440.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	440.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	2200.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	440.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	2200.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	2200.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	2200.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	440.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		25.2	%		1005 M	

Sample Number: 462184
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1122
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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COMPOUND	SURROGATE RECOVERIES RECOVERY %
2,4,6-TRIBROMOPHENOL	92
2-FLUOROBIPHENYL	76
2-FLUOROPHENOL	63
NITROBENZENE-D5	71
P-TERPHENYL-D14	77
PHENOL-D5	79

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

NONE FOUND

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-1

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462185
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1118
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		39.8				
Acenaphthylene	<	390.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	390.0	UG/KG	05/28/09	8270DM	
Anthracene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	390.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	390.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	390.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	390.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Chrysene	<	390.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	390.0	UG/KG	05/28/09	8270DM	
Fluorene	<	390.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	390.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	390.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	390.0	UG/KG	05/28/09	8270DM	
Isophorone	<	390.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	390.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	390.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	390.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	390.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	390.0	UG/KG	05/28/09	8270DM	
Phenanthrene	<	390.0	UG/KG	05/28/09	8270DM	
Pyrene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	390.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	390.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	390.0	UG/KG	05/28/09	8270DM	

Sample Number: 462185
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1118
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

To: TODD/DOWNHAM/LPD

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STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	390.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	390.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	390.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	790.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	390.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	390.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	1900.0	UG/KG	05/28/09	8270DM	
Phenol	<	390.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	390.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	390.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	390.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	390.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	390.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	390.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	390.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	390.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		16.3	%		1005 M	

Sample Number: 462185
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1118
Date Received: 4/22/2009
Date Completed: 06/01/2009
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

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SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	24
2-FLUOROBIPHENYL	34
2-FLUOROPHENOL	21
NITROBENZENE-D5	28
P-TERPHENYL-D14	29
PHENOL-D5	25

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
2-Hydroxy-1-(hydroxymethyl)ethy	811	ug/kg
Glyceryl monostearate	2280	ug/kg

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-2

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462186
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		39.7				
Acenaphthylene	<	390.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	390.0	UG/KG	05/28/09	8270DM	
Anthracene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	390.0	UG/KG	05/28/09	8270DM	
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Diethylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
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Nitrobenzene	<	390.0	UG/KG	05/28/09	8270DM	
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Benzo(a)anthracene	<	390.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	390.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	390.0	UG/KG	05/28/09	8270DM	

Sample Number: 462186
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
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Location Code:
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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	390.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	390.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
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3,3'-Dichlorobenzidine	<	790.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	390.0	UG/KG	05/28/09	8270DM	
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4-Nitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	1900.0	UG/KG	05/28/09	8270DM	
Phenol	<	390.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	390.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	390.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	390.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	390.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	390.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	390.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	390.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	390.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		16.2	%		1005 M	

Sample Number: 462186
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
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Report Date: 06/01/2009

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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

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SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	94
2-FLUOROBIPHENYL	84
2-FLUOROPHENOL	72
NITROBENZENE-D5	85
P-TERPHENYL-D14	83
PHENOL-D5	85

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS
(3.alpha.)-D:A-Friedooleanan-3-		772	ug/kg
Friedelin		467	ug/kg

Summary

Labs performing analysis on this Sample:

GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-3

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton L Gill

Sample Number: 462187
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		39.4				
Acenaphthylene	<	390.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	390.0	UG/KG	05/28/09	8270DM	
Anthracene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	390.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	390.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	390.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	390.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	390.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Chrysene	<	390.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	390.0	UG/KG	05/28/09	8270DM	
Fluorene	<	390.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	390.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	390.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	390.0	UG/KG	05/28/09	8270DM	
Isophorone	<	390.0	UG/KG	05/28/09	8270DM	
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Nitrosodiphenylamine	<	390.0	UG/KG	05/28/09	8270DM	
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Nitrobenzene	<	390.0	UG/KG	05/28/09	8270DM	
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Phenanthrene	<	390.0	UG/KG	05/28/09	8270DM	
Pyrene	<	390.0	UG/KG	05/28/09	8270DM	
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Benzo(a)anthracene	<	390.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	390.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	390.0	UG/KG	05/28/09	8270DM	

Sample Number: 462187
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
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Location Code:
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Report Date: 06/01/2009

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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	390.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	390.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	390.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	390.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	780.0	UG/KG	05/28/09	8270DM	
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4-Nitrophenol	<	1900.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	1900.0	UG/KG	05/28/09	8270DM	
Phenol	<	390.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	390.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	390.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	390.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	390.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	390.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	390.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	390.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	390.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	1900.0	UG/KG	05/28/09	8270DM	
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2-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	1900.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	390.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		15.5	%		1005 M	

Sample Number: 462187
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1014
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
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Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
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General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SURROGATE RECOVERIES	
COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	96
2-FLUOROBIPHENYL	82
2-FLUOROPHENOL	70
NITROBENZENE-D5	81
P-TERPHENYL-D14	88
PHENOL-D5	84

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH		
COMPOUND	VALUE	UNITS
(3.alpha.)-D:A-Friedooleanan-3-	1210	ug/kg
(3.beta.)-3-methoxy-D-Friedoole	444	ug/kg
Triacontane	489	ug/kg
Unknown Hydrocarbon, C-36	877	ug/kg

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-4

ANALYST'S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST Milton R Shell

Sample Number: 462188
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab		40.8				
Acenaphthylene	<	400.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	400.0	UG/KG	05/28/09	8270DM	
Anthracene	<	400.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	400.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	400.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	400.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	400.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	400.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ether	<	400.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	400.0	UG/KG	05/28/09	8270DM	
Chrysene	<	400.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	400.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	400.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	400.0	UG/KG	05/28/09	8270DM	
Fluorene	<	400.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	400.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	400.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	400.0	UG/KG	05/28/09	8270DM	
Isophorone	<	400.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	400.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	400.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	400.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	400.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	400.0	UG/KG	05/28/09	8270DM	
Phenanthrene	<	400.0	UG/KG	05/28/09	8270DM	
Pyrene	<	400.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	400.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	400.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	400.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	400.0	UG/KG	05/28/09	8270DM	

Sample Number: 462188
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

To: TODD/DOWNHAM/LPD

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STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	400.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	400.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	400.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	400.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	400.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	400.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	2000.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	2000.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	400.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	810.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	400.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	400.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	2000.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	2000.0	UG/KG	05/28/09	8270DM	
Phenol	<	400.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	2000.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	400.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	400.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	400.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	400.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	400.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	400.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	400.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	400.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	2000.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	400.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	2000.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	2000.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	2000.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	400.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		18.3	%		1005 M	

Sample Number: 462188
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1143
Date Received: 4/22/2009
Date Completed: 06/01/2009
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	98
2-FLUOROBIPHENYL	83
2-FLUOROPHENOL	67
NITROBENZENE-D5	74
P-TERPHENYL-D14	83
PHENOL-D5	81

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

NONE FOUND

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-5

ANALYST`S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462189
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

To: TODD/DOWNHAM/LPD

CC: FILE COPY

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Extractab:		41.8				
Acenaphthylene	<	410.0	UG/KG	05/28/09	8270DM	
Acenaphthene	<	410.0	UG/KG	05/28/09	8270DM	
Anthracene	<	410.0	UG/KG	05/28/09	8270DM	
Benzo(b)fluoranthene	<	410.0	UG/KG	05/28/09	8270DM	
Benzo(k)fluoranthene	<	410.0	UG/KG	05/28/09	8270DM	
Benzo(a)pyrene	<	410.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethyl)ether	<	410.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroethoxy)methane	<	410.0	UG/KG	05/28/09	8270DM	
Bis(2-chloroisopropyl)ethe:	<	410.0	UG/KG	05/28/09	8270DM	
Butylbenzylphthalate	<	410.0	UG/KG	05/28/09	8270DM	
Chrysene	<	410.0	UG/KG	05/28/09	8270DM	
Diethylphthalate	<	410.0	UG/KG	05/28/09	8270DM	
Dimethylphthalate	<	410.0	UG/KG	05/28/09	8270DM	
Fluoranthene	<	410.0	UG/KG	05/28/09	8270DM	
Fluorene	<	410.0	UG/KG	05/28/09	8270DM	
Hexachlorocyclopentadiene	<	410.0	UG/KG	05/28/09	8270DM	
Hexachloroethane	<	410.0	UG/KG	05/28/09	8270DM	
Indeno(123cd)pyrene	<	410.0	UG/KG	05/28/09	8270DM	
Isophorone	<	410.0	UG/KG	05/28/09	8270DM	
Nitrosodipropylamine	<	410.0	UG/KG	05/28/09	8270DM	
Nitrosodiphenylamine	<	410.0	UG/KG	05/28/09	8270DM	
Naphthalene	<	410.0	UG/KG	05/28/09	8270DM	
Nitrobenzene	<	410.0	UG/KG	05/28/09	8270DM	
p-Chloro-m-cresol	<	410.0	UG/KG	05/28/09	8270DM	
Phenanthrene	<	410.0	UG/KG	05/28/09	8270DM	
Pyrene	<	410.0	UG/KG	05/28/09	8270DM	
Benzo(ghi)perylene	<	410.0	UG/KG	05/28/09	8270DM	
Benzo(a)anthracene	<	410.0	UG/KG	05/28/09	8270DM	
Dibenzo(ah)anthracene	<	410.0	UG/KG	05/28/09	8270DM	
2-Chloronaphthalene	<	410.0	UG/KG	05/28/09	8270DM	

Sample Number: 462189
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/01/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
2-Chlorophenol	<	410.0	UG/KG	05/28/09	8270DM	
2-Nitrophenol	<	410.0	UG/KG	05/28/09	8270DM	
Di-n-octylphthalate	<	410.0	UG/KG	05/28/09	8270DM	
2,4-Dichlorophenol	<	410.0	UG/KG	05/28/09	8270DM	
2,4-Dimethylphenol	<	410.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrotoluene	<	410.0	UG/KG	05/28/09	8270DM	
2,4-Dinitrophenol	<	2000.0	UG/KG	05/28/09	8270DM	
2,4,6-Trichlorophenol	<	2000.0	UG/KG	05/28/09	8270DM	
2,6-Dinitrotoluene	<	410.0	UG/KG	05/28/09	8270DM	
3,3'-Dichlorobenzidine	<	830.0	UG/KG	05/28/09	8270DM	
4-Bromophenylphenyl ether	<	410.0	UG/KG	05/28/09	8270DM	
4-Chlorophenylphenyl ether	<	410.0	UG/KG	05/28/09	8270DM	
4-Nitrophenol	<	2000.0	UG/KG	05/28/09	8270DM	
4,6-Dinitro-o-cresol	<	2000.0	UG/KG	05/28/09	8270DM	
Phenol	<	410.0	UG/KG	05/28/09	8270DM	
Pentachlorophenol	<	2000.0	UG/KG	05/28/09	8270DM	
Bis(2-ethylhexyl)phthalate	<	410.0	UG/KG	05/28/09	8270DM	
Di-n-butylphthalate	<	410.0	UG/KG	05/28/09	8270DM	
Hexachlorobenzene	<	410.0	UG/KG	05/28/09	8270DM	
Hexachlorobutadiene	<	410.0	UG/KG	05/28/09	8270DM	
Benzyl alcohol	<	410.0	UG/KG	05/28/09	8270DM	
Dibenzofuran	<	410.0	UG/KG	05/28/09	8270DM	
2-Methylphenol	<	410.0	UG/KG	05/28/09	8270DM	
4-Methylphenol	<	410.0	UG/KG	05/28/09	8270DM	
2,4,5-Trichlorophenol	<	2000.0	UG/KG	05/28/09	8270DM	
4-Chloroaniline	<	410.0	UG/KG	05/28/09	8270DM	
2-Nitroaniline	<	2000.0	UG/KG	05/28/09	8270DM	
3-Nitroaniline	<	2000.0	UG/KG	05/28/09	8270DM	
4-Nitroaniline	<	2000.0	UG/KG	05/28/09	8270DM	
2-Methylnaphthalene	<	410.0	UG/KG	05/28/09	8270DM	
% Moisture - GC/MS Lab		20.2	%		1005 M	

Sample Number: 462189
Project Code: SW-SE
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 06/01/2009
Collected By: TD
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Report Date: 06/01/2009

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STATE ENVIRONMENTAL LABORATORY
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OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD/DOWNHAM/LPD

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SURROGATE RECOVERIES

COMPOUND	RECOVERY %
2,4,6-TRIBROMOPHENOL	95
2-FLUOROBIPHENYL	87
2-FLUOROPHENOL	70
NITROBENZENE-D5	78
P-TERPHENYL-D14	86
PHENOL-D5	83

COMPOUND	TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH	VALUE	UNITS

NONE FOUND

Summary

Labs performing analysis on this Sample:
GCMS Metals

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LSD-6

ANALYST'S COMMENTS:
Analyst: TGA, Review: MLC

* * ANALYST

Sample Number: 462164
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 06/08/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/08/2009

To: TODD DOWNHAM/LPD

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OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Dilution Factor, Purgeable:		1.00		05/01/09	8260BM	
Benzene	<	10.0	UG/KG	05/01/09	8260BM	
Bromoform	<	10.0	UG/KG	05/01/09	8260BM	
Carbon tetrachloride	<	10.0	UG/KG	05/01/09	8260BM	
Chlorobenzene	<	10.0	UG/KG	05/01/09	8260BM	
Dibromochloromethane	<	10.0	UG/KG	05/01/09	8260BM	
Chloroethane	<	10.0	UG/KG	05/01/09	8260BM	
Chloroform	<	10.0	UG/KG	05/01/09	8260BM	
Bromodichloromethane	<	10.0	UG/KG	05/01/09	8260BM	
Ethylbenzene	<	10.0	UG/KG	05/01/09	8260BM	
Methyl bromide	<	10.0	UG/KG	05/01/09	8260BM	
Methyl chloride	<	10.0	UG/KG	05/01/09	8260BM	
Methylene chloride	<	10.0	UG/KG	05/01/09	8260BM	
Tetrachloroethene	<	10.0	UG/KG	05/01/09	8260BM	
Toluene	<	10.0	UG/KG	05/01/09	8260BM	
Trichloroethene	<	10.0	UG/KG	05/01/09	8260BM	
Vinyl chloride	<	10.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethane	<	10.0	UG/KG	05/01/09	8260BM	
1,1-Dichloroethene	<	10.0	UG/KG	05/01/09	8260BM	
1,1,1-Trichloroethane	<	10.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloroethane	<	10.0	UG/KG	05/01/09	8260BM	
1,1,2,2-Tetrachloroethane	<	10.0	UG/KG	05/01/09	8260BM	
1,2-Dichloroethane	<	10.0	UG/KG	05/01/09	8260BM	
1,2-Dichloropropane	<	10.0	UG/KG	05/01/09	8260BM	
trans-1,2-Dichloroethene	<	10.0	UG/KG	05/01/09	8260BM	
trans-1,3-Dichloropropene	<	10.0	UG/KG	05/01/09	8260BM	
cis-1,3-Dichloropropene	<	10.0	UG/KG	05/01/09	8260BM	
Total Xylenes	<	10.0	UG/KG	05/01/09	8260BM	
Acetone	<	10.0	UG/KG	05/01/09	8260BM	
Methylethyl ketone	<	10.0	UG/KG	05/01/09	8260BM	
2-Hexanone	<	10.0	UG/KG	05/01/09	8260BM	

Sample Number: 462164
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
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Report Date: 06/08/2009

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OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD DOWNHAM/LPD

CC: FILE COPY

SAMPLE DATA

Name	Qualifier	Value	Units	Analyzed	Method	Prep Type
Methylisobutyl ketone	<	10.0	UG/KG	05/01/09	8260BM	
Styrene	<	10.0	UG/KG	05/01/09	8260BM	
Carbon disulfide	<	10.0	UG/KG	05/01/09	8260BM	
Dichlorodifluoromethane	<	10.0	UG/KG	05/01/09	8260BM	
Trichlorofluoromethane	<	10.0	UG/KG	05/01/09	8260BM	
1,1,2-Trichloro-1,2,2-trif	<	10.0	UG/KG	05/01/09	8260BM	
Methyl Acetate	<	10.0	UG/KG	05/01/09	8260BM	
Methyl tert-butyl ether (M	<	10.0	UG/KG	05/01/09	8260BM	
cis-1,2-Dichloroethene	<	10.0	UG/KG	05/01/09	8260BM	
Cyclohexane	<	10.0	UG/KG	05/01/09	8260BM	
Methylcyclohexane	<	10.0	UG/KG	05/01/09	8260BM	
1,2-Dibromoethane	<	10.0	UG/KG	05/01/09	8260BM	
Isopropylbenzene	<	10.0	UG/KG	05/01/09	8260BM	
1,2-Dichlorobenzene	<	10.0	UG/KG	05/01/09	8260BM	
1,3-Dichlorobenzene	<	10.0	UG/KG	05/01/09	8260BM	
1,4-Dichlorobenzene	<	10.0	UG/KG	05/01/09	8260BM	
1,2-Dibromo-3-chloropropan	<	10.0	UG/KG	05/01/09	8260BM	
1,2,4-Trichlorobenzene	<	10.0	UG/KG	05/01/09	8260BM	

SURROGATE RECOVERIES

COMPOUND	RECOVERY %
1,2-DICHLOROETHANE-D4	106
4-BROMOFLUOROBENZENE	93
TOLUENE-D8	99

TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH

COMPOUND	VALUE	UNITS
NONE FOUND	0	

Summary

Labs performing analysis on this Sample:

GCMS

Sample Number: 462164
Project Code: SW-SP
Agency Number:
Date Collected: 4/22/2009
Time Collected: 1030
Date Received: 4/22/2009
Date Completed: 06/08/2009
Collected By: TD
PWS Id:
Location Code:
Station:
Facility:
Report Date: 06/08/2009

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE ENVIRONMENTAL LABORATORY
707 N. ROBINSON
OKLAHOMA CITY
OKLAHOMA, 73102-6010
General Inquiries: 1-800-869-1400
Sample Receiving: (405) 702-1113

Report of Analysis by GCMS

To: TODD DOWNHAM/LPD

CC: FILE COPY

SOURCE: LORRAINE REFINERY

SAMPLERS COMMENTS:
LAB BLANK

ANALYST`S COMMENTS:

* * ANALYST

Reference 10

August 3, 2009
Todd Downham
Lorraine Refinery Site Inspection (SI)
Records of Communication

August 3, 2009: Spoke with Steve McGuire, Public Works Director, City of Bristow, Ok. Mr. McGuire answered my questions regarding the locations of Municipal Wells that provide drinking water to the City of Bristow. He provided a map with the names and locations of each well.

Fax Sheet

August 3, 2009

TO: Tod Downham
Dept. Environmental Quality
(405) 702-5136

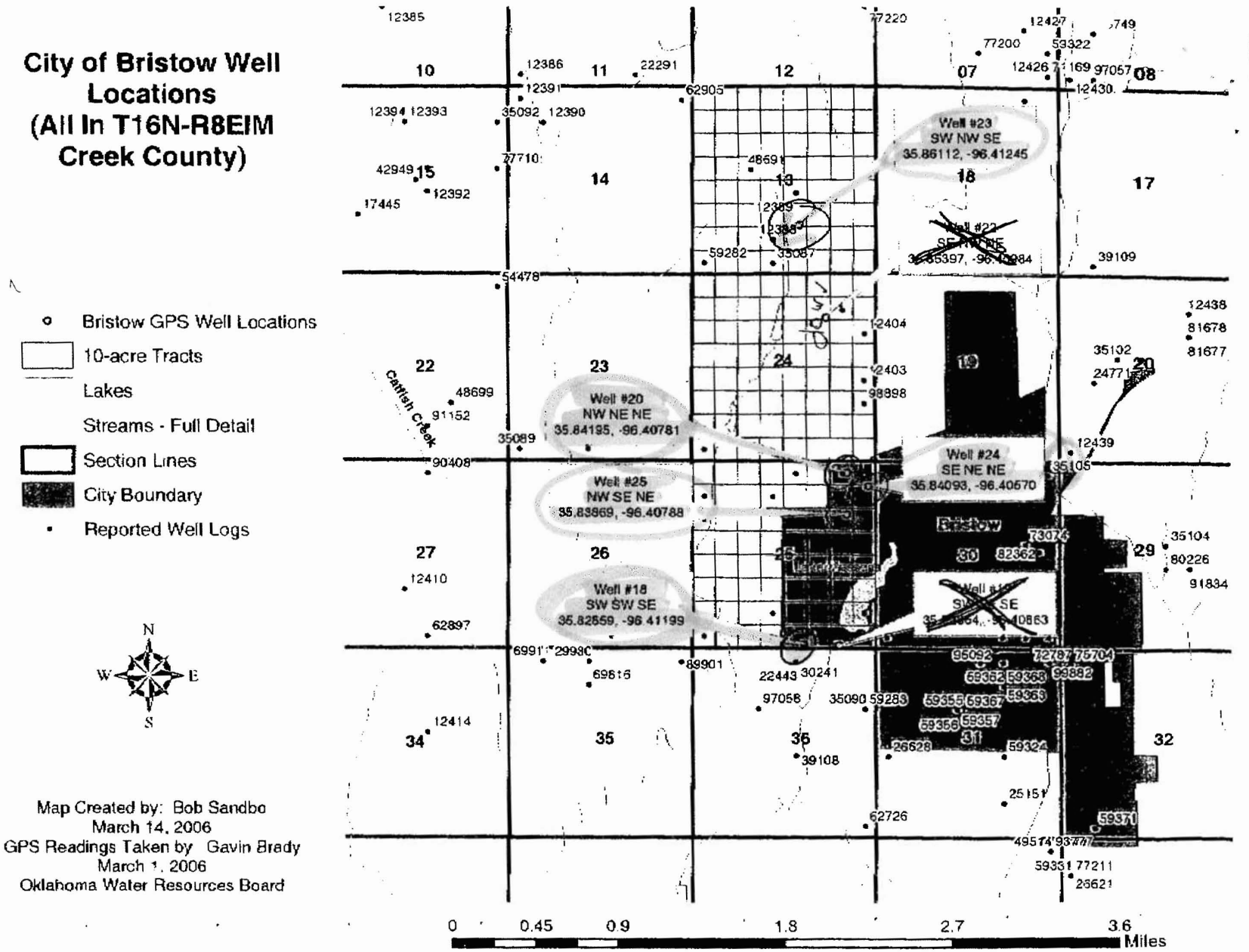
FROM: Steve McGuire Public Works Director
City of Bristow
110 West 7th Street
Bristow, Oklahoma 74010
(918) 367-2237

SUBJECT: City of Bristow Fresh Water Well Locations

The following map indicates the locations of each City of Bristow water well in use located inside Creek County (T16N-R8EIM) including GPS locations

Total sheets sent including this fax cover: Two (2)

City of Bristow Well Locations (All In T16N-R8EIM Creek County)



Map Created by: Bob Sandbo
March 14, 2006
GPS Readings Taken by Gavin Brady
March 1, 2006
Oklahoma Water Resources Board

Attn: TOD Downham
405-702-5101

From: City of Bristow

2008 Drinking Water
Summary of Wells

Any Questions Call: 918. 277-6806
Eli Smallwood

City Of Bristow

Public Works Division
110 West 7th Street
Bristow, Oklahoma 74010

Bristow Water Distribution System Information

Number of Water Wells: 5 Active Wells

Age of Wells & Distribution System:

Well # 18	40 Years
Well # 20	30 Years
Well # 23	15 Years
Well # 24	15 Years
Well # 25	15 Years

Capacity of Wells	***Depths***
Well # 18	210'
Well # 20	470'
Well # 23	450'
Well # 24	450'
Well # 25	450'

Average Volume Actually Pumped:

Well # 18	129,000 gallon per-day
Well # 20	220,000 gallons Per-day
Well # 23	280,000 gallons per-day
Well # 24	140,000 gallons per-day
Well # 25	220,000 gallons per-day

Leakage Estimate: Approximately 6,449,112 gallons per year

Number of Connection in Bristow:

	# of customers	*Average consumption in 1000 gallons per month*
Domestic:	1529	6,764,000
Business	274	4,612,000
Agriculture	0	0
Un-metered	4	45000
Water Sold to Slick	1	850,000

Steve McGuire
Public Works Director
Office (918) 367-5589
Cell (918) 277-6800

Reference 11

LORRAINE
REFINERY
SI

OKN000606909

DATE: 4/22/09 TIME: 9:37 am
WEATHER CONDITIONS: Clear, Sunny
SAMPLE # LSS-18

APPEARANCE: dark, hydrocarbon material, underlying light brown, sand-silt
SAMPLER: Jon & Emily
Reid Starke

COMMENTS: Scar on ground

Photo #: ~~1862~~ 1862 DIRECTION: NE

Taken By: Emily Starke

DATE: 4/22/09 TIME: 9:54

WEATHER CONDITIONS: clear, sunny, temp. 65°F minimal wind

SAMPLE #: LSS-17

APPEARANCE: light brown, Sandy Silt

SAMPLER: Jon Reid

COMMENTS:

Photo #: 1863 DIRECTION: East

Taken By: Emily Starke

DATE: 4/22/09 TIME: 10:04

WEATHER CONDITIONS: clear, Sunny

SAMPLE #: LSS-16

APPEARANCE: medium brown Sand

SAMPLER: Jon Reid

COMMENTS:

Photo #: 1864 DIRECTION: East

Taken By: Emily Starke

DATE: 4/22/09 TIME: 10:12

CONDITIONS: clear, sunny

SAMPLE #: LSS-15

APPEARANCE: Sandy red clay with gray gravel underneath

SAMPLER: Jon Reid

COMMENTS:

Photo #: 1864 DIRECTION: North

Taken By: Emily Starke

DATE: 4/22/09 TIME: 10:22

CONDITIONS: clear, sunny

SAMPLE #: LSS-13

APPEARANCE: dark brown above & reddish below, contains roots

SAMPLER: Jon Reid

COMMENTS:

Photo #: 1865 DIRECTION: East

Taken By: Emily Starke

DATE: 4/22/ TIME: 10:31

CONDITIONS: partial cloudy,

SAMPLE #: LSS-12

APPEARANCE: red sandy soil

SAMPLER: Jon Reid

COMMENTS:

Photo #: 1866 DIRECTION: West

Taken By: Emily

DATE: April 22/09 TIME: 9:44

CONDITIONS: 65° calm

SAMPLE #: LSS1 + LSS2

APPEARANCE: Brown Sandy

SAMPLER: Hal Gantwell

COMMENTS:

photograph #: 142 DIRECTION: west (down)

Taken By: HC

DATE: April 22/09 TIME: 9:47

CONDITIONS:

SAMPLE #: LSS4

APPEARANCE: light Brown Sandy

SAMPLER: (H)

COMMENTS:

PHOTO #: 3 of 4 DIRECTION: West (Bottom)

Taken By: H

DATE: 4/22/09 TIME: 9:50

CONDITIONS: Sunny & Warm

SAMPLE #: LSS3

APPEARANCE: Light Brown Sandy Then hard & Black

SAMPLER: GH

COMMENTS:

PHOTO #: 5+6 DIRECTION: West North

Taken By: GH

DATE: April 22-09 TIME: 10:14

CONDITIONS:

SAMPLE #: LSD3 + 4

APPEARANCE: Dark brown sandy

SAMPLER: GH

COMMENTS:

PHOTO #: 8+9 DIRECTION: NE E

Taken By: GH

DATE: April 22/07 TIME: 10:18

CONDITIONS: excellent

SAMPLE #: LSS 5+6

APPEARANCE: Light Tan Sandy some black bits

SAMPLER: H

COMMENTS: very Rocky

PHOTO #: 10 & 11 DIRECTION: North East

Taken By: H

DATE: April 22/07 TIME: 11:22

CONDITIONS:

SAMPLE #: LSO-1

APPEARANCE: Brown Sandy Red

SAMPLER: H

COMMENTS:

PHOTO: 12 DIRECTION: North

Taken By: PO

Date: April 22/09 TIME: 11:43

CONDITIONS: HOT partly Cloudy

SAMPLE #: LSS 19

APPEARANCE:

SAMPLER: ES

COMMENTS:

PHOTO#: 13 to 14 DIRECTION: East North

Taken By: G

DATE: 4/22/09 TIME: 9:45

CONDITIONS:

SAMPLE #: LSS-8

APPEARANCE: Sandy clay

SAMPLER: ~~SUBI JOHN~~ Philip Ofosu (EPA)

COMMENTS:

PHOTO #: 1 DIRECTION: North East

Taken By: Randi Brown

0016262 - Camera #

DATE: 4/22/09 TIME: 09:52

CONDITIONS:

SAMPLE #: LSS-14

APPEARANCE:

SAMPLER: Philip Ofosu (EPA)

COMMENTS: Red sandy clay

PHOTO #: 2 DIRECTION: NE

Taken By: Randi Brown

DATE: 4/22/09 TIME: 09:59

CONDITIONS:

SAMPLE #: LSS-10

APPEARANCE: Brown sandy clay

SAMPLER: Philip ofosu (EPA)

COMMENTS:

PHOTO #: 3 DIRECTION: N

Taken By: Randi Brown

DATE: 4/22/09 TIME: 10:12

CONDITIONS:

SAMPLE #: LSS-9

APPEARANCE: Brown silty clay

SAMPLER: Philip ofosu (EPA)

COMMENTS:

PHOTO #: 4 DIRECTION: E

Taken By: Randi Brown

8

DATE: 4/22/09 TIME: 10:16

CONDITIONS:

SAMPLE #: LSS-11

APPEARANCE: Brown silty clay

SAMPLER: Philip Brown (EPA)

COMMENTS:

PHOTO #: 5 DIRECTION: NE

TAKEN BY: Randi Brown

Date: 4-22-09 Time: 11:18

Conditions: sunny, 80's

Sample #: LSD-2

Appearance: Brown sandy clay

Sampler: Todd Downham

Comments:

Photo #: 2 Direction: NW

Taken by: Jeannine Bennett

Date: 4-22-09 Time: 11:43

Conditions: sunny, 80's

Sample #: LSD-5

Appearance: Dark brown, Sandy Clay

Sampler: Todd Downham

Comments:

Photo #: 3 Direction: N

Taken by: Jeannine Bennett

Date: 9-22-09 Time: 10:30

Conditions: Sunny, 70's

Sample #: LSD-6

Appearance: Light brown, Sandy

Sampler: Todd Downham

Comments: Slight sheen on water

Photo #: 1 Direction: W

Taken by: Jeannine Bennett